



"Towards the Human-Centric City: an experimental Service-Design Approach"

Manuel Schaumann

2025 Laurea





Laurea University of Applied Sciences

**"Towards the Human-Centric City: an experimental Service-
Design Approach"**

Manuel Schaumann
Service Innovation & Design
Thesis
May, 2025

Manuel Schaumann

"Towards the Human-Centric City: an experimental Service-Design Approach"

Year	2025	Number of pages	89
------	------	-----------------	----

The study investigated how Service-Dominant Logic (S-D Logic), Co-Creation and Open Innovation can reframe urban public space as a co-creative service ecosystem. Set within a public street festival, the work aimed to enhance citizens' ability to shape streetscape transformations and to offer city administrations, planners, and civic organizations empirically grounded guidance for participatory, people-centered urban development.

An experimental process of service design was applied. Digital text-to-image Artificial Intelligence (AI) supported ideation; festival visitors generated over 100 design visions, shortlisted them through online voting, and selected a preferred concept. Landscape architecture students prototyped the winning idea on-site. Data comprised AI artefacts, voting analytics, participant observations, and seven semi-structured expert and stakeholder interviews. The material was examined through qualitative, structured content analysis, informed by Mayring (2022).

Results showed that AI visualization lowered entry barriers and stimulated diverse creative contributions. However, meaningful value emerged only through subsequent dialogue, feedback, and the physical appropriation of space. The prototype converted a traffic corridor into a sociable "place." It demonstrated that perceived value-in-use is situational and emerges from a process of co-creation. Perceived value through co-creation serves to enhance personal identity and place attachment. Sustainable impact was found to depend on institutional openness, iterative feedback loops and clear governance that integrates digital tools without substituting genuine participation. Recommendations include establishing permanent urban living labs, embedding feedback mechanisms, and developing ethical standards for AI-assisted public engagement.

Keywords: Service-Dominant Logic, Co-Creation, Open Innovation, Participatory Urban Design, Artificial Intelligence, Public Space

Contents

1	Introduction	6
1.1	Background, problem and motivation	6
1.2	Purpose of the work	7
1.3	Research question.....	8
1.4	Significance	9
1.5	Glossary and terminology	9
1.6	Ethical considerations	11
2	What economic sciences can do for urban development - in theory.....	11
2.1	The human-centricity in philosophy, urban research, and social theory.....	11
2.2	Service-Dominant Logic, Co-Creation and Open Innovation for urban planning...	15
2.3	Synthesis: Public Space as Service	27
3	Methodological solutions	29
3.1	Description of the development method	29
3.2	Experimental plan with justification	33
3.3	Step-by-step implementation	37
3.4	Data collection	39
3.5	Ethics and data protection.....	42
3.6	Description of the data analysis.....	42
4	Results	46
4.1	Findings on participation & co-creation	46
4.2	Findings on value-in-use in public spaces.....	47
4.3	Technological enablers (AI) - opportunities and limits	48
4.4	Social impact and appropriation of space	50
4.5	Governance, inclusion, and scalability - structural conditions	52
4.6	Discussion of the results.....	54
5	Conclusion and reflection	56
5.1	Summary of the most important results	56
5.2	Limitations of the study / evaluation of the development settings	58
5.3	Outlook and future research needs.....	59
5.4	Answering the research question and validating the concept	61
	References.....	63
	Figures	76
	Pictures	76
	Tables	76
	Appendices	77

1 Introduction

1.1 Background, problem and motivation

"We create cities we no longer understand" (Grzesikowska 2025). Urban public spaces are currently facing profound changes, shaped by social transformations, increasing digitalization and the need for sustainable urban development (Bhatt et al. 2024; Nica et al. 2023; Leclercq 2018; Atlas of Urban AI 2025; Smart City Dialog 2025). In a time of increasing urbanization and social diversity, public spaces are no longer perceived exclusively as physical infrastructure, but are increasingly understood as places of social interaction, identification, and community value creation (Gehl 2010; Foster & Iaione 2016). At the same time, the challenge of designing these spaces in their complexity in an innovative, inclusive, and participatory way is increasing to meet the diverse and often contradictory needs of the urban population (Mulgan 2006; Vietrova et al. 2022).

An illustrative example of this phenomenon is provided by the annual "Zamanand Festival" in Munich, which temporarily frees central inner-city streets from motorized traffic (Zamanand Festival 2024). Although the festival regularly attracts large numbers of visitors, according to the organizers, a recurring pattern is evident among the attendees. In areas that are deliberately not designed with specific activities or installations, visitors often react with irritation and uncertainty. It seems that they do not know how to actively use these unfamiliar, open street spaces. This observation suggests that city dwellers today lack the competence or self-conception to appropriate or actively shape public spaces on their own initiative.

From a business perspective, a fundamental problem can be identified here. Public spaces are traditionally planned and operated from a product or infrastructure logic perspective (Gehl 2010). Thus, its users are forced into a passive consumer role of their environment. Business management approaches, in particular the service-dominant logic (Vargo & Lusch 2004) and theories of open innovation and co-creation (Vargo & Lusch 2004; Prahalad & Ramaswamy 2004; Chesbrough 2010), could create an opportunity for public space to be used more effectively and sustainably. The involvement of citizens is central.

This research project takes a practical approach to precisely this point. It examines how digital, AI-based tools can be utilized to actively engage urban residents in the creation and management of public spaces. An experimental service design project examines the extent to which user-centered methods can enhance the participation skills of the urban population. The aim of this study is to contribute to a deeper understanding of how public spaces can be addressed in terms of participatory, user-centered service logic.

In this work, service is specifically defined as a collaborative, user-centered process that enables public space to be generally understood as a social and participatory service.

The motivation for this research project stems from the conviction that public space must not only be built and managed, but also narrated, imagined, negotiated, and reinvented together. As a service designer, I am particularly interested in how processes can be user-centered and democratized through new formats, technologies, and forms of interaction. It is not only about what is created in public space, but also about how and by whom its value is defined, in the sense of a human-centric city.

This work was created in the context of a real-world laboratory 2024, which the author conceived and implemented on his own behalf as a service designer and non-profit organizer of the Zamanand Festival in Munich. The non-profit character of the festival underlines the claim to think about urban innovation in a human-centered, inclusive, and experimental way rather than commercially. The insights gained are therefore based on a practical and research-led perspective.

For the festival, the City of Munich supported the experiment with a project grant of € 25,000 (for technical equipment, fees, and design materials).

The technical implementation and moderation of the AI-based co-creation session on-site was conducted in collaboration with UrbanistAI from Helsinki (UrbanistAI 2025), Damiano Cerrone and Luca Stornaiuolo, who developed and provided a text-to-image-based AI system for collaborative spatial visualization, as well as with the help of other volunteers on site.

The translation of the AI design for the development and structural implementation of a walk-in prototype was realized in collaboration with the Chair of Landscape Architecture at the Technical University of Munich. The students Darleen Schäfer, Marie Gaschler and Julia Roemer were responsible for the design and building of the prototype and reported the project from a landscape design perspective (Darleen Schäfer, Marie Gaschler, Julia Römer 2025)

My special thanks go to my family.

1.2 Purpose of the work

The purpose of this work is to practically assess Service-Dominant Logic, Co-Creation, and Open Innovation as a strategic concept for publicly used spaces in an urban context. The aim is to develop a deeper understanding of the use of service design methods in the context of urban space production. The findings should serve urban actors such as city administrations, planners, and other stakeholders who are striving for participatory and user-centered management approaches in public spaces.

In detail, this work pursues the following specific objectives:

- The identification and analysis of specific factors that enable users to actively shape public space on their own initiative.
- The testing of a concrete, experimental service design approach in an urban context, the Zamanand Festival, to generate empirical findings on the effectiveness and acceptance of this methodology.
- The derivation of strategic and operational recommendations on how and why participatory and service-oriented methods can be integrated into urban management processes in a long-term and sustainable manner.

This purpose is intended to make a clear contribution to understanding public spaces not only theoretically, but also methodically and practically as co-created social services. The corresponding theoretical approaches are to be transferred to urban practice. The work is intended as a contribution to the concept of "public space as a service". This new perspective views public spaces as social infrastructures in which users themselves define the value they place on them. The quality and legitimacy are essentially determined by collective production.

1.3 Research question

Based on the objectives described above and the theoretical context of the work, the following central research question is posed

- How and under what conditions can an experimental service design approach, based on service-dominant logic, co-creation, and open innovation, establish public spaces as co-creative services?

Research logic

This work pursues an explorative character. In an applied setting, it examines which mechanisms and framework conditions enable an AI-based co-creation approach in urban management. At the same time, it is design process oriented. An innovative service design methodology is developed, prototypically implemented, and empirically evaluated to derive supported recommendations for action.

Sub-research questions

- Which organizational, technological, and methodological factors promote the active involvement of city dwellers in AI-supported co-creation processes?
- To what extent do digital, AI-based tools support the process of co-creatively managing public spaces?

- To what extent is the experiment with its service design approach suitable for integrating external streams of ideas into urban innovation processes?
- What conditions must be met so that the knowledge gained in the experimental setting can be transferred to other cities and contexts as a scalable model?

1.4 Significance

This research understands public spaces as dynamic, collaboratively designed and continuously evolving services. This perspective aligns with the service-dominant logic, which defines service as a process where value is created through the interaction and joint activities of participants (Vargo & Lusch 2016; Grönroos & Voima 2013).

The relevance of the work lies in providing empirical findings on the effectiveness and applicability of digital, especially AI-based, user-centered methods in an urban context. This makes a significant contribution to the expansion of service design approaches. The insights gained are relevant to practice and offer urban planners, decision-makers, and other stakeholders' concrete recommendations for designing public spaces in an inclusive, sustainable, and effective manner.

1.5 Glossary and terminology

1. **Citizen participation** - a generic term for all processes in which citizens participate in planning or political decisions, ranges from pure information to genuine transfer of power. (Arnstein 1969)
2. **Co-creation** - Joint value creation through the active participation of multiple stakeholders in all phases; going beyond traditional participation to dialogic interaction and shared control. (Prahalad & Ramaswamy 2004)
3. **Co-design** - Specific form of co-creation in which users and experts make design decisions and develop artifacts together. (Jakob Trischler et al. 2019)
4. **Co-production** - cooperation of citizens in the provision of public services; more narrowly defined than co-creation, as the focus is on implementation/production. (Bovaird & Loeffler 2012)
5. **Commons / Urban Commons** - Collectively used and managed urban resources that are protected and further developed by common rules (Foster & Iaione 2016)
6. **Governance** - the totality of formal and informal rules, processes and actors that control collective action, in the context of the work, especially co-governance between the city and civil society. (Ansell & Torfing 2021)
7. **Living Lab / Urban Living Lab** - real-world laboratory in urban areas in which administration, citizens and other stakeholders co-create and test innovative solutions under everyday conditions. (Steen & van Bueren 2017)

8. **Open innovation** - Consciously opening an organization's innovation process to incorporate external ideas and resources and share internal ones with the outside world. (Chesbrough 2010)
9. **Placemaking** - Participatory practice of designing public spaces with and for the community and giving them identity. (Ellery & Ellery 2019)
10. **PPPP (Public-Private-People Partnership)** - Extended form of public-private partnership that integrates the population as equal partners in the project and value creation structures. (Irazábal 2016)
11. **Public Space as Service** - Concept that understands public space as a socio-technical service platform in which actors create collective value through interaction.
12. **Quadruple Helix** - Innovation model that sees the four groups of actors - government, business, science, and civil society - as equal partners in open innovation processes.
13. **Service Design** - a user-centered design discipline for the analysis, development, and implementation of holistic service processes and touchpoints. (Stickdorn et al. 2018)
14. **Service-Dominant Logic (S-D Logic)** - Marketing and service paradigm that postulates "everything is service" and understands value as the result of resource integration and utilization (value-in-use). (Vargo & Lusch 2004)
15. **Service ecosystem** - Relatively self-organizing network of resource-integrating actors, connected by shared institutions and value co-creation. (P. Frow et al. 2014)
16. **Stakeholder** - All people or groups who are affected by a project or service or who can influence it (e. citizens, administration, companies). (Kazadi et al. 2016)
17. **Value co-creation** - Process in which value is only created in (joint) use and is co-created by all the actors involved. (Lusch & Vargo 2014)
18. **Value-in-use** - Subjectively perceived benefit that manifests itself for the beneficiary in the actual use; central understanding of value in S-D Logic. (Lusch & Vargo 2014)

Participation, co-creation, co-design, or call it what you want? Conceptual clarification

In the context of this thesis, various terms were deliberately used to accurately represent the respective concepts within their respective disciplinary logics. Participation in the context of urban planning, co-creation in the service science and social innovation sense, co-design from design research, and occasionally also co-production, as used in public service logic (Osborne et al. 2016).

In fact, publications often do not clearly delineate this conceptual diversity, as a recent study highlights. The terms are often used synonymously or inconsistently (Lee et al. 2024). This leads to theoretical and practical confusion. The study also notes that, particularly in interdisciplinary contexts, there is often a lack of systematic differentiation between co-creation, co-design, and co-production.

However, these include different degrees of co-creation, decision-making power, and goal orientation (Lee et al. 2024). This highlights a methodological gray area but also underscores the open nature of collaborative processes.

Mark Stickdorn, one of the central figures in the field of service design, gets to the heart of this semantic debate when he writes: "Call it what you like - it matters that you do it" (Stickdorn et al. 2018, 32). This pragmatic approach emphasizes that it is not primarily about achieving terminological clarity, but rather about consistently implementing collaborative and user-centered principles.

Nevertheless, it remains essential for scientific reflection to disclose the epistemic origins and the implicit notions of power underlying the concepts used. While participation often remains symbolic or consultative, co-creation aims at equivalent value creation. Co-design encompasses collaborative design and co-production, with a focus on joint service provision. All have different requirements in terms of process design, power sharing, and resource structure.

1.6 Ethical considerations

As part of the project, various AI-supported tools were used in a transparent and ethically responsible manner. UrbanistAI, an AI system for collaborative visualization of spatial ideas, was utilized as a service design tool for on-site co-creation.

DeepL was used for the translation of this work (German to English). Microsoft Word (Office 365) was used for the automatic transcription of the audio data. For the visualization of the contents of this work, Napkin AI was used in part and marked accordingly.

ChatGPT was used for linguistic elaboration, structuring, and curating the content. It served as a supporting tool for reflection, clarification, and optimization of the formulation. The author made all content-related decisions, critical assessments, and arguments independently. All systems used complied with the applicable data protection standards; personal data was not transmitted.

2 What economic sciences can do for urban development - in theory

2.1 The human-centricity in philosophy, urban research, and social theory

The interdisciplinary connection to philosophical and urban sociological discussions is important for the work to better grasp the context of human-centricity.

Cities are first living spaces for people and not just collections of buildings (Lefebvre & Schäfer 2016). Martin Heidegger (1954) already makes it clear that building must go beyond the mere fulfillment of purpose and function. The aim is to create conditions for a human existence in which rootedness is possible, because man always experiences his being in spatial relation to the world. Lewis Mumford (1989) emphasizes that city centers historically served not only as economic or administrative centers. They were, above all, cultural centers in which collective identity and social life were concentrated. He points out that vibrant city centers must enable social diversity, memory, and community experience to fulfill their integrative function. If the center loses this function, the city is threatened with a loss of cultural depth and social cohesion (Mumford 1989). Originally, urban squares and streets were central meeting places where social life took place. They interwove various social, economic, and cultural activities (Arendt et al. 2018; Habermas 2023). The city offers spaces in which discourse and democratic exchange can take place (Habermas 2023). From this, Lefebvre derived his concept of the "right to the city," which advocates for residents to have an active role in shaping their urban living environment (Lefebvre & Schäfer 2016). Lefebvre also emphasized that space is a social product. Space is created through social practices and conflicts (Lefebvre & Busch 2018). These approaches form the foundation for a human-centric perspective. Cities should not be planned technocratically from above but should focus on the lived experiences and needs of their inhabitants.

Urban research and urban studies have also undergone a paradigm shift since the 20th century (Carmona 2021). Authors such as Jane Jacobs criticized the sterile, modern urban planning approaches of her time and emphasized the importance of small-scale, vibrant urban life at eye level (Jacobs 2014). Jacobs showed, for example, how observation of everyday life leads to better planning decisions. Her famous image of the "ballet of the sidewalk" illustrates that urban vitality arises from spontaneous interactions between people (Jacobs 2014). Danish architect Jan Gehl (2010) continues this human-centered tradition by demonstrating that the design of urban spaces significantly influences people's behavior and well-being. In particular, he emphasizes the human scale, which has often been neglected in urban planning, and argues that public spaces must be specifically tailored to human needs for social interaction, comfort, and safety to be successful in the long term (Gehl 2010). Environmental psychology emphasizes that well-designed environments have positive effects on well-being, social interaction, and community building (Kaplan & Kaplan 1989; Hartig et al. 2014; Vries et al. 2013; Whyte 1988).

At the same time, the communicative approach developed in planning theory, inspired by Habermas' idea of deliberative processes. Planning decisions should be made dialogically and inclusively (Healey 2006). This is defined as collaborative planning, in which administration, experts and citizens work together on the future of the city (Healey 2006).

Sherry Arnstein (1969) shows with her influential participation ladder how citizen participation can go through various stages from pseudo-participation to genuine citizen control.

In today's urban practice, social, cultural, and ecological values are increasingly becoming the focus of urban planning again. Public spaces are not only seen as places of exchange, but also as central places of social cohesion, identity formation and ecological sustainability. Citizens, administration, business, and civil society are taking joint responsibility for urban spaces and infrastructures - the "collaborative-city" (Foster & Iaione 2016). Associated methodologies such as "placemaking" emphasize participatory and cooperative practices in particular to redesign public spaces and make them usable for the community (Project for Public Spaces 2025; Ellery & Ellery 2019; Lorah & Silberberg 2025). These social-theoretical and planning perspectives establish the model of cooperative urban development, in which local actors contribute knowledge and share decision-making power. Sennett advocates the "open city", which allows for imperfection and improvisation and thus offers space for human creativity and diversity (Sennett 2018).

Elinor Ostrom's concept of "urban commons" broadens the perspective on public spaces to the extent that they can be seen as resources that are collectively managed and used (Ostrom 2015). This model calls for greater co-determination and participation of local communities (Foster & Iaione 2016; Stauridēs 2016).

Instead of places of encounter and communal activities, however, consumer-oriented, visually overloaded, and commercialized urban spaces are increasingly emerging (Banerjee et al. 1999; Zukin 2002). This commercial appropriation of public space results in increased control and management of public use by public administration. The possibilities and practices of use are increasingly shaped by commercial and private sector interests and restrict the spontaneous appropriation and flexible use of public spaces (Low & Smith 2013).

This interdisciplinary theoretical framework, ranging from Heidegger's existential understanding of space to Jacobs' everyday observations of the city and collaborative planning theory, underpins the thesis of a "human-centric city." According to this, urban spaces should primarily be geared towards meeting people's needs, abilities, and participation, rather than being viewed merely as infrastructure imposed from above.

Public space as a relational, social, and cultural structure

Public space cannot be reduced to its physical substrate. It arises as a relational structure that is constantly emerging from the interactions of people, things, and practices. Urban space can be understood as a dynamic assemblage, as a provisional whole that is constantly being formed anew (Deleuze & Guattari 2007; Page 2020). Building on this, Tuan (2011) distinguishes between space, which is initially meaningless, and place, which only acquires meaning through lived experiences, memories, and cultural attributions. This transformation creates the place attachment that Relph (Relph 2016) emphasizes the foundation of local identity. Lynne Scannell and Robert Gifford (Scannell & Gifford 2010) work out that place attachment - i.e., the emotional connection to a place - consists of three components: (1) the person (individual or group-specific attachment), (2) the place itself (its physical nature), and (3) psychological processes (memories, meanings).

Empirical urban observations by Jacobs, Whyte, and Gehl show how seemingly marginal qualities - seating, microclimatic conditions, human scale - determine whether people appropriate a place, linger, and engage in social interaction. Public space thus only becomes a lively, community-building place when people live together. Its socio-cultural value is therefore inextricably linked to its everyday use and the diverse practices of its actors. Jane Jacobs (2014) demonstrated how residents contribute to the safety and vitality of streets through their mere presence—an informal interplay that planners often underestimated. It follows that user perspectives are essential to define the actual quality of a public space.

These theories (space vs. place, place attachment) are extended by the increasing integration of digital and technological dimensions (Graham & Marvin 2002). Similarly, Mitchell (2003) argues that digital communication technologies are creating new hybrid spaces that combine both physical and virtual elements. And how AI technologies are not only changing infrastructure, but also influencing urban experiences, participation, and perceptions of space - from both a technological and social perspective (Atlas of Urban AI 2025).

This is closely tied to questions of access, power, and inclusion (Low & Smith 2013). They influence who is allowed to appropriate a particular urban space. For example, squares are often the setting for cultural expressions, such as festivals and demonstrations, and thus bearers of collective identity. But they can also exclude certain groups through commercialization or exclusive design. Architectural sociologist Kim Dovey argues that space is inextricably linked to issues of power and identity. The built form can both express domination and be reinterpreted and appropriated by users (Dovey 2009). Even from this power perspective, public space is not a static entity.

It is constantly being recreated anew through the coordination and conflict between different actors and through the cultural practices that occur within it. A human-centered approach to this structure means considering the multi-layered social and cultural aspects.

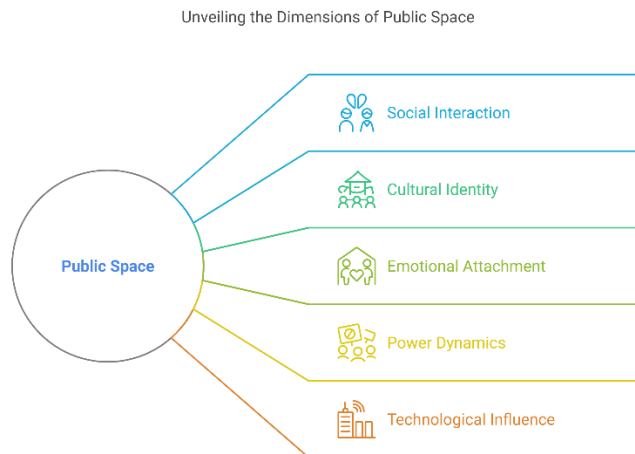


Figure 1 The Dimensions of Public Space (created with Napkin AI)

Prior theories of space and place are essential to this work, as they help grasp the complex social, cultural, and emotional dimensions of urban public spaces. They form the basis for treating this space as a common good. This must be preserved and developed in collaboration with the users. They underpin the design of spaces in such a way that they are not only functional but can be defined by their users.

From this perspective, purely administrative management of public space by the public administration alone is insufficient. Rather, citizen-oriented, participatory approaches that enable citizens to contribute and implement their ideas actively and needs in the design and use of public spaces are indispensable (Healey 2006; Forester 1999). Participatory planning processes make it possible to integrate different perspectives and design public spaces in such a way that they are recognized and actively used by the actual users (Innes & Booher 2018).

It is therefore crucial to develop and promote practices that empower people to take responsibility and self-organize in shaping their environment. Such people-centered approaches not only strengthen the democratic use of public space, but also help to promote long-term social bonds, identification, and sustainable responsibility in urban communities (Manzini & Rizzo 2011; Mulgan 2014)

2.2 Service-Dominant Logic, Co-Creation and Open Innovation for urban planning

Cities are therefore faced with the challenge of designing public spaces in a people-centered and innovative way.

Instead of planning urbanity top-down, the focus is shifting to public space as a construction that is created by and with people. This perspective requires an approach that puts people and users at the forefront, fostering a human-centric perspective. Away from a static view of squares and streets towards a dynamic logic in which citizens, administration, and other stakeholders create value together.

This work precisely takes this approach. It integrates three complementary theoretical approaches to understand public spaces as co-creative service systems. Service-Dominant Logic (S-D Logic) (Vargo & Lusch 2004) as the ontological foundation, Co-Creation (value creation through participatory processes) (Prahalad & Ramaswamy 2004) as the actor logic, and Open Innovation (Chesbrough 2010) as the governance framework for opening the innovation process. This construction lays the theoretical groundwork for the practical experiment presented in this paper.

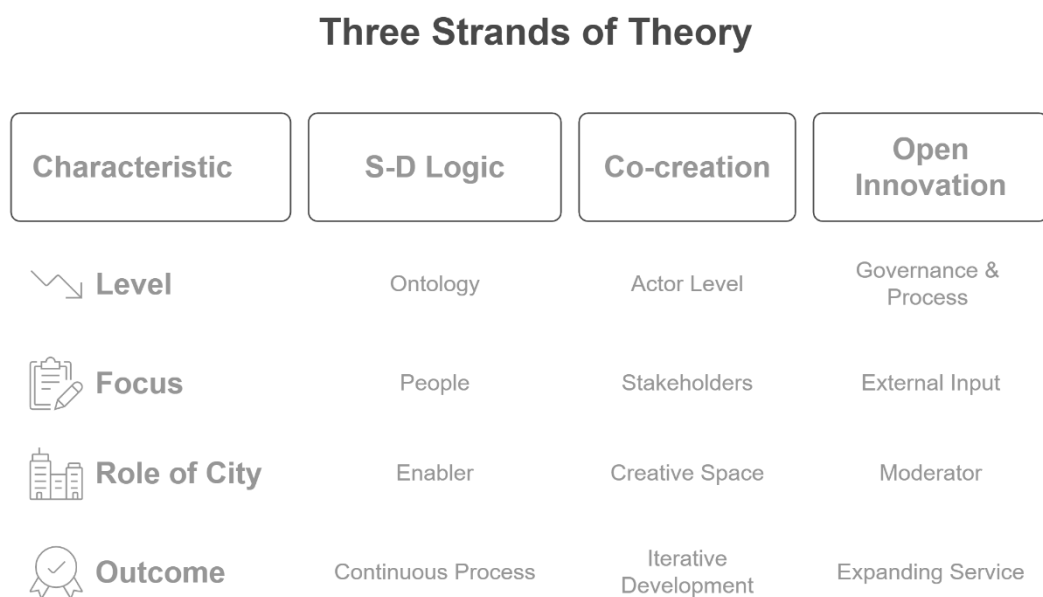


Figure 2 The strands of theory (created with Napkin AI)

The following presents and critically discusses these three theoretical strands systematically. Finally, they are contextualized for urban public spaces. How can S-D Logic, co-creation and open innovation be brought together in participatory processes, as in the case of the Zamanand Festival in Munich, to arrange people-centered urban spaces?

Service-Dominant Logic: Everything is service

Service-Dominant Logic (S-D Logic) has triggered a paradigm shift in marketing and service research (Vargo & Lusch 2004). It replaces the traditional goods-centered logic and focuses on service as the fundamental principle of exchange. "Everything is service" implies that economic value is not inherent in material goods themselves, but rather in the benefits that arise from the use and integration of resources from the beneficiary (Lusch & Vargo, 2004). The principle of "value-in-use" applies (Lusch & Vargo 2014, 91). A car, for example, is not valuable in S-D Logic, but rather a means of providing mobility services. Goods are viewed as "intermediaries in service delivery" that enable the service to be delivered (Lusch & Vargo 2014, 13). Four key axioms are identified: (1) service is the fundamental basis of exchange; (2) value is co-created through the interaction of multiple actors (always including the beneficiary); (3) all social and economic actors are resource integrators; (4) Value is always uniquely and phenomenologically determined by the beneficiary (Lusch & Vargo 2014; Vargo & Lusch 2016). These principles illustrate that value creation is not a one-sided process, but rather one that is created through interaction, where people invest their resources. Providers can only offer value propositions; value realization occurs when the customer utilizes them (Grönroos 2008). In his Service Logic, Grönroos (2008) emphasizes that customers are the main actors in value creation and that companies support this process through interaction. Without user participation, no real value is created. This view is also important in the public sector, where citizens as users of services should always be involved in the creation of value (Osborne 2018). The co-creation of value is therefore a core component of S-D Logic (Lusch & Vargo 2014). It is essential to note that co-creation is not limited to the narrow sense of "joint production" but encompasses a more comprehensive understanding. Every use of a service by the user contributes to value generation and is therefore part of co-creation (Lusch & Vargo 2014). This understanding differs from older management concepts in which companies create value and customers only consume it. This insight aligns with early indications in the literature that value creation occurs as a "value constellation" within networks of multiple participants, rather than a linear value chain (Normann & Ramírez 1993). S-D Logic extends the view from bilateral customer-company relationships to complex service ecosystems. A service ecosystem is a self-regulating system of actors connected by common institutions (rules, norms) that jointly generate value through the exchange of services. "Value cocreation is coordinated through actor-generated institutions and institutional arrangements" (Vargo & Lusch 2016, 8).

Applied to the city, this means urban spaces (assemblages) can be viewed as service ecosystems in which different actors (citizens, administration, companies, technologies such as AI) contribute resources and interact to jointly create for their beneficiaries.

(Polese et al. 2019) suggest explicitly conceptualizing the smart city as a service system, for example. They emphasize the collaborative logic in which public and private actors, as well as citizens, continuously exchange resources and learn together. Citizens are seen as equal partners with whom goals and knowledge are shared to create value through synergetic interactions (Polese et al. 2019). This perspective also requires new institutional frameworks. S-D Logic emphasizes that shared institutions enable coordination in service ecosystems (Vargo & Lusch 2016).

However, S-D Logic alone does not provide any concrete guidance on how this should be done in practice. This is where the next theory stems in - co-creation as an action-oriented logic of value creation.

Co-creation: Joint value creation through participatory processes

The term "co-creation" refers to the joint creation of value by multiple stakeholders through a dialogical process. The concept is popularized by Prahalad & Ramaswamy (2004), who call for a paradigm shift in marketing and management literature. Away from company-centered "we produce - customer consumes" thinking, towards interaction processes in which customers become active partners (Prahalad & Ramaswamy 2004).

Co-creation is more than just customer involvement in late phases. It encompasses the active participation of users in all phases of value creation - from idea generation and design to implementation and use. In practice, co-creation takes many forms. For example, in the urban context of participatory urban planning, where citizens have a say in designing their environment (Voorberg et al. 2015). Co-creation is used in a similar way in design research. Sanders & Stappers (2008) define co-creation as any act of collective creativity, i.e., creativity that is shared by two or more people. Co-creation generally refers to the cooperative production of something new by several actors (Prahalad & Ramaswamy 2004).

The actor's logic is therefore important in co-creation. All participants, whether professionals or laypeople, contribute their own resources, perspectives, and skills and create something new together. Ramswamy & Ozcan (2018) emphasize that co-creation should be understood as an interactive process that takes place on interactional platforms - i.e., in system environments that facilitate and promote interaction. So-called "agential assemblages" (Deleuze & Guattari 2007; Prahalad & Ramaswamy 2004) are created through the interaction of various actors. Co-creation, therefore, requires suitable platforms (physical or digital) on which people, artifacts and processes can interact with each other (Prahalad & Ramaswamy 2004).

Modern technologies can function as enablers of such platforms by facilitating and multiplying interactions (e.g., AI-supported creative tools) (Cerrone 2023).

Thus, digital platforms and tools offer new opportunities to break down barriers to participation and enable even stronger, more democratic participation by promoting accessibility, transparency, and diversity of voices (Cerrone 2023). Their use and the empowerment of lay people to visually express their ideas beyond the usual participation formats and "post-it sessions" add user-defined value to the development of public space. However, it is criticized that the structural integration is often insufficient (Falco & Kleinhans 2018; Ertiö 2015).

The concept of co-creation has gained a foothold in the public sector. Terms such as "co-production" (Osborne et al. 2016; Ostrom 1996) or "participation" (Arnstein 1969; Bryson et al. 2013) are used to discuss how citizens and the administration can jointly generate public services. However, it is noticeable that the terms co-production, co-creation, and co-design are often used interchangeably, and no distinction is made (Lee et al. 2024). Participation in urban development is often located along the "ladder of citizen participation" labeled by Arnstein (1969). This ladder describes forms of non-participation (manipulation, therapy) through symbolic participation (informing, consulting, involving) to genuine power-shifting (partnership, delegated power, citizen control). In practice, however, participation often stops at intermediate levels and rarely reaches actual co-creation (Grcheva & Oktay Vehbi 2021). If we look at Prahalad & Ramaswamy (2004), we see that co-creation starts above the symbolic levels of participation and is based on principles such as dialogue, transparency, and shared control. Applied to urban development, this means not only consulting citizens but also involving them as equal partners in ongoing processes.

(Bryson et al. 2013) emphasize that participation is not achieved through standardized formats. Success is measured through a carefully designed approach that considers goals, participants, power relations, resources, and contextual conditions. Urban planners can learn from the business world to view participation as experience-oriented, individualized, and transparent co-creation, thereby reorganizing urban development as a joint value creation process (Albrechts 2013). In this context, Osborne (2018) speaks of public service logic and argues that value in public services is only created in their use by users. Public organizations co-produce this value with users, not unilaterally for them (Osborne 2018).

A systematic framework of meaning can be derived from research on co-creation and value co-creation, which provides a new perspective on understanding public space. Co-creation basically refers to any collaborative production of ideas, products, or experiences by several actors (Prahalad & Ramaswamy 2004). However, if the focus is specifically on the benefits arising from the interaction, this is referred to as value co-creation (Lusch & Vargo 2014). Companies or institutions merely function as value enablers (Vargo & Lusch, 2008).

Value creation thus becomes a cyclical process of resource integration in which all actors involved (citizens, organizations, technology) make continuous contributions (Payne et al. 2008). If we apply this logic to public space, its understanding shifts from a static physical infrastructure to a relational space of experience and use. Traditionally, public space is defined as a structural-legal territory that is provided and regulated by public authorities (Hee & Ooi 2003). In the light of Service-Dominant Logic, public space is rather a platform on which value is created collectively (Ramaswamy & Ozcan 2018). People give places meaning through residence, exchange, protest, or culture, as discussed earlier. Municipalities and service providers provide resources such as cleanliness, security, or digital connectivity (Ind & Coates 2013; Ranjan & Read 2016).

Considering the discussion before, the following definition interprets "Public Space as Service":

Public space is a socio-technical service platform in which state, civil society and market actors integrate their resources to create and renew collective and individual value for its users (value-in-use) through ongoing interactions.

This definition makes two key points clear: firstly, the value of public space is not conceived *ex ante* but emerges situationally during use. Secondly, the role of the public sector is shifting from sole producer to coordinator of an open value creation community that orchestrates physical, digital, and social components. The definition follows a PPPP (Public Private People Partnership) (Irazábal 2016) or Quadruple Helix (Carayannis & Campbell 2009), which addresses public value (Moore 2021; O'Flynn 2007; Acar et al. 2023), but with users at the center. It includes a definition of value that goes beyond monetary or functional dimensions and, as such, must also be assessed and considered.

The definition results in the following features:

1. Cooperation and participation: Service in public spaces is created through the active involvement, exchange, and coordination of different stakeholder groups.
2. Process character: The service is not a finished product, but rather a dynamic process that changes according to needs, time of day, season, or social trends.
3. Intangible value creation: The focus is on the social and public value created through use and interaction.
4. Interaction of physical and social factors: Spaces, architecture, and infrastructure provide the framework in which social exchange and experiences occur. This human interaction lends the place its benefits and value.

This makes "public space as a service" a theoretical framework that focuses planning and governance processes more strongly on participation, adaptive design, and continuous value generation.

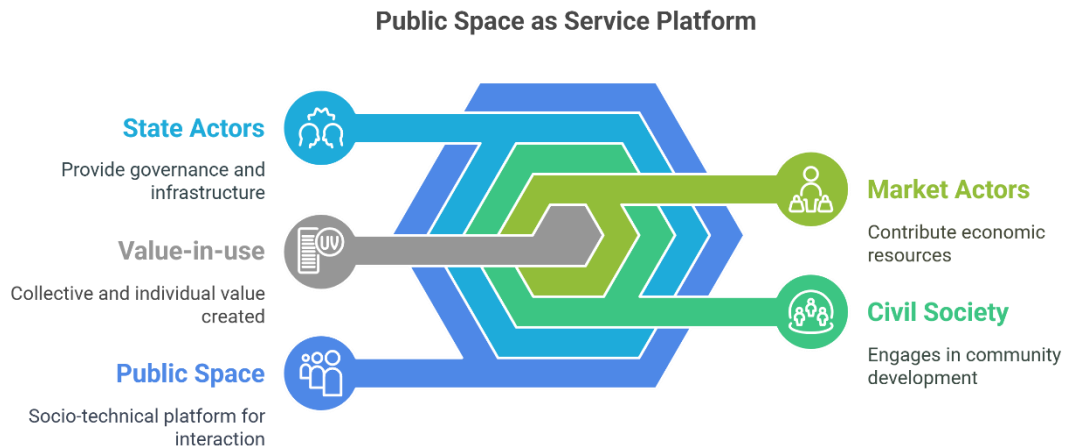


Figure 3: Public Space as Service (created with Napkin AI)

Co-creation thus promotes overall democratic legitimacy and social capital, as citizens feel taken seriously and contribute their skills (Bovaird & Loeffler 2012). Where citizens and authorities are in close contact, co-creation is used to develop solutions that better meet local needs (Voorberg et al. 2015).

However, co-creation is challenging. It requires institutions to share power and control, design new participation formats, and deal with the unpredictability of open processes (Torfing et al. 2019). In addition, the most inclusive processes possible must be found so that not only vocal or resource-rich groups participate. The design of such co-creation processes is already the subject of interdisciplinary research, for example, on the governance of co-creation (Ansell & Torfing 2021) or methods of participatory design in design research (Steen & van Bueren 2017).

An important aspect is the role of moderation and mediation. As different stakeholders have different languages and knowledge backgrounds, translators or facilitators are often needed (Mahajan 2024). Designers are needed to define the process from a citizen's idea through to planning, design, and implementation (Morelli et al. 2017). This new role of designers supports transformative processes by enabling co-creative solutions to complex societal challenges (Manzini 2015). Design thinking methods are employed to actively engage diverse stakeholder groups and develop innovative solutions to complex problems (Brown 2009; Liedtka 2011).

For the design of public space as service - as in the context of this thesis - co-creation provides an operational framework.

Citizens can be actively involved in brainstorming (What is a livable neighborhood?), concept development (What could a park look like?) and even implementation (collaborative building, temporary interventions). This results in locally adapted, accepted solutions because the future users were involved from the outset (van der Graaf et al. 2014). In this context, Manzini (2015) says that in the age of social innovation, "everyone designs". The role of experts is to channel this diffuse creativity into productive channels (Manzini 2015; Dorkenwald 2025). In practice, structures such as workshops, living labs, communities, or forums are often used for this purpose, in which stakeholders come into direct contact (Brandsen & Honingh 2016). Co-creation, therefore, makes it possible to use the creativity and intelligence of citizens to establish a city that is truly people oriented.

Co-creation links participation and identity formation in public urban spaces (Hafer & Ran 2016). It has even more far-reaching implications than mere participation. Through equal negotiation of perspectives, participants experience self-determination and self-efficacy. This results in emotional and symbolic ties to the jointly created places (Scannell & Gifford 2010; Dovey 2016; Manzo & Perkins 2006). A valorization takes place. Identification with co-created spaces transcends functional utility aspects. Co-creation strengthens a sense of belonging and creates a collective identity, which in turn promotes the maintenance, adaptive use, and further development of public spaces (Jacobs 2014; Gehl 2010; Lewicka 2011). Participatory processes also promote dense social networks, as shared responsibility trains the negotiation of divergent interests and generates creative solutions to urban complexity (Healey 2006; Forester 1999; Innes & Booher 2018). Co-creation, therefore, significantly strengthens local identity, social integration, and sustainable urban development. This creates a circular value-identity cycle. Co-creation generates perceived benefits that strengthen identity, which in turn triggers further co-creation. This value-identity cycle, similar to the Value-Identity-Personal-Norms Model (Ruepert 2016), ensures the continuous evolution of public spaces as service platforms.

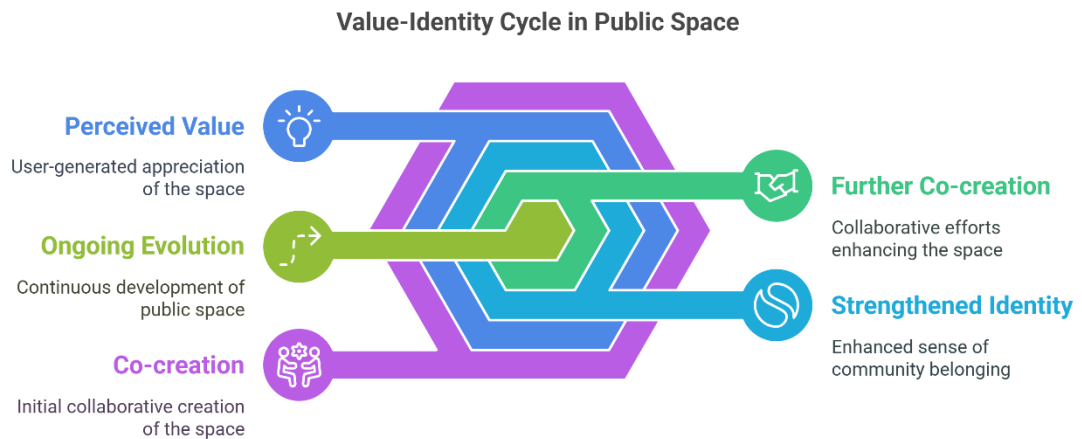


Figure 4 Value-Identity Cycle in Public Space (created with Napkin AI)

Co-creation, therefore, provides the actor and process logic for the work to practically implement the value creation called for in S-D Logic. It operates by illustrating how various stakeholders, including citizens, companies, and governments, collaborate to create value together. However, the question remains as to how organizations, in this case the event organizer and, in perspective, the public administration, manage this openness and participation institutionally. This is where the third strand of theory comes into play. Open innovation (Chesbrough 2010) offers approaches for opening the innovation process beyond organizational boundaries and systematically integrating external contributions.

Open innovation: opening the innovation process as a governance framework

The term Open Innovation is coined by Chesbrough (2010). It is an approach in which organizations consciously incorporate external ideas and resources into their innovation process. At the same time, internal ideas are shared externally. Traditionally, many companies pursued "closed innovation", i.e., research and development took place in a quiet chamber, and knowledge was strictly guarded. Chesbrough (2010) contrasts this with the open paradigm. Companies can and should utilize external ideas just as much as internal ones, and they should pursue both internal and external routes to market. This definition was later clarified. Open innovation is a distributed innovation process that is made possible by targeted knowledge flows across organizational boundaries (Chesbrough & Bogers 2014).

Knowledge can flow inwards (inbound open innovation, e.g., integration of customer ideas) or outwards (outbound, e.g., licensing of own inventions to others) (Chesbrough 2010). Both directions often occur simultaneously, for example, in networks or alliances (Gassmann & Enkel 2004).

In the context of service, Chesbrough (2011) has further developed the concept into Open Services Innovation. He proposes four core principles: (1) Think of your business as a service business. (2) Invite customers to co-create innovation with you. (3) Use Open Innovation to accelerate and deepen service innovation. (4) Transform your business model through open service innovation. (Chesbrough, 2011)

These principles explicitly combine the previously discussed approaches. A service orientation (S-D Logic), co-creation with customers, and openness to the outside world. Open innovation acts here as an accelerator and amplifier for innovations. In the service sector in particular, the involvement of external partners generates more ideas and allows them to be evaluated more quickly (Chesbrough 2011). Applied to the public sector, open innovation means that administrations actively use external sources of knowledge to solve public problems (Hilgers & Ihl 2010). This can take various forms. Open government initiatives publish open data so that external actors can create innovations based on it (Palumbo et al. 2023). Public-private innovation partnerships bring city administrations together with start-ups, universities, or social initiatives to jointly develop new services (Irazábal 2016). All of these are forms of open innovation in the public sphere, with the aim of leveraging public innovation potential and generating public value (Moore 2021). Open innovation practices in the public sector can contribute to more efficient and citizen-oriented solutions. However, they also require suitable structures (e.g., legal framework for collaboration, incentive systems, etc.), as administrations traditionally tend to act in a closed manner (Moore 2021; Mergel 2018; Palumbo et al. 2023).

Another relevant aspect of open innovation in public value creation is the concept of open social innovation (Chesbrough & Di Minin 2014). This refers to the application of open innovation strategies to social challenges. These are innovative processes that bring together various social actors (government, civil society, companies, academia) in the Quadruple Helix (Carayannis & Campbell 2009) to creatively solve social problems. Social value (Schumpeter 1909; Kroeger & Weber 2014) is often created when such unorthodox partnerships are entered into and traditional sector boundaries are overcome (Chesbrough & Di Minin 2014; Agile Verwaltung 2024). The results of such open collaborations can be new forms of services that no one would have developed alone.

From a governance perspective, open innovation requires public institutions to let go to a certain extent (Agile Verwaltung 2024). Authorities must learn that good governance also entails attracting and utilizing ideas from outside (Sørensen & Torfing 2019). This presents established bureaucracies with challenges in terms of data sharing, participation, and willingness to take risks (Mergel 2018). It requires trust in citizen competence and external expertise (Mu & Wang 2022). Some administrations are responding by establishing innovation labs or staff units for citizen participation that manage such open processes (Ekroos 2023).

One example of open innovation that is relevant to this work by its design, is the concept of urban living labs (Steen & van Bueren 2017; Nesti 2018). These urban living labs can be seen as an open innovation environment on-site. Giorgia Nesti (2018) defines Urban Living Labs as public spaces where local authorities involve citizens to develop innovative urban services. Their strength lies in a methodology based on open innovation, experimentation, and citizen participation (Nesti 2018). Cities establish experimental spaces, such as a city quarter or a test field, and open the innovation process to residents and other stakeholders, allowing them to co-create and test new solutions in a real-world environment (Kronsell & Mukhtar-Landgren 2018). This format combines co-creation (involving citizens) with open innovation (encouraging outside knowledge flows) within a governance framework for experimentation (McCormick & Hartmann 2017; Kronsell & Mukhtar-Landgren 2018). Such labs are used, for example, to develop new mobility services, energy solutions or design approaches for public spaces in a participatory manner (Pego & Matos 2025). They are seen as a promising way of bringing innovation and inclusion together and bridging the gap between administration and living in urban reality. It is explicitly envisaged that results from the labs will later be incorporated into regular urban operations (mainstreaming). This also requires a governance framework that can institutionalize openness (Nesti 2018).

Open Innovation thus provides a framework for action at the organizational level to enable large-scale co-creation and embed it in administrative processes. It adds the dimension of openness and scaling to the two theories discussed. Especially for complex systems such as cities, no single actor (not even the city government) has sufficient knowledge to design optimal solutions. Openness and participation of many leads to better results (Chesbrough 2010). Thus, Open Innovation provides the governance framework necessary to implement the co-creation of broad stakeholder groups. The next section outlines how these three theoretical perspectives - S-D Logic, Co-Creation and Open Innovation - combine to provide a powerful frame of reference for the design of people-centered urban spaces.

Public space as a co-creative service in the open city ecosystem

If we look at the three strands of theory together, a consistent picture emerges. S-D Logic defines the mindset. Co-Creation defines the concept of collaboration. Open Innovation adds the strategy of systematically cooperating beyond one's own boundaries. Public spaces can be understood as service ecosystems where value is created through co-creation of the actors involved, fostered by an Open Innovation framework. Each theoretical strand illuminates one level of this overall picture.

Comparison of Dimensions




Characteristic	S-D Logic	Co-creation	Open Innovation
 Basic Idea	Value through use	Joint value creation	Opening boundaries
 Role Model	Actor-to-actor	Prosumer/co-producer	Platform orchestrator
 Thesis Relevance	Public space value	AI workshop arena	Festival as living lab

Figure 5 The Theories and their manifestations in the approach (created with Napkin AI)

Ontology (S-D Logic): It describes the city as a service ecosystem in which public spaces are platforms for value exchange. Value is only created in the context of use through people's experiences (value-in-use) (Lusch & Vargo 2014). This context is highly social. A place is defined, for example, when people use it for encounters, develop activities, and fill it with meaning. The city administration cannot create this value on its own but can only make it possible by providing resources. The actual generation of value occurs in the interaction between citizens and space (Tuan 2011). Consequently, cities should not provide public space as a finished product, but as a service that can be accepted and shaped by citizens. Citizens are not consumers here but are always involved in the production of the city (Osborne 2018). This understanding underlines the focus on people. What matters is the value experienced by local people, not the physical objects themselves.

Actor level (co-creation): It specifies who should be involved in value creation and how. All relevant stakeholders should be involved in a participatory and cooperative manner (Kazadi et al. 2016). For public spaces, this means allowing citizens to actively participate - from the idea phase (ideation) to design (co-creation) and implementation (governance). In addition to citizens, this also includes other stakeholders such as local businesspeople, civil society organizations, experts from architecture/planning and urban research (Dübner et al. 2018). It is essential to create a creative collaboration space that breaks down hierarchies and provides a safe framework for contributions (Ramaswamy & Ozcan 2018). In concrete terms, cities could, for example, organize co-creation workshops or create labs in city districts (Dübner et al. 2018), or set up online platforms (Eskelinen 2024), where citizens' ideas are continuously collected and jointly concretized.

Co-creation ensures that the service “public space” is continuously developed with users.

Governance & Process (Open Innovation): This framework answers the question of how the city can organize and promote co-creation and the open value creation process. Open innovation suggests that cities should strategically bring in external impulses. This can mean launching competitions for the redesign of a square where anyone can submit ideas (Haltofova 2018). It can mean entering collaborations with tech that develop new participatory technologies (e.g., participation apps, AI for citizen participation (Cerrone 2023; Atlas of Urban AI 2025)). It can also mean opening one's own data (Chan 2013; Palumbo et al. 2023) and premises (Tonin & Zanatta 2023) allowing groups to innovate. The governance framework should also clearly regulate how the results of external contributions are incorporated into decision-making (Bragaglia et al. 2024). Open Innovation in the urban context also entails fostering a culture of openness within the administration. Offices function as enablers and integrators of external ideas, not as the sole creators. This requires suitable governance structures. Interdisciplinary innovation teams within the city administration can provide support, moderate projects with citizens and function as advocates for co-creation within the administration (Ekroos 2023). It also helps to set up test spaces such as the urban labs mentioned above, where new approaches can be evaluated as prototypes before being rolled out across the city (Nesti 2018).

Open Innovation provides a strategy for expanding and structuring value co-creation across the traditional “administration vs. citizenship” boundary.

In combination, these three perspectives enable a comprehensive, service-dominated, co-creative, and open strategy for a people-centered city. Public space then becomes something that is continuously designed in cooperation. Something that is never really “finished” but continues to develop adaptively. Citizens are both customers and co-creators; the administration acts as a provider and moderator, and external partners serve as co-innovators. This view challenges traditional roles and aligns with modern concepts of the city as a shared space (Foster & Iaione 2016) or as a platform (Ramaswamy & Ozcan 2018). What they all have in common is that the city provides infrastructure, and the community defines value based on it.

2.3 Synthesis: Public Space as Service

If we combine the previous perspectives, a holistic picture of the knowledge base emerges. Public space can be understood as a service ecosystem - a dynamic network of actors who jointly create and share value. Residents, administrative staff, local businesses, civil society initiatives and other stakeholders form a structure that is held together by common rules, norms, and goals (institutions such as municipal guidelines, usage regulations, but also social norms of cooperation).

In such an ecosystem, the city administration assumes the role of a facilitator, providing framework conditions and platforms that enable other stakeholders to contribute and coordinate their resources. Planning is transformed into a coordination task in a living network, rather than prescribing an end state top-down.

The idea of public space as a service aligns closely with the concept of the city as a commons. (Foster & laione 2016) propose viewing urban spaces and services as a communal resource that is managed in co-governance by the administration and citizens. This model of the urban commons requires new governance instruments to institutionalize community responsibility. However, it is already evident in smaller initiatives. From community gardens maintained by neighborhood groups in consultation with the city, to sidewalk cafés enabled by flexible regulations. Such examples illustrate the principle of shared responsibility. Public space is jointly produced, used, and maintained. The value is defined by a caring citizen who has a strong place attachment and identity within his surroundings (Davis 2022; van Woerden 2021).

More cities are setting up urban laboratories or real-world laboratories in which administration, citizens, and science can jointly form urban space. The theories described above are relevant here. Participation (co-creation) and opening to external expertise (Open Innovation) within an orchestrated framework (service ecosystem). The planning of public space thus becomes a continuous learning and negotiation process. User feedback leads to adjustments, new usage requirements to innovative solutions.

This flexibility and user orientation help to make cities more people-human-centric and resilient, as they can adapt to changing needs.

The synthesis approach of public space as a service offers a normative and analytical framework that integrates the previously separate disciplines of urban planning, economics, and social sciences. It theoretically anchors the thesis "towards to the human-centric city". The city is not seen as a collection of concrete and regulations, but as a socio-technical system that thrives through the cooperation of its members. For municipalities and planners, this means seeing themselves as part of a network and orchestrating processes in which citizens are partners rather than addressees. User-centric methods from service design, such as empathy with users or prototyping (Stickdorn et al. 2018; Kumar & Hackett 2013) can be fruitfully applied here. This creates the basis for anchoring the principles described in the previous chapters - value-in-use, co-creation, open innovation - in practice and designing sustainably effective, people-centered urban spaces.

The city is understood as a constant, self-organized process of "becoming-city" by its users (Deleuze & Guattari 2007; Latour 2007; Horelli & Wallin 2024). Value is created in relationalities.

A public space as a service is then not a fixed object, but a stage for diverse relationships and uses that is shaped by co-creation and constantly readjusted through open processes. This image aligns with the concept of self-adapting service ecosystems outlined in S-D Logic (Vargo & Lusch 2016). It provides a deeper level of meaning to the technical and organizational language of S-D Logic, Open Innovation, and Co-creation. The city is a living, complex organism (Whitehead 1979) that only thrives through the interaction of its parts.

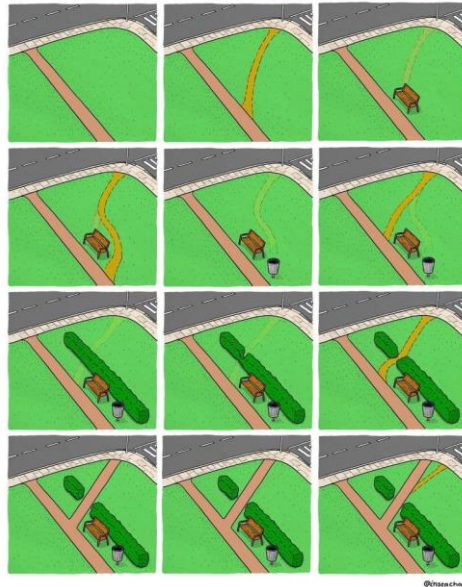


Figure 6 When public space is defined by the value-in-use (own interpretation of Hutton (2025))

3 Methodological solutions

3.1 Description of the development method

To address the previous theoretical considerations, an experimental and participatory design was chosen within a festival setting for this research-based development process. It is based on the principles of service-dominant logic, co-creation, and Open Innovation. The complexity of urban systems requires methodological approaches that are high up on the participation ladder. These include co-creation workshops and collaborative prototyping processes that integrate collaborative learning, creative idea generation, and practical testing (Brown 2009; Liedtka 2011; Kumar & Hackett 2013; Stickdorn et al. 2018). The integration of digital and AI-supported tools such as participatory visualizations and interactive prototypes offers additional potential to make participatory processes even more inclusive and democratic (Falco & Kleinhans 2018; Cerrone 2023).

In this work, the basic process of service design is employed as a viable framework for practical applications due to its user-centric approach. It follows a qualitative approach and is clearly divided into three interlinked phases:

- Exploration (topic, method, stakeholders)
- Prototyping (on-site co-creation)
- Evaluation (with this thesis)

Service design in general, as a set of methods, focuses on the consistent design and optimization of services from the user's perspective. This discipline offers methods for holistically understanding and effectively designing complex, service-oriented systems (Stickdorn et al. 2018; Mager & Gais 2009; Polaine 2013). The potential of service design lies in its interdisciplinary nature, which enables the integration of diverse stakeholders from various fields and systematically incorporates their perspectives.

To operationalize the underlying theory of S-D-Logic, Co-Creation & Open Innovation, a systematic approach is required, such as that offered by the service design process and its methodological building blocks. Applying these processes and methods to the urban context reveals that service design has significant potential not only in the economic sector but especially in urban development.

(Stickdorn et al. 2018) identify four central elements: (1) Research, (2) ideation, (3) prototyping and (4) implementation. They can be defined more precisely as follows.

Research (sensing and sensemaking): In the research phase, qualitative research methods such as interviews, observations, cultural soundings, or context analysis are employed to gain detailed insights into users and their context (Kumar & Hackett 2013). Chipchase (2013) argues that it is precisely the investigation of the seemingly self-evident ("the hidden in plain sight") that provides valuable insights into innovative solutions. Furthermore, Madsbjerg (2014) emphasizes that the ethnographic approach is essential for understanding the implicit, non-explicitly articulated needs of users.

Ideation ("How might we...?"): The idea generation phase is about systematically and creatively generating new ideas. Intuitive methods such as brainstorming, brainwriting or rapid sketching are used (Kumar & Hackett 2013; Gray et al. 2010). Tschimmel & Sátiro (2020) emphasize that idea generation should be multidisciplinary and holistic. By generating the broadest possible spectrum of creative solutions, the realistic and sustainable potential is best unveiled. In addition, (Liedtka 2011) underlines that methodically guided ideation not only develops creative potential but also ensures the acceptance and feasibility of solutions by reducing individual cognitive biases.

Prototyping ("test early, fail early"): Prototyping involves quickly transforming ideas into tangible and testable models or simulations. The aim is to obtain feedback from users at an early stage and to improve it iteratively. The methods range from simple paper prototypes and storyboards to functional minimum viable products (MVPs). (Stickdorn et al. 2018; Kumar & Hackett 2013)

Implementation ("Name it, but more importantly, live it"): Implementation refers to the actual introduction and sustainable integration into existing organizational and social contexts. This often requires far-reaching changes to internal processes, structures or even the organizational culture. Stickdorn (2022) points out that special attention should be paid to change management, training, and communication strategies in this phase to ensure acceptance and long-term impact. Junginger (2015) adds that the implementation phase is also secretly a design process that must be continuously reflected upon, adapted, and optimized.

A key feature of service design is its methodological openness and flexibility. Stickdorn et al. (2018) explicitly emphasize that there is no universal process in service design that is equally valid for all contexts. Rather, the approach requires continuous adaptation of processes and methods to specific situations, problems, and requirements.

This methodological flexibility is based on the fact that services are dynamic, heterogeneous, and context-dependent (Lusch & Vargo 2014), just like our urban space. In contrast to purely product-oriented approaches, where standardized and linear processes can often be applied, the design of services requires a high degree of adaptability and an iterative approach (Polaine 2013).

Design theorists, such as Béla Banathy (1996), point out that it is precisely the complexity of social systems, including urban public spaces, which makes a rigid, linear process logic impossible. Instead, he suggests that processes should be consciously conceived as recursive and iterative, which enables continuous learning, feedback, and adaptation to changing conditions. The widely used "Double Diamond Model" (Design Council 2003) builds on this and adopts this adaptive character. It combines the phases of divergent (opening) and convergent (closing) thinking in a repeating pattern. In each project phase, new options first open and then close again in a targeted manner to enable optimal decisions (Design Council 2003). This approach is further differentiated in models such as "Evolution 6" by Tschimmel (2018), which also explicitly addresses the iterative and reflexive nature of the design process, or the "Design Innovation Process" by (Kumar & Hackett 2013), which provides for the integration of a variety of methods from different disciplines to solve problems

Furthermore, Manzini (2015) shows that the openness of process design is crucial for achieving user-centered and socially sustainable solutions.

He emphasizes that the lack of a "standard process" is not a weakness but rather a strength, as it enables a flexible response to complex and ever-changing social challenges. Finally, Secomandi & Snelders (2011) emphasize that process openness and methodological experimentation are key factors that significantly impact the quality and innovation of service design. The adaptability of the method promotes a high degree of creativity, user orientation, and long-term sustainability of the designed services. In the context of complex and socially embedded services, it becomes clear that deliberately avoiding a standardized procedure is not only reasonable but also indispensable. Rather, it is this deliberate methodological openness and adaptability that makes it possible to develop innovative, inclusive, and sustainable solutions through service design.

The Zamanand Festival as an experimental urban lab

How can all the theoretical considerations and the toolbox of methods be put into practice? The Zamanand Festival in Munich provides an example of this. Twice a year, this major inner-city event transforms the main inner-city traffic areas into a huge pedestrian zone for a weekend. The result is a temporary public space dedicated entirely to people. The name Zamanand (a dialect word made up of "together" and "with each other") says it all. Under the motto of sustainability, diversity, and tolerance, citizens of all ages come together to experience culture, education, and community. With around 200,000 visitors over the course of one weekend, the festival has been well-received by the local population from the very beginning (Zamanand Festival 2024). It is crucial that different stakeholders co-create the content. Numerous Munich associations, initiatives, artists, and scientific institutions, such as TUM or City of Munich, participate with information stands, workshops, hands-on activities, and stage programs (muenchen.de 2023; TUM 2024). The city administration acts primarily as an enabler here, closing the streets, providing infrastructure, and ensuring framework conditions (such as security, permits) - but the real value comes from the contributions of the urban community. This creates a lively marketplace of ideas that makes the principles outlined above tangible. Citizens actively participate in shaping the event (co-creation), new solutions and projects on sustainability and mobility are presented to a wide audience (Open Innovation) and the public space acts as a service platform.

As a temporary urban lab, the Zamanand festival also enables new forms of urban use and participation processes to be assessed in a real environment. The temporary traffic calming provides insights into how a permanent reduction in car traffic could improve the quality of the city. At the same time, the festival offers a testing ground for interdisciplinary cooperation. In direct contact with citizens, researchers and local organizations, urban planners can observe which offers are well received and where needs lie. For example, dialog between research and society was sought on a science stage to discuss sustainable urban development together. Such feedback from practice is valuable for adapting urban strategies.

The festival thus functions as a real-life laboratory in which the administration can learn how people-centered urban design can look and work in practice. It creates public learning spaces in which administration and citizens can gather shared experiences.

Such experimental spaces are essential on the path to a human-centric city. They show on a small scale that citizen engagement and open planning processes lead to lively, inclusive spaces, thus paving the way for these principles to be applied on a large scale (e.g., in framework planning or long-term projects). Urban planning and municipal discourse can learn from such practical examples that a service-oriented, user-centered design is not only theoretically convincing but can also be successfully implemented in the long term.

The Zamanand festival illustrates how the theories discussed above can be translated into concrete measures. A public urban space temporarily becomes a service ecosystem in which co-creation and openness are practiced. Such an approach can serve as a model for municipalities to strengthen participatory formats. This thesis presents an experimental format within the festival's program, which was conducted in 2024.

3.2 Experimental plan with justification

Goal and function:

The starting point for the experiment was observations from previous festival events, where it was found that visitors were primarily looking for orientation and activity in areas that were deliberately kept free of permanent installations or stands. At the same time, festival sponsors expressed concerns about these supposedly "empty" areas, fearing a negative impact on the festival's attractiveness and perceived liveliness.

From these observations, a significant gap in planning and utilization was identified. If public space, especially inner-city street space, is viewed from a purely functional perspective ("streets for cars"), its potential as a social and communally usable space becomes overshadowed. The perceived emptiness and the resulting irritation of the visitors made it clear that this place offered an ideal testing ground for the application of Co-Creation and Open Innovation, actively involving visitors in the co-production of the space and transferring the "value-in-use" to them.

The experimental service design of this research project aims to actively engage the urban population, particularly festival visitors, in the role of responsible creators. The festival as a representation of the city serves as an enabler in this regard.

Overall, the research design presents an integrative approach that enables the application of theoretical considerations from service-dominant logic, co-creation, and open innovation in the context of public spaces, yielding practical insights for the effective management of these spaces.

Exploration phase:

An innovative approach to co-creation is participatory AI prototyping, which uses digital tools to enable the participation of a broader and more diverse public. AI-powered platforms and technologies enable users to visualize their ideas intuitively and effectively, thereby directly contributing to the design of urban spaces (Cerrone 2023). The exploration phase began with a constituent online workshop, in which representatives from Urbanist AI, the festival organizer (in the function as service designer), landscape architecture students, and urban planners participated. The workshop thus followed the principle of open innovation. The organizer deliberately relied on input from various external stakeholders. The aim of this workshop was to jointly define the parameters of the AI model, ensuring that the visualization options of the AI platform are optimally tailored to the experiment's needs and requirements (which would be quick access for participants due to festival context, options for exactly the specific location in question, predefined quick selection oriented towards current urban planning issues (climate resilience, alternative mobility but also the festival and cultural context)).



Figure 7 Defining the pre-categories for AI training in the workshop

Prototyping phase:

An AI-supported workshop with the visitors then took place live on the specific site during the ongoing festival. The aim was to promote spatial awareness and a sense of identification with the specific urban environment.

Conducting the workshop directly at the location to be designed also had a special significance in terms of the space-and-place theory (Tuan 2011). The immediate spatial presence and active participation of the participants enabled them not only to perceive the place physically, but also to understand it emotionally and symbolically as their own space ("place"). The approach helped to transform the abstract space into a meaningful and identity-creating place through direct experience and collaborative design. The visitors thus became an active part of shaping the festival program.



Picture 1 participatory AI workshop on-site

The images created during the workshop were then put to a public, unrestricted online vote. This broad participation and a democratic selection of the most popular idea.

The announcement of the AI workshop on site and the opportunity to vote online following the event were communicated via the festival's social media, the website and in a press release.

The "Urbanist AI" platform was selected for the technical implementation of the first prototyping phase and the voting. This platform is specially designed to support users' visual imagination and generate user-centered concepts digitally. Urbanist AI is a text-image AI that, in addition to free design, also offers ready-made patterns and suggestions to facilitate the creative process. (Urbanist AI, 2025)

Specifically, a 100-metre-long inner-city street on the festival site was closed to car traffic and completely clear of any pre-planned alternative equipment such as stages, stands or other permanently installed elements. The technical setup on site consisted of a physical sea container equipped with two AI terminals (iPads with the Urbanist AI software and one preview monitor each). Two hosts explained the basic functionality of Urbanist AI to the festival visitors, but otherwise deliberately kept a low profile and did not influence the users' design decisions.

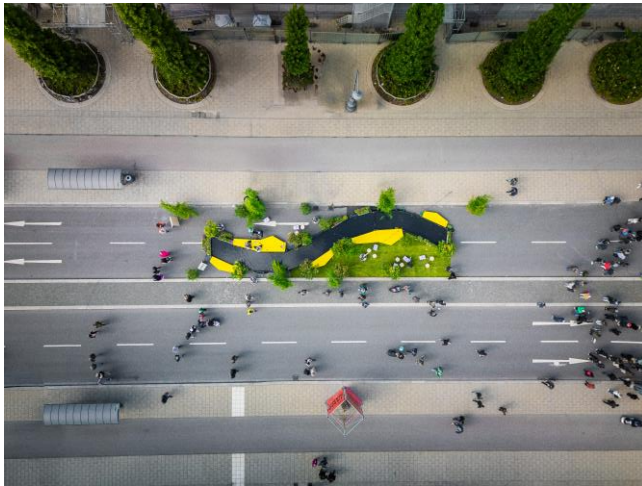


Picture 2 Set-Up on-site

Urbanist AI Voting website for the designs generated by visitors using AI

The design that received the most votes at the end of the online voting was realized as a walk-in prototype at the following festival. The practical implementation of the prototype, including construction, was conducted in close collaboration with landscape architecture students from the Technical University of Munich (TUM). The students contributed their knowledge to translate the theoretical AI visualization into physically tangible structures and interventions. The aim of this collaboration was not only to promote virtual co-creation, but also to make it tangible in the real urban space. The prototype was used to create a tangible artifact from the visitors' chosen designs, which could then be evaluated and experienced live on site at the next festival. Compared to direct realization, the prototype has the advantage of generating a second iteration stage that can be produced cost-effectively to assess actual acceptance and thus value-in-use.

The experimental design was clearly geared towards the intensive and active participation of festival visitors, specifically combining technological and creative resources to explore the potential of service design in an urban context in a comprehensive and practical manner. This approach is closely related to the previous theoretical perspective that public spaces only develop their full societal and social quality through intensive user participation and personal initiative.



Picture 3 Drone-Shot of the Prototype by Fabian Erlach

3.3 Step-by-step implementation

Phase 1: Embedding in the festival, the role of the author, and stakeholders

The first project phase was embedded in the context of the already established inner-city festival "Zamanand" in Munich. The author of this work was not only a scientific observer but also the service designer plus the organizer responsible for the entire content of the festival. The festival served as an experimental platform for the co-creation format examined in this study. As a non-profit organization, the project's focus was not on economic profit, but on promoting socio-spatial innovation, citizen participation, and democratic urban development.

This dual role brought methodologically relevant advantages. The direct responsibility for the process, combined with an in-depth understanding of the planning, implementation, and dynamics of the intervention, enabled the capture of the following key aspects. Participation, the use of digital tools, and social impact could be understood with a high degree of accuracy and context sensitivity. The position also enabled authentic access to target groups, decision-makers, and technical partners, which would not have been possible in externally supervised studies.

This proximity to the field of investigation was reflected methodically and translated into a research-based approach. It is based on the principles of service innovation and the generation of practice-based knowledge. As part of a research-oriented development process, the author's role was not seen as a disruptive factor, but rather as an integrative component of an iterative innovation process focused on the common good. The non-profit context further legitimizes and strengthens this position, as it places the focus on social value, inclusion, and transformative urban management. These are values that also underpin the theoretical framework of this work.

The city administration was involved at an early stage to ensure the legal, financial, and infrastructural framework conditions for the experiment. Relevant stakeholders were identified using a stakeholder map. The stakeholder map (Stickdorn et al. 2018) provides an overview of the actors involved in the experiment and their tasks.

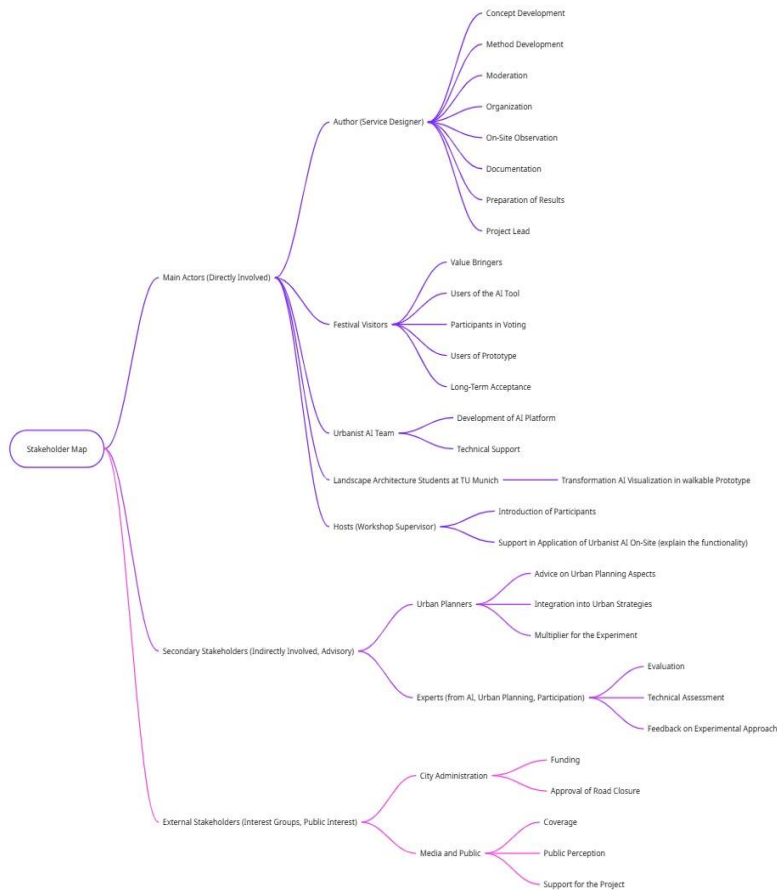


Figure 8 The Stakeholder Map of the Experiment (see also Appendix)

Phase 2: Stakeholder workshop

In the second phase, a constitutive online stakeholder workshop was held, during which relevant stakeholders participated. Participants were the service designer (author), an urban planner, landscape architecture students, and a representative of Urbanist AI. The primary objective of the workshop was to present the methodological parameters for the overall project in detail and to establish alignment, while also discussing the specific parameters of the AI model. The AI-based platform Urbanist AI was presented in detail by the developers to create transparency about its functionality and application.

A comprehensive collection of specific needs, identified problems, and urban planning objectives was compiled to train the AI model. This phase aimed to create a common understanding of the project's challenges and objectives, which is why no citizens were invited to this stage.

Phase 3: Implementation of digital/analog service design methods

The third phase focused on the practical implementation of prototyping, which took place digitally via the Urbanist AI platform at the first festival date in June 2024 and through physical intervention at the second festival date in September 2024.

Citizens were provided with specific, straightforward, and clear instructions on how to utilize the AI tools. Trained moderators were available on site to explain the technical processes to festival visitors and answer any questions without influencing the content decisions of the users.

Once the winning design had been determined, a physically accessible prototype was built that translated the digital visualization of the citizens' ideas into a tangible spatial installation. Particular attention was paid to an open and accessible design to encourage interaction and spontaneous use by visitors. During the festival, the service designer and the landscape architecture students continuously and systematically observed the reactions and behavior of the visitors to gain valuable insights into the acceptance, appropriation, and valorization of the designed spaces by the users.

Phase 4: Documentation and reflection

In the final phase, all processes were thoroughly documented and thoroughly reviewed. Qualitative research methods included observation notes, photo and video recordings and short conversations with visitors. Interviews were conducted with the landscape architects involved and experts from various relevant fields. The results were critically reflected upon, identifying methodological adaptations for future projects and deriving recommendations for the sustainable integration of participatory and AI-supported approaches in urban planning practice. The results of these considerations were transparently documented and scientifically evaluated in this study to support the transferability and further development of the knowledge gained for future applications.

3.4 Data collection

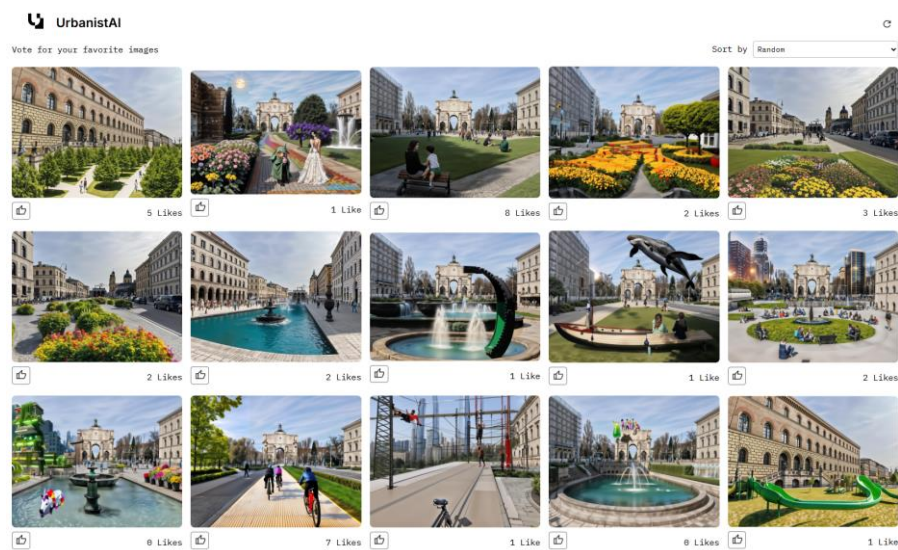
As part of this research project, a combination of digital and analog qualitative data was collected to accurately record and analyze the experiences and results.

Digital AI designs (anonymized)

Visitors had the opportunity to independently develop and directly visualize their ideas with the help of the AI-based Urbanist AI platform. Approximately 3,000 individual images were generated during the festival. From this multitude of ideas, the respective creators then selected their own favorites on-site, which were subsequently chosen by them for the voting process. These approximately one hundred favorite images were stored anonymously, documented, and systematically recorded to create a comprehensive collection of diverse ideas and preferences.

Anonymous public online voting

The approximately one hundred selected design drafts were then presented to the public online for voting. The like-voting process allowed for a simple and transparent selection of the most popular ideas. The voting results were documented, allowing for later analysis of which design options were particularly popular and why they were favored.



Picture 4 Screenshot of the voting website showing some of the generated images

Qualitative methods:

In addition to digital data collection, qualitative research methods were employed to gain deeper insights into the project's dynamics and impact.

Observations on site

During the festival, both during the AI workshop and in the physically realized prototype, the interactions of the visitors were observed.

Spontaneous forms of use, social encounters, and reactions were observed to gain an understanding of the value-in-use and the co-creation opportunity.

Reflection discussions with landscape architecture students

Reflective discussions were held with students of landscape architecture at TU Munich, who were significantly involved in the construction of the walkable prototype. The aim of these discussions was (1) to record experiences and challenges during the realization process from the perspective of the design experts. (2) to derive possible suggestions for improvement and (3) to receive an idea for the open-innovation character of the project.

Interviews with experts

Additionally, three expert interviews were conducted to provide a critical and professional reflection on the project and its context. The selected experts came from the fields of AI technology, urban planning, and citizen participation/co-creation. The interview partners were selected using theoretical sampling (Glaser & Strauss 2017). The starting point was initial observations made during the experiment, in which three central dimensions of the co-creation process emerged: (1) technological facilitation, (2) institutional framing (governance), and (3) procedural moderation and social inclusion. Accordingly, experts were specifically selected to represent these perspectives: an AI developer and urban design specialist (technology), a participation facilitator (process), and an urban planner with an administrative background (governance). This selection was not intended to be representative, but rather to conceptually cover relevant influencing factors as they result from the theoretical framework (S-D Logic, Co-Creation, Open Innovation). The selection was therefore based on the logic of theoretical saturation, rather than quantitative criteria. These interviews provided valuable insights and critical comments on the application of the AI-supported approach, indicating potential for optimization in future projects.

Triangulation and data density:

The selection of three guideline-based expert interviews, a focused reflection round with the student group, and two participatory observations, supplemented by informal discussion sequences with festival visitors, follows the principle of information power (Malterud et al. 2016). A clearly defined phenomenon is investigated. The three interviews represent central stakeholder roles, including city administration, urban practice, and digital platform. The landscape architecture student panel provides a user-oriented design perspective. The observation protocols and spontaneous snippets of conversation supplement the picture with situational knowledge of action. All the data collected was fully transcribed or recorded and then analyzed using a deductive-inductive method.

Initially, five main categories were identified based on theory; during the open coding process, two additional, data-driven codes were added, resulting in a total of seven analytical categories. The combination of triangulated data sources, thematic redundancy, and cross-source code coverage thus demonstrates a sufficiently high information power of the sample.

3.5 Ethics and data protection

As part of this research project, particular emphasis was placed on ethical standards and the responsible handling of data. During the use of Urbanist AI, no personal data of the participants was collected or stored at any time. All AI-generated images were anonymized and archived to prevent any conclusions being drawn about individual users.

The interviews were also conducted anonymously. The interviews were electronically transcribed for analysis and stored in an anonymized form. Participation was voluntary. Access to the data was restricted to the author. After completing the data analysis and documentation, all stored transcripts were deleted to protect the participants' privacy. This ensured that data protection standards were always adhered to, and that no personal data was stored permanently or used in any other way.

3.6 Description of the data analysis

This data analysis is based on a qualitative, structured content analysis based on (Mayring 2022). The aim was to extract central structures of meaning from the collected interview transcripts, observation protocols, image data sets, and freely formulated feedback, which are closely related to the theoretical guidelines of the work.

The analysis was conducted manually and theory-based along a deductive-inductive coding framework comprising seven main categories: "Value-in-use in public space" (VU), "Participation and co-creation" (PC), "Technological enablers (AI)" (TE), "Social impact and appropriation of space" (SW), "Governance and institutional conditions" (GV), "Inclusion and accessibility" (IN) and "Sustainability and transferability" (SC). The following code references consist of the combination of the category code and the source ID.

Code	Main Category	Subcategories	Example Codes / Statements
VU	Value-in-use in Public Space	Spontaneous use, perceived value, intuitive appropriation	“I didn’t know what to do here - until I just started exploring.”
PC	Participation and Co-Creation	Quality of participation, agency, influence on outcome	“It was great that my idea was actually implemented.”
TE	Technological Enablers (AI)	Access, usability, creative support, technological barriers	“The AI helped me visualize what I had in mind.”
SW	Social Impact and Spatial Appropriation	Emotional attachment, social interaction, place identification	“By building together, I felt part of the place.”
GV	Governance and Institutional Conditions	Political support, administrative hurdles, institutional openness	“Getting permission was a long process - but we finally got the go-ahead.”
IN	Inclusion and Accessibility	Digital participation, social barriers, group inclusion	“Older visitors struggled to use the tool.”
SC	Sustainability and Transferability	Long-term effects, repeatability, applicability to other contexts	“I’d love to see something like this in our neighborhood too.”

Table 1 Coding Table with Examples (not actual data)

The coding was done in tabular form, whereby exemplary statements from the data were assigned to the respective categories. A software-supported evaluation was deliberately avoided; instead, a text-based and interpretive approach was used to account for the complexity and contextual nature of the statements.

The categories used to analyze the qualitative data collected are derived directly from the theoretical framework of this work, as well as from the central research question and its sub-questions. The selection of the five main categories was theory-driven and reflects the central concepts of service-dominant logic, co-creation theory, and open innovation, which serve as the analytical foundation for this work.

The first coding category, "Value-in-use in public space," is based on the central principle of service-dominant logic (Lusch & Vargo 2014), according to which the value of a service does not arise from its provision but is only realized through its use in specific contexts of use. For the analysis, this means that statements by users regarding their subjective perception and evaluation of the designed space are interpreted as indications of the value generated.

The second category, "Participation and co-creation," refers to the procedural participation of citizens and their active role. It addresses both methodological issues and structural aspects such as influence, visibility of ideas, and subjectively perceived creative power. This approach is closely linked to the project's participatory nature and the concept of co-creation (Prahalad & Ramaswamy 2004; Sanders & Stappers 2008).

The third coding category, "Technological Enablers (AI)", focuses on the role of digital tools, particularly the AI platform "Urbanist AI", used in the service design process. The underlying theoretical assumption is that technologies can function as interactional platforms (Ramaswamy & Ozcan 2018) that enable, expand, or restrict creative participation. Statements on accessibility, usability, and perceived support from AI are central to this discussion.

The fourth main category, "Social Impact and Appropriation of Space," reflects the socio-spatial and emotional dimensions of the intervention. Concepts from spatial theory are incorporated here, such as differentiation between "space" and "place" (Tuan 2011) and concept of place attachment (Relph 2016). This category enables the analysis of statements that refer to affiliation, social interaction, or identification with the designed place - central indicators of the successful transformation of space into a communally supported "place".

The fifth coding strand is "Governance and institutional conditions". This category encompasses statements related to the structural, administrative, or organizational framework conditions - for example, the role of the city administration, political hurdles, or requirements for the long-term integration of participatory processes. It is derived from the governance framework of open innovation (Chesbrough 2010) and is particularly important for assessing the transferability and institutional anchoring of the developed approach.

The selected categories thus allow a close interlocking between empirical material, methodological implementation, and theoretical frame of reference.

They reflect central aspects of the research question and serve to systematically evaluate the topic along clearly defined analytical dimensions.

The results of the analysis were documented in narrative form and supplemented with exemplary quotes to vividly illustrate the subjective perspective of the participants and their experiences with the experimental setting. A separate image or form analysis was deliberately omitted, as the focus of the work is on social, process-related, and participatory aspects.

As this work is an explorative and user-centered study, the coding system was deliberately designed to be open. In addition to the five theory-based categories, further thematic strands were identified during the in-depth data review, which were additionally recorded and analyzed.

The category 'Inclusion and Accessibility' includes statements about the scope and accessibility of the methods used, particularly regarding digital participation. This involves, for example, factors such as age, language, education, or affinity for technology - in other words, whether certain population groups were structurally excluded from the process or faced hurdles. The question of inclusion is particularly central in the context of digital participation processes (Gordon 2019; Falco & Kleinhans 2018) and in terms of social justice.

The last remaining strand, "Sustainability and Transferability", proved to be relevant. This included statements relating to the long-term impact, repeatability, or transferability of the service design model to other contexts—an aspect directly related to the goal of scalability and continuity.

These categories were not defined as main strands in the initial structure but were inductively added during the analysis as they appeared to be recurring and significant in terms of content.

The results of this analysis were presented in a thematic format. Key statements from the interviews and concise observations were integrated as illustrative quotes to enhance understanding. The aim was to make the individual perspectives visible and to systematically relate the experiences to the theoretical argumentation of this work.

4 Results

4.1 Findings on participation & co-creation

The project explored how citizens can be actively involved in creating urban spaces through both digital and analog formats. The service design approach was implemented in several stages, from using an AI tool for co-creation to voting on the designs via like-voting, and the physical implementation of a prototype by landscape architecture students during prototyping. Analysis of the data reveals that this multi-stage process was both methodologically sound and effective from the perspective of those involved, albeit with its challenges.

Low-threshold entry through AI as a co-creation enabler

Many participants perceived the AI-supported tool as an intuitive and inspiring introduction to the design of public spaces. One student described the platform as "perhaps ... a tool to get people involved for a citizen participation process in the first place " (31TE/PC). Another euphorically commented on this approach: "Ohh cool, I can play" (32TE/PC/VU). The AI made it possible to get started without any prior planning knowledge.

At the same time, it was emphasized that AI should not be seen as a substitute for participatory dialogue, but rather as a supplement to it. There should be sufficient scope for users' ideas (16PC). "It doesn't work without conversation", emphasized one student, making it clear that dialogue must remain an indispensable part of co-creation (13PC). The moderator added: "Also giving feedback back, and I think that's the most important thing of all" (17PC/GV). It was also emphasized that AI is helpful as a visual stimulus, especially in the early phases - later implementation, however, requires intensive coordination and social negotiation.

Co-creation as an active commitment - but not a matter of course

The participatory nature of the experiment was perceived by many as a positive experience. This became particularly clear in the statements of the landscape architecture students, who emphasized the value that the approach brought them. They reported that the citizens' visual ideas gave them a meaningful basis for the subsequent structural implementation of the prototype. According to one student, citizen participation did not start at zero, but "because you can talk about it directly" (42TE/PC).

At the same time, however, it also became clear that participation does not automatically lead to long-term commitment. The observation that many of those initially involved were no longer active in later steps. "Probably should have an email address or something have to hand in," suggested one student in retrospect 1(GV/PC).

This assessment points to a structural deficit in the linking of digital and analog co-creation, which was not sufficiently addressed during the project.

Genuine participation requires trust and connectivity

Participation is perceived as meaningful when contributions are visibly incorporated into decisions. The participation moderator emphasized this: "Giving feedback ... is also the most important thing of all" (17PC/GV). A criticism of participation formats without a clear effect. "...there is also so much questioning ... where it is not at all clear what happens with the results" (18PC/IN). These statements point to the importance of genuine feedback loops and the continuous involvement of citizens in the process as permanent actors.

Coding shows a close connection to service-dominant logic. Co-creation generates value not through supply, but through value-in-use. The success of participation is also context dependent. Place, time, format. A festival offers spontaneous encounters. One student recognized "... that you can reach different classes, different citizens" (10IN). But structural embedding was missing. One expert put it briefly and said that citizens should: "... not just be involved in order to involve them somehow, but ... where does that even make sense? " (15PC)

The combination of technical support, interactive design, and spatial accessibility can enhance co-creation processes, but their sustainability depends on institutional anchoring, continuous moderation, and social connectivity.

4.2 Findings on value-in-use in public spaces

The study aimed to investigate how citizens experience the value of public spaces for themselves when they are actively involved in their creation. In other words, how value-in-use in the sense of service-dominant logic (Lusch & Vargo 2014) manifests itself in the real context. The data collected provides differentiated insights into this, particularly about context, use, social interaction, and situational conditions.

Value is created through experience, not through planning

A recurring pattern in the observations and discussions was that public space only acquires meaning for users through concrete appropriation. The design ideas that emerged from the AI workshop were remarkably positively rated when they were directly linked to the location. In other words, when they were not abstract visions but were applied to a real context. One student emphasized, "...it's simply about that you can use the space" (39VU).

The observational data also confirms this correlation. In sunny weather, the prototype developed into a lively meeting place, whereas in rainy weather it remained almost unused (41VU). This is a clear indication that the perceived value is highly dependent on the situation.

Design as a value catalyst - but not as a value guarantor

Although the designed scenarios were rated as positive overall, it was shown that the perceived value of space does not result from the planning or visualization itself. Although the statement “ohh cool, I can play” (32TE/PC/VU) shows the value-in-use of the Ai method in such a way that an enhancement of visual expressiveness takes place. In the end, it only manifests itself in combination with usage options, atmosphere, and social context in the prototype on-site. Designs that combined greenery, shade and appropriate options were particularly preferred. One observation sums this up: “Designs with a focus on greening and unsealing strongly emphasize the ecological and climatic advantages visually” (40VU)

The individual value was particularly evident when the space invited social interaction, for example, through picnic areas, seating, or play areas. Young people made themselves comfortable in the seating areas, while families spontaneously spread picnic blankets and older visitors used the quieter places to relax (29SW/IN/VU).

The public space as an open service system

The observed use of the prototype confirms the assumption that public space functions in the sense of a service ecosystem. Different actors contribute resources (e., ideas, designs, construction, organization, use) and create a social benefit (19PC/SC). Visitors act not only as consumers, but also as co-producers - through their presence, behavior, and reactions to the spatial offerings.

These processes are not linear; instead, they are circular. Use generates value, which in turn strengthens loyalty, and loyalty promotes renewed use. This confirms the basic idea of service-dominant logic. Public space as a dynamic, non-closed usage system whose quality is created through continuous interaction.

4.3 Technological enablers (AI) - opportunities and limits

The integration of the AI platform Urbanist AI was a core element of this experiment. The aim was to determine the extent to which AI-based tools can function as “enablers” of participatory processes, in the sense of a digital amplifier for co-creation and visualization of user perspectives. The evaluation presents a differentiated picture, highlighting high potential, real enabling effects, as well as technical and structural limitations.

Visualization as empowerment: "I see my idea for the first time"

All interviewees and observations mentioned the potential of AI as a decisive advantage. The text-to-image interface provided easy access to articulating ideas and personal values during use, particularly for laypersons who often felt linguistically or technically inferior in a planning context. One observation described AI as a "translation tool between everyday language and planning systems" (43TE/GV).

Students also confirmed that the AI designs provided a valuable basis for the transition to the physical prototype.

This visualization option not only led to the diversity of participation in terms of measurable output (33TE), but also to a strengthening of the participants' self-efficacy. A key criterion for successful co-creation. It was observed that people feel that their idea is visible - that is more than just voting. "A campaign like this can definitely stay in your head for longer." (25 SW)

Democratization through simplicity - but with limits

The intuitive operation and low-threshold access to the AI platform played a key role in motivating festival visitors to participate. The container, as a physical location, combined with a clear and playful usage situation, also enabled people to actively participate in the process without prior technical knowledge. (37TE/PC; 38TE/PC)

At the same time, the observations and interviews also show the critical limits of this approach. Older people or people without digital experience sometimes appeared hesitant or were put off by technology. (23TE/GV; 35TE/GV)

It also became clear that although the platform generates ideas, it does not necessarily replace discussion or reflection. As one expert emphasized: "Democracy is not in the act of voting as much as it's in the act of discussing your ideas with somebody else before you vote." (20 PC/SW)

Openness needs structure: the role of AI in the process

The integration of AI into the process also raises questions about process design and institutional embedding. The results show that AI-based tools are particularly effective when they are used as part of a structured co-creation process - not as a singular tool, but as part of a larger interaction framework. In retrospect, several participants noted that it would have been helpful to link the results from the AI process more sustainably (23TE/GV).

It was shown that such AI tools have great potential to function as visual and methodical bridge builders - especially in the early ideation phase. As part of the overall service design process, the opportunity to create realistic test scenarios in early project phases using AI-supported prototypes was particularly emphasized. This allows ideas to be evaluated under almost risk-free conditions before major financial resources are committed. Instead of immediately making extensive investments, it is possible to gain well-founded insights into whether a concept is viable with a small investment (24 SC/TE). This approach not only provides a valuable basis for decision-making in strategic planning processes but also helps to avoid bad investments and to deploy resources in a targeted manner.

However, for this methodology to be fully effective, it requires (accompanying) human interaction, clear processes, and institutional connectivity. Only then can AI be a genuine enabler of participatory processes - not just a technological gimmick.

4.4 Social impact and appropriation of space

Testing co-creation and prototypical interventions as a contribution to social activation and emotional appropriation of public space was of key importance. Observations on site and discussions with participants show that this was largely successful. The originally functional street space temporarily became a place of social interaction, collective experience, and public debate - a transformation from "space" to "place" (Tuan 2011).

From a passageway to a social space

The realized intervention was not only utilized by many visitors but also perceived as a place that facilitated new forms of social interaction. The observation notes reveal a range of everyday yet meaningful activities. Conversations between strangers, picnics, games, rest periods, and taking photos together. The atmosphere was characterized by curiosity, openness, and social exchange—all elements that imbue public space with emotional meaning. The effect was particularly evident in the reaction of visitor groups that are not normally involved in participation formats, such as families, young people, or older people. They utilized the prototype in their own way, thereby actively contributing to the collective valorization of the space. One observation aptly summarizes this: "Young people sat on the seating areas, families spontaneously spread-out blankets ... Older visitors used the quiet corners to linger" (29SW/IN/VU).

Participation as the starting point for identification

The qualitative analysis suggests that co-creation not only leads to spatial change but also fosters an emotional connection to the place.

Designing with one's own ideas—even if it only took place in digital space—creates a sense of self-efficacy that is reflected in how the physical space is used. One student said: "... a campaign like this can definitely stay in your head for longer" (25SW).

This temporary conversion created a collective moment. A public space that was experienced as a common meeting and negotiation space. Many of the designs included this desire for meeting places, such as seating furniture. (26SW).

Limits to the appropriation of space: misunderstandings and symbolic ruptures

Despite the largely positive response, critical voices were also raised. Some visitors, especially older people, expressed a lack of understanding of individual design elements, such as the symbolic watercourse or the unconventional furnishings. The observation notes report: "Some participants found it difficult to understand the redesign ... with an artificial watercourse" (4GV/IN/SW). These irritations suggest that participatory interventions challenge expectations of space—and are not always effective without accompanying communication.

Appropriating space is not an automatic process. It must be accompanied by context, explanation, and connection possibilities. The experiment shows that the lack of a mediating dialogue can lead to space being perceived as alien or incomprehensible. As a result, it could potentially lose its intrinsic usefulness. It must be clearly perceptible "that this is indeed public space and ... that everyone is allowed to decide about it." (6GV/PC/SW)

People make space

The experiment demonstrates how public spaces can become social places through co-creation. The transformation from a functional traffic space to an emotionally charged place was visible and tangible. The social effect is created not only through design, but above all through use, communication, and situational interaction. Even visitors who were not directly involved in the AI workshop developed a greater awareness of the changeability and designability of public space through the presence of the prototype. From the observation: "Surprising moments arose ... from spontaneous conversations between strangers discussing the future of urban design" (27SW).

The results confirm central assumptions from the socio-spatial theory discussed and underline the practicability of service design as a toolbox for facilitating this collective production of space.

4.5 Governance, inclusion, and scalability - structural conditions

The analysis of the interviews and observations also revealed that the experiment not only functions at the level of individual experience or creative interaction, but must also be addressed significantly within structural, political, and institutional frameworks. The impact of such processes is linked to questions of governance, social accessibility, and transferability to a permanent situation.

Governance as an enabling framework

Several interviewees emphasized that co-creation in the urban context often fails due to structural hurdles—particularly, silo-like administrative structures (3GV/IN), a lack of responsibilities, or fear of losing control (2GV). One urban planner explicitly demanded: "... there needs to be this removal, these boundaries ... between the city administration ... and the citizens on the other side..." (5GV/PC). At the same time, it is pointed out that planning processes fail not so much because of a lack of ideas but because of implementation. "We often fail not because of planning, but because of implementation in the city administration, because ... of a lack of staff" (9GC/SC). These statements confirm the significant role of governance in participatory innovation processes. Without institutional openness, resources, moderation, co-creation remains sporadic.

Social accessibility: Inclusion remains a challenge

The barriers to co-creation are also becoming apparent. One interviewee criticized the fact that these approaches tend to remain within the educated middle classes, noting that "... many people are not reached at all ..." (11IN). This refers to the influence of language, educational proximity and affinity with technology. Observations also showed that it was mainly younger, urban and tech-savvy people who took part, while other groups tended to stay away, despite the open nature of the festival setting. At the same time, however, it was observed in the images that diverse user groups were considered (12IN).

Scalability and structural integration

Several interview statements underlined the potential of transferring such co-creation approaches beyond the festival into permanent urban development processes. One student put it succinctly: "There should be much more - you should actually really push it in... this is your space" (21SC). The perceived legitimacy of participatory planning processes is significantly enhanced as soon as they are supported by formal institutional backing from the city administration. Explicit support from municipal actors acts as a symbolic and structural legitimizing factor. It strengthens the trust of those involved and increases the binding nature of the results within administrative and political decision-making structures (7GV/SC).

The observation revealed that the concepts developed by citizens were not merely spontaneous or unstructured individual opinions. In many cases, their content was compatible with existing strategic urban objectives. Topics such as sustainable infrastructure, the promotion of cycling and walking, and the vision of a city of short distances not only reflect social sustainability discourses but also correspond directly with urban planning models. This observation points to the potential of public co-creation. The ideas submitted are serious contributions to central urban issues of the future and can be understood as informed, collective knowledge production that goes beyond mere lay participation. (22SC)

However, doubts were also expressed about sustainability. "Some visitors expressed doubts about the long-term feasibility of such concepts ... particularly with regard to maintenance and sustainability" (23TE/GC). Critical voices drew attention to the discrepancy between the visually impressive AI design and the deliberately simplified prototype that was ultimately realized, which they found difficult to grasp. While the visualizations raised high design expectations, the actual implementation, due to the prototypical character, proved to be much more pragmatic and functionally reduced. Precisely because it was an exploratory prototype, this difference was sometimes difficult for outsiders to understand, creating a certain potential for disappointment regarding the realized results. (4GV/IN/SW; 35TE/GV)

In this context, however, one interviewee emphasized the importance of cost-efficient prototyping as an instrument: "Maybe you can spend €10 000 ... and then see if it's actually a good idea" (24SC/TE). This sentence refers to a central strategy in service design - iterative testing before major implementation.

Structure determines effect

The findings make it clear that creative, people-centered urban planning does not fail because of the citizens' will, but because of the structural conditions that hinder their participation. For co-creation, digitalization, and social impact to have a lasting effect not only in individual projects but also in broader contexts, new forms of governance, consciously designed inclusion strategies, and political decision-makers who have the courage to share responsibility are necessary. Because "people are open to taking responsibility for their environment if you let them" (30 SW/PC).

AI as a substitute for participation? - An ethical tipping point

In contrast, one particularly critical aspect was brought to light. It concerns the emerging practice of some cities to simulate co-creation using AI agents. The expert warned, "the risk is that they would want to replace the actual in-person participatory planning experience with an AI-agent-based simulation of participatory planning" (34TE/GV).

Corresponding requests are already being made: "I think it's already happening ... people are asking me if we can do this for them" (8GV/SC). One particularly pointed statement illustrates the implications: "To say 'I don't do participatory planning because I can simulate it' - that's quite scary ... it's gonna be so much cheaper" (36TE/GV/IN). This development represents an ethical tipping point. If participation is simulated instead of living, citizens lose real influence. Social dialogue is replaced by algorithmic projection. This raises a new question in terms of democratic theory. Who owns the city, the people or the models?

AI should not replace participation but rather enable co-creation. Its legitimacy depends on whether it is used as a tool for co-creation or as a strategy of efficiency without participation. From the perspective of democracy, there are fears that the increasing automation of participatory processes could further undermine citizens' trust in the legitimacy of government action (28(SW/GV). The more algorithmic systems replace human negotiation, the greater the risk that participation will be perceived as depersonalized, non-transparent or symbolic. This is accompanied by potentially detrimental consequences for the culture of democratic participation and institutional credibility. Therefore, targeted promotion of co-creative formats is required. Only through active co-creation opportunities can citizens experience the intrinsic value (value-in-use through co-creation) and develop a sense of effectiveness. Co-creation not only functions as a methodological counter-model to technocratic automation. It is also a relevant instrument in democratic theory for strengthening collective self-efficacy and legitimizing political and administrative decisions. The expert: "It's a bit like the right to vote - it's a chance and a duty." (14PC)

4.6 Discussion of the results

This study aimed to explore how SD-Logic, co-creation and open innovation can contribute to the participatory design of urban public spaces. The underlying experiment at the Zamanand festival served as a real-life test for the concepts developed in theory. The results confirm central assumptions, but also reveal areas of tension, limitations and new dynamics.

Participation creates value - but only in context

Public space does not develop its value solely through planning, but through situational use, appropriation, and emotional attachment - value-in-use, in the sense of the service-dominant logic. However, this generation of value is not guaranteed, but depends on the context. Weather, social interaction and situational conditions have a major influence on perception and use. This insight underscores the importance of understanding cities not only as physical infrastructure but also as service ecosystems, where value is created in an emergent manner. Though, it is questionable when intrinsic value is created and consciously perceived as such in this context.

Co-creation works - when design and dialogue work together

The project demonstrates that visual tools, such as AI platforms, open new avenues for participation, particularly for previously uninvolved groups. At the same time, it became clear that co-creation is particularly effective when it is not understood in isolation, but as part of a structured, moderated dialog process. The mere generation of designs does not replace the joint negotiation of spatial concepts but is at most their catalyst. This is in line with theoretical perspectives that understand co-creation as a social, iterative and dialogical process (Prahalad & Ramaswamy 2004; Ramaswamy & Ozcan 2018).

Technological enablers: opportunity and risk at the same time

The role of AI as an interactional platform was largely viewed positively. Its ability to quickly visualize ideas creates new opportunities for expression, especially for laypeople. At the same time, a critical discussion opened about the limits and dangers of automating participation. One interview explicitly warned against the trend of using AI agents to simulate real participation to reduce costs. This practice threatens to transform democratic processes into a technological logic of efficiency, which could lead to the erosion of genuine participation. This area of tension points to a crucial point of discussion. Technology should not replace participation but rather enable it.

Governance determines impact

A key finding concerns the role of the institutional framework. According to the conclusion of several experts, participation is often not held back by a lack of creativity or citizen interest, but by a lack of structural openness, bureaucratic fragmentation or diffusion of responsibility. These findings align with the open innovation theory, which posits that institutional openness and cross-organizational learning processes are essential prerequisites for co-creative value creation (Chesbrough 2011; Sørensen & Torfing 2019).

Co-creation needs visibility and feedback

A recurring motif in the data was the desire for feedback, transparency, and visibility. Co-creation is only experienced as effective and meaningful if citizens feel that their contributions are taken seriously, processed, and made visible. This reveals a shortcoming of participation processes. They collect but do not reflect. The results underscore the importance of the feedback principle as a central building block of democratic service design, in the sense of a circular process between contribution, impact, and renewed participation. This may ultimately lead to the value-identity cycle.

5 Conclusion and reflection

5.1 Summary of the most important results

On the path to a human-centric city, a theoretically sound shift in course can be observed. The provision of predefined services to citizens is evolving towards the co-creation of the city as a service, together with citizens. In this work, three complementary theoretical approaches - service-dominant logic, co-creation and open innovation - were integrated to lay a solid foundation for this change of course.

Service-Dominant Logic offers insight into understanding public spaces as service ecosystems, where value is created solely through interaction and the user experience of citizens (value-in-use). This ontological view ensures that all further considerations remain human-centered and benefit-oriented.

Co-creation brings in the specific actor and process perspective: Through participatory design, citizens and other stakeholders become active co-creators and intrinsic value creators, resulting in solutions that fit better, are more innovative, and enjoy broader legitimacy.

Finally, open innovation broadens horizons and offers strategies for opening the boundaries of institutions, systematically integrating external ideas and forming an ecosystem of innovation that works together across silos or competences.

Together, these approaches provide a coherent framework for making public management fit for the future, as platforms for encounters and cooperation that continuously adapt to people's needs. However, the critical discussion has shown that each approach also entails specific challenges.

S-D Logic necessitates a profound reevaluation of administration, shifting away from expert knowledge and toward active validation through user experience. Co-creation requires new skills in moderation, translation, and shifting power. Open innovation must be institutionally anchored so that it does not fizzle out as a one-off intervention.

Furthermore, there is an ambivalent relationship with digitalization. Digital tools such as AI can make participation much easier, for example, through visual translation, low-threshold access, and playful exploration. At the same time, their unconsidered use harbors new risks: algorithmic distortion, digital exclusion, and, recently, even the tendency to replace real citizen participation with simulated AI agents to save time and money. This threatens a tipping point. Participation would be gutted and replaced by technical efficiency, a finding that requires ethical and political debate.

The Zamanand festival demonstrated the potential of people-centered urban design in an experimental setting. It demonstrated that citizens are willing to get involved - if given the opportunity, they can become visibly effective, and their ideas are translated into real-world spaces. The setting made it possible to experience how public space gains social value through appropriation, interaction, and visual imagination. At the same time, however, the limits also became visible. Participation needs structure, feedback, and continuity - and must not be seen as just an event or symbolic gesture.

Several implications can be derived from this work on the way to a human-centric city. (1) Cities should redefine their role, away from being pure service providers and towards becoming curators of an open, co-productive value creation system. (2) Structural capacities must be built up to manage co-creation and open innovation on a permanent basis (e. urban labs, cross-departmental innovation departments, further training in design methodology). (3) The use of technology must be designed more consciously - not as a substitute, but as an enabler of participatory processes. AI can translate, not decide. (4) A new feedback culture is needed. Participation must not end at the idea stage - it needs institutional feedback and connectivity. (5) Political will is key: The approaches described here require the courage to be open and willing to take risks. The theory shows the benefits - but without a willingness to change in practice, it will have no impact.

The theoretical foundation of public space as a service provides a strong argumentation framework to legitimize this transformation. It combines economic efficiency and innovation considerations with sociological and design-scientific human orientation. This builds a bridge between disciplines - service science meets urban planning; design thinking meets administrative science.

This interdisciplinarity is likely to be crucial to effectively address the complex challenges of the urban future, from climate change and social polarization to digital transformation. Cities are living in social systems; their design must be equally living, learning, and co-creative.

Thinking of public space as a service means understanding the city as a joint project. Theory and practice go hand in hand - theory provides orientation, practice provides feedback. On the way to a human-centric city, experiments such as the Zamanand Festival must become a new norm - not as an exception, but as a regular part of democratic, learning urban development.

5.2 Limitations of the study / evaluation of the development settings

Contextual, methodological, and structural limitations

Despite revealing findings, this study has several methodological, contextual, and structural limitations that must be considered when interpreting the results. These relate to the scope of the database, the transferability of the results and the stability of the methods used.

Contextuality of the festival setting

The study took place in the specific cultural, organizational, and spatial context of the Zamanand Festival. Although this format enabled a high degree of visibility, low-threshold, and interaction potential, it can hardly be replicated in regular urban contexts outside of events. The public space was temporarily redefined, which both generated attention and limited the lasting effectiveness of the effects achieved. In addition, the strong project identification of the researcher as festival organizer led to intensive process control, but potentially to experimental distortions, as institutional constraints of regular administrative procedures were partially circumvented.

Limited sample size and representativeness

The qualitative database comprises three expert interviews, a reflective discussion with landscape architecture students, and participant observations during two festival phases. This data offers deep insights into individual experiences, perspectives, and usage behavior, but is not representative due to the limited sample size. Therefore, the results are exploratory in nature and cannot be generalized.

Technological development vs. institutional inertia

The AI system used, Urbanist AI, proved to be an effective tool for idea development and visual exploration. However, its use is subject to the limitation that technological innovations are developing rapidly, while municipal administrative structures are designed for long-term planning and standardization processes. This asynchrony makes it challenging to integrate methods within established administrative frameworks. Furthermore, its use makes it clear that technological feasibility does not automatically guarantee social connectivity; the implementation of AI-generated visualizations in real change processes requires additional creative, communicative, and organizational mediation services.

Transferability and scalability of the approach

A central concern of this work is the transferability of the developed co-creation approach to other urban contexts.

The analysis shows that central impact dimensions, such as the emotional appropriation of urban spaces or participatory value creation processes, were strongly linked to the experimental character of the specific setting. Sustainable scaling requires far-reaching structural prerequisites, including the institutional consolidation of co-creative formats in urban living labs, legal and organizational safeguards for the use of digital tools, and strategic measures to involve previously underrepresented social groups.

From a technical perspective, the AI-supported co-creation approach could easily be transferred to entire districts or cities, as the systems used are highly scalable in terms of data processing, visualization, and user interaction. However, the technical potential is offset by non-technical challenges. Organizational responsibilities, legal framework conditions and requirements for socio-spatial connectivity must be considered for successful implementation.

Lighthouse effect and structural sustainability

Finally, the study shows typical characteristics of a municipal lighthouse project. Despite an elevated level of innovation, visibility, and exemplary impact, there is a risk that the project will remain a one-off innovation production after completion due to a lack of structural anchoring. Without institutional learning, political connectivity and systemic integration, even ambitious experiments risk remaining merely symbolically effective without having a long-term structural impact.

5.3 Outlook and future research needs

The results of this work show that service design and participatory digital tools offer enormous potential for the transformation of urban public spaces - if they are used consciously, reflectively, and inclusively. Three central fields of research and action can be identified for the further development of this approach: (1) the deepening and systematization of AI-supported participation, (2) the structural scaling of experimental models, and (3) the conceptual refinement of the understanding of service design in the urban context.

Further developing AI-supported participation - between enabler and risk

Participatory AI prototyping enables new ways of shaping public space. Digital tools such as text-image AI can facilitate access to participation and appeal to those population groups that are often excluded from traditional formats, especially younger, digitally savvy people (Falco & Kleinhans 2018; Cerrone 2023; Baccarne et al. 2014).

At the same time, there is an urgent need for critical reflection on the social and ethical limits of such systems.

Digital inequality, algorithmic distortions, lack of transparency and data protection risks can significantly impair the legitimacy of such processes (Zuboff 2019; Gordon 2019; Jobin et al. 2019).

One particularly worrying trend concerns the current discussion about the simulation of participation by AI agents (Beroche & Noyman 2025; Esposito & Cremer 2025). In an interview in this study, it was explicitly pointed out that city administrations are increasingly considering replacing participatory planning formats with virtual agents - i.e., technically simulating participation instead of enabling it. While such systems may appear efficient, they run the risk of undermining the democratic core of participation. If citizens are replaced by "synthetic citizen personas", urban planning shifts from social dialogue to algorithmic decision-making, with far-reaching consequences for legitimacy, trust, and social participation.

Research and practice, therefore, face the challenge of developing digital participation and service design not only technically, but also normatively and structurally. In the future, it should be investigated how AI-supported tools can be designed to support human creativity, dialogue, and negotiation, rather than simulating or replacing them.

From temporary prototypes to structural integration

The Zamanand festival served as a temporary laboratory, where new formats were evaluated, citizens were engaged, and AI was explored as a creative tool. However, the scalability of such processes remains limited as long as they are not institutionally anchored. The challenge is to transfer formats such as urban labs, co-creation platforms, or flexible voting tools into the regular urban development logic (Hasan 2025). The aim is to use the entire intelligence of the city for a "City Collaborative" (Mulgan 2024).

This requires political backing for iterative experimentation in the public sphere, adapted legal frameworks for digital tools and participatory processes, as well as personnel and organizational capacities that can not only manage, but also moderate, translate and shape (Innes & Booher 2010; Healey 2006).

The boundaries between design, creation, service, and management are becoming increasingly blurred. This makes it more important to actively shape these transitions, not only technically, but also culturally. This requires new interdisciplinary interfaces in administration that bring together service expertise, urban research, and social innovation methods.

Quality of life as a non-monetary value - a new understanding of services

The evaluation of public space as a service requires a departure from purely functional, quantitative, or economic efficiency criteria. The interviews and observations show that quality of life in these spaces is created through social interaction, aesthetic experience, belonging and freedom of design - in other words, through values that are non-monetary but highly relevant to society (Gehl 2010; Manzini & Rizzo 2011).

Future research in the field of urban service innovation should therefore focus more on the question of how non-monetary, intrinsic values can be systematically recognized, communicated, and integrated - for example through qualitative indicators, social feedback systems or new forms of impact monitoring.

5.4 Answering the research question and validating the concept

The definition of public space as a service developed in this paper postulates that public space should not be understood as a static product, but as a socio-technical service ecosystem. In this system, actors (citizens, administration, technology, civil society) contribute their resources to co-create value through continuous interaction (value-in-use).

This conceptual framework was confirmed in principle and further sharpened by the results of the empirical study. The intervention conducted shows that value in public space is created emergently, through situational use, social interaction, and emotional appropriation. Space was not defined by planning alone, but by the active participation and co-production of citizens (Gehl 2010; Tuan 2011). The observations and interviews also confirm that AI-based prototyping tools—enable new forms of resource contribution, particularly for non-professional actors. These tools expand the interaction capacity of the service system without, however, being able to replace human participation. The definition of "public space as a service" implies a governance structure based on openness, inclusion, and iterative feedback processes. This is precisely where the limits become apparent. Although the participatory processes could be activated temporarily, their institutional perpetuation usually fails to materialize, an indication of structural deficits in the municipal innovation system.

The central research question of this work was: How and under what conditions can an experimental service design approach, based on service-dominant logic, co-creation, and open innovation, establish public spaces as co-creative services?

The results of the theoretical analysis and the empirical study of the Zamanand festival make it clear that public space can only be successfully established as a co-creative service if certain conditions are met.

The decisive factor here is that public spaces are conceived as open value platforms whose concrete value only arises through active use and appropriation by citizens (value-in-use). Citizens can be made aware of this value through value co-creation. Instead of a predetermined, top-down planned design, space must be created for individual and collective creative freedom that enables direct interaction.

At the Zamanand Festival in particular, it became clear that immaterial signs of value, such as a positive atmosphere, spontaneous interaction, and shared experiences, are of significant importance. Such emotional experiences form the core of the perceived value, which cannot be measured in traditional monetary indicators.

The results confirm the definition of public space as a socio-technical service ecosystem in which value emerges from the usage situation, social interaction, and emotional appropriation. It also became apparent that active participation creates a strong bond (Hafer & Ran 2016). This process creates a reciprocal cycle. Experienced value in turn strengthens identity and this strengthened identity drives new value creation processes - the value-identity cycle. This close link between personal identity and experienced value confirms theoretical assumptions about place attachment. This may result in "caring citizens" (Davis 2022; van Woerden 2021). Then, public space becomes a public place in the human-centric city.

A long-term and sustainable implementation of these findings requires a structural change towards a curated co-creation platform. Institutional openness, flexible political and legal frameworks, as well as continuous resources for moderation and communication between experts and citizens, are crucial. In addition, success should not only be evaluated in monetary terms, but should also include social cohesion, identity formation and emotional value.

An experimental service design approach can successfully establish a temporary public space as a co-creative service if it combines real-life place experiences, low-threshold digital visualizations, and immediate social feedback. However, adaptive governance structures that institutionalize open knowledge flows, thereby enabling and stabilizing the value-identity cycle in the long term, are essential for sustainable implementation.

The validity of the study is limited by the restriction to a solitary case in Munich, a short festival duration of two days each, an explorative sample, and the lack of long-term data. In addition, the composition of the participants could be influenced by self-selection of committed citizens.

References

- Acar, L., T. Steen & B. Verschuere 2023. Public values? A systematic literature review into the outcomes of public service co-creation. *Public Management Review* 0: 1-33. doi:10.1080/14719037.2023.2288248.
- Agile Verwaltung 2024. Von der Bürokratie zur Innovation: Kreativität in der Verwaltung. Accessed 13 April 2025. https://agile-verwaltung.org/2024/07/25/von-der-burokratie-zur-innovation-kreativitat-in-der-verwaltung/?utm_source=chatgpt.com.
- Albrechts, L. 2013. Reframing strategic spatial planning by using a coproduction perspective. *Planning Theory* 12: 46-63. doi:10.1177/1473095212452722.
- Ansell, C. & J. Torfing 2021. *Public Governance as Co-creation* Cambridge University Press.
- Arendt, H., D. S. Allen & M. Canovan 2018. *The human condition*. Chicago, London: The University of Chicago Press.
- Arnstein, S. R. 1969. A Ladder Of Citizen Participation. *Journal of the American Institute of Planners* 35: 216-224. doi:10.1080/01944366908977225.
- Atlas of Urban AI 2025. GOUAI's Atlas of Urban AI. Accessed 05 May 2025. <https://gouai.cidob.org/atlas/>.
- Baccarne, B., D. Schuurman & P. Mechant & L. de Marez 2014. The role of urban living labs in a smart city. In XXV ISPIM Innovation Conference, Proceedings.
- Banathy, B. H. 1996. *Designing social systems in a changing world. Contemporary systems thinking*. New York, London: Plenum Press.
- Banerjee, T., A. Loukaitou-Sideris & Loukaitou-Sideris/Banerjee (eds) 1999. *Urban Design Downtown: Poetics and Politics of Form*. University of California Press, Berkeley, CA.
- Beroche, H. & A. Noyman 2025. AI Agents in Urban Planning: A New Paradigm for Urban Simulation. *Urban AI*, 2/27/2025. <https://medium.com/urban-ai/ai-agents-in-urban-planning-a-new-paradigm-for-urban-simulation-41c4c210e4a8>. Accessed 27 April 2025.
- Bhatt, H., S. Devkota & S. Shah 2024. Sustainable Urban Planning and Green Infrastructure: A Symbiotic Relationship. *IJFMR - International Journal For Multidisciplinary Research* 6. doi:10.36948/ijfmr.2024.v06i06.33921.

- Bovaird, T. & E. Loeffler 2012. From Engagement to Co-production: The Contribution of Users and Communities to Outcomes and Public Value. *VOLUNTAS: International Journal of Voluntary and Nonprofit Organizations* 23: 1119-1138. doi:10.1007/s11266-012-9309-6.
- Bragaglia, F., U. Janin Rivolin & E. Berisha & G. Cotella 2024. How is urban co-production conveyed in European cities? *European Planning Studies* 32: 1613-1631. doi:10.1080/09654313.2024.2339933.
- Brandsen, T. & M. Honingh 2016. Distinguishing Different Types of Coproduction: A Conceptual Analysis Based on the Classical Definitions. *Public Administration Review* 76: 427-435. doi:10.1111/puar.12465.
- Brown, T. 2009. *Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation*. 1st ed. Erscheinungsort nicht ermittelbar: HarperCollins Publishers.
- Bryson, J. M., K. S. Quick & C. S. Slotterback & B. C. Crosby 2013. Designing Public Participation Processes. *Public Administration Review* 73: 23-34. doi:10.1111/j.1540-6210.2012.02678.x.
- Carayannis, E. G. & D. F. Campbell 2009. 'Mode 3' and 'Quadruple Helix': toward a 21st century fractal innovation ecosystem. *International Journal of Technology Management* 46: 201. doi:10.1504/IJTM.2009.023374.
- Carmona, M. 2021. *Public Places Urban Spaces*Routledge.
- Cerrone, D. 2023. Toward Participatory Urban Planning - Urban AI - Medium. *Urban AI*, 11/14/2023. <https://medium.com/urban-ai/toward-participatory-urban-planning-d99a1c2dc8a1>. Accessed 11 April 2025.
- Chan, C. M. 2013. From Open Data to Open Innovation Strategies: Creating E-Services Using Open Government Data. In 2013 46th Hawaii International Conference on System Sciences: 1890-1899.
- Chesbrough, H. 2010. *Open innovation: The new imperative for creating and profiting from technology*. Boston, Mass.: Harvard Business School Press.
- Chesbrough, H. 2011. *Open services innovation: Rethinking your business to grow and compete in a new era*. 1st ed. San Francisco, CA: Jossey-Bass.
- Chesbrough, H. & M. Bogers 2014. *Explicating Open Innovation: Clarifying an Emerging Paradigm for Understanding Innovation*.

- Chesbrough, H. & A. Di Minin 2014. Open Social Innovation*. In Chesbrough, H., W. Vanhaverbeke & J. West (eds), *New Frontiers in Open Innovation* Oxford University Press: 169-188.
- Chipchase, J. 2013. *Hidden in Plain Sight: How to Create Extraordinary Products for Tomorrow's Customers*. 1st ed. Erscheinungsort nicht ermittelbar: HarperCollins Publishers.
- Davis, J. 2022. *The caring city: Ethics of urban design*. Bristol: Bristol University Press.
- Deleuze, G. & F. Guattari 2007. *A thousand plateaus: Capitalism and schizophrenia*. 12th ed. Minneapolis, Minn.: Univ. of Minnesota Press.
- Design Council 2003. *The Double Diamond*. Accessed 30 April 2025.
<https://www.designcouncil.org.uk/our-resources/the-double-diamond/>.
- Dorckenwald, S. 2025. Co-Crea-ti-on als kol-la-bo-ra-ti-ver Gestaltungsprozess. bayern design, 2/10/2025. <https://bayern-design.de/beitrag/co-creation-als-kollaborativer-gestaltungsprozess/>. Accessed 02 March 2025.
- Dovey, K. 2009. *Becoming Places: Urbanism/architecture/identity/power*. London, New York: Routledge.
- Dovey, K. 2016. *Urban Design Thinking* Bloomsbury Publishing Plc.
- Dübner, S., N. Fanderl & C. Heydkamp 2018. *City of the Future Ludwigsburg: Co-Creation in Urban Development Processes*. In.
- Ekroos, T. 2023. *Public Sector Innovation Leadership in Complex Networks*. MBA. Service Innovation & Design. Laurea University of Applied Sciences. Accessed 2 April 2025.
https://www.theseus.fi/bitstream/handle/10024/807048/Ekroos_Toni.pdf?sequence=2
- Ellery, P. J. & J. Ellery 2019. *Strengthening Community Sense of Place through Placemaking*. *Urban Planning* 4: 237-248. doi:10.17645/up.v4i2.2004.
- Ertiö, T.-P. 2015. *Participatory Apps for Urban Planning—Space for Improvement*. *Planning Practice & Research* 30: 303-321. doi:10.1080/02697459.2015.1052942.
- Eskelinen, S. 2024. *Enhancing Social Innovation - Case: Concept Design of Innovillage*. Innovation Forum. MBA. Service Innovation & Design. Laurea University of Applied Sciences. Accessed 2 April 2025
https://www.theseus.fi/bitstream/handle/10024/863052/Eskelinen_Sari.pdf?sequence=5&isAllowed=y

- Esposito, M. & D. de Cremer 2025. The Future is Coded: How AI is Rewriting the Rules of Decision Theaters. Tech Policy Press, 4/22/2025. <https://www.techpolicy.press/the-future-is-coded-how-ai-is-rewriting-the-rules-of-decision-theaters/>. Accessed 27 April 2025.
- Falco, E. & R. Kleinhans 2018. Digital Participatory Platforms for Co-Production in Urban Development. *International Journal of E-Planning Research* 7: 52-79. doi:10.4018/IJEPR.2018070105.
- Forester, J. F. 1999. *The Deliberative Practitioner: Encouraging Participatory Planning Processes*.
- Foster, S. & C. Iaione 2016. The City as Commons. *Yale Law & Policy Review* 34: 281-349.
- Gassmann, O. & E. Enkel 2004. Towards a Theory of Open Innovation: Three Core Process Archetypes. *University of St. Gallen* 6.
- Gehl, J. 2010. *Cities for people*. Washington, DC: Island Press.
- Glaser, B. G. & A. L. Strauss 2017. *The Discovery of Grounded Theory* Routledge.
- Gordon, F. 2019. Virginia Eubanks (2018) *Automating Inequality: How High-Tech Tools Profile, Police, and Punish the Poor*. New York: Picador, St Martin's Press. *Law Technology and Humans*: 162-164. doi:10.5204/lthj.v1i0.1386.
- Graham, S. & S. Marvin 2002. *Splintering Urbanism*. London: Routledge.
- Gray, D., S. Brown & J. Macanuso 2010. *Gamestorming: A playbook for Innovators, Rulebreakers, and Changemakers*. Beijing, Cambridge: O'reilly.
- Grcheva, O. & B. Oktay Vehbi 2021. From Public Participation to Co-Creation in the Cultural Heritage Management Decision-Making Process. *Sustainability* 13: 9321. doi:10.3390/su13169321.
- Grönroos, C. 2008. Service Logic Revisited: Who Creates Value? And Who Co-creates? *European Business Review* 20: 298-314. doi:10.1108/09555340810886585.
- Grönroos, C. & P. Voima 2013. Critical service logic: making sense of value creation and co-creation. *Journal of the Academy of Marketing Science* 41: 133-150. doi:10.1007/s11747-012-0308-3.
- Grzesikowska, H. 2025. We create cities we no longer understand. Accessed 28 April 2025. <https://www.linkedin.com/feed/update/urn:li:activity:7266367739630407680/>.

- Habermas, J. 2023. Strukturwandel der Öffentlichkeit: Untersuchungen zu einer Kategorie der bürgerlichen Gesellschaft mit einem Vorwort zur Neuauflage 1990. 18th ed. Suhrkamp-Taschenbuch Wissenschaft 891. Frankfurt am Main: Suhrkamp.
- Hafer, J. A. & B. Ran 2016. Developing a Citizen Perspective of Public Participation: Identity Construction as Citizen Motivation to Participate. *Administrative Theory & Praxis* 38: 206-222. doi:10.1080/10841806.2016.1202080.
- Haltofova, B. 2018. Using Crowdsourcing to Support Civic Engagement in Strategic Urban Development Planning: A Case Study of Ostrava, Czech Republic. *Journal of Competitiveness* 10: 85-103. doi:10.7441/joc.2018.02.06.
- Hartig, T., R. Mitchell & S. de Vries & H. Frumkin 2014. Nature and health. *Annual review of public health* 35: 207-228. doi:10.1146/annurev-publhealth-032013-182443.
- Hasan, S. 2025. Building Collective Capacity For Experimentation. Accessed 27 April 2025. <https://www.innovationgrowthlab.org/blog/building-collective-capacity-for-experimentation>.
- Healey, P. 2006. *Urban Complexity and Spatial Strategies* Routledge.
- Hee, L. & G. L. Ooi 2003. The politics of public space planning in Singapore. *Planning Perspectives* 18: 79-103. doi:10.1080/0266543032000047413.
- Heidegger, M. 1954. *Bauen, Wohnen, Denken*. Pfullingen: Neske.
- Hilgers, D. & C. Ihl 2010. Citizensourcing: Applying the concept of open innovation to the public sector. *The International Journal of Public Participation* 4: 67-88.
- Horelli, L. & S. Wallin 2024. Civic Engagement in Urban Planning and Development. *Land* 13: 1446. doi:10.3390/land13091446.
- Hutton, C. 2025. (@instachaaz) • Instagram-Fotos und -Videos. Accessed 27 April 2025. <https://www.instagram.com/instachaaz/>.
- Ind, N. & N. Coates 2013. The meanings of co-creation. *European Business Review* 25: 86-95. doi:10.1108/09555341311287754.
- Innes, J. E. & D. E. Booher 2010. *Planning with Complexity* Routledge.
- Innes, J. E. & D. E. Booher 2018. *Planning with Complexity*. Second edition. | New York, NY Routledge, 2018.: Routledge.

- Irazábal, C. 2016. Public, Private, People Partnerships (PPPPs): Reflections from Latin American Cases. *Private Communities and Urban Governance*. Springer International Publishing: 191-214.
- Jacobs, J. 2014. Tod und Leben großer amerikanischer Städte. In *Tod und Leben großer amerikanischer Städte* Birkhäuser.
- Jakob Trischler, Timo Dietrich & Sharyn Rundle-Thiele and 2019. Co-design: from expert- to user-driven ideas in public service design. *Public Management Review* 21: 1595-1619. doi:10.1080/14719037.2019.1619810.
- Jobin, A., M. Ienca & E. Vayena 2019. The global landscape of AI ethics guidelines. *Nature Machine Intelligence* 1: 389-399. doi:10.1038/s42256-019-0088-2.
- Junginger, S. 2015. Organizational Design Legacies and Service Design. *The Design Journal* 18. doi:10.2752/175630615X14212498964277.
- Kaplan, R. & S. Kaplan 1989. *The experience of nature: A psychological perspective*. Cambridge: Cambridge University Press.
- Kazadi, K., A. Lievens & D. Mahr 2016. Stakeholder co-creation during the innovation process: Identifying capabilities for knowledge creation among multiple stakeholders. *Journal of Business Research* 69: 525-540. doi:10.1016/j.jbusres.2015.05.009.
- Kroeger, A. & C. Weber 2014. Developing a Conceptual Framework for Comparing Social Value Creation. *Academy of Management Review* 39: 513-540. doi:10.5465/amr.2012.0344.
- Kronsell, A. & D. Mukhtar-Landgren 2018. Experimental governance: the role of municipalities in urban living labs. *European Planning Studies* 26: 988-1007. doi:10.1080/09654313.2018.1435631.
- Kumar, V. & J. P. Hackett 2013. *101 design methods: A structured approach for driving innovation in your organization*. Hoboken, N.J: John Wiley & Sons.
- Latour, B. 2007. *Reassembling the social: An introduction to Actor-Network-Theory*. 1st ed. Clarendon lectures in management studies. Oxford: Oxford Univ. Press.
- Leclerq, E. 2018. Privatisation of the Production of Public Space. 1-384 Pages / A+BE | *Architecture and the Built Environment*, No. 5 (2018): Privatisation of the Production of Public Space. A BE | *Architecture and the Built Environment* 8: 1-384. doi:10.7480/abe.2018.5.2009.

- Lee, D., P. Feiertag & L. Unger 2024. Co-production, co-creation or co-design of public space? A systematic review. *Cities* 154: 105372. doi:10.1016/j.cities.2024.105372.
- Lefebvre, H. & A. Busch 2018. *Die Produktion des Raums The Production of Space / Henri Lefebvre*. 1st ed. Leipzig: Spectormag.
- Lefebvre, H. & C. Schäfer 2016. *Das Recht auf Stadt*. Nautilus Flugschrift. Hamburg: Edition Nautilus.
- Lewicka, M. 2011. Place attachment: How far have we come in the last 40 years? *Journal of Environmental Psychology* 31: 207-230. doi:10.1016/j.jenvp.2010.10.001.
- Liedtka, J. 2011. *Designing for growth: A design thinking tool kit for managers*. Columbia Business School Publishing. New York: Columbia Business School Pub.
- Lorah, K. & S. Silberberg 2025. *Places in the Making*. Accessed 13 April 2025. <https://issuu.com/civicmoxie/docs/mit-dusp-places-in-the-making>.
- Low, S. & N. Smith 2013. *The Politics of Public Space* Routledge.
- Lusch, R. F. & S. L. Vargo 2014. *Service-dominant logic: Premises, perspectives, possibilities*. Cambridge: Cambridge University Press.
- Madsbjerg, C. 2014. *The Moment of Clarity: Using the Human Sciences to Solve Your Toughest Business Problems*. Boston: Harvard Business Review Press.
- Mager, B. & M. Gais 2009. *Service Design*. UTB Design 3113. Paderborn: Fink.
- Mahajan, S. 2024. Navigating the cohesion-diversity trade-off: understanding the role of facilitators in co-creation using agent-based modelling. *Philosophical transactions. Series A, Mathematical, physical, and engineering sciences* 382: 20240093. doi:10.1098/rsta.2024.0093.
- Malterud, K., V. D. Siersma & A. D. Guassora 2016. Sample Size in Qualitative Interview Studies: Guided by Information Power. *Qualitative health research* 26: 1753-1760. doi:10.1177/1049732315617444.
- Manzini, E. 2015. *Design, When Everybody Designs* The MIT Press.
- Manzini, E. & F. Rizzo 2011. Small projects/large changes: Participatory design as an open participated process. *CoDesign: international journal of cocreation in design and the arts* 7: 199-215. doi:10.1080/15710882.2011.630472.

- Manzo, L. C. & D. D. Perkins 2006. Finding Common Ground: The Importance of Place Attachment to Community Participation and Planning. *Journal of Planning Literature* 20: 335-350. doi:10.1177/0885412205286160.
- Mayring, P. 2022. *Qualitative Inhaltsanalyse: Grundlagen und Techniken*. 13th ed. Weinheim, Basel: Beltz.
- McCormick, K. & C. Hartmann 2017. The Emerging Landscape of Urban Living Labs Characteristics, Practices and Examples. In.
- Mergel, I. 2018. Open innovation in the public sector: drivers and barriers for the adoption of Challenge.gov. *Public Management Review* 20: 726-745. doi:10.1080/14719037.2017.1320044.
- Mitchell, W. J. 2003. *Me++*The MIT Press.
- Moore, M. 2021. Creating Public Value: The Core Idea of Strategic Management in Government. *International Journal of Professional Business Review* 6: 219. doi:10.26668/businessreview/2021.v6i1.219.
- Morelli, N., M. Aguilar & G. Concilio & A. De Götzen & I. Mulder & J. Pedersen & L. Kilitgaard Torntoft 2017. Framing Design to support Social Innovation: The Open4Citizens Project. *The Design Journal* 20: 53171-53184. doi:10.1080/14606925.2017.1352823.
- Mu, R. & H. Wang 2022. A systematic literature review of open innovation in the public sector: comparing barriers and governance strategies of digital and non-digital open innovation. *Public Management Review* 24: 489-511. doi:10.1080/14719037.2020.1838787.
- muenchen.de 2023. Re:think München beim Zamanand Festival. muenchen.de, 5/5/2023. <https://www.muenchen.de/veranstaltungen/aktuell/rethink-muenchen-beim-zamanand-festival>. Accessed 05 May 2025.
- Mulgan, G. 2006. The Process of Social Innovation. *Innovations: Technology, Governance, Globalization* 1: 145-162. doi:10.1162/itgg.2006.1.2.145.
- Mulgan, G. 2024. The City Collaborative - helping big cities to think and solve their problems. Accessed 27 April 2025. <https://www.geoffmulgan.com/post/the-city-collaborative-helping-big-cities-to-think-and-solve-their-problems>.
- Mulgan, T. 2014. *Understanding Utilitarianism* Routledge.
- Mumford, L. 1989. *The city in history: Its origins, its transformations, and its prospects*. A Harvest book. San Diego, New York, London: Harcourt Inc.

- Nesti, G. 2018. Co-production for innovation: the urban living lab experience. *Policy and Society* 37: 310-325. doi:10.1080/14494035.2017.1374692.
- Nica, E., G. H. Popescu & M. Poliak & T. Kliestik & O.-M. Sabie 2023. Digital Twin Simulation Tools, Spatial Cognition Algorithms, and Multi-Sensor Fusion Technology in Sustainable Urban Governance Networks. *Mathematics* 11: 1981. doi:10.3390/math11091981.
- Normann, R. & R. Ramírez 1993. From value chain to value constellation: designing interactive strategy. *Harvard business review* 71: 65-77.
- O'Flynn, J. 2007. From New Public Management to Public Value: Paradigmatic Change and Managerial Implications. *Australian Journal of Public Administration* 66: 353-366. doi:10.1111/j.1467-8500.2007.00545.x.
- Osborne, S. P. 2018. From public service-dominant logic to public service logic: are public service organizations capable of co-production and value co-creation? *Public Management Review* 20: 225-231. doi:10.1080/14719037.2017.1350461.
- Osborne, S. P., Z. Radnor & K. Strokosch 2016. Co-Production and the Co-Creation of Value in Public Services: A suitable case for treatment? *Public Management Review* 18: 639-653. doi:10.1080/14719037.2015.1111927.
- Ostrom, E. 1996. Crossing the great divide: Coproduction, synergy, and development. *World Development* 24: 1073-1087.
- Ostrom, E. 2015. *Governing the commons: The evolution of institutions for collective action*. Canto Classics. Cambridge: Cambridge University Press.
- P. Frow, J.T. McColl-Kennedy & T. Hilton & A. Davidson & D. Brozovic 2014. Value propositions: A service ecosystems perspective. *Marketing Theory* 23: 1-25.
- Page, S. 2020. Assemblage Theory. In Kobayashi, A. (ed), *International Encyclopedia of Human Geography (Second Edition)*. Oxford: Elsevier: 223-227.
- Palumbo, R., E. Casprini & M. Fakhra Manesh 2023. Unleashing open innovation in the public sector: a bibliometric and interpretive literature review. *Management Decision* 61: 103-171. doi:10.1108/MD-12-2022-1745.
- Payne, A. F., K. Storbacka & P. Frow 2008. Managing the co-creation of value. *Journal of the Academy of Marketing Science* 36: 83-96. doi:10.1007/s11747-007-0070-0.
- Pego, A. & B. M. d. R. Matos 2025. The Role of Urban Living Labs in Entrepreneurship, Energy, and Governance of Smart Cities. In Ordóñez de Pablos, P., R. Khan & M. Taqi & K.

- Hussainey (eds), *Analyzing the Nexus of Big Data and International Trade. Advances in Business Strategy and Competitive Advantage* IGI Global: 203-221.
- Polaine, A. 2013. *Service Design: From Insight to Implementation*. 1st ed. La Vergne: Rosenfeld Media.
- Polese, F., A. Botti & A. Monda & M. Grimaldi 2019. Smart City as a Service System: A Framework to Improve Smart Service Management. *Journal of Service Science and Management* 12: 1-16. doi:10.4236/jssm.2019.121001.
- Prahalad, C. K. & V. Ramaswamy 2004. Co-creation experiences: The next practice in value creation. *Journal of Interactive Marketing* 18: 5-14. doi:10.1002/dir.20015.
- Project for Public Spaces 2025. Placemaking Program. Accessed 07 May 2025. <https://www.pps.org/placemaking>.
- Ramaswamy, V. & K. Ozcan 2018. What is co-creation? An interactional creation framework and its implications for value creation. *Journal of Business Research* 84: 196-205. doi:10.1016/j.jbusres.2017.11.027.
- Ranjan, K. R. & S. Read 2016. Value co-creation: concept and measurement. *Journal of the Academy of Marketing Science* 44: 290-315. doi:10.1007/s11747-014-0397-2.
- Relph, E. C. 2016. *Place and placelessness. Research in planning and design* 1. Los Angeles, London, New Delhi, Singapore, Washington, DC: Sage.
- Ruepert, A. M. 2016. *Working on the environment*. [Thesis fully internal (DIV), University of Groningen].
- Sanders, E. B.-N. & P. J. Stappers 2008. Co-creation and the new landscapes of design. *CoDesign: international journal of cocreation in design and the arts* 4: 5-18. doi:10.1080/15710880701875068.
- Scannell, L. & R. Gifford 2010. Defining place attachment: A tripartite organizing framework. *Journal of Environmental Psychology* 30: 1-10. doi:10.1016/j.jenvp.2009.09.006.
- Schumpeter, J. 1909. On the Concept of Social Value. *The Quarterly Journal of Economics* 23: 213. doi:10.2307/1882798.
- Secomandi, F. & D. Snelders 2011. The Object of Service Design. *Design Issues* 27: 20-34. doi:10.1162/DESI_a_00088.

- Sennett, R. 2018. Die offene Stadt: Eine Ethik des Bauens und Bewohnens. München: Hanser Berlin.
- Smart City Dialog 2025. Von Chatbots bis zur Stadtplanung: Generative KI in der Verwaltung | Smart City Dialog. Accessed 05 May 2025. <https://www.smart-city-dialog.de/wissen/blog/von-chatbots-bis-zur-stadtplanung-generative-ki-der-verwaltung>.
- Sørensen, E. & J. Torfing 2019. Designing institutional platforms and arenas for interactive political leadership. *Public Management Review* 21: 1443-1463. doi:10.1080/14719037.2018.1559342.
- Stauridēs, S. 2016. Common space: The city as commons. In *common*. London: Zed Books.
- Steen, K. & van Bueren, E. 2017. The Defining Characteristics of Urban Living Labs. *Technology Innovation Management Review* 7.
- Stickdorn, M. 2022. 10 Tips on how to embed Service Design in Organisations.
- Stickdorn, M., M. E. Hormess & J. Schneider 2018. This is service design doing: Applying service design and design thinking in the real world ; a practitioners' handbook. Sebastopol: O'Reilly Media Inc.
- Tonin, S. & G. Zanatta 2023. Promoting temporary reuse of brownfield sites for triggering urban transformation. *Journal of Urban Regeneration and Renewal*.
- Torfing, J., E. Sørensen & A. Røiseland 2019. Transforming the Public Sector Into an Arena for Co-Creation: Barriers, Drivers, Benefits, and Ways Forward. *Administration & Society* 51: 795-825. doi:10.1177/0095399716680057.
- Tschimmel, K. 2018. Toolkit Evolution 6 - An E-handbook for practical Design Thinking for Innovation.
- Tschimmel, K. & Sátiro, A. 2020. CriAtivaMente/TheCreativeMind/CreA@tivaMente.
- Tuan, Y.-F. 2011. Space and place: The perspective of experience. 7th ed. Minneapolis, Minn.: Univ. of Minnesota Press.
- TUM 2024. Zamanand: Street Science and more. Accessed 05 May 2025. <https://www.tum.de/en/news-and-events/all-news/press-releases/details/streetscience-zamanand-festival>.
- UrbanistAI 2025. UrbanistAI. Accessed 30 April 2025. <https://site.urbanistai.com/>.

- van der Graaf, S., C. Veeckman & L. Morganti & N. Helber 2014. Designing for participatory governance: assessing capabilities and toolkits in public service delivery. *info* 16: 74-88. doi:10.1108/info-07-2014-0028.
- van Woerden, W. 2021. Living well on a finite planet: Building a Caring World Beyond.
- Vargo, S. L. & R. F. Lusch 2004. Evolving to a New Dominant Logic for Marketing. *Journal of Marketing* 68: 1-17. doi:10.1509/jmkg.68.1.1.24036.
- Vargo, S. L. & R. F. Lusch 2016. Institutions and axioms: an extension and update of service-dominant logic. *Journal of the Academy of Marketing Science* 44: 5-23. doi:10.1007/s11747-015-0456-3.
- Vietrova, P., P. Vasyliiev & L. Maksymiv 2022. Participatory design method for improvement of urban public spaces - case study. *ACTA SCIENTIARUM POLONORUM - Architectura Budownictwo* 21. doi:10.22630/ASPA.2022.21.3.18.
- Voorberg, W. H., V. J. J. M. Bekkers & L. G. Tummers 2015. A Systematic Review of Co-Creation and Co-Production: Embarking on the social innovation journey. *Public Management Review* 17: 1333-1357. doi:10.1080/14719037.2014.930505.
- Vries, S. de, S. M. E. van Dillen & P. P. Groenewegen & P. Spreeuwenberg 2013. Streetscape greenery and health: stress, social cohesion and physical activity as mediators. *Social science & medicine* (1982) 94: 26-33. doi:10.1016/j.socscimed.2013.06.030.
- Whitehead, A. N. 1979. *Process and reality ; an essay in cosmology ; Gifford lectures delivered in the University of Edinburgh during the session 1927 - 28*. 1st ed. New York, NY: Free Press.
- Whyte, W. H. 1988. *The social Life of small urban spaces*. 7th ed. Washington, D.C.:
- Zamanand Festival 2024. *Vision & Werte* < Zamanand Festival. Accessed 05 May 2025. <https://zamanand.de/vision-werte/>.
- Zuboff, S. 2019. Surveillance Capitalism and the Challenge of Collective Action. *New Labor Forum* 28: 10-29. doi:10.1177/1095796018819461.
- Zukin, S. 2002. *The cultures of cities*. Cambridge, Mass.: Blackwell.
- Unpublished
- Schäfer, D. Gaschler, M., Römer, J. 2025. *Re-Thinking Public Space: Partizipative Stadtentwicklung mit KI-gestützter Bildgenerierung und Prototyping*. München: TUM, Chair of Landscape Architecture

ChatGPT has been used to edit the language of this text

Figures

Figure 1 The Dimensions of Public Space (created with Napkin AI)	15
Figure 2 The strands of theory (created with Napkin AI)	16
Figure 3: Public Space as Service (created with Napkin AI)	21
Figure 4 Value-Identity Cycle in Public Space (created with Napkin AI)	23
Figure 5 The Theories and their manifestations in the approach (created with Napkin AI) ...	26
Figure 6 When public space is defined by the value-in-use (own interpretation of Hutton (2025)	29
Figure 7 Defining the pre-categories for AI training in the workshop	34
Figure 8 The Stakeholder Map of the Experiment (see also Appendix)	38

Pictures

Picture 1 participatory AI workshop on-site	35
Picture 2 Set-Up on-site	36
Picture 3 Drone-Shot of the Prototype by Fabian Erlach	37
Picture 4 Screenshot of the voting website showing some of the generated images	40

Tables

Table 1 Coding Table with Examples (not actual data)	43
--	----

Appendices

Appendix 1: Codebook	78
Appendix 2: Stakeholder Map	85
Appendix 3: Photo Documentation	86

Appendix 1: Codebook

Source ID	Code(s)	Exact Quote (translated)	Short Interpretation	Dataset
1	GV/PC	Would probably just have an e-mail address or something have to hand in...	Lack of process feedback/follow-up p-gap	Landscape Architects Students
2	GV	... if this is called into question I feel personally attacked.	Fears of loss of control in public authorities	Urban Planner
3	GV/IN	... two very separate currents ... The administrative track is running along and has no Exchange with citizens ...	Parallel worlds ↔ Citizenship	Urban Planner
4	GV/IN/SW	Some participants found it difficult to understand the redesign ... with an artificial watercourse.	Skepticism of older visitors towards unconventional design	Observations
5	GV/PC	... it would need this abolition, these boundaries ... between City administration ... and the Citizens on the other side...	Abolition of administration-citizen boundary demanded	Urban Planner
6	GV/PC/SW	that this is indeed public space and ... that everyone is allowed to decide about it.	Public space belongs to everyone - Codecision	Urban Planner

7	GV/SC	My favorite thing would be if the city had said: yes, we want to know from you ...	Legitimacy increases when the city is officially behind it	Participation Moderator
8	GV/SC	I think it's already happening ... people are asking me if we can do this for them.	Cities are already actively requesting simulation	AI Developer
9	GV/SC	We often fail not because of planning, but because of implementation in the City administration, because ... Staff shortage.	Implementation gap due to lack of capacity	Urban Planner
10	IN	...that you can do so many different classes, various Citizens reached...	Festival reaches heterogeneous groups better	Landscape Architects Students
11	IN	... classic educated middle class ... did not reach many people at all ...	Difficulty of involving diverse groups	Urban Planner
12	IN	Play and leisure facilities for families and children are also often integrated.	Ideas take different age groups into account	Observations
13	PC	it does not work without Conversation.	Dialogue remains indispensable Part of Co-Creation	Landscape Architects Students
14	PC	It's a bit like the right to vote ... it's a chance and a duty.	Participation as a democratic duty and opportunity	AI Developer
15	PC	... not just to involve them in order to involve them somehow, but ... where does that even make sense?	Participation should be purposeful, not an alibi	Urban Planner

16	PC	The workshop participants emphasized ... that despite the predefined categories, there was enough room for users' own creative ideas. should remain.	Balance of predefined scenarios↔ Free creativity	Observations
17	PC/GV	We also give feedback, and I think that is the most important thing of all. Most important.	Feedback as a prerequisite for legitimate participation	Participation Moderator
18	PC/IN	...there is also so much questioning ... where it is not at all clear what happens with the results...	Indication of participation and survey fatigue	Participation Moderator
19	PC/SC	When people with different ideas have to work together, they usually create an innovation.	Divergent perspectives generate innovation	AI Developer
20	PC/SW	Democracy is not in the act of voting as much as it's in the act of discussing your ideas with somebody else before you vote.	Discussion more important than voting	AI Developer
21	SC	There should be much more ... you should actually really push it in - this is your space.	Demand for systematic consolidation and scaling	Landscape Architects Students
22	SC	The concepts often deal with issues of sustainable infrastructure ... cycling and	Ideas compatible with strategic city goals	Observations

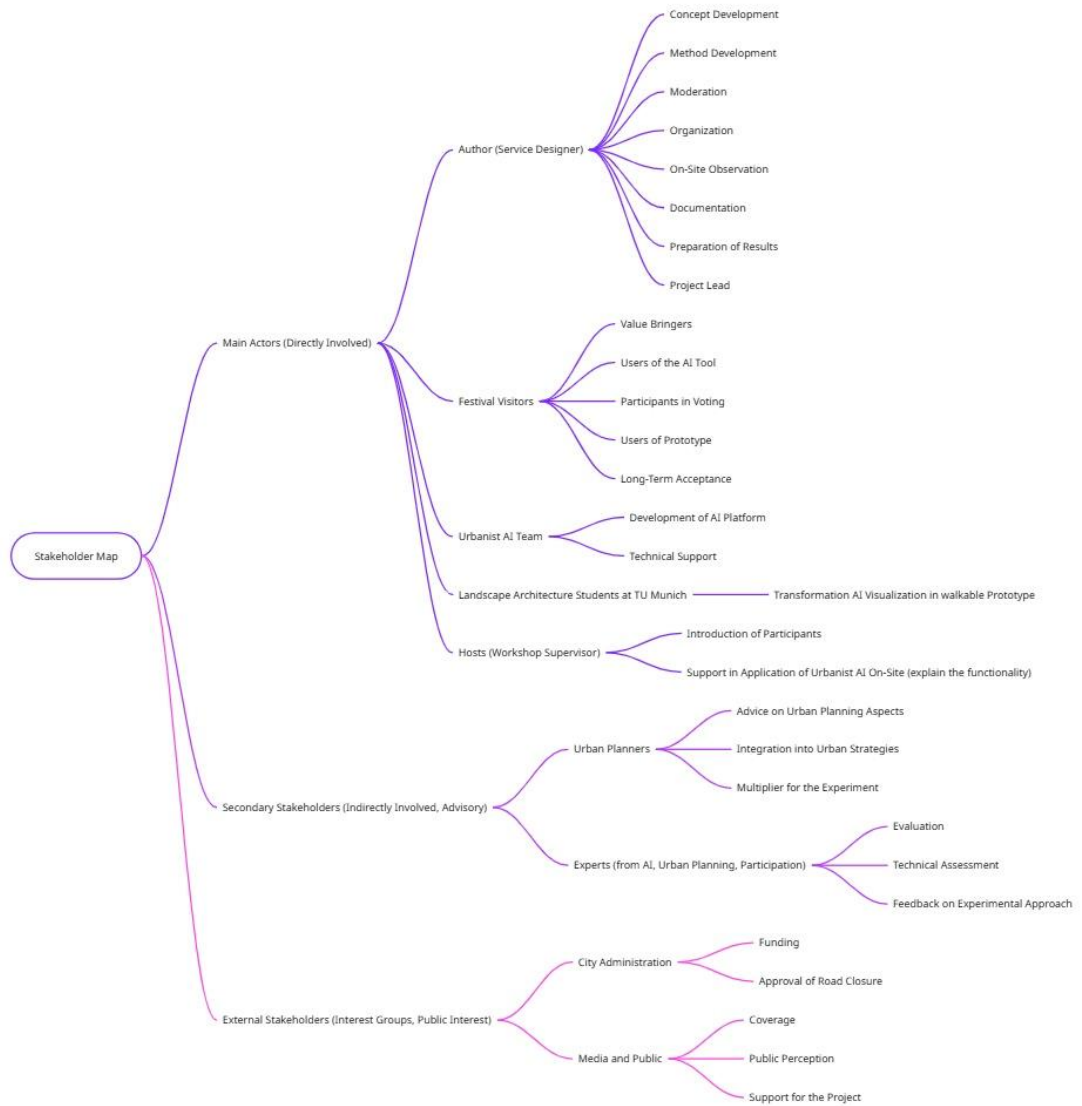
		walking .. 'City of short distances'.		
23	TE/GV	Some visitors expressed doubts about the long-term feasibility of such concepts ... especially with regard to maintenance and sustainability.	Question of long-term maintenance (scalability)	Observations
24	SC/TE	Maybe you can spend €10000... and then see if it's actually a good idea.	Prototyping saves budget and tests acceptance	AI Developer
25	SW	"A campaign like this can definitely stay in your head for longer."	Participation promotes lasting loyalty to the location	Landscape Architects Students
26	SW	Many designs explicitly emphasize meeting places for social interaction, for example Example with seating ...	Citizen designs focus on communal use	Observations
27	SW	Surprising moments arose ... from spontaneous conversations between strangers discussing the future of urban design.	Prototype stimulates dialog about the future of urban space	Observations
28	SW/GV	Making the process even more automatic is gonna increase even more the distrust that citizens have for public administration.	Automation increases mistrust	AI Developer

29	SW/IN/VU	Young people sat in the seating areas, families spontaneously spread out blankets ... Older visitors took advantage of the quiet Corners to linger in.	Diverse social use, spontaneous appropriation (value-in-use)	Observations
30	SW/PC	People are open to taking responsibility for their environment if you lets.	Co-production strengthens sense of responsibility	Urban Planner
31	TE/PC	Perhaps it is also a tool to get people involved in a citizen participation process in the first place.	AI visualization as a low-threshold entry enabler	Landscape Architects Students
32	TE/PC/VU	Ohh cool, I can play.	AI wakes you up immediately Curiosity/play instinct	Participation Moderator
33	TE	Stylistically, the visualizations are very different, ranging from realistic ... all the way to futuristic-experimental.	AI enables a wide range of designs	Observations
34	TE/GV	...the risk is that they would to replace the actual in- person participatory planning experience ... basically AI-agent- based simulation of participatory planning.	Warning: AI agents could replace real citizens	AI Developer

35	TE/GV	Critical voices ... on the difference between the visually impressive AI-generated image and the simpler, more pragmatic implementation.	Discrepancy between AI image vs. realization as technology/expectation gap	Observations
36	TE/GV/IN	To say 'I don't do participatory planning because I can simulate it' - that's quite scary ... it's gonna be so much cheaper.	Cost argument threatens to displace genuine participation	AI Developer
37	TE/PC	In the first planning workshop ... main categories were defined to provide festival visitors with initial design scenarios. to propose.	Pre-structuring facilitates entry into AI design	Observations
38	TE/PC	The setting of the AI workshop was deliberately designed as a temporary, low threshold location ... digital information boards with 'Test AI' drew attention ...	Low-threshold AI lab in public spaces as a participation magnet	Observations
39	VU	...it's simply about that you can use the space	Value is defined by actual usability	Landscape Architects Students
40	VU	Designs with a focus on greening and unsealing emphasize the ecological and climatic advantages visually.	Ecological quality of stay as a value	Observations

41	VU	On the first day, when the weather was rainy, the number of visitors remained modest ... On the second day, when the sun was shining, the number of visitors increased significantly.	Use (and value) is highly dependent on the weather and situation	Observations
42	TE/PC	Because you can talk directly over it	AI Ideation delivers directly Inspiration, topic of conversation	Landscape Architects Students
43	TE/GV	"Translation tool between everyday language and Planning systems".	SD tools as visualizers and mediators	Observations

Appendix 2: Stakeholder Map



Appendix 3: Photo Documentation



voted winner image



prototype is ready to be experienced



the venue - drone shots by Fabian Erlach



Appendix 4: Interview Guide - Public Space as a Service

(German Original translated to English)

Organizational aspects of the implementation

The interview lasts approx. 45-60 minutes.

It will be recorded (with consent) and transcribed, then anonymized.

Introduction & context

Please briefly tell us who you are and what you are currently doing in the context of urban planning, participation or technology.

What does “public space” mean to you personally - and what makes it lively or successful?

What experiences have you had with participation in public spaces - as a planner, facilitator or technology developer?

What role do you think digital tools - e.g. AI - could play in such processes?

Urban planning / administration

How do you experience the existing participation formats in your work - do they work? Where is there a problem?

What is currently preventing you (or your organization) from engaging with people earlier and more openly in planning processes?

Imagine someone brought you an AI-supported participation tool with colorful pictures - what would be your first thought?

What would have to happen for you to take such a format seriously and integrate it into a real process?

And more specifically: What would be helpful for citizens' ideas to really become relevant to planning?

What are your chances of anchoring participation as a strategic component of the planning culture in the long term?

What do you think of the “Public Space as a Service” concept - do you find it helpful or rather too abstract?

Participation moderation / co-design

Who do you reach well with your formats - and who not? Why is that?

How important is visualization, storytelling or “hands-on thinking” in your work?

Where do you see opportunities and risks when participation is supported by AI?

What would have to happen for such a format not to become a “technical gimmick” but to promote real dialog?

How can a municipality better support you so that you can engage in good, creative participation?

Do you have the feeling that participation is perceived more as an obligation or as a real opportunity?

How important is collective identity building for you when designing public spaces?

Tech / AI development

How do you rate the state of generative AI for participation - is it ready for real application?

What do you need as a developer so that your tools not only work, but are also used in a meaningful way?

Where do you see the boundary between “inspiration” and “manipulation” in AI-generated images?

How do you see the relationship between lay participation and technological control - how open can it really be?

What would you wish for municipalities or participation partners so that you can create good projects together?

To what extent do you think the idea of co-creation can be reflected in technical tools - and what is left out?

Reflection & outlook

What would have to change fundamentally so that participation is taken more seriously and systematically anchored?

What would you specifically like to see from a project like Public Space as Service - in terms of content, technology and institutions?

Are there things that you think are overrated in the current participation or digitalization hype?

Have you experienced an example that has strongly influenced your attitude towards participation or urban planning?

What advice would you give to people who want to use new formats to shape the city together?