Identifying value conflicts in urban transformations

The redesign of a public value co-creation tool for stakeholder dialogue

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Summary

Research Problem & Goal

The Dutch government is coping with several grand challenges in the living environment that call for major spatial changes, thus requiring large-scale area developments such as urban transformations. An urban transformation is the transformation of existing urban areas that are not conform the current and future standards, thus need to be transformed into attractive multifunctional areas. These areas are considered complex due to existing social and structural networks, notwithstanding the government is steering towards urban transformations in railway zones to preserve nature and agricultural grounds and because of the existing accessibility network. Urban transformation plans should be developed in cooperation with other public and private actors, due to the complexity of the spatial challenges and existing landowners and actors in the area. This can be achieved by public value co-creation. Public value can be defined as value that is beneficial to society, on which governmental bodies base their decision-making. Co-creation can be defined as collaborative problem solving where multiple public and private actors solve interconnected problems by sharing resources, ideas, and competences to produce innovative outcomes. Public value co-creation can be achieved by inviting several public and private actors with different backgrounds and practices to collaboratively solve interconnected problems and create an atmosphere with mutual understanding and trust.

Public value co-creation is especially useful in the front-end phase of an urban transformation project, as important decisions that affect the entire process are made. However, the involvement of both public and private actors can result in value conflicts, as they can have different views on value creation. It is essential that these conflicting values are managed, to avoid value destruction, disputes, and negative impacts on relationships. A promising solution to the management of public value co-creation and identification of value conflicts is an existing dialogue tool. The purpose of the existing dialogue tool is to create awareness about values, conflicting values, and coping mechanisms, and it consists of multiple infographics, cards, and icons to facilitate a co-creation session. However, this dialog tool is not designed for the complex context of an urban transformation. Therefore, this study redesigned this existing dialogue tool such that it could be used in the context of an urban transformation with multiple public and private actors in a railway zone of a medium sized city in the Netherlands. The redesigned dialogue tool should contribute to early identification of value conflicts in public value co-creation discussions in urban transformations.

Problem Investigation, Artifact Design & Validation

To reach the goal of this research, a design science methodology was applied consisting of three phases: problem investigation, artifact design, and validation. In the problem investigation phase, the problem context was first explored through a literature investigation. Thereafter, interviews with practitioners and experts were conducted to explore the practical perspective of the problem context. It was found in both the literature and practical investigation that there was a need for a methodological approach to discover and manage value conflicts in urban transformations, as it currently does not exist. A synthesis of the problem investigation was used as input for the design brief consisting of a design context, goal, and requirements for the artifact design. The artifact would be the redesigned dialogue tool and had to be applicable in context of an urban transformation with multiple public and private stakeholders. The goal was to discover values, conflicting values, and possible coping mechanisms by applying the artifact. One of the requirements was that it had to facilitate public value co-creation discussions.

Based on the design requirements, the existing dialogue tool was redesigned applying an iterative design process. In this process, a preliminary redesign of the dialogue tool was tested in a simulation of a public value co-creation process in an urban transformation project. This design was improved based on feedback collected through a survey and observations. The final artifact consists of several infographics, assignment cards, icons, actor cards, and a workshop design that can facilitate a discussion on values, conflicting values, and coping mechanisms.

To validate the final artifact, a similar simulation research was performed. Here, a fictional case of an urban transformation project in a railway zone of a medium sized city was constructed, and a public value co-creation setting was created by having public and private stakeholders represented by experts in the workshop. Data were collected through a post-simulation survey and observations. It was validated that the redesigned dialogue tool satisfied all the design requirements.

Conclusions & Recommendations

The workshop observations and post-workshop survey confirmed that the dialogue tool facilitated a public value co-creation setting, where participants collaboratively solved problems while sharing own resources, knowledge, and ideas. Further, the most important values of the participants were discovered and used in the workshop utilizing the actor card and corresponding infographics. Moreover, the infographics facilitated discussions about interpretation of values and conflicting values. Decision-making and reaching conclusions on coping mechanisms proved to be difficult in the simulation, so a vision for the urban transformation could not be formed. Nonetheless, from the results could be concluded that the outcomes could be useful in urban transformation projects, as participants were positive about applying the learning outcomes in their daily work. In conclusion, the redesigned dialogue tool can be used as a methodological approach by initiators and stakeholders in urban transformation projects in railway zones in medium sized cities in the Netherlands to get an overview of the perspectives of others, as well as to identify values, conflicting values, and coping mechanisms in a public value co-creation setting. The researcher recommends that stakeholders are included in the front-end of urban transformations, and that the redesigned dialogue tool is used to facilitate the early identification of value conflicts in co-creation sessions.

Samenvatting

Onderzoeksprobleem & Doel

De Nederlandse overheid staat voor grote uitdagingen in de fysieke leefomgeving die ingrijpende ruimtelijke veranderingen met zich meebrengen, en dus grote gebiedsontwikkelingen vereisen zoals binnenstedelijke transformaties. Een binnenstedelijke transformatie is de herinrichting of transformatie van bestaande stedelijke gebieden die niet voldoen aan de huidige en toekomstige normen, en dus moeten worden heringericht tot aantrekkelijke vaak multifunctionele gebieden. Zo'n binnenstedelijke transformatie wordt als complex beschouwd vanwege bestaande sociale en fysieke netwerken, desondanks stuurt de overheid aan op deze binnenstedelijke transformaties in spoorzones voor het behouden van natuur en landbouwgrond en door de bestaande toegankelijkheid van het gebied. Plannen voor binnenstedelijke transformaties moeten worden ontwikkeld in samenwerking met andere publieke en private partijen, vanwege de complexiteit van de ruimtelijke vraagstukken en de bestaande grondeigenaren en partijen in het gebied. Dit kan worden bereikt door co-creatie van publieke waarden. Publieke waarde kan worden gedefinieerd als waarde die gunstig is voor de samenleving. Dit wordt gebruikt door overheidsinstanties als onderbouwing voor besluitvorming. Co-creatie kan worden gedefinieerd als het gezamenlijk oplossen van problemen, waarbij meerdere publieke en private partijen middelen, kennis en vaardigheden te delen om innovatieve oplossingen te vinden voor complexe problemen. Co-creatie van publieke waarden wordt bereikt wanneer verschillende publieke en private partijen met verschillende achtergronden gezamenlijk problemen oplossen, en er een sfeer is gecreëerd van wederzijds begrip en vertrouwen.

Co-creatie van publieke waarden is vooral nuttig vroegtijdig in het proces van een binnenstedelijke transformatie, doordat er in de eerste fases belangrijke beslissingen worden genomen die invloed hebben op het vervolg. Het betrekken van meerdere publieke en private partijen kan echter ook leiden tot tegenstrijdige waarden, omdat zij andere opvattingen van publieke waarde kunnen hebben of andere waarden kunnen nastreven. Het is essentieel dat tegenstrijdige waarden in goede banen worden geleid om conflicten en negatieve relaties tussen partijen te voorkomen. Een veelbelovende oplossing om zo'n co-creatie proces van publieke waarden te begeleiden en om tegenstrijdige waarden te kunnen ontdekken is een bestaand waarde dialoog instrument. Het doel van de waarde dialoog is om bewustwording van waarde te creëren, tegenstrijdige waarden te ontdekken en coping mechanismen te ontwikkelen. De waarde dialoog bestaat uit verschillende praatplaten, opdrachtenkaarten, en pictogrammen om een co-creatie discussie te begeleiden. Echter is deze niet ontworpen de complexe context van een binnenstedelijke transformatie. De huidige studie heeft deze bestaande waarde dialoog herontworpen, zodat deze toepasbaar is in de context van binnenstedelijke transformaties in een spoorzone van een middelgrote stad in Nederland met meerdere publieke en private partijen. Dit zou moeten bijdragen aan het vroegtijdig herkennen van waarden en tegenstrijdige waarden in co-creatie van publieke waarden.

Probleemanalyse, Artefact Ontwerp & Validatie

Om een nieuw ontwerp te maken, werd een ontwerpgerichte methode toegepast met drie fase: probleem onderzoek, ontwerpen en validatie. In de fase van het probleem onderzoek werd eerste de probleem context verkend door middel van een literatuurstudie. Daaropvolgend werden interviews gehouden met experts en mensen uit de praktijk om de probleem context van een praktische kant te verkennen. Uit zowel de literatuur als uit het praktische onderzoek kwam naar voren dat er behoefte was aan een methodologisch benadering om tegenstrijdige waarden in binnenstedelijke transformaties te herkennen en te benaderen, aangezien dit momenteel niet bestaat. Door een synthese van het gehele probleem onderzoek konden de resultaten worden gebruikt in de specificatie van de opdracht van het ontwerp, bestaande uit de context, het doel en de specifieke eisen voor het ontwerp. Dit ontwerp wordt ookwel een artefact genoemd en is in deze studie de herontworpen waarde dialoog. Deze moet toepasbaar zijn in de context van een binnenstedelijke transformatie waarbij meerdere publieke en private partijen meedoen. Het ontwerpdoel was het herkennen van waarden, tegenstrijdige waarden en

mogelijke coping patronen door het toepassen van het artefact. Een van de specifieke eisen was dat het co-creatie van publieke waarden moest faciliteren.

Op basis van de specificaties en het originele instrument werden de materialen opnieuw ontworpen door middel van een iteratief ontwerpproces. In dit proces werd een voorlopig herontwerp getest in een simulatie van co-creatie van publieke waarden van een binnenstedelijke transformatie. Dit ontwerp werd daarna verbeterd aan de hand van de verzamelde feedback via een enquête en observaties. Het uiteindelijke ontwerp bestaat uit verschillende praatplaten, opdrachten kaarten, pictogrammen, actoren kaarten, en een workshop ontwerp die de discussie over waarden, tegenstrijdige waarden en coping patronen kunnen faciliteren.

Om het uiteindelijke ontwerp te valideren, werd een vergelijkbare simulatie opgezet. Hiervoor werd een fictieve casus van een binnenstedelijk transformatie project in een spoorzone van een middelgrote stad gemaakt. Daarnaast werd er een co-creatie workshop voor publieke waarden gecreëerd, met vertegenwoordiging van publieke en private belanghebbende partijen in een workshop. Gegevens werden verzameld via een enquête na de simulatie en door middel van observaties. Hieruit kwam dat de herontworpen waarde dialoog voldeed aan alle ontwerp eisen.

Conclusies & Aanbevelingen

Uit de resultaten kan worden geconcludeerd dat de waarden dialoog co-creatie van publieke waarden heeft gestimuleerd, waar deelnemers gezamenlijk problemen oplosten en eigen middelen, kennis en vaardigheden konden delen. Bovendien werden de belangrijkste waarden van elke deelnemer ontdekt, om ze daarna te gebruiken tijdens de workshop met behulp van de actorenkaart. Daarnaast hielp de waarden dialoog bij het herkennen van tegenstrijdige waarden en begeleidde het discussies over verschillende interpretaties van waarden. Besluitvorming en het komen tot conclusies over coping patronen bleek lastig te zijn voor de deelnemers van de simulatie, dus kon er nog geen overzichtelijke visie voor de binnenstedelijke transformatie worden gevormd. Desondanks, waren de deelnemers positief over het toepassen van de resultaten en geleerde lessen, dus kan er worden geconcludeerd dat de uitkomsten van de workshop nuttig kunnen zijn in binnenstedelijke transformaties. Tot slot, er kan worden gesteld dat de waarden dialoog kan worden gebruikt als methode door initiatiefnemers en belanghebbende partijen in binnenstedelijke transformatie projecten in spoorzone van middelgrote steden in Nederland om een overzicht te krijgen van de waarde perspectieven van andere partijen, en om waarden, tegenstrijdige waarden en omgang met deze tegenstrijdigheden te herkennen en te bespreken in een co-creatie omgeving over publieke waarden. De onderzoeker beveelt aan dat verschillende partijen betrokken moeten worden in de vroege fase van binnenstedelijke transformaties, en om de herontworpen waarde dialoog te gebruiken voor co-creatie van publieke waarde en het ontdekken van tegenstrijdige waarde.

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1   Introduction

1.1   Spatial Challenges

The Netherlands is coping with several grand challenges in the living environment (PBL, 2021). The challenges are, among others, related to a severe housing shortage, effects from climate change, and the energy transition. First, the housing shortage has become a national problem caused by a multitude of problems, of which the passive role of the government in the housing market since 2013 played a big role in the crisis (Nationale Woon- en Bouwagenda, 2022). Second, resilience, climate resistance, or climate adaptation are important challenges for the Dutch living environment (Rijksoverheid, n.d.-b). Due to climate change, the temperatures are rising, resulting in more extreme weather events like heavy rainfall or heat waves. In addition, the sea level is rising and there is a higher possibility of flooding. To cope with the effects of climate change, the Netherlands is steering towards climate adaptation (Rijksoverheid, n.d.-b), as there is a pressing need for climate change adaptation in the living environment. Closely related is the grand challenge of achieving the goals of the 2015 Climate Agreement of Paris as a measure for reducing climate change (PBL, n.d.). The agreements were mainly focused on transforming the energy system, by transitioning from fossil fuels to renewable energy sources. This is also known as the energy transition, and the ambition is to reduce greenhouse gas emissions with 80 – 95% by 2050. There are quite some renewable energy sources, like solar or wind and even nuclear energy. However, these solutions require adjustments to the living environment, the infrastructure both surface and subsurface, and a lot of space in the already limited available land of the country (*Ruimte voor klimaatadaptatie en energietransitie*, 2023).

The grand spatial challenges of the coming years call for major changes to the living environment, thus requiring large-scale area developments, urban developments, and urban transformations (PBL, 2021). The national government has outlined its goals regarding development in several programs (*Programma Mooi Nederland*, 2022; *Programma NOVEX*, 2022; *Programma woningbouw*, 2022). Currently, the spatial development plans are mostly focused on housing in combination with working and infrastructure, thereby neglecting other themes like climate adaptation and sustainable energy. It is advised by the Dutch Environmental Planning Agency [PBL] to shift the focus to creating more integral development plans instead of the current sectoral approach. The major changes can be implemented in existing urban areas or as expansions projects (PBL, 2021). Existing urban areas that do not conform to the current and future standards need to be transformed into attractive multifunctional areas considering solutions to the grand challenges (Verheul et al., 2019). This is called an urban transformation. Even though they are more complex due to the existing social and structural networks, they do not necessarily take more time than expansion projects as infrastructure to make those areas accessible has to be created (PBL, 2021). As a response to the housing crisis, the government has released a large-scale program with a regional approach to develop new housing in 17 locations in the Netherland while taking on an integral approach (*Programma NOVEX*, 2022). The locations are mostly within city borders to preserve nature and agricultural grounds, and around railway stations for easy accessibility and less dependency on cars. As a result, there will be fewer cars and space needed for parking, which in turn benefits the use of space and the climate.

With the limited availability of space in the Netherlands, there must be a balance between implementing solutions and taking risks regarding these grand spatial challenges (PBL, 2021). This requires political considerations and integral solutions from the government and governing authorities. Ideally, public authorities are basing their decisions on public value (Moore, 1995). According to Moore (1995), who first introduced this definition, public value can be defined as the contribution of value to society, thus, how to contribute to the common good. Due to the increasing complexity of the pressing societal challenges the public sector cannot achieve solutions on its own, and private actors need to be included (Torfing et al., 2021). Moreover, urban transformations are characterized by fragmented landownership and many different public and private stakeholders (Hobma et al., 2019). It is essential that these actors

are also included in the process and can recognize their values in the final development plans, to avoid uncooperating landowners (Beer, 2023). This is also recognized by Verheul et al. (2019), but they advise to find a balance between including stakeholders and working independently.

In response to the need to collaborate with other public and private actors, public bodies can use the governance tool public value co-creation in response (Torfing et al., 2021). Public value co-creation can be defined as a process where multiple public and private actors collaborate in a problem-solving process to enhance public value (Kitchener et al., 2023). Through co-creation, public authorities gain access to valuable knowledge and resources from private actors, that can be used to solve societal problems in new innovative ways (Torfing et al., 2021). This can widen the impact of their solutions and can produce better outcomes.

1.2 Front-end of Projects

Important decisions about values and risks in projects are made in the front-end (Candel et al., 2021), which can be defined as strategic project shaping and building of the business case (Edkins et al., 2013). This includes activities such as project definition and management of the involved stakeholders. Others define the front-end phase as the project planning stage (Samset & Volden, 2016), and it is characterized by high uncertainty, and low levels of information availability of stakeholders' interests and preferences (Williams et al., 2019). The front-end phase includes the generation and development of innovations that later will be used in the project (Kroh & Schultz, 2023). Therefore, it is essential that stakeholders' roles and responsibilities are recognized in the front-end phase and that synergies are established (Yang et al., 2022). Furthermore, collaboration by actors in a cross-sectoral setting in the front-end of a project creates the possibility to achieve integrative solutions (Bryson et al., 2006). In turn, this potentially creates more public value as it gives the actors the possibility to explore co-benefits and synergies and to avoid conflicts in the early stages (Bryson et al., 2006). However, with increasing complexity more stakeholders are involved in or affected by the project, thereby making it challenging to find synergies between all actors (Yu et al., 2017).

Public value co-creation can be particularly useful in this front-end phase, and it can facilitate the development of agreeable and innovative solutions (Liu et al., 2014). According to Liu et al. (2019), co-creation provided a great opportunity for stakeholders to define and create their values. Additionally, they discovered that co-creation sessions with knowledge exchange and discussions, can help client and market parties to communicate their value propositions. These findings are promising, but they suggest further research into co-creation beyond the infrastructure sector. This call has been answered by Toukola et al. (2023). They studied co-creation processes between a municipality and private company in the front-end of urban development projects. With their study, they identified value co-creation processes in the front-end and discovered the need for the involvement of both actors in each process. That is, because the basis for the following process is determined in the previous one, thereby also concluding that the first contact between the municipality and private company is a valuable starting point. They suggest future research should focus on including multiple value perspectives, as more stakeholders are involved in urban development (Toukola et al., 2023). Similarly, Candel et al. (2021) researched front-end value co-creation in housing developments, more specifically co-creation between the municipality and different housing developers. They concluded that value co-creation and the management of value conflicts can lead to more informed and sustainable requirements for the project. It is also suggested that future research can explore perspectives of other stakeholders that have an interest in the value co-creation process.

1.3 Value and Value Conflicts

The need for public authorities to collaborate with multiple private actors is challenging for urban transformations, due to fragmented landownership that characterizes many city centres in the Netherlands. Other actors, like citizens, business owners, or transportation companies, have ownership

of their land each with their plans and rights to redevelop their land (Hobma et al., 2019). This complicates the realization of solutions in the living environment as implementation of solutions requires their support. Furthermore, it is determined in the new environmental law that societal partners and citizens will have a more prominent role in the process of value creation, due to mandatory citizen participation (Rijksoverheid, 2023). Ideally, this can be done in the front-end phase of an urban transformation project where, as argued before, the scope for the project is established and decisions are made that impact the entire project life cycle.

A problem with creating public value, according to Moore (1995), is the possibility of conflicting values. In her research on value conflicts, Kuitert (2021) also concluded that value conflicts are the main issue when discussing new public values. These conflicting values can occur internally between departments within municipalities, internally across governmental layers, or externally between public and private organizations, like contractors, citizens, or other societal partners. Public and private parties are conflicting systems by nature, and public parties have a responsibility to create value that is beneficial to society while implementing political goals (Moore, 1995). Private organizations are profit-oriented and competitive by nature (Team, 2023). This results in a different view on value creation, as well as in different demands and goals. Value conflicts occur more frequently due to the complexity of the grand challenges and the involvement of both public and private in the process (Kuitert, 2021).

According to Mele (2011), it is essential that conflicting values are managed properly and constructive resolution is reached for value co-creation. As a result, it will strengthen the relationship between actors due to increased trust and understanding. If conflicting values remain unresolved or destructive resolution is reached, it negatively impacts the relationships resulting in diminishing trust, commitment, and cooperation between stakeholders. They also discovered that there is an interconnectedness between conflicts, meaning that if conflicts remain unresolved it can affect and involve other relationships in the network (Mele, 2011). A similar conclusion was reached by Toukola et al. (2023), as they state that value co-destruction can occur depending on how the process is managed. But, managing conflict does not necessarily mean that mutually beneficial solutions are found (Candel et al., 2021). Sometimes, trade-offs or compromises must be made as implied by value-co-creation processes (Candel et al., 2021), and correspondingly this is also recognized by conflict management as it argues to focus on relationships and not on maximizing outcomes (Mele, 2011). This ensures long-term satisfaction of all stakeholders, strengthens relationships, and leads to more co-created value and value preservation (Mele, 2011). Thus, it is important that conflicting values are managed in public value co-creation processes.

To create awareness about value systems and to assist actors in discovering and understanding conflicting values, Kuitert (2021) developed a dialogue tool. The tool is specifically designed to support public clients with safeguarding their public values when working with construction companies. The tool aims to create awareness about value systems of involved actors and helps the actors to discover and understand conflicting values. Furthermore, it provides understanding on how to manage these conflicting values with matching coping mechanisms. It should be applied at the start-up phase, to create awareness of potential value conflicts before they occur and to ensure proactive preparation for differing value dynamics later in the process. In the future outlook, it was argued that the tool could use refinement and additional testing. Furthermore, it was suggested to extend the usage of this tool to setting with more public and private parties, and even in situations of advanced participation such as co-creation. Hence, the dialogue tool is expected to be a promising solution to the management of public value co-creation and early identification of value conflicts.

1.4   Research Problem

To summarize, the grand spatial challenges of the living environment in the Netherlands, require large-scale developments considering an integral approach (PBL, 2021). Governmental programs steer

towards urban transformations within city borders close to railways stations (*Programma NOVEX*, 2022). Urban transformation plans should be developed in cooperation with other public and private actors, due to the complexity of societal challenges and existing landowners and actors in the area (Beer, 2023; Torfing et al., 2021; Verheul et al., 2019). This can be achieved by public value co-creation, where multiple actors collaboratively solve problems by sharing valuable knowledge and resources that can widen the impact of the solutions and produce better outcomes (Kitchener et al., 2023; Torfing et al., 2021). Public value co-creation can be especially useful in the front-end phase of an urban development project (Liu et al., 2019), where there is a need for research on taking perspectives of multiple stakeholders into account (Candel et al., 2021; Toukola et al., 2023). However, the involvement of both private and public actors can result in value conflicts, as they can have different views on value creation for the urban transformation (Kuitert, 2021). It is essential that these conflicting values are managed, to avoid value destruction, disputes and negative impacts on relationships (Mele, 2011; Toukola et al., 2023). A promising solution to the management of public value co-creation and identification of value conflicts is the dialogue tool developed by Kuitert (2021). However, it is not designed for the context of an urban transformation with multiple public and private stakeholders.

In addition, this study also answers the call for research on tools and techniques that can be used to manage internal and external stakeholders in the front-end of projects (Edkins et al., 2013), as well as the call for extending the usage of the dialogue tool in a different setting with multiple public and private stakeholders (Kuitert, 2021). Furthermore, more research into understanding value conflicts in project networks is needed, as well as research focusing on cooperation as conflict resolution (Mele, 2011), which is also considered in this study.

1.5   Research objectives

The aim of this study is to redesign an existing dialogue tool to contribute to the early identification of value conflicts in public value co-creation in urban transformations in railways zones in the Netherlands. The tool needs to improve the current discussions on values, value conflicts and value dilemmas in the context of an urban transformation and is meant for the front-end phase, preferably as the first contact of public and private actors on the same project. Moreover, it needs to enhance public value co-creation between multiple public and private actors. This research aims to redesign the dialogue tool by applying the design science methodology from Wieringa (2014). This methodology can be applied when the major activities in the study are designing an artifact and investigating this artifact in a context. According to Wieringa (2014) an artifact is something that serves a practical purpose and is created by people. In this study the artifact is the redesign of the dialogue tool and the context is an urban development case with multiple public and private parties will be investigated. The study follows the structure of the design cycle with a problem investigation, artifact design, and validation phase. In the problem investigation phase, the goal is to investigate the problem context by identifying, describing, explaining, and evaluating the problem that requires improvement of an artifact. This investigation is used as input for the design brief, consisting of information about the design context, design goal, and specific design requirements. In the artifact design phase, the artifact is designed through an iterative process thereby considering the entire design brief. In the validation phase, it is validated whether the artifact would contribute to solving the problem investigated in the first phase.

The design science methodology applied to this study translates into a problem investigation phase, with a literature and practical investigation that serve as input for the design brief. In the artifact design phase, an existing dialogue tool will be redesigned considering the design requirements derived from the problem investigation. The objective is to redesign the tool such that it facilitates a public value co-creation setting with multiple public and private actors in the context of an urban transformation project. In the treatment validation phase, it will be validated whether the designed artifact can contribute to the early identification of value conflicts in urban transformation projects, by applying it in a simulated co-creation setting.

1.6   Scope

The research will be conducted in the Netherlands. The Netherlands is a small densely populated country with limited availability of land, hence careful considerations and integral solutions to problems have to be made (PBL, 2021). This requires cross-sectoral collaborations between both public and private actors, thereby providing an interesting opportunity for the implementation of a stakeholder dialogue tool. Further, it will be limited to an urban transformation in the city centre of a medium sized city within a railway zone. The upcoming large-scale developments need to take place in both the large and middle large cities (*Nationale woningbouwkaart*, 2021), where many have outdated city centres and shopping areas that need transformations (*Impulsaanpak winkelgebieden*, 2021). Especially middle large cities are coping with a lack of expertise and labour force to execute these large-scale developments (Verheul et al., 2017). Therefore, the redesigned dialogue tool can be particularly helpful for middle large cities. However, the need for early identification of values and value conflicts in public value co-creation is recognized by researchers across countries and in other scale cities (Candel et al., 2021; Toukola et al., 2023), making this study also relevant across borders. Second, the scope of this research is limited to the front-end phase of an urban transformation. As explained in the introduction, here the project is strategically shaped, stakeholder management is determined (Edkins et al., 2013) and important decisions about value and risks are made (Candel et al., 2021). For an urban transformation project, the front-end is defined as the initiative phase in which the municipality will research the possibilities and determines the program (*Introductie en proces gebiedsontwikkeling*, n.d.). In other words, in this phase the vision for the project is determined, thereby providing opportunity for the artifact of this study.

1.7   Outline of the Report

This report follows the structure of the design cycle and is captured in a schematic overview in Figure 1. The report starts with chapter 2 Methodology, in which the design science phases are discussed in detail. In chapter 3 Phase 1: Problem investigation, a literature and practical investigation is presented, followed by the design brief that captures the design context, goals, and requirements, based on the results from the investigation. Chapter 4 Phase 2: Artifact Design includes the specifications of the final design, changes made to the existing dialogue tool and results from a test workshop as part of the iterative process. This is followed by chapter 5 Phase 3: Validation, where the results from a workshop to validate the final design in a simulated context are presented and discussed. In chapter 6 Discussion, the results and limitations of the study are discussed. Lastly, in chapter 7 Conclusion & Recommendations, the final conclusions are presented, and recommendations are given.
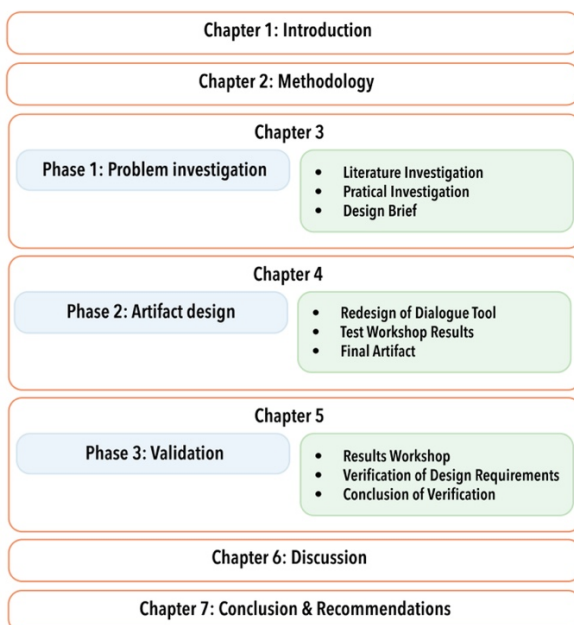
Figure 1: Outline of the report

2   Methodology

To redesign the dialogue tool such that it contributes to early identification of value conflicts, a design science research approach will be applied as the methodology of this study. Design science research is the design and investigation of a specific artifact in a specific context, where the aim is to reduce the problem (Wieringa, 2014). These problems can be defined as design problems, which require an analysis and demand some sort of change in the real-world with a solution in the form of a design/artifact. The interaction between the artifact and the problem context should contribute to solving the problem. The aim of this study is to redesign the dialogue tool such that it can improve the current discussions on values, value conflicts and value dilemmas in the context of an urban transformation.

The design science activities have been applied to this research, resulting in a methodology consisting of three phases as can be seen in Figure 2. The activities start with the problem investigation phase, where a literature and practical investigation are conducted. Here the problem context will be illustrated by identifying, describing, and explaining the problem from a theoretical and practical perspective. The outcomes are synthesized and captured in the design brief as requirements. The second activity is the treatment design, where solutions to the design brief requirements are determined and a concept design is presented. The specifications of the design, in other words the documentation of the decisions, are documented in this part. The third activity is the treatment validation, where the redesigned dialogue tool will be validated by applying it in a simulated public value co-creation setting in the context of an urban transformation. The researcher will be the facilitator of the co-creation setting, where the materials will be applied. Data for validation will be collected through a post-simulation survey and independent observations. The results will be used as input for the final design, discussion, and conclusions.

The outcome of this research is a validated artifact that can be used in front-end phase of an urban transformation to identify values and value conflicts with multiple public and private actors. In the upcoming chapter, the problem investigation, treatment design and validation phase will be explained in detail.
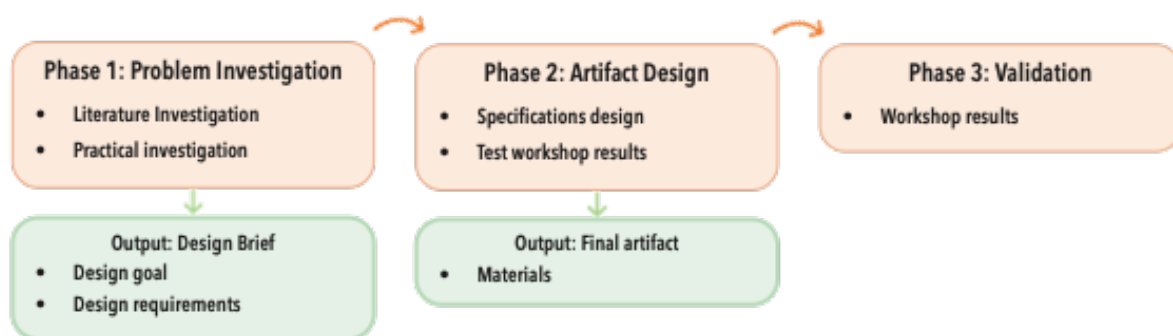
Figure 2: Schematization of research approach and methodology

2.1 Phase 1: Problem Investigation

The purpose of the problem investigation is preparing for the design of the artifact and learning about the problem to be treated (Wieringa, 2014). In this study, the problem investigation will consist of a literature investigation and a practical investigation. The literature review will provide general knowledge about the problem context and possible design solutions for the artifact. The practical investigation shows the practical point of view on the problem context and design of the artifact. Here, experts and practitioners are interviewed about their experiences in practice. Five knowledge questions below have been used as guidance for both the literature and practical investigation. The outcome of this phase includes a synthesized summary of the findings and a design brief with requirements for the design of the artifact. The requirements will be constructed based on the entire problem investigation. The knowledge questions are as follows.

1. What does the front-end of an urban transformation look like and what challenges can be encountered?
2. What are current practices and literature findings about values and value conflicts in urban transformations and how are they identified?
3. What types of public and private parties are involved in the front-end of an urban transformation project and how do they collaborate?
4. What is the motivation behind the set-up and design of the dialogue tool and what information can be taken from previous experiences?
5. How can a co-creation discussion be designed for early identification of value conflicts?

2.1.1 Literature Investigation

The literature investigation consisted of a scientific literature review into the problem context and the design of the artifact. The knowledge questions have been used to outline the relevant research topics. To find relevant literature for the first guiding question, governmental documents on urban transformations in the Netherlands have been consulted to discover what the process is expected to look like. Additionally, articles about the actual practices and challenges encountered during an urban transformation project have been consulted, for example from professors at the TU Delft with years of experience. The second guiding question called for a scientific literature review about values, public values, public value co-creation, value conflicts and coping mechanisms for value conflicts. For this, pioneering literature about public value from Moore (1995) was the starting point. Additional literature has been searched using the search engine SCOPUS and taking inspiration from other researchers in the field. The third guiding question has been answered by the literature review for second guiding question, and additional information has been collected during the practical investigation. For the fourth guiding question the PhD publication from Kuitert (2021) was examined to discover the motivation and design decisions for the dialogue tool. Moreover, Kuitert was contacted by the researcher about the use of the dialogue tool, resulting in additional information and access to the complete dialogue tool set. The last guiding question acknowledges what important design elements need to be considered when designing the concept artifact. This part includes a scientific literature review on design features. The outcome of this section was a synthesized summary of the results for each knowledge question.

2.1.2 Practical Investigation

The practical investigation comprised of interviews with experts and practitioners. An interview is a conversation where respondents give information to the researcher, and they are considered a flexible way of data collection (Van Thiel, 2014). That is because the researcher steers the conversation with questions and can ask supplementary questions to get a better understanding of the answers. The interviews in this research were semi-structured, meaning that questions were prepared in advance but there was room for the participants to steer the answers. Based on the knowledge questions, categories for the interview questions were established. The categories were [1] process of an urban transformation, [2] values and conflicting values, [3] public and private stakeholders in the process, [4]

collaborations between stakeholders, and [5] current tools and artifact design. The questions were determined by the researcher based on the knowledge questions and the findings from the literature review, thereby aiming to discover the practical point of view and thus asking about their perspectives and experiences. It followed a logical structure, starting with general questions and throughout the course of the interview more specific questions were asked. The questions can be found in Appendix I.

Two interviews were held face-to-face and two online using Microsoft Teams. They were individual and lasted about one hour. All interviews were audio recorded and automated transcripts were first reviewed by the researcher and then used to summarize answers to the questions. These were sent back for review by the participants and were compared and analyzed using Excel. This provided a clear overview of the findings and allowed for comparison of the answers. The section in the chapter presents the results and separates the answers from the experts and the practitioners to get a better understanding of the different points of view and experiences. In addition, it presents a synthesized summary of the results considering the knowledge questions.

In total four interviews were conducted, two with advisors and two with practitioners. The two advisors have years of experience working on area developments, urban developments, and urban transformations. They have taken on different roles and their answers include a combination of experiences, making them a useful source of information for this research. The goal of these interviews was to see whether they can generalize, find connections and/or are able to find comparisons between different projects. The two practitioners working on the same urban transformation project were interviewed. One is an urban planner for the municipality, in charge of collecting and drawing the vision of the municipality on the project and collaborations with private actors. The other one is a planner and in charge of the constructing the governance structure with other public parties. These two points of view on the same project provided a broad and more complete view on the urban transformation from the perspective of the municipality. The goal of these interviews was to gain insight in the current practices in a project and get a complete overview of the process. Additionally, the findings from the practitioners' interview have been used as input for designing a fictional case for the simulation.

2.1.3 Design Brief

The design brief used the input from the synthesized summaries of the literature and practical investigation to determine the design context, goal, and requirements for the final artifact. This way, the design brief is supported by the problem investigation. The design requirements are captured in a table in the corresponding section and their origin is referenced.

2.2 Phase 2: Artifact Design

The second phase constituted of designing the artifact. The starting point for the designing activities was investigating the materials from the existing dialogue tool (infographics, actor cards, assignment cards, icons) and the additional information sent by Kuitert (2023) as well as the design requirements from the design brief. The materials have been redeveloped through an iterative design process, which can be defined as an approach to continuously improve the quality or functionality of a concept or design (Fullerton, 2014). Central in the design process was the usability of the materials in the context of the scope. The usability can be defined as the extent to which specified users can use a product with effectiveness, efficiency, and satisfaction, to achieve a specified goal (Stone et al., 2005). To ensure the usability of the redeveloped materials, research on user interface design was consulted. User interface design focuses on the interaction between the users and the interface, as a good interface contributes to higher satisfaction, productivity and allows for better understandability (Stone et al., 2005). A good interface encourages interaction with the interface in a natural, easy, and engaging way, which allows the user to perform tasks effectively. Through an iterative design process the user interface, in this research the materials, can be evaluated and improved.

The design process started by finding design solutions to the requirements and iterating through different ideas. It was important to safeguard the purpose of the dialogue tool, and only make alterations so that it was serving the same purpose in a different context. After iteration, the redeveloped materials were tested in a test workshop. An additional advantage of having a test workshop, was to find out how the participants interacted with the materials. For this, the researcher simulated a value co-creation setting with five participants to discover the usability of the redeveloped materials. Participants represented an actor role, described on an actor card by the researcher. The roles were determined based on the problem investigation phase, and were developer, mobility, municipality, water board and local resident. The actor cards can be found in Appendix II. All participants had a civil engineering background and either worked for a consultancy firm or were studying a master, making them suitable for representing the actor roles in the test simulation. Furthermore, a fictional case was written by the researcher, that acted as input for the discussions. Most materials that were redesigned were tested.

After the test workshop, a survey was filled in by the participants about the usability and user interface of the test workshop. The survey was based on the categories from the design requirements, with a focus on materials, workshop structure and co-creation. What's more, the researcher made unstructured observations during the session and noted these directly after the session, such that improvements to the materials could be made. The results provided information about the usability and user interface of the redesigned dialogue tool and were gathered in an excel file to allow for easy comparison and interpretation. In the chapter, the specification details of the improved final artifact are presented, as well as the survey and observation results.

2.3   Phase 3: Validation

To validate whether the designed artifact can contribute to the early identification of value conflicts in urban transformation projects, simulation research has been performed. The purpose of the validation is to explore how the artifact will interact with its context, by setting up experimental research instead of observing it in the real-world (Wieringa, 2014). Thus, to validate the designed dialogue tool, simulation research has been applied. In this section first the design of the experiment is discussed, as well as the manipulated variables. Second, the analysis methods are presented.

2.3.1   Simulation Research Design

To study whether the materials met the design requirements from the problem investigation phase, the researcher set up a co-creation setting where specific participants applied the redesigned materials to a written case. It imitates reality but can be seen as an experiment. An experiment is a research method where the researchers interfere with the variables to observe changes (Field, 2002). An experiment where the researcher does not have full control over the manipulation of the variables, thus cannot guarantee randomization, can be regarded as a quasi-experimental design (Campbell & Stanley, 2015). A type of quasi-experimental design can be simulation or gaming research (Van Thiel, 2014). Van Thiel (2014) defines this as research where the researcher creates a case based on reality, where participants perform activities or do an assignment. In this type of research, participants can play different roles and the conditions can be set by the researcher. Through observation, qualitative data can be collected to discover the dynamics of the group, behaviour of participants, and outcomes of the simulation. Therefore, it provides useful information to validate the redesigned dialogue tool.

In this research, a simulation was created by the researcher that imitated a value co-creation setting where five participants playing a public or private actor role applied the redeveloped dialogue tool to an urban transformation case. By simulating a setting, it was validated whether the redeveloped dialogue tool could perform in this new context and how it could be improved for actual implementation. The simulation is further referred to as the workshop. The researcher manipulated the independent variables [1] time duration, [2] materials, [3] participants' roles, and [4] case. The dependent variables that have

been measured are the [5] behaviour, [6] interaction, [7] outcomes, and [8] experience. These will be discussed in the section data analysis. In the next section, the workshop will be explained in detail.

2.3.1.1 Workshop

The purpose of the workshop was to find an answer to the research question how the redesigned artifact could contribute to the early identification of value conflicts in a public value co-creation discussion in urban transformation projects. The researcher simulated a public value co-creation discussion with five participants representing stakeholders in an urban transformation of the city centre of a middle large city within a railway zone. The urban transformation case represented a general real-life case and was based on the interviews with the practitioners of the municipality and public documents about their current plans. During the interviews, both practitioners mentioned that there were two types of urban transformation processes occurring within the railway zone. The first one was transformation plans of the city centre with an urban character, where the municipality and two developers had the most landownership. The second area was an industrial estate with fragmented landownership, where only the public space was owned by the municipality. Both situations needed to transform to reach the goals of the municipality. The experts confirmed that these two types of situations occurred more often, thus in the description both were included as North and South. The description included an overview of the stakeholders with landownership, the situation of the city centre [North and South], some pictures to make it more visual and an overview of goals that the municipality wants to achieve. The full case description can be found in Appendix III.

The time duration for the workshop was based on the advice from Kuitert (2021) to take at least three hours for applying the set of materials. In the test workshop the time duration was tested, and it was determined that more time was needed. However, not all materials from the original tool were applied in the workshop, thus it was determined to be 2.5 hours with a pause of 10 minutes in-between. The redesigned materials from phase 2 of this research have all been applied in the simulation and will be explained in detail in the corresponding section. The researcher was the facilitator of the workshop and there was an independent observer not participating in the activities. Regarding the participants, in her conclusions, Kuitert (2021) advised to play the dialogue tool with not more than five participants. The roles were determined based on the practical investigation and their varied points of view and were a developer, water board, mobility [ProRail], urban planner, and a local resident. Initially, practitioners of these roles were approached for an interview to fill in the actor-card and to participate in the workshop. Several practitioners were interested in doing the interview, but only one had time to participate in the workshop. Thus, the four remaining roles of the actor-cards were played by consultants working as those roles or often working together with those roles. An example of an actor card can be seen in Figure 3, the rest of the cards can be found in Appendix II: Actor Cards. The roles are discussed below.

2.3.1.1.1 Developer

In general, a developer has the financial resources to execute the transformation plans, and sometimes has large landownership in the area (Personal communication, January 16 2024). In this research, the developer has large landownership and together with the municipality wants to discover the possibilities for developments. Therefore, it is important to consider their point of view for early identification of value conflicts in an urban transformation context. To fill in the actor-card, an employee of a developing company from Amsterdam was interviewed on their role, influences on the process, and values of the firm in an urban transformation project. The result can be seen in Figure 3. They were not able to attend the workshop. A director from a developing company eventually represented the role during the workshop, thereby using the actor-card and applying their own experiences to the workshop. Therefore, the role of a developer was played well and completely during the workshop.

2.3.1.1.2 Water board

The purpose of a water board in the Netherlands is to guarantee the water quality and water safety *(*Personal communication*, January 26 2024). They have an advisory role in an urban transformation and are mainly involved by issuing permits, to evaluate whether the development plans are interfering with the water quality or safety. Due to climate change, the government is steering towards more water and soil based spatial decisions, thereby making collaborating with water boards more relevant in transformations (Rijksoverheid, 2022). The actor-card was filled in with an advisor that is working for multiple waterboards representing different roles. The same advisor represented the water board during the workshop.

2.3.1.1.3 Mobility

An urban transformation usually revolves around the city centre, where multiple mobility related companies are operating (Personal communication*, January 11 2024). In the fictional case, there is a train station in-between the city centre North and South, and the station needs a transformation. In the Netherlands, the landowner of the stations is ProRail. Their purpose is to develop a functional and future-proof station and their role in an urban transformation can be anything between active and passive. They are an important stakeholder in for the area, as they have landownership, financial resources and are located centrally in the area. The actor-card was filled in together with two experts in station development from ProRail. Both could not attend the workshop, so the actor role is represented by an advisor with experience working with ProRail. As an advisor they need to represent different roles for different projects and clients, therefore they are suitable for representing a role in the workshop.
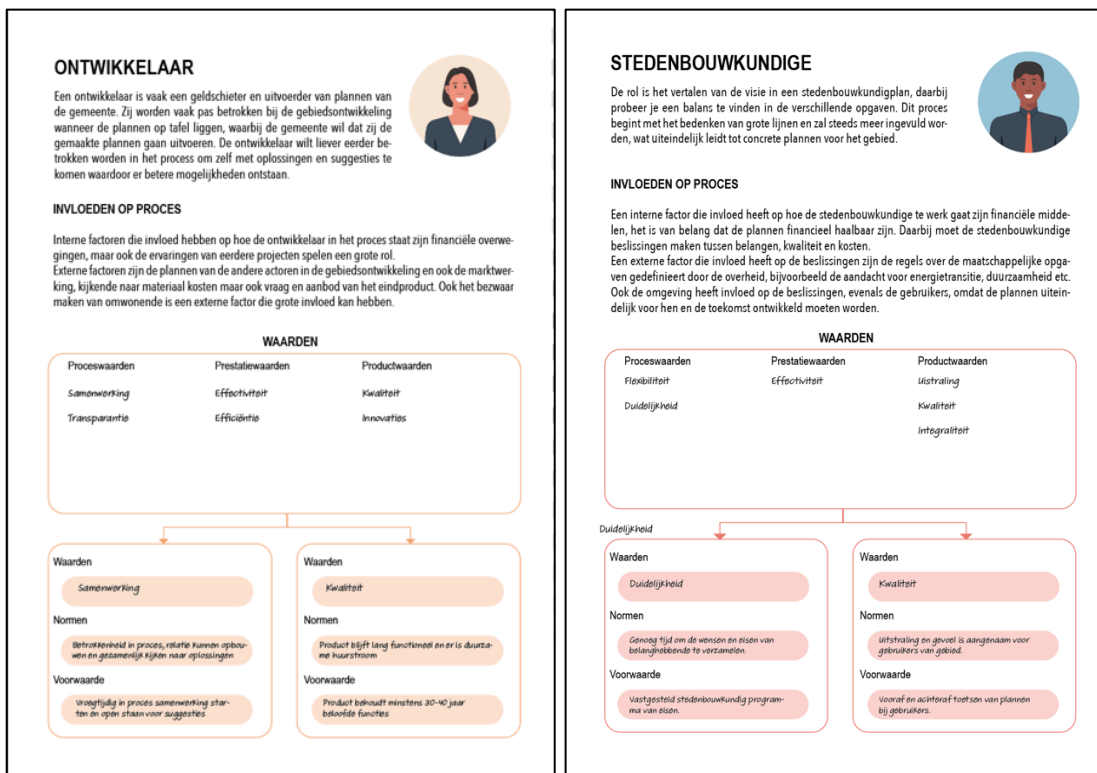
Figure 3: Example Actor-cards (Translation heading top to bottom: developer, influence on process, values)

2.3.1.1.4 Urban Planner

Within the municipality, the urban planner is responsible translating the vision for the urban transformation into an urban development plan (Personal communication*, January 26 2024). For this, they have to gather information from relevant stakeholders, as well as from departments within the municipality. Furthermore, they have to find a balance between interests, quality and costs. This makes them an important actor for the workshop. The actor-card was filled in together with an advisor with

years of experience working in urban transformations and developments, often working together with urban planners. This advisor also represented the role during the workshop, as they are familiar with how urban planners approach these kinds of sessions.

2.3.1.1.5 Local Resident
The last actor in the workshop is the local resident. They are getting more involved in the front-end phase of urban developments or construction projects, due to the newly introduced environmental code with the rule of mandatory participation. Usually, residents unite, and representatives are informed about the process and not actually involved (Personal communication, January 12 2024). They will be the users of the finished product and have another point of view on the area developments than the other stakeholders. Thus, they are also important in the workshop. The actor-card is filled in together with an expert on stakeholder participation, thus it represents their experiences with how residents are usually acting towards an urban transformation. They also represented the role during the workshop.

2.3.2 Data Collection

With the obtained data from these measures, it can be tested whether the final artifact meets the design requirements proposed in the design brief from the problem investigation phase. Consequently, an answer to the research question of this study can be formulated. To measure the variables two methods for data collection were applied: observations and a survey. Additionally, the output from the assignments was used as input for the results.

2.3.2.1 Observations

Through observation, knowledge about the studied phenomena can be acquired and additional information about underlying mechanisms that influence these phenomena can be investigated (Wieringa, 2014). Furthermore, it can add new dimensions to understanding the uses of new technologies and can provide information about any problems being encountered (Yin, 2009). Therefore, it provided useful information about the dynamics of the participants in the simulation. With the observations information about the behaviour of the participants, the interactions, the outcomes and their experiences were collected.

The observations were made by both the researcher and an independent observer, who was present in the room but did not partake in the workshop. The researcher wrote down unstructured observations during and after the workshop without consulting with the observer. Later, these observations have been categorized in an excel sheet. For the observer, the researcher created an observer manual with four categories of questions, see Table 1. These categories were based on the design requirements from the design brief of the problem investigation phase, and questions have been formulated based on theories from both the literature and practical investigation. The first category was case description, to discover whether the materials were applicable to the case description of an urban transformation, and thus could possibly be used in these contexts. The second category, co-creation, was created to observe whether characteristics of a co-creation setting were occurring. Thirdly, the category workshop structure provided knowledge about the flow of the workshop and whether the materials provided input for the discussions. The last category, learning outcomes, was created to find out what the participants had learned by doing the workshop that they will use in their work. The design requirement related to the materials was part of the survey, as only input from the participants was needed.

Table 1: Observation plan

Category	Question
Case description	Does the workshop facilitate discussions on plans and details about urban transformation projects?
	Do the participants converse about the case description? If yes, in what way?

Co-creation	Does the workshop stimulate collaboration?
	Does the workshop stimulate discussions between the participants?
	Does the workshop stimulate sharing of own ideas?
	Does the workshop stimulate expressing own perspectives?
	How was the atmosphere during the workshop?
	Does the workshop facilitate problem solving?
Workshop structure	Was the goal of the workshop clear?
	Were there many interruptions due to questions?
	Was the pace of the workshop good?
	Was the workshop a good guide for discussing values?
	Was the workshop a good guide for discussing conflicting values?
	Was the workshop a good guide for discussing coping mechanisms?
Learning outcomes	Can participants use information from the workshop in their daily job?
	Can participants use the outcomes from the workshop in their daily job?
	Did the workshop facilitate awareness about the applicability of this tool?

2.3.2.2 Survey

Secondly, data were collected through a post-simulation online survey filled in by the participants. Surveys can be used to collect data on the opinion and attitude towards certain phenomena, or to collect factual information (Van Thiel, 2014). In this study, the respondents were questioned about their experiences to gather additional data about the simulation. The survey was set up addressing the categories in accordant with the design requirements, but the experience of the respondent was not relevant for all categories. Furthermore, the survey was structured differently than the categories, so the survey felt shorter. The survey consisted of several closed-end statements, where respondents filled in a five-point Likert-scale with disagree, slightly disagree, neutral, slightly agree, or agree. For the last category, learning outcomes, two open ended questions about the use of the materials in practice were added, to give the respondents the freedom to answer it in their own way. The translated survey can be seen in Table 2, below.

Table 2: Survey statements

Category	Statement
Case description	De case description and the infographics were well connected
	I used the case description to formulate answers for the assignments
Co-creation	I liked participating in the workshop
	I was able to collaborate well during the workshop
	I got enough space to express myself during the workshop
	I was able to solve problems together with other participants
Workshop structure	I was able to make the assignments without consulting the facilitator with more questions
	There was enough time to make the assignments
	The presentation was complete and clear
	The presentation and materials were well connected
Materials	The appearance of the materials was good
	The infographics were intuitive
	The actor card was intuitive
	The information on the infographic was complete and clear
	The case description and infographics were well connected
	The actor card was useful during the workshop
	The assignment card matched the assignments well

	The presentation and materials were well connected
Learning outcomes	Through this workshop I learned something about values and conflicting values in an urban transformation
	I am more aware of the added value of early collaboration
	I think that the information from this workshop is relevant and applicable in my work on urban transformations
	I will apply the learning outcomes from the workshop in my work
Open statements	I think the workshop is/is not useful to put into practice, because…
	What should change about the workshop so it can be applied in practice?

2.3.2.3 Output

The last data used to validate the redesigned dialogue tool, was the output of the workshop. Participants of the workshop will fill in an assignment card and integral approach card. Their answers on those cards were used to analyse whether the participants understood the assignments, and whether interesting conflicting values could be found in this setting. The output has been used as additional support for the results of the observations and survey.

2.3.3 Data Analysis

To analyse the results and validate the redesign of the dialogue tool, the gathered data were collected in an excel sheet and structured in accordance with the categories from the design requirements. Per category, first the results of the survey were analysed to see whether the respondents were positive or negative about certain aspects. Thereafter, the observations from the independent observer were gathered about the corresponding category. The results of both the survey and observations were compared and synthesized conclusions were drawn for that specific category. The observations from the facilitator and the data from the collected output were only used in the analysis to support or contradict the claims from the survey and independent observer. This process was repeated for all categories and the results have been presented in the corresponding chapter. Consequently, the results were interpreted and discussed, thereby looking at the comparison between the results and the design requirements. At last, the validated results were summarized in a table to see whether the design requirements were met.

3 Phase 1: Problem Investigation

In this chapter the problem context is identified and explored through a literature investigation and a practical investigation. First, the literature investigation is presented which corresponds with the knowledge questions as explained in 2.1 Phase 1: Problem Investigation. Then a synthesized summary of the findings is presented. Second, the results of the practical investigation are discussed, which also includes a synthesized summary corresponding to the knowledge questions. In the final section of this chapter the design brief, with the design context, goal, and requirements for the artifact are presented.

3.1 Literature Investigation

3.1.1 Urban Transformation Process

According to Rijkswaterstaat, the executive organization of the ministry of Infrastructure and Water Management, an urban development is the art of connecting functions, disciplines, parties, interests, and financial resources to develop an area (*Introductie en proces gebiedsontwikkeling*, n.d.). It is an integral process where multiple spatial assignments and multiple public and private actors need to find their way in the final solution. Rijkswaterstaat defines two ways of approaching an urban transformation, classic and organic. The classic form applies project management principles with a specified assignment and end goal. Here, the government tries to actively acquire landownership to pursue their assignments, thereby shutting out local initiatives and leaving limited room for flexibility. With the organic approach the government creates a vision in collaboration with other landowners and steers towards a process without a clearly defined goal. This approach allows for local initiatives and there is room for flexibility in the defined plans goal. The government has a facilitating role (*Introductie en proces gebiedsontwikkeling*, n.d.).

An urban transformation is an area development in an existing urban environment, where typically there is fragmented landownership (Verheul et al., 2019). For years, municipalities have applied the classic approach to transform these urban areas, thereby needing substantial financial resources to obtain landownership of the entire area (Hobma et al., 2019). After the credit crash, banks were more hesitant to loan these significant financial resources and municipalities had to change their approach. According to Hobma et al. (2019) there are four other types of approaches for urban transformations: [1] plot development, [2] organic development, [3] developing apart together, and [4] merging ownership.

With the approach of plot development, landowners in the urban area develop their own plot separately and independently in line with a general vision. This vision is established by the initiator in collaboration with users, landowners, and other stakeholders. The development is gradual because the plots are developed independently, but it heavenly depends on the vision whether this strategy is effective as landowners need to find advantages in developments to support their decisions. The organic approach as described by Hobma et al. (2019) is similar to Rijkswaterstaat (*Introductie en proces gebiedsontwikkeling*, n.d.). The developing apart together approach is defined by the private-public collaboration, where actors recognize that boundary crossing collaborations are necessary to achieve an urban transformation. Public and private parties develop a global vision together, but they independently develop their own plots. The last approach, merging ownership, matches the classic approach as defined by Rijkswaterstaat (*Introductie en proces gebiedsontwikkeling*, n.d.), but differs in the way that the party trying to obtain ownership of the entire area does not have to be the municipality. Here, the goal is to obtain ownership as one party, which could be a public party, a private party, or a public-private collaboration. It is also important that agreements on plan development are made, for example on quality, ambition, and phasing.

A commonality of these four approaches is the importance of developing a vision for the area in collaboration with other stakeholders, preferably in the beginning of the development (Hobma et al., 2019). However, each stakeholder has different goals and ambitions for the area, making the involvement in the planning process challenging (Verheul et al., 2019). Involving too many may complicate and delay the process, whereas involving too little may create a tunnel vision that does not represent the needs of the area. Verheul et al. (2019) conclude that the involvement of stakeholders depends on the assignment and vision of the municipality.

However, determining the assignment or business case is known as another dilemma for urban transformation (Verheul et al., 2019). The wish for an urban transformation starts from a certain assignment, for example the need for housing, but can be combined with multiple other objectives. The objectives are often solutions to the grand challenges as described in the introduction, like climate adaptation, and an integral approach to these challenges ensures connection and achievement of synergies. This has a positive effect on the value creation and linking these challenges can give the municipality access to multiple governmental subsidies. However, it increases the complexity and lengthens the process of the transformation, thereby creating the possibility of making the urban transformation expensive. Additionally, it can create so much value that the prices of the realized houses or businesses are very expensive. So, the municipality has to find a balance between the complexity and the value creation of the urban transformation (Verheul et al., 2019). Again, this comes down to determining the vision for the urban transformation.

3.1.2 Public Value

Governmental decision-making should be based on public value (Kuitert et al., 2017), thus determining the vision for an urban transformation as municipality as well. The term 'public value' was first introduced by Moore (1995) as the value that contributes as a common good to society at large. It is achieved by public managers, who are responsible for allocating public resources such that it benefits the citizens. These resources can be seen as defining rules and regulations or physical resources such as money from taxation. However, using public resources limits the possibility of private consumption by individuals and private organizations, thus public managers must allocate resources in the most valuable way for individuals and private organizations. He conceptualized his theory in the framework known as 'the strategic triangle of public value' (Benington & Moore, 2011), developed for the public managers at the top of the hierarchies in public organizations (Bryson et al., 2017). With this introduction, Moore (1995) started the debate about the role of the government as an active creator of public value, instead of just a rule-setter, service-provider, and social safety net (Benington & Moore, 2011).

In more recent work, Benington & Moore (2011) discuss the original publication in a changed political economic and social context, described as 'complex adaptive systems'. In this new context with complex issues across systems, public value requires an understanding of interconnections, interdependencies, and interactions, which require a different approach to public management. This aligns with the critique on the theory of public value from Bryson et al. (2017), who discuss the increased complexity and wickedness of delivering public value by public managers and the need for adaptation of the framework. Most importantly, the framework needs to address the inter-organizational collaboration that is necessary to produce public value, thus different actors collaborating should be at the centre of the framework. Torfing et al. (2021) also critique the narrow view that public managers are the sole creators of public value and agree with Torfing and Sørensen (2019) that both public and private actors contribute to the production of public value. That is because the complex and pressing societal challenges cannot be resolved by the public sector alone. These contributions to the conceptualization of public value come from the public administration domain.

Kuitert et al. (2017) studied the public value theory in the context of the construction sector, which is the context of the current study. They discuss the work from Bruijn and Dicke (2006) who state that

public values reflect values that society believes are important and what they expect the government to ensure in the production of products and services. At last, they concluded that there is a growing need for public clients to collaborate with the market, or private parties, to achieve public values. Since this study aims to contribute to the body of knowledge on public value in the construction sectors, this is also the view on public value in this study.

3.1.3 Co-creation

3.1.3.1 Definition of Co-creation

This theoretical point of view on determining public value in collaboration with other public and private actors, aligns with the new governance structures as proposed by Hobma et al. (2019) to transform urban areas. Both state that alignment with key stakeholders is necessary to achieve the production of public value, which is done through collaboration. This more collaborative form of determining public value is known as co-creation. Co-creation emerged from the term co-production from the private sector, which started when companies wanted customers to actively participate in the service production by indicating their wants and needs (Torfing et al., 2019). Co-production refers to the bundling of different resources and capabilities for the production and delivery of services through an interactive process by providers and users.

According to some researchers, co-creation is interchangeable with co-production and can be used similarly in the public sector (Voorberg et al., 2015). Others disagree, arguing that co-production has conceptual limitations (Torfing et al., 2019). First, there is a restriction of only having two types of actors in the process, namely providers and users, which excludes important stakeholders in the public sector. Second, the goal of the process is the production of services and not on the creation of public value, which is a much broader term. Third, in co-production interaction, the service is usually already defined in advance but needs to be improved to meet the expectations of the users. This limits the development of disruptive innovations. Thus, co-production is a narrow concept covering the interactive process between service providers and users. In this research, the broad term of co-creation is adopted without the above-mentioned limitations.

The same researchers (Torfing et al., 2019), defined co-creation in the public sector "*as a process through which two or more public and/or private actors attempt to solve a shared problem or task through a constructive exchange of different kinds of knowledge, resources, competences and ideas that enhance the production of public value either through a continuous improvement of outputs or outcomes or through innovative step-changes that transform the understanding of the problem or task at hand and find new ways of solving it*" *(Torfing et al., 2019, p. 7)*. More recently, researchers defined public value co-creation as "*a collaborative problem-solving process through which two or more public and private actors try to enhance public value through a constructive exchange of knowledge and resources*"*(Kitchener et al., 2023, p. 2)*. These definitions capture different aspects of the concept of co-creation also described by other researchers, explained below.

First, the enhancing ability of co-creation on the production of public value and innovation by exploiting input from multiple actors is characterized, and has also been acknowledged by Torfing et al. (2021). They even state that public value and co-creation are mutually reinforcing, meaning that when individual components work together, they can produce greater outcomes. A second aspect is the collaborative nature of the process between different public and private actors. This collaboration is necessary due to the wickedness of the pressing societal issues that need innovative solutions, which cannot be achieved by the public sector alone (Torfing et al., 2021). They need knowledge and other valuable resources from the private sector complementary to what they already have to widen the range and impact of their solutions. Third, Ansell and Torfing (2021) assert that a public value co-creation process can be used as a public governance tool for organizing societal resources and solving wicked problems in response to new and challenging conditions. Although this is not directly stated by the two definitions, it is implied

that the public sector uses co-creation as a problem-solving governance tool. Thus, from these aspects and definitions, it can be concluded that co-creation can enhance public value and can be used as a collaborative public governance tool to find innovative solutions to societal problems.

Table 3: aspects of co-creation concept

Aspect	Description	Source
Collaboration	Multiple private and public actors share knowledge, resources, and ideas.	Kitchener et al. (2023) Torfing et al. (2021)
Solving interconnected problems	Actors attempt to solve a wicked or shared problem by collaborating.	Ansell and Torfing (2021) Torfing et al. (2019) Kitchener et al. (2023)
Production of outcomes	Co-creation enhances the ability to produce outcomes by getting input from multiple actors in a constructive way.	Kitchener et al. (2023) Torfing et al. (2021)

3.1.3.2 Public Value Co-creation Process

There are different ways of applying the concepts of co-creation in an urban transformation process. In their research on Urban Development Projects [UDPs], Toukola et al. (2023) defined four processes where value was co-created in the front-end of the UDP projects of which the first and second are within the scope of this research. The first value co-creation process is zoning, where the requirements and standards of the projects are created and boundaries for future projects are set. The second process is exploring the feasibility of the project, where time and resources are invested to explore the opportunities. In these processes the municipality has a more determinative role in the co-creation process. They argue that the first contact between a municipality and the private actors can potentially be a valuable starting point for value co-creation. Furthermore, they concluded that actors need to be involved in each process, as decisions in each phase impact the next.

Co-creation processes have different components on macro-level, as collected and discussed by Candel and Paulsson (2023). First, each process consists of several public and private actors. They can be almost anyone who can contribute to the production of public value (Torfing et al., 2019). For example, the public actors can be politicians, public managers, or waterboard employees, and the private actors can be citizens, private corporations, representatives of civil groups, housing corporations, and other service users. Second, these actors have different practices depending on their responsibilities and objectives, for example, policy analysis or organizational design (Candel & Paulsson, 2023). Third, the actors operate in different arenas, which can be defined as spaces where actors meet each other to collaborate on problem-solving processes. These arenas contribute to the production of public value and can be at different levels, such as on individual, group, organizational, regional, provincial, national, or even international levels (Bryson et al., 2017). These levels are not strictly separated but should be approached as multiple intertwined arenas, which can also be defined as platforms. The last component is the function of the co-creation process, which translates to the purpose or goal of the co-creation process (Candel & Paulsson, 2023).

In addition, Toukola et al. (2023) found several characteristics on micro-level that influence value co-creation processes. First, mutual understanding and trust have a significant impact on value co-creation due to their influence on relationships in the project organisation. Second, personal chemistry between the participants of the co-creation setting significantly influences the process, as it affects the ability to reach mutual understanding and trust. Lastly, collaborative activities between actors, for example engaging in a shared planning, can potentially foster opportunities for value co-creation, especially during a kick-off session. These macro- and micro-level components of value co-creation have been summarized in Table 4.

Table 4: Components of co-creation processes

Level	Component	Source
Macro-level	Several public and private actors	(Candel & Paulsson, 2023) Torfing et al. (2019)
	Actors with different practices	Candel and Paulsson (2023)
	Actors operate in different platforms	Bryson et al., 2017 Candel and Paulsson (2023)
	Purpose of the process	Candel and Paulsson (2023)
Micro-level	Mutual understanding	Toukola et al. (2023)
	Trust	Toukola et al. (2023)
	Personal chemistry	Toukola et al. (2023)
	Collaborative activities	Toukola et al. (2023)

3.1.3.3 Actor Involvement in Co-creation Processes

Related to the function, actors, and practices of co-creation processes, Voorberg et al. (2015) identified three different types of actor involvement in co-creation: co-implementer, co-designer, and initiator. Co-implementer means that actors only perform some implementation tasks, whereas the public organization decides upon the solution, policy, or tasks beforehand. As co-designers, the actors participate in the designing of the service, but the process is still initiated by the public organization. In the last involvement type, initiator, the actors initiate the co-creation process, and the public organization follows them. The type where the actors act as co-implementers has been researched the most (Voorberg et al., 2015). They conclude that the concepts of co-creation and co-production can be used interchangeably, and thus only looked at citizen involvement in the process. In this research, as supported by others, the concepts are defined differently, and other actors can also be involved in the process. Therefore, it is asserted that the different types can be generalized to other types of actors, and the current study investigates the co-creation process with actors as co-designers.

Co-creation on different organizational levels influence the context and actors involved in the process (Torfing et al., 2019). At the organization level with the goal of *service provision*, the public actor is the service provider and the private actors are end-users. It is characterized by a fixed context and closely connected actors; thus co-creation can make the solutions more fitting for the end-users. In institutionalized contexts with many public and private actors with varying levels of power and interest, the function of the process can be *public problem-solving*. It can be challenging to facilitate co-creation, due to many actors that can have little connection to each other. The last function of a co-creation process can be *public regulation*, characterized by a stable context with a clear set of stakeholders on a national or supra-national level. This creates a large distance between public and private actors in the co-creation process, thereby making it difficult to achieve co-creation. The importance of the context on the public value is also argued by Ansell and Torfing (2021). Thus, actors in the public value co-creation process can be anyone who contributes to the production of public value depending on the level and/or context of the public value co-creation process.

3.1.4 Value Conflicts

3.1.4.1 Nature of Value Conflicts

During a public value co-creation process, multiple private and public actors interact and express their values regarding the results. Value can be defined as the beliefs from individuals or groups that something they consider most important and worth pursuing (Dictionary, n.d.). A distinction can be

made between public value and private value. As explained before, public value refers to the value that contributes to the collective or society at large (Moore, 1995), whereas private value refers to values related to individuals or private organisations. Kuitert et al. (2017) created a public value framework based on three types of public values that will be adopted in this research: procedural, performance, and product. Procedural values are related to the ethical way to act and are related to the process. Performance values are related to how a certain goal is reached, by efficiency or effectiveness. Product values are related to the product itself and its ability to meet the interests or needs from the actors.

The difficulty of public values according to De Graaf et al. (2016), is that they are incompatible and incommensurable, meaning that values do not have a measuring unit, cannot be compared, and that pursuing certain values limits the possibility of other values to be achieved. Therefore, value conflicts can arise in co-creation interactions (Kuitert, 2021). A conflict means that there is a clash between differing perspectives, interests, objectives, values, or even behaviours (Mele, 2011). These conflicting values can occur internally within an individual or within a department within an organization, this is defined as actor-level conflicts. They can also occur internally across different departments or governmental layers, which is defined as organization-level conflicts. Furthermore, they can occur externally between public and private organizations, like contractors, citizens, or other societal partners.

Public and private parties are conflicting systems by nature (Moore, 1995). Public parties have a responsibility to create value that is beneficial to society while implementing political goals. Private organizations are profit-oriented and competitive by nature (Team, 2023). This results in a different view on value creation, as well as in different demands and goals. Value conflicts occur more frequently due to the complexity of the grand challenges and the involvement of both public and private in the process (Kuitert et al., 2017). The contradictions can occur due to different interpretation of values, for example sustainable can be interpreted as long-lasting or environmentally friendly, or due to dominance in values, thus between different types of values.

In the dialogue tool and related presentations, Kuitert (2023) identified four causes for conflicting values between parties: [1] management approach, [2] professional values, [3] internal relation between actors, and [4] phases. The management approach conflicts are caused by different governance modes of organizations, traditional, markets or networks, and the associated values. Conflicts caused by professional values are occurring due to characteristics of the profession, like work processes, scale, or culture. The relation between actors can cause conflicts due to hierarchical processes or contractual relations if looked at vertically, or due to different values of equal actors if looked at horizontally. Lastly, conflicts caused by phases can occur due to dominance of conflicts in different phases, for example the department urban planning and delivery and management might have a different interpretation of quality.

3.1.4.2 Coping with Conflicting Values

Value conflicts are only perceived negatively if they are not managed properly and result in disputes or dilemmas (Kuitert et al., 2019). Thus, when conflicts arise, value trade-offs have to be made and dilemmas have to be addressed, which is especially challenging in complex environments (Kuitert et al., 2017). To create sustainable value, it is necessary to find a balance between the different values and thus define a coping pattern. Actors will act differently depending on whether the actor sees the conflict as a threat or an opportunity (Kuitert, 2023). If the actor sees it as a threat, they will act defensive to avoid confrontation as the outcome is most probably your values or their [or/or]. They will either choose to disconnect conflicting elements to avoid confrontation, or will look for compromises where both parties have to give in. For the latter, it is necessary that actors define minimum standards for their values, as they have to give in to a certain degree to find a compromise. If the actor sees it as an opportunity, they will try to combine values by looking for synergies and the outcome is both values are

secured [both/end]. Their goal is to find a balance between the conflicts and eventually to find a consensus.

Kuitert et al. (2019) researched conflict management and coping theory in relation to the positions where the conflicts occurred in the phases of the project. Based on their data they identified three coping patterns looking at the time dimension, namely Deferral, Prolongation and Anticipation. In addition, they identified four coping patterns regarding the spatial dimension, namely Prevalence, Relegation, Aggravation and Coincidence. They are explained in Table 5 below.

Table 5: Coping patterns adapted from Kuitert et al. (2019)

Dimension	Coping Pattern	Explanation
Time	Deferral	Situations where value delivery is delayed to another project phase, where engagement with other value systems is possible.
	Prolongation	Situations where after the conflict, coping mechanisms take place over a longer period. This can enable postponement of decisions and allows for engagement with other value systems.
	Anticipation	Situation where the coping approach takes place at the same time as the conflict.
Spatial	Prevalence	Situation where network levels are crossed by using power relations and positions to determine the coping pattern at a higher level than at which the conflict takes place, referred to as a top-down approach.
	Relegation	Situations where the coping approach occurs at a lower level than at which the conflict takes place, referred to as bottom-up.
	Aggravation	Situations where network levels are crossed for decisions in assessment and monitoring, to integrate value systems. Decisions are embedded through formalization.
	Coincidence	Situations where network actors work parallel at the same network level in order to cope with the value conflicts.

3.1.5 A Dialogue Tool

Since managing conflicting values is essential to prevent value destruction and negative relationships between actors, Kuitert (2021) developed a tool that creates awareness about the impact of value systems on achieving public value and brings value-based opportunities into alignment. The tool is called 'speaking of values' and can be used to stimulate a value dialogue between different actors to get insight and possibly achieve co-creation. More specifically, it can be used to identify the main challenges when organizing the safeguarding of public values as a support for public construction clients. It has three main tasks identifying value systems, understanding value dilemmas, and understanding how to deal with the complexity of those value systems. The author developed three infographics (Dutch: praatplaten), one for each main task. The dialogue tool enhances the current level of awareness about the different values of the actors and enables alternative ways of determining the public value by collaborating. Interactions in public value co-creation processes are characterized by actors stating their values, discussing value conflicts, and finding value dilemmas. Thus, this tool can be useful in guiding the co-creation processes to discover the value dilemmas.

The tool is made for public construction clients and actors that they encounter while commissioning their works (Kuitert, 2021). More specifically, the tool has been designed for the start-up phase, because the impact is potentially the largest and there is a lot of the uncertainty. It is intended to discover the value complexities and to develop tactics for dealing with it, specifically looking at the impact of the new value X on the existing values. The value implementation process should be determined before the application. This way, the core actors related to this process should be invited. The actors will receive an actor card and will be playing the tool in a participatory setting.

The 'speaking of values' tool was empirically tested in a few [online] sessions, and the following conclusions have been drawn (Kuitert, 2021). First, it is recommended to restrict the number of participants to five and recommended to take at least four hours for a complete session, thus applying all three sheets. It is possible to split up the sheets in multiple sessions. Second, it is recommended that the moderator should encourage the participants to think differently to allow a creative process to arise. The moderator can ensure this creative environment by respecting the ideas and contributions of the participants and encouraging different ideas and suggestions. Last, the goal should be to create awareness, not to be extensive and complete.

As the tool has been developed for commissioning construction works, it is not designed for dealing with values in the complexity of an urban transformation project. Here, more public and private stakeholders are involved, which can result in more conflicting values. In addition, the tool is developed for commissioning new works for which the values are already known, usually because the commissioning party is the landowner. In an urban transformation, there are many landowners thus the design of the area is decided upon much later. Therefore, this research will redevelop this tool such that it fits the context of an urban transformation in a middle large city in the Netherlands.

3.1.6 Design Elements

The dialogue tool is intended for a co-creation setting, thus in this section design elements that stimulate co-creation are discussed. As mentioned, co-creation emerged from co-production, which can be defined as customer collaboration or participation in the final product for businesses (Leino & Puumala, 2021). In business management literature, Frow et al. (2015) developed a co-creation design framework is a new approach to identify innovative opportunities for business managers. Through a literature analysis and several interviews, they identified six dimensions of co-creation and discussed for each dimension several categories. These categories are related to co-creation in business management, but the identified dimensions comprise the key components of co-creation and could be transferred to urban transformation projects. The dimensions are: [1] co-creation motive, [2] co-creation form, [3] engaging actors, [4] engagement platform, [5] level of engagement, and [6] duration of engagement. The first refers to the goal of the session, the second to the type of actor involvement, the third to the actors in the process, the fourth to the content, the fifth to how actors should behave, and the sixth to the duration of the session.

Although co-creation literature is emerging, there are very few scientific articles about the set-up and design characteristics of a co-creation setting in an urban development context. Thus, to find more specific design elements, elements and characteristics of workshops and workshop facilitation are gathered for inspiration. A workshop can be defined as a meeting or brief intensive educational program where a small group of people engage in an activity or discussion about a particular field (Merriam-Webster, n.d.-b). A workshop design is dependent on several elements, characteristics or variables that determine the flow and outcomes of the workshop (Healey et al., 2015). Papamichail et al. (2007) developed a framework for analysing facilitation techniques for workshops on Problem Structuring Methods [PSM]. According to Mingers and Rosenhead (2004) PSMs are especially useful in workshops where participants are discussing complex problems involving multiple actors, uncertainties, conflicting

objectives. Hence, the produced framework for analysing workshop facilitation techniques for PSMs is also applicable to this research. With their research, Papamichail et al. (2007) explored facilitation practices for PSMs and produced a framework for studying and assessing facilitation practices in decision workshops, see Figure 4. The artifact in this research will also operate in complex environments with problems involving multiple actors, uncertainties, and conflicting objectives. Therefore, the produced framework can be used to find relevant facilitation variables that the artifact needs to address.
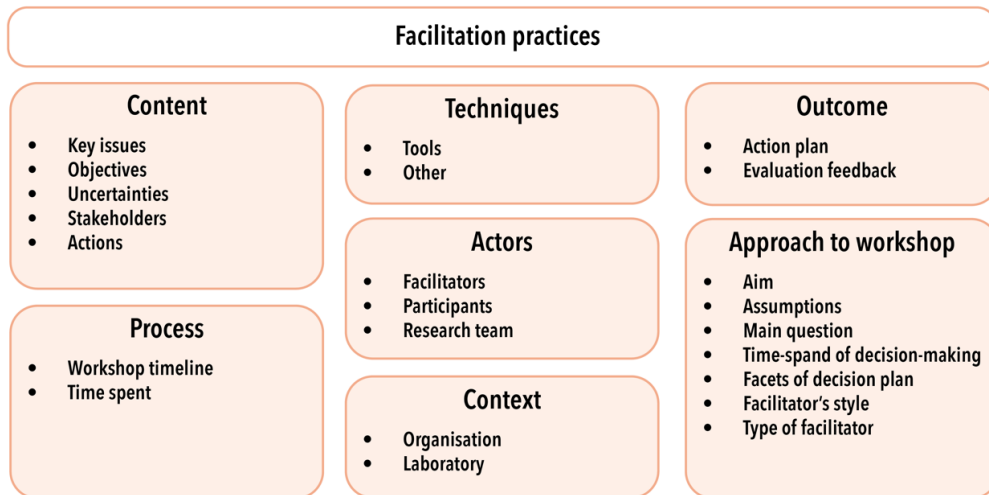
Facilitation practices

Content
- Key issues
- Objectives
- Uncertainties
- Stakeholders
- Actions

Process
- Workshop timeline
- Time spent

Techniques
- Tools
- Other

Actors
- Facilitators
- Participants
- Research team

Context
- Organisation
- Laboratory

Outcome
- Action plan
- Evaluation feedback

Approach to workshop
- Aim
- Assumptions
- Main question
- Time-spand of decision-making
- Facets of decision plan
- Facilitator's style
- Type of facilitator

Figure 4: Conceptual framework for analysing facilitation practices (Papamichail et al., 2007)

The variables of the facilitation practices are as follows. The content relates to the content of the discussions, and include the identification of key issues, objectives, uncertainties, stakeholders, and actions that can have an influence on the discussions. The process is the process that is followed during the workshop, including a timeline with the sequence of main events and the time spent on each event. The techniques relate to the techniques applied by the facilitator during the workshop, which include the applied tools and other methods for facilitating the workshop. The actors include the facilitators, the participants and the research team that make observations or notes for research purposes. The context relates to the setting of the workshop, whether it is facilitated in an organisational setting [real life] or laboratory setting [simulation]. The outcome includes the action plan and evaluation feedback from the participations. Lastly, the approach to the workshop relates to the aim, the assumptions, main question, timespan of decision making, facets of the decision plan, facilitators style and type of facilitator (Papamichail et al., 2007).

Other research on designing situations with complex environments suggest the application of the Institutional Analysis and Development framework (Warbroek et al., 2023). The framework can be used to identify types of variables across institutional arrangements (Ostrom, 2011). At the centre of the framework is an action situation, defined as a situation where several actors with certain positions interact to achieve potential outcomes. Although the purpose of the framework is not designing a workshop for collaboration, the elements of uncovering the institutional variables and linkages from the framework can provide a starting point for discovering what elements are important for action situations where actors make decisions. The tool for a co-creation setting designed in this research can be seen as an action situation as described by Ostrom (2011). The internal structure of the action situation is dependent on several rules as presented in Table 6.

Table 6: Rules for action situations (Ostrom, 2011)

Rules	Description
Position rule	The positions and roles of the actors in the situation
Boundary rule	How actors participate in the situation

Choice rule	What actions the actors can take; thus what choices and attitudes are allowed
Information rule	What type of information is shared and in what way
Scope rule	The goal and vision for the situation and outcome
Payoff rule	The distribution of the costs and benefits
Aggregation rule	How decisions in the action situation are made

In their research on co-design processes in the health care domain, Zechmeister-Koss et al. (2023) identified several facilitation and hindering factors to determine the influence of specified co-design processes. In their research, several public and private actors with different background participated in their study, making their methodology also interesting for this research. They used the key facilitating and hindering factors identified by Drahota et al. (2016) in a systematic literature review, to evaluate whether the co-design processes were benefitting or hindering the interactions. For this study only the facilitating factors are interesting to find design elements for a co-creation setting. The facilitating factors are presented in Table 7 below, divided into interpersonal and operational levels (Drahota et al., 2016).

Table 7: Facilitating factors (Drahota et al., 2016)

Level	Facilitating factor
Interpersonal	Effective conflict resolution
	Clear roles/functions of partners
	Effective and/or frequent communication
	Good relationships
	Shared vision, goals and/or mission
	Respect among partners
	Trust among partners
Operational	Positive community impact
	Good selection of partners
	Mutual benefits for all partners
	Well-structured meetings
	Good quality of leadership

Lastly, design elements influencing the achievement of certain outcomes have been researched. Healey et al. (2015) researched workshop characteristics for strategy workshops in organizations and found four groups of design characteristics that have an influence on three categories of outcomes: organizational, interpersonal, and cognitive outcomes. Although the authors focused their research on strategy workshops, their findings show a relation between outcomes and design features that can be applied more generally. They developed four categories of design characteristics: [1] goals and purpose, [2] routinization, [3] involvement, and [4] cognitive effort. These four categories of variables show the general features of a workshop that need to be addressed. The first category, goals and purpose, is about clearly defining and setting the goal of the workshop. On individual level, this is vital in achieving the desired outcomes, energizing participants, and keeping on track. On group level, it develops group identity and builds cohesion thereby improving the performance of the group. The second category, routinization, refers to either pursuing routines or breaking away from routines through workshop design. The third category, involvement, refers to the involvement and participation of actors in the workshop and the influence on the outcomes. The fourth category, cognitive effort, is about challenging participants mentally to achieve better outcomes.

3.1.6.1 Synthesis Design Elements
In the scientific literature review finding design elements for co-creation settings, several co-creation elements from different domains were discussed and literature on workshop design and facilitation

practices was consulted. Through a comparison between the different approaches, several common design elements were discovered. They are presented in Table 8.

Table 8: Synthesis design elements

#	Design element	Description	Sources
1	Shared goal/vision	A clearly defined goal for the session.	Frow et al. (2015) Papamichail et al. (2007) Ostrom (2011) Drahota et al. (2016) Healey et al. (2015)
2	Defining actors and their roles	Considerate selection of the participants and clearly defining their roles/ involvement in the session.	Frow et al. (2015) Papamichail et al. (2007) Ostrom (2011) Drahota et al. (2016) Healey et al. (2015)
3	Structure of session	This refers to the content and approach to the session.	Frow et al. (2015) Papamichail et al. (2007) Drahota et al. (2016)
4	Decision making	Refers to the way decision are made and how conflict resolution is approached.	Papamichail et al. (2007) Ostrom (2011)
5	Cognitive effort	Refers to the way participants engage in the sessions, and how their input is challenged.	Frow et al. (2015) Papamichail et al. (2007) Ostrom (2011) Healey et al. (2015)
6	Behaviour/ involvement	Refers to the way participants should act, looking at trust, respect, and attitudes.	Frow et al. (2015) Ostrom (2011) Drahota et al. (2016) Healey et al. (2015)
7	Outcomes	Defined vision for the outcomes with mutual benefits for participants.	Papamichail et al. (2007) Ostrom (2011) Drahota et al. (2016)

3.1.7 Synthesis Literature Investigation

The results from the literature investigation are synthesized and answers to the knowledge questions are formulated from a literature perspective. The knowledge questions are presented in 2.1   Phase 1: Problem Investigation.

1. What does the front-end of an urban transformation look like and what challenges can be encountered?

An urban transformation is the art of connecting multiple spatial assignments, public and private actors, financial resources, and functions to transform an existing urban area (*Introductie en proces gebiedsontwikkeling*, n.d.). The process of an urban transformation depends among others on the governance, which is determined by the initiator and depends on the landownership, availability of financial resources, and willingness to collaborate with other stakeholders (Hobma et al., 2019; *Introductie en proces gebiedsontwikkeling*, n.d.). The first step of the process and critical in all governance approaches, is determining a shared vision or goal in collaboration with other stakeholders (Hobma et al., 2019). This also influences the business case, complexity, and involvement of other stakeholders in the transformation (Verheul et al., 2019), which are known as other challenges of urban transformation processes.

2. What are current practices and literature findings about values and value conflicts in urban transformations and how are they identified?

Governmental decisions are based on public value, meaning that they are searching for value that contributes to the collective (Moore, 1995). Public and private parties have conflicting value systems by nature (Moore, 1995), thereby increasing the possibility of encountering conflicting values in an urban transformation context. Conflicting values are only perceived negatively if they are not managed properly (Kuitert et al., 2019). It is essential that conflicting values are discovered early in the process and coping mechanisms are determined before dilemmas or disputes arise (Kuitert et al., 2019). Determining the public value with multiple public and private actors can be achieved through co-creation, which can be defined as a collaborative problem-solving process involving multiple actors that produces certain outcomes (Torfing et al., 2019).

3. What types of public and private parties are involved in the front-end of an urban transformation project and how do they collaborate?

A public value co-creation process can be applied in the front-end of an urban transformation, defined as the zoning phase by Toukola et al. (2023). Here requirements and standards of the project are determined that influence the following phases, thus it provides a valuable starting point for public value co-creation. Components of public value co-creation include the involvement of different types of actors and working towards to a shared goal (Kitchener et al., 2023; Torfing et al., 2021; Torfing et al., 2019). Actors involved in the process can be anyone that can contribute to the production of public value(Torfing et al., 2019), but usually these actors have different practices and operate in different organizational levels (Candel & Paulsson, 2023). Furthermore, collaborative activities are undertaken that rely on mutual understanding, respect, and trust (Toukola et al., 2023).

4. What is the motivation behind the set-up and design of an existing dialogue tool and what information can be taken from previous experiences?

Kuitert (2021) developed a dialogue tool that can be used to identify value systems, understand conflicting values, and provides guidance on how to approach the complexity of those conflicting value systems. It is designed to discover the impact of value complexities and to develop tactics for dealing with it, specifically looking at the impact of a new value x on existing values. However, this tool was developed for clients and their contractors, and not for the complex environment of an urban transformation where multiple public and private actors operate. Key recommendations based on their implementation were having a strict number of participants, taking at least three hours for all infographics, and make sure the goal is to create awareness.

5. How can a co-creation discussion be designed for early identification of value conflicts?

Design elements for a public value co-creation setting that should be considered in the final artifact are determining a shared goal, defining participants and their roles, having a clear structure of the session, determine the way decisions are made, deciding how participants engage, finding a way for participant behaviour and determining a vision for the outcomes of the co-creation session (Drahota et al., 2016; Frow et al., 2015; Healey et al., 2015; Ostrom, 2011; Papamichail et al., 2007).

3.2   Practical Investigation

In this chapter, the results from the interviews with experts and practitioners in urban transformations are summarized, and thereafter synthesized per category corresponding to the knowledge questions.

3.2.1   Urban Transformation Process

3.2.1.1 Experts

The interviewed experts agreed that the process of an urban development or transformation depends on the scale and type, but that it always starts with determining the purpose and mentioned two possibilities. First, it could be a governmental or municipal decision or initiative as a response to a public

necessity. For example, in response to the current housing shortage an urban transformation can be started or to update areas that are impoverished, so here policy documents are leading. Expert 2 mentioned that usually the initiative comes from a governmental decision. Second, it could be an initiative from a private actor or independent project developer who wants to transform an area including the public space. This can lead to a more large-scale urban transformation when other actors come on board, but the private actor started the initiative. Generally, after the idea and initiative, a vision for the urban transformation has to be formed. Thereafter, the vision will be translated into a conceptual urban development plan, which according to expert 2 can be very time consuming thereby giving an example of a case that took 10 years. In this process the municipality can involve other stakeholders, but it depends on the project whether they do. Expert 1 shared that it is necessary to collaborate with other actors in this stage of the project, whereas expert 2 mentioned that in at least one of his projects the municipality explicitly did not involve any other actors.

3.2.1.2 Practitioners

The interviewed practitioners were both involved in the same urban transformation project, and during the interview they explained the process. It started three years ago with to simultaneous initiatives. First, governmental policies and subsidies encouraged development of new housing due to the severe housing shortage, resulting in a regional program to create accessible cities around the metropolitan region of Amsterdam. There was a focus on compaction and creating housing within a range of 1200 meters from a railway station. Second, the municipality had ambitions to start an urban transformation and created a compaction vision with development plans within the city centre, to preserve nature and agricultural grounds. So, the transformation was initiated due to regional decisions and by the municipality. Thereafter, a concept development framework was published [Dutch: ontwikkelkader], which included transformation plans created by the municipality and a feasibility analysis. The municipality decided to not include any stakeholders in the first phase to avoid raising expectations by other actors. The publication has been shared with other public and private actors to inform them about the transformation plans. At the same time, they are trying to set up a public-public governance framework with the municipality, the province, and the government, with the idea to create a separate entity. This will allow for more control and additional financial resources to speed up the process. At the time of the interview, the project was in this phase.

According to the practitioners, collaboration with other landowners or interested private parties is lacking. Within the transformation project there are two areas with different characteristics. One area is an industrial estate, characterized by a patchwork of landowners and few landownership by the municipality. The other area is the commercial city centre situated next to the railway station, where the municipality and two other developers have all the landownership. In the former, the municipality has a more passive role regarding governance structure, where for the latter the municipality has a more leading role in the collaboration structure. However, they have not started the participation process yet. They did mention that after participation, the new version will go to the council who will vote on the plans, thereby making it official. Thereafter, a more detailed urban development plan for each of the projects in the entire municipality will be made by urban planners.

3.2.2   Public and Private Stakeholders

3.2.2.1 Experts

Regarding the necessity of collaborations between public and private actors, the interviewed experts stated that it is crucial that the public space connects to the private developments, thus that collaborations with other private actors are desired. However, it depends on the initiator of the project and the landownership in the area what the collaboration structure looks like and when it occurs. The initiator usually takes control of the collaboration structure. Sometimes the municipality creates a conceptual development plan without any formal participation or collaboration. Expert 1 stated that this is partially due to the lack of a method or framework, and that normally one person is responsible for

the entire project and depending on their style and strategy the collaboration structure will be determined. They raised the point that it might be useful to have a certain method for setting up collaboration to justify decisions.

According to both experts, decision making in urban development projects depends on the land ownership and the severity of the decision. All governmental and private parties have their own responsibilities. When conflicts arise on operational level, it is useful to map the interests of both parties and when necessary, you can step up to managers or even top management for decision making. This can be done for both public and private parties.

3.2.2.2 Practitioners

According to the practitioners, the stakeholders of the urban transformation project according to the practitioners were the following. There are some landowners in the area, which includes the municipality, companies that have their own ground, and owners of real estate or land that they rent out to users. Then, there is the government, the province, ministry of Infrastructure & Water management, ministry of the Interior and Kingdom Relations, water boards, and other semi-governmental organisations. Regarding the railway zone, there is ProRail, and conveyors like NS, GVB, and Connexion. Additionally, there are developers and investors without landownership but who are interested in project development. Moreover, there are local residents, companies that rent their office space in the area, and international companies with an interest in coming to this area. Other interested parties can be social parties like the cyclist's association. Not all concerned stakeholders are included in the front-end phase or even the development phase of the urban transformation. The experts stated that as municipality you have to find the right balance of including the interests of these parties.

In this project, the municipality is the initiator and has a leading role in determining the collaboration process and governance structure. However, they are financially dependent on the governmental subsidies for infrastructure, greenery, and housing, so careful collaboration with governmental parties is important. Currently, the municipality is focusing mostly on a collaboration structure with the province and ministry of Interior and Kingdom Relations. Furthermore, they started the participation process for residents and companies, and they are currently informing them about the development plans. They are careful with inviting stakeholders to cooperate or collaborate, and only want to invite them if they have to offer something. That is to carefully manage the expectations of the stakeholders. At the same time, bottom-up initiatives are willing to cooperate and are offering themselves for discussions.

Regarding decision making, the municipality as actor takes a leading role, but within the municipality the decisions are made stepwise. The conceptual urban development plan had to pass by the alderman, and thereafter it was shared with the ministries and other stakeholder. After that, the council will vote on the final concept.

3.2.3 Values and Value Conflicts

3.2.3.1 Experts

On the existence of some sort of methodological approach to the discussion of values and conflicting values, the experts disagreed. Expert 1 stated that there are too many differences between urban transformation projects in different cities, thus discussion values is difficult to standardize. However, an urban transformation is initiated with a purpose that is the starting point for all discussions, so to create an integral urban development plan other values must be discussed at some point. Expert 2 mentioned that most of the time the reason for the transformation is discussed at the beginning of the project. However, people discuss themes instead of values or immediately start discussing 'hard' metrics instead of defining 'soft' values to begin with.

Regarding value conflicts, both experts mentioned that generally an urban transformation can be seen as a puzzle where elements are interconnected and a balance between the pieces has to be found. Value conflicts between public actors are usually between the level of detail and the planning, for example beautiful integral plans for new housing developments cannot go together with starting quickly and building fast. Furthermore, public parties might have a different focus on governmental policies, like housing or economics. Value conflicts between public and private parties are more challenging because private parties tend to only look at the costs and profits. Private parties that disagree with decisions will stop negotiating, which will stagnate the collaboration process. The difference between public and private parties is that public parties are not dependent on making profits and make decisions out of public values. A workshop to discuss conflicting values in the front-end phase of an urban transformation could be useful to prevent stagnation in the process according to expert 1. These projects have many stakeholders with different interests. Expert 2 was more reluctant, stating that it might be useful but emphasized that an urban transformation is not a linear process thus constantly moving due to internal and external changes.

3.2.3.2 Practitioners

The practitioners agreed that there are currently no value dilemmas in the urban transformation project, but there are some conflicting ideas that could potentially turn into a dilemma. The municipality has a different point of view on the parking standard and the percentage of affordable housing in the new plans than other public parties. They have not encountered value conflicts, with other private parties, mainly due to the lack of involvement of private parties in the processes thus far. However, the municipality foresees a possible conflict, namely that local businesses must make way for new housing developments. They do not have a clear strategy or approach to cope with these value conflicts, but usually they are led by political choices from the council and alderman who usually make decisions based on financial feasibility. The practitioners mentioned as a coping strategy that having a conversation and integrally weighing the options could also be useful, but currently this is not done.

When questioned about the need for information about value conflicts in the early stages, the practitioners agreed to some degree. Practitioner 1 mentioned that it would be useful if the parties are dependent on each other, and they feel the need to clarify their values. However, public parties in the Netherlands are all operating for the benefit of the collective and are not fundamentally different. So, practitioner 1 thinks this only might be useful for public-private collaborations or citizen participation. Practitioner 2 thinks there might be an opportunity for this, as dissatisfaction arises from feeling left out of the process. Currently, the municipality works on a stakeholder analysis internally and does not have a strategy for involving stakeholders in the process. Therefore, practitioner 2 thinks that learning about value conflicts early could be useful.

3.2.4   Current Tools and Artifact Design

3.2.4.1 Experts

The experts have not encountered any workshops for structuring the collaboration processes with other actors in general and specifically for values and value conflicts. They usually apply a few basic principles, but they have not encountered a specific methodology. This might result from a lack of interest in collaborating with other actors. However, they agree that it might be useful to apply a methodology for recognizing the interests of other actors, especially for public-private collaborations. Then, there should be a focus on getting an overview of all the interests and a methodology of how to approach the differences and decisions. The experts indicated that being able to justify decision making is critical. Furthermore, they were asked for general tips of setting up a workshop. They advised to research the participants to discover their behaviour in workshops, for example looking at dominance. The workshop should enable all participants to share their opinions. Furthermore, it is important that participants are disconnected from their daily routine and do not get stuck on daily details. They advised to have discussions on a higher level.

3.2.4.2 Practitioners

According to the practitioners, the urban transformation project has not reached a phase for participation or collaboration with other stakeholders, hence it has not happened yet. The municipality has performed a stakeholder analysis internally and develop a conceptual development plan based on that. The next step is informing the stakeholders about their plans and receiving feedback, but not collaborating. Only in the phase of developing the detailed urban development plan collaborations with other stakeholders in the area will be considered. There the goal is to develop ideas together, so that needs the structure of a workshop. It is important that the right stakeholders are invited and all interests are represented, while limiting the amount of participants. In those workshops, deliberate decisions have to be made. The practitioners think a value conflicts workshop could be useful in the participation stage but should not be longer than two hours and should be understandable for all participants.

3.2.5   Synthesis Practical Investigation

The categories of the interviews were set-up based on the knowledge questions. In this synthesis, the summary from the interviews have been used to formulate answers the knowledge questions.

1. *What does the front-end of an urban transformation look like and what challenges can be encountered?*

It can be interpreted that the front-end of an urban transformation starts with an initiative, usually from the municipality. The initiator then defines the purpose and vision for the transformation, which will be translated into a conceptual urban development plan. Usually, public and private stakeholders are not included in vision forming and drafting the plan to avoid growing expectations. Then, the conceptual plan will be shared with stakeholders by informing them and receiving some feedback. Collaboration and participation with other public and private stakeholders will be included in the more detailed urban development plan.

2. *What are current practices and literature findings about values and value conflicts in urban transformations and how are they identified?*

According to the experts and practitioners, values and conflicting values are not explicitly discussed in the beginning of an urban transformation project, although a vision and some themes might be determined. Further, there is no methodological approach to identifying value conflicts, but the initiator has to find a balance between the interests of different stakeholders. They all state that it could be useful to have a strategy or workshop to identify values and conflicting values.

3. *What types of public and private parties are involved in the front-end of an urban transformation project and how do they collaborate?*

The collaboration process and governance structure are determined by the initiating actor. It is desired to collaborate with other public and private parties to ensure connectivity in the area, but to prevent growing expectations and complexity of the urban development plans not all concerned stakeholders are involved. The initiator should find a balance between collaborating and keeping control.

4. *How can a co-creation discussion be designed for early identification of value conflicts?*

The experts indicated that a methodological approach to recognizing interests of other actors might be useful, especially for public-private collaborations as it can justify decision making. The focus should be on identifying all interests and finding differences. The practitioners stated that a co-creation discussion about values and conflicting values would be useful in the participation phase, thus after the conceptual development plans have been published. In the current research, recognizing stakeholders' values and conflicting values in the front-end of an urban transformation project is essential to prevent disputes and value destruction. The lack of interest from the practitioners can be seen as problematic and shows a great opportunity for the need for a redesigned value dialogue tool.

3.3   Design Brief

The literature- and practical investigation have provided an overview of the problem context and design variables of the artifact, in the form of a literature review and summary of the findings from the expert interviews. The findings of these two chapters have been synthesized and questions to the knowledge questions were formulated. This has been used as input for the design brief. The design brief consists of the design context, the design goal of the artifact and the requirements that the artifact should adhere to.

3.3.1   Design Context

The final artifact should be applicable in the front-end of an urban transformation project in a railway zone of a medium sized city in the Netherlands. An urban transformation is usually initiated by the municipality out of public necessity (Practitioners, Personal communication, November 29 2024), whom start the process by determining the governance mode. This is dependent on the landownership, availability of financial resources, and willingness to collaborate with other stakeholders (Hobma et al., 2019; *Introductie en proces gebiedsontwikkeling*, n.d.). The complexity of the spatial challenges require an integral approach and cross-sectoral collaborations (PBL, 2021), thus it is becoming increasingly important to find a governance mode that involves stakeholders (Hobma et al., 2019). However, municipalities often do not involve other stakeholders in the process (Experts, Personal communication, November 29 2024), as it can contribute to the complexity (Verheul et al., 2019). This is a result of the fact that governmental decision-making is dependent on value that contributes to the collective (Moore, 1995), whereas private actors are usually financially driven. So, public and private parties have conflicting value systems by nature (Moore, 1995), thereby increasing the possibility of encountering conflicting values in an urban transformation context. Conflicting values are only perceived negatively if they are not managed properly (Kuitert et al., 2019). Therefore, it is essential that conflicting values are discovered early in the process and coping mechanisms are determined before dilemmas or disputes arise (Kuitert et al., 2019).

It is essential that municipalities involve other stakeholders, especially those with landownership, to prevent stagnation by conflicting values and to find a balance between the goals and ambitions . Determining the public value with multiple public and private actors can be achieved through co-creation, which can be defined as a collaborative problem-solving process involving multiple actors that produces certain outcomes (Torfing et al., 2019). A public value co-creation process can be applied in the front-end of an urban transformation, where requirements and standards of the project are determined that influence the following phases, thereby providing a valuable starting point for public value co-creation (Toukola et al., 2023). So, the final artifact should operate in the context of urban transformation project as described.

3.3.2   Design Goal

The purpose of the artifact is to contribute to the early identification of value conflicts in a public value co-creation setting for urban transformations in railway zones. The artifact should facilitate a co-creation setting where both public and private actors are stimulated to share their values on the case, where discussion about value conflicts is encouraged and where coping mechanisms for these conflicting values are proposed. The output of the artifact should be useful in vision development for the urban transformation and management of value conflicts. The artifact is meant for initiators of urban transformation projects to get an overview of values from other actors, conflicting values, and coping mechanisms. The focus is to create awareness and not to get a complete and comprehensive overview. It can also be used by actors, both initiators and not, to initiate collaborations and start partnerships.

3.3.3 Design Requirements

Based on the literature investigation, the practical investigation and the design goal, design requirements for the final artifact were created. They are presented in Table 9 with a corresponding category that is used in the validation phase and the sources.

Table 9: Design requirements

#	Design Requirement	Category	Source
1	The artifact should be applicable in the front-end phase of urban transformation projects in a railway zone of a medium sized city in the Netherlands.	Case description	Interviews Liu et al. (2019) Edkins et al. (2013) Hobma et al. (2019)
2	The artifact should stimulate public value co-creation between participants.	Co-creation	Torfing et al. (2019) Kitchener et al. (2023) Ansell and Torfing (2021) Torfing et al. (2021) Hobma et al. (2019)
3	The artifact should provide guidance for the discussion of values, conflicting values, and coping mechanisms.	Workshop structure	Interviews, Kuitert (2021) Moore (1995) Mele (2011)
4	The starting point for the artifact should be the tool 'speaking of values' from Kuitert (2021).	Materials	Kuitert (2021) Kuitert (2023)
5	The artifact should produce outcomes that are useful for vision development for urban transformations.	Learning outcomes	Interviews Hobma et al. (2019) Verheul et al. (2019)
6	The artifact should adhere to the synthesized design elements for public value co-creation sessions.	Materials	Frow et al. (2015) Papamichail et al. (2007) Ostrom (2011) Drahota et al. (2016) Healey et al. (2015)

4   Phase 2: Artifact Design

In this chapter, the final design of the artifact is presented and specifications of the design are discussed elaborately. The starting point for the design was the dialogue tool developed by Kuitert (2021), retrieved by personal communication (Kuitert, 2023), and the design requirements [DR] from the design brief. In this chapter, the starting point for the artifact is discussed, as well as the changes that were made. These changes are linked to the design requirements. Additionally, the design for the application process is presented. Thereafter, the results of the test workshop as part of the iterative design process are presented and conclusions regarding design alterations are drawn.

4.1   Starting Point Artifact Design

The existing dialogue tool cannot be used in the context of an urban transformation. In Table 10, the starting point of the existing dialogue tool is discussed per design requirement.

Table 10: Starting point original dialogue tool

#	Design requirement	Original dialogue tool	Implications for redesign
1	The artifact should be applicable in the front-end phase of urban transformation projects in a railway zone of a medium sized city in the Netherlands.	The existing tool is designed for application within a public client organization or between a public client and a construction company. The assignments on the infographics are directed at public clients, and sometimes limited to discovering values within the organization.	- Consider multiple actors - Assignments should consider project level
2	The artifact should stimulate public value co-creation between participants.	The infographics have multiple assignments that are mostly individualistic and there is not a clearly defined outcome. The tool does facilitate mutual understanding.	- Make assignments more collaborative - Consider clearly defined outcome
3	The artifact should provide guidance for the discussion of values, conflicting values, and coping mechanisms.	Through the assignments on the infographic, participants discover their own values, conflicting values, and coping mechanisms. This is the purpose of the dialogue tool.	- Use a similar purpose
4	The starting point for the artifact should be the tool 'speaking of values' from Kuitert (2021).	The original materials and corresponding videos of the application process were retrieved.	- Make materials adapted from original
5	The artifact should produce outcomes that are useful for vision development for urban transformations.	The tool is created for finding the influence of the implementation of value X in an existing value palette. In the front-end of urban transformations new value palettes should be created to discover the vision. Further, there are no clear outcomes that can be used to create a vision.	- Reconsider use of value X - Consider production of useful outcomes
6	The artifact should adhere to the synthesized design elements for	The tool has a clearly defined goal and facilitates defining actors and their roles. The structure is facilitated by the	- Consider engagement,

public value co-creation sessions.	infographics, and assignments help steer towards decision making. Engagement is not facilitated, and involvement is also not considered. Production of outcomes is lacking.	involvement, and outcomes. - Reconsider goal, actors, decision making and cognitive effort.

4.2 Redesign of the Dialogue Tool

The purpose of the existing dialogue tool is to collaboratively identify value systems, conflicting values, and coping mechanisms (Kuitert, 2021). The purpose of the artifact developed in this research is similar, but it should be applicable in an urban transformation context. Thus, it is essential that through redevelopment of the dialogue tool the purpose stays the same. To achieve this, essential elements of the tool will be preserved. The dialogue tool consists out of three infographics, actor cards, conflict cards, role cards, several icons, and presentations for the structure of the session. All elements were modified in the design of the artifact. The improved materials are presented in this phase, first the alterations to the materials are explained and second the design elements of the artifact are discussed.

4.2.1 Replacing Infographic 1

The first major change to the materials was the replacement of the first infographic by a prefilled-in actor card. Instead of applying the infographic, the facilitator will have an interview with each participant individually. The information, purpose, and assignments of the first infographic have been transferred to a PowerPoint, which is used as guidance for said interview. The facilitator and participant will use the PowerPoint to fill in the more detailed actor card together. The actor cards will be printed for the workshop and participants can use the actor cards as guideline throughout. This can be seen in Figure 5 and has been developed for the following reasons.

First, the application of each infographic would take at least one hour each, thereby making the complete session over three hours long. According to the practitioners and experts, there is limited availability of time in the municipalities and taking up more than three hours of valuable time is not desired. According to Kuitert (2021), it was possible to split up the application in multiple sessions, for example three sessions of one hour for each infographic. However, the tool is intended for collaboration between multiple actors with different backgrounds, thus finding multiple moments in time to play it in person would be challenging. Therefore, the researcher decided to find a way to shorten the application, without compromising on the purpose of the tool.

Second, the intention of the application was to facilitate public value co-creation, but the first infographic comprised of only individual assignments. Collaborative problem solving and sharing knowledge, resources, and ideas are crucial elements of co-creation, which are not facilitated by performing the first infographic. Since design requirement 2 advocates for facilitation of co-creation, the researcher decided to shorten the application by redeveloping this.
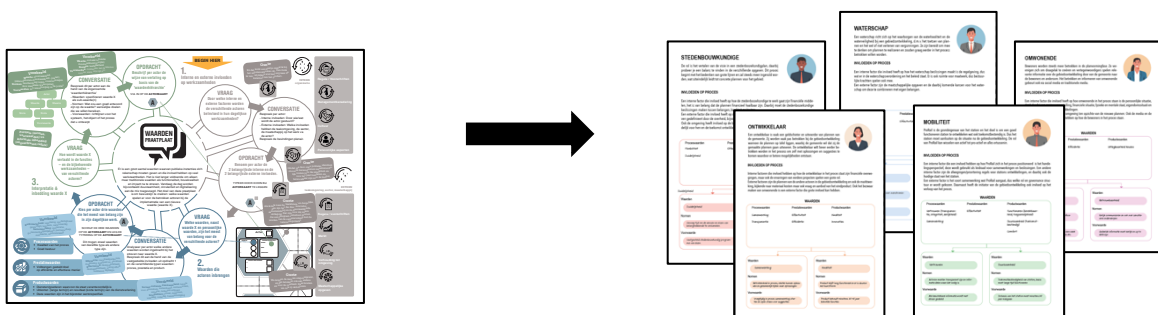

Figure 5: Replacing infographic 1 with actor-cards

Third, because the actor cards are filled in during an individual interview, the participants cannot be influenced by each other's answers. As a result, the actor cards represent their own opinion on the values and position of the actor in the urban transformation process. Since the interview is conducted some time before the actual session, participants also have some time to process the questions and answers. During the workshop it is even possible to make changes to the card, as it serves as a support tool for the participants during the workshop. Furthermore, during the interview, the facilitator will explain the purpose of the tool and there is room for the participants to ask questions. Consequently, there will be a deeper understanding of the purpose of the tool among the participants. In addition, the facilitator has met all participants before the session and can respond to their characters during the session, which was a suggestion from an expert. To summarize, it contributes to the facilitation of co-creation and provides guidance during the workshop, thereby contributing to the achievement of design requirements 2 and 3.

The last benefit of replacing the first infographic, is the possibility of a substitute representing a role during the session. Since the tool is intended for multiple public and private actors, it might be difficult to find a suiting time where all participants are available. What is more, there is always a possibility of a participant cancelling last minute. To achieve the best results, it is crucial that all interests are represented during the application. A substitute taking over an actor card and representing this role during the application, allows for consideration of their values and interests. This makes it more applicable in an urban transformation context, thereby contributing to design requirement 1.

4.2.2 Detailed Actor-card

In the original dialogue tool two different cards for the actors, a role-card and an actor-card were developed. On the role-card, the participants could shortly describe their role. On the actor-card there was room to place the role-card and to fill in additional information about values, interpretation of value X and conflicting values. These cards were filled in after applying infographic 1. However, there was little room for a complete description of the role of the actor, and no room for the description of influences on their works which was an assignment on the plate. To be precise, there was little room for answers in general. Since this card will be used as input for the rest of the tool, it is crucial that the information is complete. Therefore, the researcher decided to make the actor card more detailed. An added benefit is that the more detailed actor card provides a better understanding of said actor when a substitute is representing the role.

The actor cards are filled in by the facilitator and participant during the interview, and all sections from top to bottom will be discussed, see Figure 6 on the next page. The first section describes the role of the actor in an urban transformation, including how they prefer to be involved. The second section has been changed to a description of the internal and external influences on decision-making in the process. For the context of finding value conflicts urban transformation, it is more interesting to discover how actors make decisions as decision-making is related to public value for public actors (Moore, 1995). The third section provides an overview of the most important values for the actor, thereby categorising them into process, performance, and product values. This enhances the understanding of each value for the participants. The last section shows a more elaborate description of two values from the actor, by explaining the standard and condition. This makes the redesigned dialogue tool more applicable in the context of urban transformations in the Netherlands as described by design requirement 1 and helps to produce relevant outcomes that can be used in vision development for urban transformation, thereby stimulating design requirement 5.
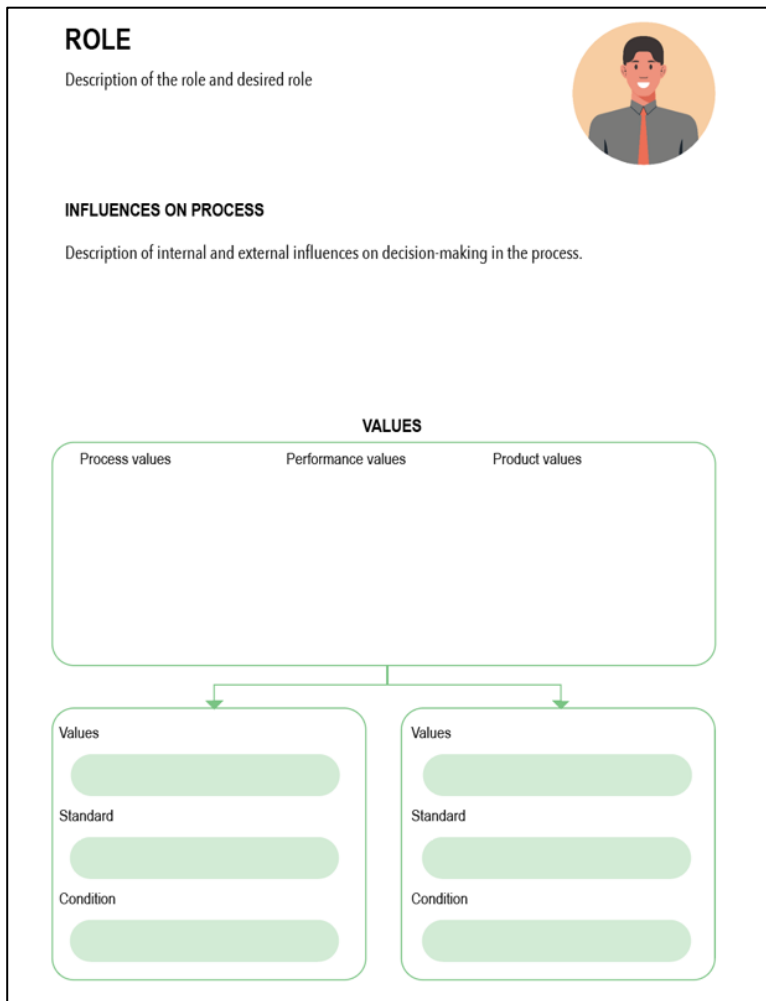
Figure 6: Actor card

4.2.3   Changes to Infographics

To ensure they could be applied in the context this research, a couple changes to the layout, information, and assignments on the infographics have been made. In the redeveloped material set infographic 1 is replaced by an actor card, so there are only two infographics in this version. In this section, a small version of the new infographics is shown. A larger version can be seen in Appendix IV.

4.2.3.1 Change Layout and Colours

The most visible change to the infographics is the new layout and use of different colours. The new layout should contribute to the readability of the infographics and understandability of the information and assignments. The structure of the infographics could be improved, as well as the readability of the assignments and information. Therefore, the researcher structured the layout into three pillars, with in each pillar a section of information, icons, examples, and assignments. This way, the participant can read the infographic normally from left to right and find all relevant information in the corresponding pillar. The icons that correspond with the information are kept, to ensure the purpose and outcome of the tool are similar to the original dialogue tool.

The new colours were introduced to replace the formal appearance by a more playful look, to disconnect the participants from formalities and ensure an open conversation. For this, a colour palette was created with three colours. The dominant colour is orange, followed by green which is a complementary colour. The tertiary colour in the palette is blue which complements both. They are proportionately visible on

the infographics, thereby also making sure that they have the same saturation level for a softer view on the eyes.

4.2.3.2 Assignment Changes

A major change to the assignments on the infographics is the removal of value X. The infographics were created such that a new value [value X] would be introduced in an existing project environment, and some of the assignments were directed into discovering the influence of this new value on the other values in the existing project environment. Since the project environment is completely new at the time of implementation of this dialogue tool, there is no existing value palette for the project environment. Thus, instead of discovering the influence of value x on the existing value palette, the influence of new values on each other is determined. This allows makes the dialogue tool outcomes interesting for all actors and allows for creative and integral answers, thereby contributing to design requirements 1 and 5.

A second change to some assignments on infographic 2 is the replacement of organisation level with project level. Organisation level refers to the relations within the organisation, for example between departments. Since the purpose of the tool is identifying conflicting values and coping mechanisms related to the urban transformation, it is interesting to identify these between the participants. As the participants have different backgrounds, thus finding conflicting values on organisation level would be an individual assignment whereas co-creation should be accomplished. Thus, to stimulate collaboration between participants, the researcher introduced project level. This also contributes to achieving design requirements 1 and 5.

4.2.3.3 Outcome Section

The background of the dialogue tool are theoretical and scientific articles, and the information on the tool is supported as well. Therefore, the concepts and information on the tool might be difficult to understand for participants unfamiliar with these theoretical concepts. What's more, participants might not understand the goal of the assignments as they need to work with the concepts. To ensure participants know what is expected of them, an additional section with outcomes was created. This facilitates co-creation, thereby contributing to design requirement 2. This section shows an example of what the filled in assignment card could look like after playing the infographics.

4.2.4   Redevelop Assignment Cards

For the assignments on the infographics 2 and 3, an assignment card and icons that could be placed on that card were developed. This added an interactive dimension to the dialogue tool, which is supported by the design requirements. However, the assignment card had place for one conflicting value and the corresponding icons. The purpose of the tool in this context is to create a new value palette and discover conflicting values, so more space on the assignment card is needed for that. Thus, a new assignment card was created. As mentioned, a filled in example of the assignment card is shown on the infographic, thereby clarifying the usage of this card. Each participant has their own assignment card. This facilitates co-creation and produces outcomes that are practical for vision development, thus contributing to design requirements 2 and 5.

The new assignment card is used for both infographic 2 and 3, clearly separating two sections corresponding to assignments on said plates. It includes a place for each icon, so in the end an overview of the conflicting values and the corresponding icons is created for all participants. The icons were printed on a sticker sheet, making application to the assignment card an easy task. Beneath the conflicting values, there is room for a short explanation of the nature of the conflict and how the coping pattern was developed. The new assignment card can be seen in Figure 9.
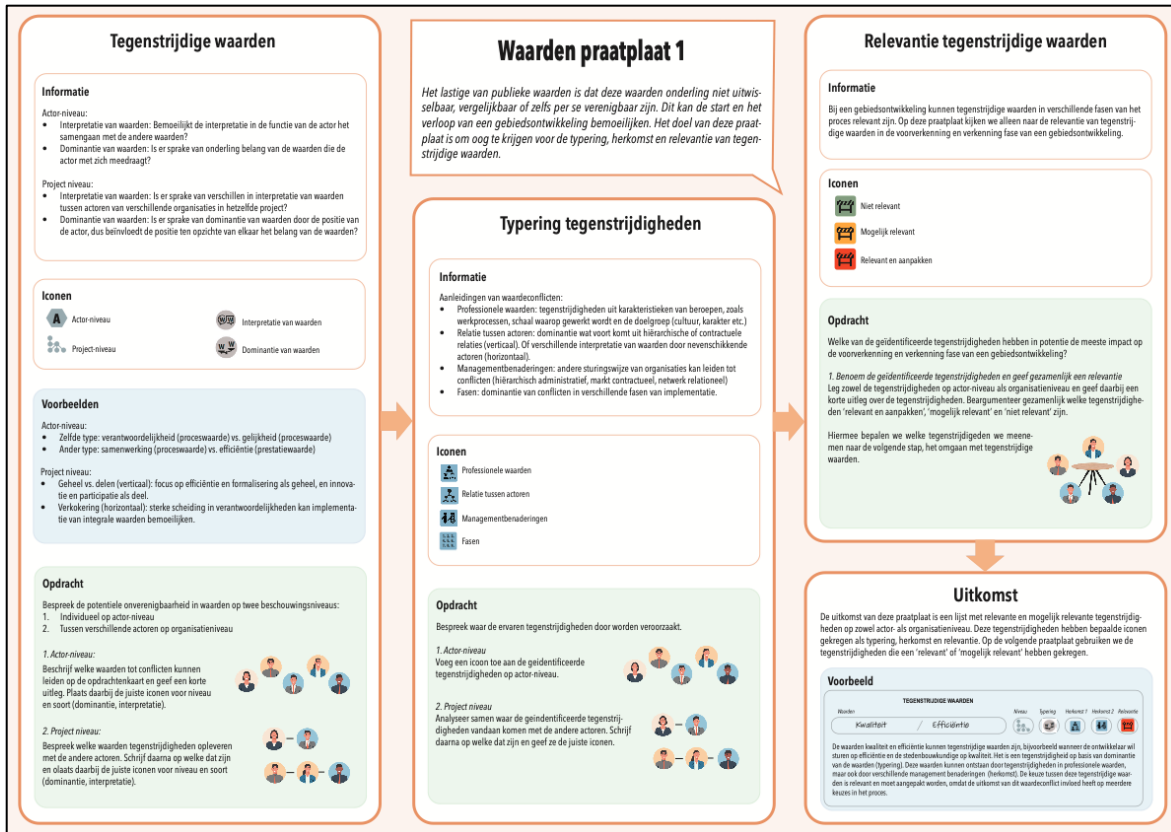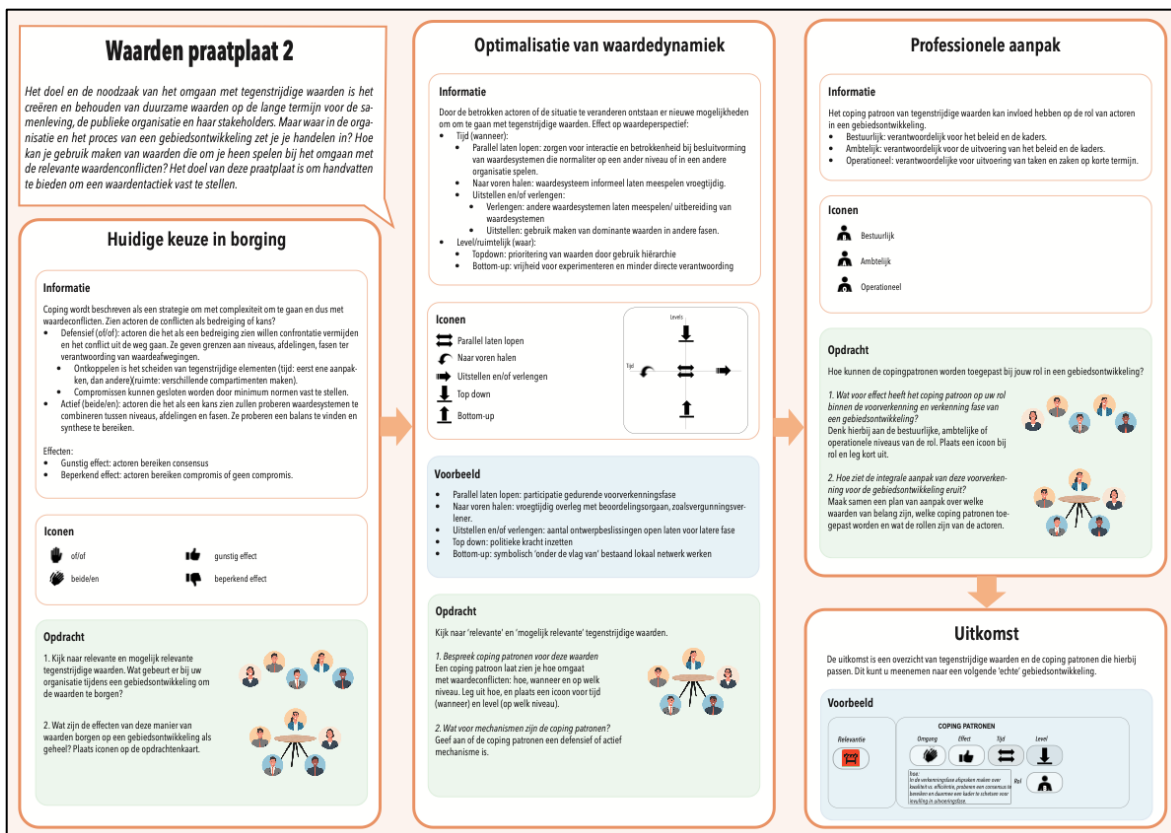
Figure 7: New infographic 1

Figure 8: New infographic 2

4.2.5 Develop Integral Approach

The last change to the materials is the development of a new card, called the integral approach, see Figure 10. The purpose of the card is to provide a summary of the findings of applying the dialogue tool, and four sections are created. In the first, four of the most important conflicting values can be placed. Second, coping patterns corresponding to these conflicting values as identified in infographic 3 should be drawn. Third, the role of the actors in the urban transformation project should be stated. Lastly, based on the conflicting values and coping patterns participants can also recognize synergies in values, and thus define the most important values for the project. Only one card is printed, and participants have to collaboratively fill in the card.

The integral approach card was created to summarize the findings of the applying the dialogue tool for several reasons. First, the findings from the literature on design elements suggest that for a workshop or co-creation session to be effective, there should be a vision for the outcome. The outcome of the original tool was an overview of the conflicting values and their related coping mechanisms, but a concluding and collaborative end-result was lacking. This is needed to achieve design requirement 2 and 6. Second, co-creation implies that problems are solved collaboratively, thus by introducing integral approach card a collaborative conclusion to the session can be achieved. Moreover, actors can implement the findings of this integral approach card in their daily work to make more integral development plans for the project, thereby contributing to design requirement 5.

Figure 9: Assignment card

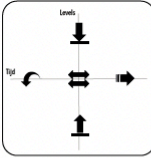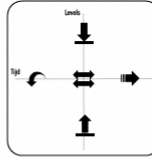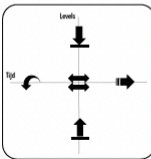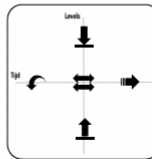*Figure 10: Integral approach card*

4.2.6 Workshop process design

Lastly, a workshop design had been created that shows the application process of the materials. As the materials have to facilitate a public value co-creation session, the common design elements from chapter 3.1 Literature Investigation have been considered. The design elements together shape the application process in the form of a workshop.

4.2.6.1 Shared Vision/Goal

This refers to clearly defining the purpose and setting the goals of the session (Drahota et al., 2016; Frow et al., 2015; Healey et al., 2015; Ostrom, 2011; Papamichail et al., 2007). The purpose of the dialogue tool is to identify values, value conflicts and coping mechanisms in a co-creation session with multiple public and private actors involved in the front-end of the same urban transformation project. Furthermore, the purpose is to create awareness of conflicting values. With this, suitable coping mechanisms for potential value conflicts can be determined and dilemmas and disruptions due to value conflicts can be avoided. What's more, collaboration between actors can promote integral solutions and more focused decisions can be made by the actors. The purpose of the workshop is explained in the individual interview before the workshop and at the beginning of the workshop. By sharing the goal during the interview there is room for participants to ask questions and ensure their understanding of the purpose. This way, actors can manage their expectations and know what is expected of them during the session.

4.2.6.2 Participants and their Roles

There should be a considerate selection of the participants and their roles/involvement should be clearly defined. According to Kuitert (2021), the tool should be played with a maximum of five participants, thus the participant selection should start there. In the practical investigation, practitioners mentioned that it is essential that different points of view are represented in a workshop on values to create the best overview of all interests. Thus, actors representing different points of view should be selected as participants, both public and private. Moreover, it essential that they are working on the same urban transformation project. Their roles during the workshop are determined by the role they have in their

daily work, which is clarified by the pre-filled in actor card. This does not apply to substitutes representing a role. Their role is supported by the actor card.

4.2.6.3 Well-structured Session

This refers to the content and approach to the workshop. The content of the workshop are the redesigned materials, thus the infographics, actor cards, assignment cards, icons, and integral approach card. The approach to the session is also designed, in the form of a PowerPoint presentation. The workshop starts with a general introduction to the workshop and the purpose of the dialogue tool. Then, the materials of the workshop are explained in detail. Thereafter, background information on the first infographic is presented, followed by an explanation of the corresponding icons and the assignments. After this is played there is room for a break, followed by the second infographic which is presented in a similar matter. Then, the integral approach card is introduced and played. Lastly, the workshop is closed with room for questions and an open evaluation of the participants. Each infographic will take approximately an hour and together with an introduction, integral approach card, and short break in between, the session will take at least 2.5 hours. The workshop should be facilitated by an independent party who will do the presentation and will keep track of time. A facilitator provides guidance without being involved in the process and helps participants collaborate (McArdle, 2015).

Introduction
- **General introduction**
- **Purpose of redesigned dialogue tool**
- **Explanations of materials**

Infographic 1
- **Background information**
- **Explanation icons and assignments**
- **Application**

Break

Infographic 2
- **Background information**
- **Explanation icons and assignments**
- **Application**

Integral approach card
- **Explanation of the card**
- **Application**

Closing
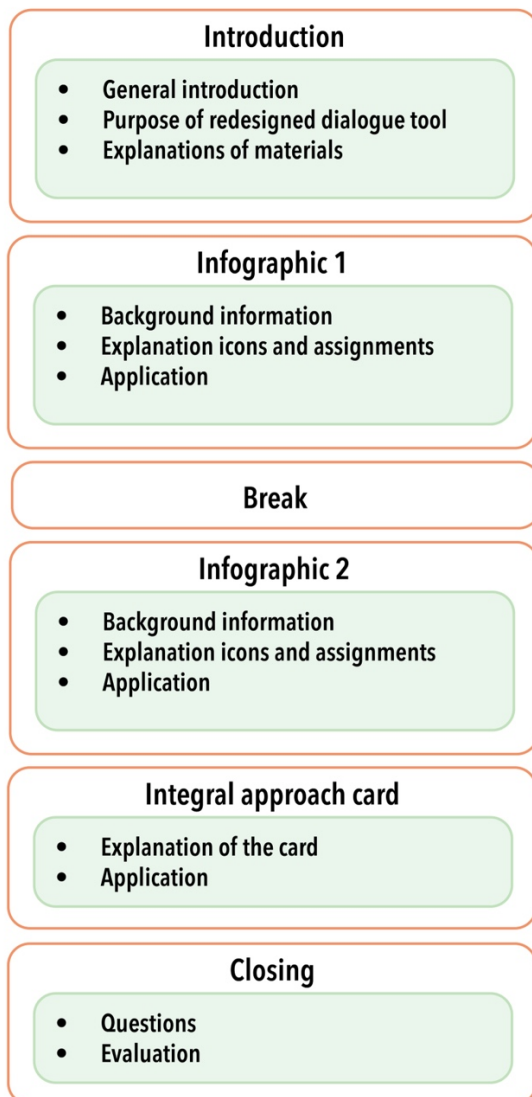- **Questions**
- **Evaluation**

Figure 11: Structure of the workshop

4.2.6.4 Decision Making

This refers to the way decisions are made and how conflict resolution is approached in the workshops. In the workshops, each participant has their own assignment card, making them governor of their own ideas. Although some assignments require collaboration between two or more actors, the participant is in control of what they write on the assignment card. This gives each participant the feeling of being in control and makes everyone feel like they actively contributed equally to the workshop. This was a tip from an expert from the practical investigation interviews. At the end of the workshop when the integral approach card should be filled in, participants need to decide what should be on the card together. Decisions are made by having a conversation or by popular vote.

4.2.6.5 Cognitive Effort & Behaviour

It is important that all participants actively participate and contribute to the outcomes for it to be useful and complete. As mentioned, participants execute the assignments on the infographics by filling in the assignment card with, among other, several icons from a sticker sheet. So, not only are the infographics a conversation starter, but they also stimulate interactive activities. Furthermore, it is essential that participants are honest and open about their values in order to get the best results. This can be especially challenging if the actors are already experiencing conflicts or have had disputes in the past. During the workshop, the participants are taking on a wider view, which might help to create some distance between daily work and this session. This can contribute to creating an open and honest atmosphere. Moreover, participants should be respectful to each other, which the facilitator should safeguard.

4.2.6.6 Vision for Outcomes

In the initial dialogue tool, a vision for the outcome was missing. Thus, in the artifact of this research a larger assignment card was introduced, as well as the integral approach card. Both materials will be filled in during the workshop. After the workshop, this gives the participants relevant information that they can use for decision making regarding development plans for the urban transformation. These cards have been explained before.

4.3 Results Test Workshop

The results from the test workshop as part of the iterative design process, to test the usability and user interface of the materials, will be discussed corresponding to the categories as defined in the design brief. As explained in the methodology, the test workshop was played with five participants representing a role using the actor cards and discussing a case description created by the researcher. Important to note, the test workshop was set up to test the user interface and usability of the materials, thus not all design requirements were in detail represented in the survey. In this section, the explanation of the results is completed with unstructured observations from the researcher. From this synthesis conclusions for the redesign of the artifact were drawn. The survey results can be found in Appendix V: Survey Results.

4.3.1 Case Description

The case description was created as playing field for the infographics and was part of the simulation. It comprised of a description of Studiestad, a city that wanted to transform their city center, and outlined some characteristics of the urban area. The full case description can be found in Appendix III. The participants found that the case description and infographics were well connected, but the facilitator made some conflicting observations. Although the case description was clearly understood by the participants, it became apparent through conversations between participants that they did not relate the assignments to the case and mainly had discussions on a more conceptual level. They approached the assignments with a general view and failed to discuss ideas related to the characteristics in the case description. So, it was decided that more specific information in the case description could contribute to more case related discussions of values. Therefore, a section about development plans from the

municipality was added to the case description, that can be used as input for the assignments to steer away from general conversations.

4.3.2 Co-creation

The materials should facilitate co-creation, but in the post-test simulation survey only few questions were dedicated to this. A reason is that the participants were not experts in their roles so several aspects from co-creation, collaborative problem solving and sharing resources, could not be evaluated. The participants were questioned about whether the workshop facilitated collaboration, which four participants rated this with agreed and one with neutral. This was also observed by the researcher as many discussions between participants were stimulated by executing the assignments, and collaboration was needed to fill in the answers on the assignment card. The second statement was whether participants felt like they received enough space to express themselves, and all participants agreed. Thus, based on the limited expertise of the participants and the survey results, the researcher did not make changes to the infographics to facilitate more co-creation.

4.3.3 Workshop Structure

This refers to the structure and time planning of the session. One of the goals of the test workshop was to verify the usability, so several statements related to this category. Participants somewhat agreed that the presentation used was clear and complete, and matched well with the materials. Moreover, they stated that the workshop was fun, although this is subjective. From observations a similar conclusion was reached, as few questions about the presented information were asked. The only improvement for the final workshop was the additional information about the purpose of the workshop and information about the second infographic as only one was played in the test workshop.

Regarding the assignments the participants were less positive. The facilitator noticed that there were many questions about the assignments, the goal of the assignments, the assignment card, and the collaboration structure. This was supported by the results of the survey, as participants were negative about playing the workshop without consulting the facilitator. Thus, the assignment card was updated to be intuitive and during the presentation more detailed instructions would be given for making the assignments. Regarding the time planning, three were neutral and one slightly agreed that there was enough time to make the assignments. Even though, all assignments were completed after one hour, the researcher felt some assignments had to be rushed. Furthermore, the icons for the test workshop were all cutout and put together in envelopes, making it difficult for the participants to retrieve the right ones quickly. This also steered the conservation from the assignments to the icons a lot, thereby limiting the time to have pointed discussions. In conclusion, the cutout icons were replaced with a sticker sheet and half an hour was added to the final workshop.

4.3.4 Materials

The purpose of the test workshop was to test the user interface and usability of the materials, thus a lot of survey questions were related to this category. The results of the survey can be seen in Appendix V: Survey Results. In general, the participants responded positively to the appearance of the materials, the usefulness of the actor cards and connection between the assignment card and the assignments on the infographic. They were more critical about the clearness of the information and the intuitive nature of the infographic. This could be a result of the scientific nature of the information and the ability of the person to understand this. Some questions about the information and how to proceed with the assignments were raised, especially regarding actor-level and organizational level. The latter is later replaced by project level for a better fit to the context. The facilitator also noticed some questions about the assignment card, even though the participants were positive about it. However, the researcher improved the assignment card and changed some information on the infographic to make it more clear and complete. Lastly, the participants had a divided opinion about the intuitional nature of the actor card. During the session, quite some questions were asked about the actor card, especially about what

the information on the card meant and what was supposed to be used as input. Thus, it was necessary to improve the layout of the cards by clarifying more clearly what sections were meant as background information and what sections could be used as input for the assignments.

4.3.5 Learning Outcomes

The learning outcomes were to create awareness about the practical usefulness of the tool. This category was intended for the experts, but nevertheless the participants were asked whether they learned something about values and value conflicts during an urban transformation project. Three slightly agreed and two agreed, thereby also giving a short explanation of their answer. They wrote that it was interesting to learn about the different perspectives and learned that the interpretation of values is important. Further, they mentioned that it was interesting to learn about urban transformations. Other feedback was that more time was needed for the workshop, so participants had more time for discussions. Overall, participants felt like they learned about the value of collaborating with different perspectives. With this information, the researcher did nothing to change the artifact, but improved the final survey section by formulating more specific statements.

4.3.6 Conclusion

To conclude, based on the results from the test workshop some improvements to the materials have been made. First, the case description was improved by creating a section about the development plans of the municipality, to be used as input for the conversations. Second, regarding co-creation, no changes were made. Third, the structure of the workshop was improved by emphasizing the purpose of the workshop in the presentations, improving the intuitiveness of the assignment cards, and providing more clear instructions for making the assignments. Moreover, the cutout icons were replaced with a sticker sheet and half an hour was added to the time planning. Fourth, regarding the materials, the organizational level was replaced with project level, and the actor cards were improved by clarifying more clearly what sections were background information and what sections could be used during the assignments. Lastly, regarding the learning outcomes, only the final survey for participants was improved by adding more relevant questions.

4.4   Final Artifact

The final artifact consists of the redesigned materials and the design of the application process. Changes to the materials have been discussed in this chapter. The following materials are included in the package of the redesigned dialogue tool and can be seen bundled in Figure 12.

- Infographic 1 and 2 (see Figure 7 & Figure 8)
- Actor cards (see Figure 6)
- Assignment cards (see Figure 9)
- Integral approach card (see Figure 10)
- Icons on sticker sheet (see Appendix IV: Redesigned materials)

Regarding the workshop design, the common design elements from 3.1.6   Design Elements have been considered. Here the shared goal, participants, well-structured session, decision making, cognitive effort & behavior and the vision for the outcomes are discussed. In Figure 13, the workshop design has been schematically presented. With this information, the redesigned dialogue tool can be applied in practice.
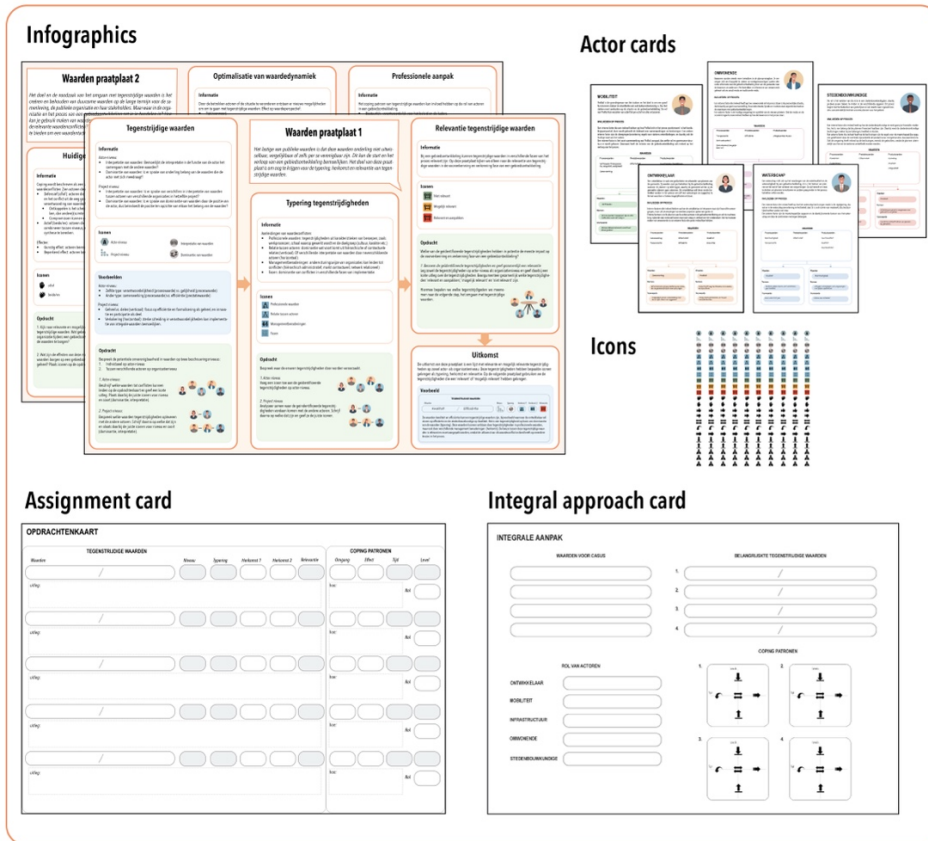
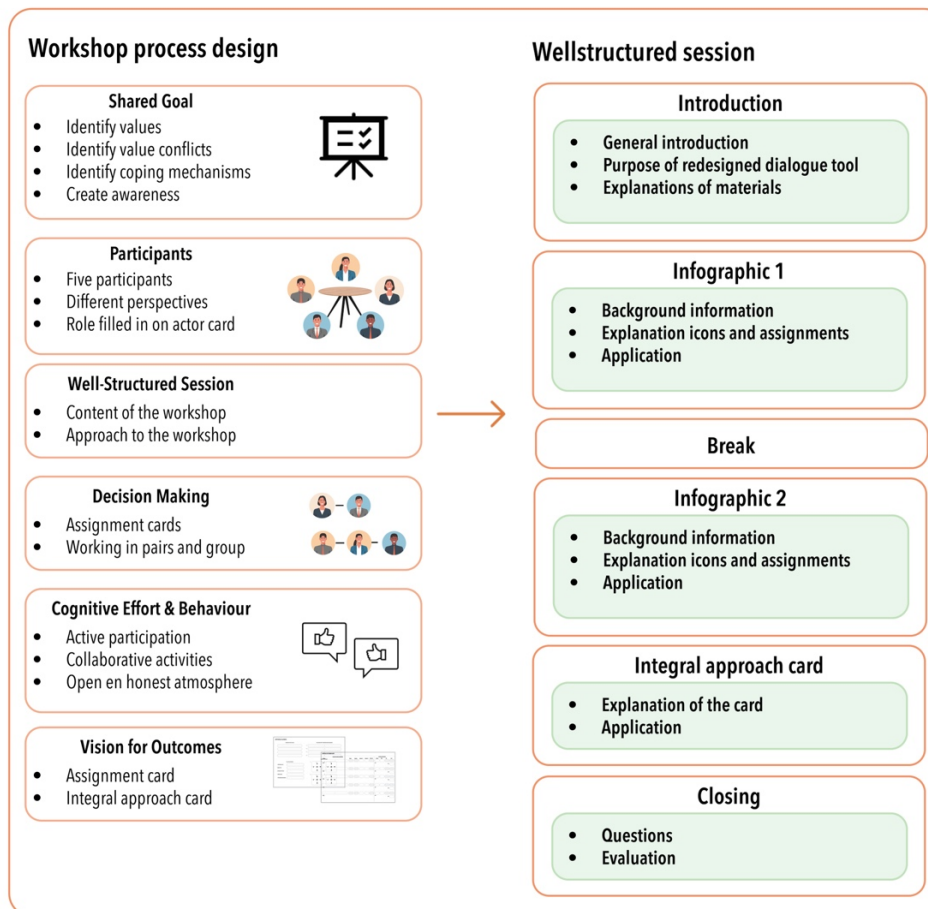*Figure 12: Materials redesigned dialogue tool*

Figure 13: Workshop process design

5   Phase 3: Validation

In this section the results of the survey are presented and synthesized with the results from the observations and unstructured observations from the facilitator. This is done for each of the categories as determined in the design brief, namely case description, co-creation, workshop structure, materials, and learning outcomes. More information on the workshop can be found in the methodology, section 2.3   Phase 3: Validation. The survey results can be found in Appendix V: Survey Results.

5.1   Results Workshop

5.1.1 Case Description

The respondents are positive about the connectivity of the infographics and the case description, and the results show they used the case description to formulate answers. In contrast, the observer noted that the participants only referred to the case description in discussions was when they were not able to think of practical examples from their own experiences. In other words, they used the case description to enhance the discussion about values, but not as content-related input for it. The facilitator had similar observations and noted that the conversation was mainly fueled by examples from their experiences in practice. This resulted in general answers to assignments, where details of the case description were lacking. The observer had comparable observations and added that the nature of a fictional case also limited the ability of a discussion to discover underlying mechanisms and tensions, as participants were not actually connected to each other. Therefore, details about development plans for urban transformations were not discussed. To conclude, the experiences of the respondents with the usage of the case description were different to the observations from the observer and facilitator.

5.1.2 Co-creation

Participants responded positively to the collaborative nature of the workshop, while feeling like they also had enough space to express themselves. The observer agreed and mentioned that due to the nature of the assignments, participants had to collaborate to formulate answers. Furter, the observant noted that discussions about the assignments were fueled by participants having a different interpretation of values or conflicting values, but that consensus was often reached after deliberate discussion. Regarding the expression of own perspectives and ideas, the observer mentioned that the workshop facilitated this. Moreover, they noted that that working in pairs was more effective for expressing own ideas and collaborating, than working with three. The number of participants was five, so when working in groups there was one group of two and one of three. What's more, the participants in the groups stayed the same throughout the workshop, resulting in participants not collaborating with other group members. Consequently, not all conflicting values between participants could be found. The facilitator reached a similar conclusion, as new conflicting values were discovered while filling in the integral approach card with the entire group at the end of the workshop.

According to the observer, the atmosphere during the workshop was relaxed and lighthearted, and along the way the participants enjoyed it more. The results of the survey show this positive attitude towards the workshop as well. After the workshop, the facilitator received feedback from the participants stating they enjoyed the workshop and thought it was well-organized. The aspect of collaborative problem solving from co-creation also scored quite well looking at the survey results. The observer somewhat agreed, stating that through discussions consensus was often reached, but as a result of infographic 2 not many concrete solutions to the conflicting values were found. The facilitator agreed with the latter, mentioning that decisions were not taken at all, and the participants often referred to a grey or in-between area with answers. Moreover, there was limited time for each assignment, so sometimes the discussions had to be cut off. In conclusion, the co-creation category scored well on the survey, and the observer and facilitator agreed with most aspects.

5.1.3 Workshop Structure

The workshop was guided by the facilitator using a PowerPoint with background information for the assignments and explanations about the icons. Respondents were positive about the completeness and clarity of the presentation and thought it matched well with the materials. The observations showed that more awareness about the purpose was created throughout the course of the workshop, thereby stating that in the beginning the goal of the assignments was unclear but after some time it became clearer. These observations are supported by the facilitator. Further, the observer noticed not many questions were asked to the facilitator, only during silent moments placing the sticker icons or for small clarifications. The facilitator noticed that at the beginning participants had quite some questions about the information and the corresponding icons, but along the way this decreased. This is also in line with the responses of the survey, as some participants responded they were able to make the assignments without consulting the facilitator and some responded they could not.

Regarding the time planning, some respondents agreed that they had enough time to make the assignments, where two were more neutral. The observer noted that a time indication for each assignment was lacking, thereby creating unclarity. Further, they noticed that sometimes there was too much time for an assignment, resulting in discussions about examples from practices and thus steering away from formulating answers to the assignments. This was also noticed by the facilitator, but they interpreted it as not having enough time to elaborately discuss assignments and thus that more time was needed. Therefore, the respondents and observations are positive about the time planning and structure of the workshop, whereas the facilitator is more critical.

The observation plan was more directed to finding whether workshop structure was a good guide to discover values, conflicting values, and coping mechanisms. The observer listened to conversations and concluded that the participants frequently discussed their own values facilitated by the workshop. What's more, they noticed that although participants already have some ideas of conflicting values, the infographics were useful in expressing these and discovering perspectives of other participants. But, regarding the coping mechanisms the observer noticed that participants were hesitant to make decisions and often formulated in-between options, thereby also not discussing the case description. The produced output also suggested that the participants interacted well with the materials, and that assignments were well-understood. Many conflicting values were discovered and characterized by using the icons, but for coping mechanisms participants were more hesitant with placing icons. Thus, the observer noted that the workshop was a good guide for having discussions on values and conflicting values, but hardly for coping mechanisms.

5.1.4 Materials

The appearance of the materials and the usability were mostly validated through the survey. The respondents were strongly positive about the overall appearance of the materials. Regarding the usability, the respondents were less positive about the completeness and clarity of the infographics, and slightly positive about the intuitional nature of the plates. The connectedness of the infographics with the case description received more positive results, as well as the match between the assignments and the assignment card. Furthermore, the actor card was perceived as somewhat useful, and they were intuitionally structured. Overall, the usability and appearance of the materials received a positive result, with the infographic resulting in the most division in answers.

As mentioned in the previous section, the materials facilitated a discussion on values and conflicting values, and moderately facilitated a discussion on coping mechanisms. For the latter the participants were more hesitant to make decisions and remained in an in-between area. The facilitator agreed.

5.1.5 Learning Outcomes

With the learning outcomes it was validated whether the artifact produced relevant outcomes for the participants. Relevant was defined as useful in practice during urban transformation projects. The participants agreed that they learned something about values and conflicting values in urban transformation projects through this workshop, some more than others. In addition, more awareness about early collaboration was created and some participants seemed to think that the information from the workshop is relevant and applicable in their work on urban transformations. And all participants agreed that they will use the learning outcomes in their work. The observer agreed that participants were able to take relevant information to their daily job, but that the results of the session, especially the identified conflicting values and coping mechanisms, were case dependent. In addition, the observer found that awareness about the contribution and applicability of this tool was created among the participants. The facilitator received positive feedback after the workshop about the applicability in practice. At last, the participants were asked to respond to two open ended statements in the survey. In summary, participants think the workshop is especially useful as it gives insight in personal and other actors' values and conflicting values, which creates understanding for each other's perspectives. However, before it can be applied in practice, refinement of the materials is necessary, and the scientifically formulated information should be rewritten.

5.2 Verification of design requirements

DR 1: The artifact should be applicable in the front-end phase of urban transformation projects in a railway zone of a medium sized city in the Netherlands.

The case description was created in accordance with the urban transformation characteristics from the interviews with practitioners and their corresponding urban development plans. It was created for the workshop to act as input for the discussions and assignments. The participants were positive about the usage of the case description in the formulation of their answers, but the observer and facilitator disagreed. The observer noticed that the conversations were often about examples from past experiences, thereby not discussing characteristics of the case description. It is possible that characteristics of a fictional case are not the best support, whereas real-world examples are a better foundation for arguments.

Furthermore, the observer noticed the discussions were held on a conceptual level about values, thereby not discussing details about the case. Whether this is problematic is a relevant discussion point. On the one hand, it could be concluded that the case description was not used, thus it cannot be validated whether the dialogue tool can be used in the context of an urban transformation. On the other hand, in the session actors operating in urban transformation projects had discussions about values and conflicting values that are relevant in these cases, thereby concluding that the redeveloped dialogue tool can be used in an urban transformation context. Because the respondents were positive about the connectivity between the infographics and the case description, the latter is more likely. Moreover, in the open-ended questions the respondents stated that the workshop could be useful in practice as it stimulates conversations about values and value conflicts and develops understanding for each other's perspectives. Thus, although the respondents and observer disagreed about the usage of the case description, the dialogue tool proved to be applicable and useful in an urban transformation context in the Netherlands. Therefore, it can be concluded that the first design requirement is met.

Through the open questions in the survey and from the observations some feedback for the materials could be derived to make it even more applicable in the context of urban transformations. Regarding the infographics, the participants were moderately positive due to the difficulty of the information, thus suggested to make it more accessible by rewriting the information. Another point was that the last pillar of infographic 2, 'professional approach' about the roles of actors in the process, was not relevant for urban transformations. It was suggested to change this to an escalation model, thus making a governance model of decision making for when conflicting values turn into dilemmas. In the practical

investigation interviews, the escalation model was often mentioned as a tool for decision making, thus the suggestion is worth investigating. In addition, there was some feedback on the integral approach card. This card also included the role of the actor from the last pillar of infographic 2, so it was suggested to change this to the opinion of the actor on the value conflicts. In other words, the actors can choose their standpoint on the top four conflicting values, thereby using a scale to indicate their view on the conflict. So, one actor could be entirely in favor of quality over efficiency, whereas another actor could be in the middle but tending towards quality. This way, actors don't have to make decisions in the workshop and can give more in-between answers, which occurred often according to the observer. With this, an overview of the conflicting values, the coping mechanisms and the standpoint of the actors is produced.

DR 2: The artifact should stimulate public value co-creation between participants.
From the literature investigation it was determined that the materials should stimulate co-creation (Hobma et al., 2019; Torfing et al., 2019) and therefore included in the design requirements. Aspects related to the design of the process are that several public and private actors operating in different platforms and performing different practices are included. In the simulation this was facilitated by the five different roles, which were developer, water board, mobility, urban planner, and local resident. The actor cards provided an overview of the role description, influences on decision making, and the most important values. These were mostly filled in by experts from the field but represented by consultants in the actual session. Although the consultants had work experiences in the fields related to the roles they represented, they did not practice the role daily. The actor cards were used as guidance and had to be interpreted by the consultants. Moreover, the four out of the five participants were consultants. So, even though they represented a role such that the simulation consisted out of different perspectives, their daily job was similar. Because the nature of the study was simulation research, it can be concluded that including different perspectives as part of co-creation was achieved.

Another aspect of a co-creation process is mutual understanding and trust that is needed for collaboration, which is an important activity in co-creation. The observer found that the atmosphere was lighthearted and relaxed. The participants said they liked doing the workshop, which suggests they liked the atmosphere, the assignments or both. Further, they all agreed that they got enough space to express themselves and that they were able to collaborate well. This suggests the redeveloped dialogue tool provides a good atmosphere for own expression and collaboration. However, in the workshop a fictional case was discussed, and participants did not have dependencies on each other in the case. Therefore, there were no underlying mechanisms at play that could influence the atmosphere or collaboration in the session, like distrust from past experiences. From the interviews with practitioners, it became apparent that underlying mechanisms can play a role in the process and decision making. They only involved stakeholders after plans were made by informing them, and only included them in the process when the plans were almost finalized. They did this to prevent growing expectations from stakeholders, while their opinions might not be considered. Thus, this can influence the atmosphere during a real-world session. In addition, four participants are colleagues with good connections, thus the good atmosphere could have been a result of their familiarity and respect for each other. In conclusion, the results show that there was an open atmosphere during the workshop, but whether the dialogue tool also facilitates this in a real-world session should be further researched.

The last aspects of co-creation in this discussion are the production of outcomes and solving interconnected problems. The respondents were moderately positive about problem solving with other participants. According to the observer, consensus was often reached after deliberate discussions between participants, but mentioning that this was more effective when working in pairs. For the simulation five participants were invited, following the recommendations from Kuitert (2021). However, five participants turned out to be impractical when making assignments in smaller groups. Furthermore, not all participants were able to collaborate with each other, as switching collaboration partners with five people is difficult. As a result, not all conflicting values were found while applying the infographics,

as was discovered when new conflicting values were brought up when filling in the integral approach card at the end. So, inviting four or six participants to the sessions could have improved the collaborative problem-solving aspect of co-creation and would have enabled switching collaboration partners that can contribute to a more complete overview of conflicting values.

In conclusion, the tool facilitated all aspects of co-creation, some more than others, and some recommendations can be concluded to improve the facilitation of co-creation. Therefore, the second design requirement is met.

DR 3: The artifact should provide guidance for the discussion of values, conflicting values, and coping mechanisms.
Through observations it was seen that the dialogue tool facilitated discussions on values, interpretation of those values by actors, discovering conflicting values, and for recognizing the conflicts. Further, it led to discussions on coping mechanisms. But the observer noted that participants were more hesitant to reach conclusions on coping mechanisms, as their solutions often remained in an in-between area. This could be a result of the undetermined governance structure, as this is the first time that the actors meet. With limited knowledge about the governance structure, it is unclear what actor is responsible for what decision-making. This can result in a hesitant attitude towards determining coping mechanisms to the identified conflicting values. Furthermore, participants are representing an organization during the workshop, thus they are not able to make decisions on the spot that could influence their position or actions. The lack of decision-making could also be a result of wanting to avoid conflicts early on, which was the strategy of the practitioners from the practical investigation. In conclusion, the redeveloped dialogue tool facilitated discussions on values, value conflicts, and coping mechanisms, but the latter discussions remained very general.

Whether the artifact was a good guideline, depends among others on the structure of the workshop (Drahota et al., 2016). During the workshop, a presentation was used by the facilitator as guidance and the participants were positive about its clarity and completeness. That is probably because the concepts, icons, and assignments were explained in detail, which according to the participants was very necessary. In the open questions they stated that the information on the infographic was sometimes scientifically written, thereby making it difficult to understand. The observer and facilitator also noticed that questions often were about the concepts, icons, and assignments. So, in the current form, the tool cannot be applied without a facilitator that can explain the scientifically written information. It is therefore useful that the information is rewritten such that it is more accessible to everyone.

To summarize, the presentation provided good guidance to the workshop, and it facilitated discussion about values and conflicting values and opened the conversation about coping mechanisms. However, improvements to the information on the infographic could be rewritten to be more accessible. In conclusion, this design requirement is met.

DR 4: The starting point for the artifact should be the tool 'speaking of values' from Kuitert (Kuitert).
The original dialogue tool set was used to create the redesigned tool set, with the idea to keep the purpose of the tool set similar. According to the observer, this was partially achieved because the tool stimulated discussions on values, value conflicts and partially on coping mechanisms occurred. This aligns with the purpose as presented by Kuitert (2021). Whether the purpose of the dialogue tool in the context of urban transformations should be similar to the original dialogue tool is a relevant point that will be discussed in the section discussion of dialogue tool. The only major differences were the introduction of the integral approach card and the replacement of infographic 1 by the actor card. Overall, the respondents were positive about the appearance of the materials, the way they connected, and the usefulness. All scores about the infographic were moderately positive, probably because the scientific nature of the information made it difficult to understand at first. Therefore, it can be concluded that this design requirement is met.

DR 5: The artifact should produce outcomes that are useful for vision development for urban transformations.
The participants were positive about the usefulness of the tool in practice and stated that they would apply the outcomes and information in their work on urban transformations. The observer raised the relevant point that the outcomes of the tool are very case dependent, thus that results cannot be directly transferred to other projects. Moreover, the workshop was about a fictional case, which makes it difficult to say for the participants whether this could be useful for the vision development. But the participants were experts in their fields with experience in urban transformation, thereby making their statements about the usefulness in practice more reliable. To clarify whether this dialogue tool actually produces outcomes useful for vision development in urban transformations, case study research with a post-workshop evaluation should be conducted. Thus, assuming the survey responses are reliable, the design requirement is met.

DR 6: The artifact should adhere to the synthesized design elements for public value co-creation sessions.
Brief explanations on whether these design elements are represented in the workshop are presented in Table 11. In summary, some design elements are met, whereas others are partially met. The partially met elements are often a result of the hesitant attitude towards decision making in the workshop, which is discussed elaborately before. Overall, the design elements were all included in the artifact, some more successful than others, and it can be concluded that this design requirement is met.

Table 11: Verification design requirement 6

#	Design element	Explanation	Met?
6.1	Shared goal/vision	The purpose of the session was explained in the individual interviews and at the beginning of the presentation, but according to the observer it was somewhat unclear at the start. This claim is supported by the fact that the facilitator was contacted by one of the participants before the workshop for more information about the purpose. Throughout the course of the session, participants understood the assignments and purpose better, which is backed by the responses of the survey.	Partially
6.2	Defining actors and their roles	On the actor cards, the roles of the participants and their most important values were described in detail. This was used for participants as support during the session. They were positive about the usefulness of the actor cards during the workshop.	Yes
6.3	Structure of session	The structure of the session is discussed in the workshop structure section, with the conclusion that even though guidance is necessary the presentations and infographics provided a good workshop structure.	Yes
6.4	Decision making	The personal assignment cards allowed every participant to be in control of their answers, and the cards were positively evaluated in the survey. However, the observer noticed that decision making in the last part of the workshop was more difficult, and the answers remained in the in-between area.	Partially
6.5	Cognitive effort	All participants actively participated in the activities, produced filled-in assignment cards and in group discussions all participants contributed. During the assignments, the observer noticed that working in pairs was more efficient for reaching consensus and that switching collaborative partners should enable identification of even more conflicting values.	Yes

6.6	Behaviour/ involvement	According to the observer, the atmosphere was light-hearted and relaxed. The participants had honest conversations and were all actively participating.	Yes
6.7	Outcomes	The actor cards produced a clear overview of the most important values of each actor, and through the assignment card an overview of the conflicting values and their coping mechanisms was determined. With this information the integral approach card could be filled-in, but that was more difficult. Participants found it difficult to make general decisions, thus revision of this card is necessary.	Partially

5.3 Conclusion of verification

In the verification of design requirements, the results of the workshop were thoroughly discussed and conclusions to the design requirements have been drawn. These conclusions have been summarized in Table 12, below. All design requirements have been met, although some with more conviction than others as can be read in the table. It can be concluded that the redesigned dialogue tool was meant for practitioners and initiators of urban transformation projects to get an overview of the values and conflicting values from other stakeholders and to find relevant coping mechanisms. It facilitated co-creation between multiple public and private actors, and it was validated that the redesigned dialogue tool contributed to the discussion of values and conflicting. Furthermore, it contributed to understanding the perspectives of other stakeholders, and helped participants understand that conflicting values could even arise from different interpretation of similar values. In addition, the participants acknowledged the added value of this tool for early identification of value conflicts in the front-end of urban transformations, as it produced relevant outcomes. Further, it could be applied as a methodological approach to identify values and conflicting values in practice, so practitioners can collaboratively find solutions to the complex spatial challenges.

Table 12: Conclusions of validated design requirements

#	Design requirement	Redesigned dialogue tool	Met?
1	The artifact should be applicable in the front-end phase of urban transformation projects in a railway zone of a medium sized city in the Netherlands.	The dialogue tool proved to be applicable and useful in an urban transformation context in the Netherlands. Some improvements could be made to the materials to ensure better alignment, such as adding an escalation model assignment and updating the integral approach card.	Yes
2	The artifact should stimulate public value co-creation between participants.	The tool facilitated all aspects of co-creation, like collaborative problem solving and sharing resources, knowledge, and ideas. In addition, it facilitated an open atmosphere with mutual understanding and respect. But it is recommended to invite an even number of participants and switch collaborative partners.	Yes
3	The artifact should provide guidance for the discussion of values, conflicting values, and coping mechanisms.	The presentation provided good guidance to the workshop, and it facilitated discussion about values and conflicting values and opened the conversation about coping mechanisms. However, improvements to the information on the infographic could be rewritten to be more accessible. In conclusion, this design requirement is met.	Yes

4	The starting point for the artifact should be the tool 'speaking of values' from Kuitert (2021).	The purpose of the dialogue tool is similar to the redesigned dialogue tool, and most information, assignments and icons were only altered to fit the context of an urban transformation.	Yes
5	The artifact should produce outcomes that are useful for vision development for urban transformations.	The participants acknowledged the relevance of the dialogue tool in practice, thereby also stating that they were likely to use the produced outcomes in their work in urban transformations.	Yes
6	The artifact should adhere to the synthesized design elements for public value co-creation sessions.	Overall, the design elements were all included in the artifact, some more successful than others, and it can be concluded that this design requirement is met.	Yes

6 Discussion

6.1 Reflection on the final artifact

Several key findings of the validation phase will be translated into discussion points in this section. The first point is the reconsideration of the purpose and intended users. From the results it can be interpreted that the tool proved to be useful for the identification of values and conflicting values, but the discussions remained conceptual, and participants were undecisive of solutions. Furthermore, the respondents stated that the tool proved to be useful for developing understanding for other participants' perspectives, which is especially valuable. Thus, even though it contributed to the early identification of value conflicts and facilitated co-created discussion, the participants valued the understanding of the perspectives more. So, the purpose of the tool in the context of urban transformations could be enhanced to learning about actors' perspectives on values and conflicting values. Regarding the users, it was intended for initiators of urban transformations to get an overview of the values from other stakeholders and discover conflicting values and coping mechanisms early in the process. In the workshop to validate the tool most participants acknowledged the added value of the tool. This suggests that it is not only useful for initiators but for all participating stakeholders. The need for identifying the perspectives of other actors is supported by the practical investigation, as the practitioners from the municipality mentioned their conceptual plans are based on an internally performed stakeholder analysis. The dialogue tool can be used in this context in two ways. First, it is possible to apply the materials like intended and invite several public and private stakeholders and use the outcomes as input for a conceptual urban development plan. However, practitioners mentioned that it is not desirable to raise expectations of including their wishes in the plans, even though the real interests of stakeholders can only be identified by including them in the process. Thus, a second option is the application of the materials where practitioners from the municipality use the actor cards themselves to represent a stakeholder. Normally, a stakeholder analysis aims to identify stakeholders, their interests, and their impacts, to prioritize these stakeholders (Yang, 2014). Interests can be defined as something to engage attention to (Merriam-Webster, n.d.-a), whereas values conceptualize desires and needs into powerful motives with wide-reaching effects and are part of the social identity of individuals or groups (Provis, 1996). Thus, with application of the dialogue tool the perspectives of other stakeholders on values can be identified, as well as conflicting values. This provides more insight in the underlying motives of stakeholders, thereby making an analysis more complete.

Whether the dialogue tool is desirable is a second point of discussion. From the literature investigation it could be concluded that the grand spatial challenges of the coming years required collaborations between public and private stakeholders in the form of public value co-creation (Beer, 2023; Torfing et al., 2021; Verheul et al., 2019). It was argued that it is essential to identify conflicting values in the front-end of urban transformations, which can be achieved by redesigning the existing dialogue tool (Kuitert, 2021). However, from the practical investigation it could be concluded that practitioners do not feel the need to involve other actors in the front-end process of an urban transformation. Furthermore, both experts and practitioners stated that identifying values and conflicting values was not methodologically included in the process. In fact, they mentioned that the conceptual level of identifying values and conflicting values was often overlooked, let alone discussed with other stakeholders. This was partly due to the lack of a methodological approach and partly due to the lack of relevance according to the practitioners. So, even though from a theoretical point of view public value co-creation is considered essential in the front-end of urban transformations, it is not applied in practice.

The lack of desirability in practice was recognized by the researcher during the validation phase of this study. The initial idea for the validation was the application in a real-world setting, thus in an actual urban transformation case with stakeholders. However, the practitioners from the municipality did not want to raise expectations by stakeholders that their wishes were taken into consideration, so it was not possible to apply it to a real context. From this, it can be taken that the municipality is hesitant towards early

participation, even though participation is mandatory in plan development due to the new environmental law (Rijksoverheid, n.d.-a). An alternative option for validation was to create a simulation of an urban transformation case and invite relevant stakeholders form practice to play the workshop. Experts from practice were invited for an interview to fill out the actor card to eventually play it in the workshop. None of the experts that were interviewed had time to participate in the workshop, and only one expert in the workshop was not a substitute for the role. They all mentioned they did not have time, or coming to a workshop on sight was not possible. Since this workshop was about a fictional case this is understandable. However, it opens the discussion about whether this will happen when it is applied in practice.

A third point of discussion is whether public and private stakeholders are willing to participate in such a workshop. On the one hand, it gives stakeholders the opportunity to express their values for the transformation, which can be taken into consideration by plan developers. Moreover, the initiator can gather relevant information as input for the conceptual urban development plan. According to Hobma et al. (2019) governance structures allow for more collaborative approaches to vision development, thus participation in practice will be seen as more urgent. On the other hand, it can raise expectations by stakeholders or make the conceptual plan more difficult to draft. These points were raised by practitioners during the practical investigation. What is more, stakeholders might not acknowledge the added value of the dialogue tool. The lack of acknowledgement of the added value of the dialogue tool was observed by the researcher during the validation phase. Before the workshop, the facilitator was contacted to provide more information about the purpose of the workshop. It was unclear to them what would be discussed that there were not enough financial details to work with, and that in this stage they were never included. The latter was also acknowledged by the other participants. So, in the beginning of the workshop the purpose was quite unclear and participants were not used to discussing abstract concepts, as stated in the observations and survey results. It was also mentioned that the information was very theoretically written. A reasoning for this, could be that the discussion on values and conflicting values does not occur in practice and practitioners start with vision development immediately, as discovered in the practical investigation. Therefore, it is possible that it is unclear what the added value of implementing the dialogue tool in the front-end is, thereby making people hesitant to participate. However, after participating in the workshop, the participants were enthusiastic about the information and outcomes of the workshop, also stating that it could be relevant in their daily work in urban transformation projects. Furthermore, they acknowledged that there was added value in early collaboration and mentioned that the usefulness is mainly because it contributes to the understanding of other actors' perspectives. From this, it could be concluded experts acknowledge the added value of the tool, but only after participation. Thus, to apply this tool in practice, it is necessary to elaborately explain the purpose of the tool or even enhance the purpose of the tool, such that practitioners are open and willing to participate.

A fourth discussion point is related to the users of the final artifact. The tool is intended for initiators of urban transformations or actors in the project to create awareness about conflicting values or to get an overview of all values, conflicting values, and coping mechanisms. The tool was tested in a workshop with participants that often practiced the roles of initiators or actors in a project. Feedback from the participants was that the tool used scientific concepts, which made it difficult to understand and quite abstract. Furthermore, technical terms related to urban transformations are represented. Therefore, the tool can only be played with participants with an understanding of urban transformations. In their interview, the practitioners of the municipality mentioned that the added value of the tool for them would be to use it for participation with local residents and companies. Kuitert (2021) shared this view in the future outlook, stating that it could be interesting to apply the dialogue tool in advanced participation. However, it can be concluded that the redesigned dialogue tool in the current state is not suitable for this, as the tool requires understanding of technical terms and scientific concepts. Thus, although in the current state it is not suitable, this additional practical relevance should be explored.

Fifth, the application of the redesign dialogue tool should be discussed, as it was designed to be played physically on location. Prior to the workshop, the researcher experienced some cancellations from participants because it could not be played online, so the demand for online participation of this workshop became apparent. This is also acknowledged by Kuitert (2021), she stated that creating an online version would be essential due to a more digitized and remote working society. However, in physical workshops people communicate using paralanguage which may include facial expressions, body language, pitch, volume, and intonation, and this is lost in virtual workshops (Clubb, 2007). Furthermore, interactions between participants are not organic in virtual workshops, and they do not facilitate opportunities to socials and network during and after the workshop (Becerra et al., 2021). Paralanguage and aspects of interactions are needed to facilitate public value co-creation, as it contributes to mutual understanding, trust, personal chemistry, and collaborative activities (Toukola et al., 2023). In addition, it is not possible to achieve the same outcomes as physical workshops (Galabo et al., 2020). So, whether a dialogue tool like this should be available online depends on whether it can facilitate public value co-creation, which in the current form it cannot and it is questionable whether this is achievable at all.

6.2   Limitations

Part of the discussion is the consideration of the limitations of the study considering the internal and external validity of design science studies. The internal validity is measured by the plausibility of the results, considering the causal, architectural and rational inference (Wieringa, 2014). The external validity refers to the degree of support for generalization of the object of study, sampling, and treatment (Wieringa, 2014). These concepts will be explained in more detail in the corresponding sections.

6.2.1   Internal Validity

The internal validity of a design science study is the plausibility of the results, thereby looking at the casual inference, architectural inference, and rational inference (Wieringa, 2014). The casual inference refers to the influence of the sample and measurement on the case phenomena, in other words produced the study reliable results. The reliability of the research depends on the extent of the replicability of the study. A threat to the reliability of this study was the interpretation of the qualitative data collected in the practical investigation and the validation phase of the artifact. To ensure reliable interpretation of the interviews, the collected data were summarized in a large excel table with the categories and questions as rows and the answers as columns. This way, a complete overview of the answers was created which allowed for easy comparison and conclusions. This was done for both the practical investigation analysis and the results of the validation phase. Another threat to the reliability could have been the designing phase, as the repeatability of coming up with the final design is challenging. That is because, designing is dependent on interpretation of design requirements and applying design solutions can be subjective. As a measure, the design decisions were carefully documented, and specifications of the final materials were presented. This way, the final design of the artifact was traceable and should be more reliable.

The architectural inference is about acquiring enough and relevant data so that the components of the case produce good results (Wieringa, 2014). A measure for this problem is the triangulation method, meaning several mixed data collection methods are used (Yin, 2009). In the investigation phase, two perspectives on the problem context were taken, a literature and practical approach. Thereby a more complete overview of the problem context was created as a measure for the internal validity. Furthermore, in the validation phase multiple data collection methods were applied, a post-simulation survey, observation from both an independent observer and the facilitator, and the outcomes. This ensured a more complete analysis of the artifact in the simulation and made the conclusions more internally valid.

Another threat to the internal validity, looking at the architectural inference, is the collection of data through observations (Van Thiel, 2014). The risks are selectivity and subjectivity of the observer, as they

consciously or unconsciously choose what to note down in the protocol and what to ignore. This could occur by both the independent observer as the facilitator, but especially in the latter. There are five participants during a case study session, thus the observer cannot note down all events and behaviors. Furthermore, there is a possibility of observer bias when own expectations or experiences influence the observations made. A measure to these problems is using a well-defined method for the observer. In this research, a detailed observation protocol has been created with specific questions that can be filled in by the observer during the session. Furthermore, the observations from the facilitator were mostly only used to support the observations or survey results, and conclusions from standalone observations from the facilitator were not included.

The rational inference refers to the discovering rational explanations for behaviour of the participants (Wieringa, 2014). The participants of the study were consultants representing a role during the workshop and their participation was a non-recurring thing. The only underlying motivation or goals that could have influenced their behaviour was that they wanted to stay respectful towards the facilitator and each other, because they are colleagues. This could have influenced the atmosphere and could have been an explanation of the relaxed atmosphere as described by the observer.

6.2.2 External validity

The external validity of design science research relates to the degree of support for generalization of the object of study, sampling, and treatment (Wieringa, 2014). First, the object of study refers to the designed artifact in a context, and depending on the population predicate and ambiguity of this predicate the results of this study can be generalizable. In other words, it should be discussed whether the redesigned dialogue tool can produce similar results with other populations. The population, in the simulation the five represented roles, were determined by the researcher based on the practical investigation and their variety in interests. This variety could have resulted in many conflicting values and thus relevance of the tool was created by this selection of participants. Some measures have been taken as support for the population predicate. Four participants in the simulation were consultants representing the role of a stakeholder, thus the outcomes were dependent on their interpretation. As a measure, the role cards were filled in by experts from practice, so the values on the cards corresponded somewhat to reality. Moreover, the relationships between the participants did not represent reality. Four participants were colleagues, and the atmosphere was relaxed and lighthearted where participants were open and honest. In reality, there are complex social constructs that influence the behavior of actors (Sénécal, 2012). The complexity of the relationships between actors in a real-world setting was not considered in this simulation. Selecting other participants might have resulted in other outcomes of value conflicts, but conclusions on the usage of the dialogue tool in this context and the usefulness of the dialogue tool might have been similar. That is because the measurements were about the dynamics, the structure of the workshop, and the materials, not about the output of the assignments. Thus, if different roles were represented using the actor cards, similar results to this study could have been found.

Second, sampling refers to the influence of selected case on the results, thus whether the observed phenomena also occur in other cases (Wieringa, 2014). The case description in this simulation was created by the observer based on the interviews with the practitioners and corresponding online conceptual urban development plans. Thus, the researcher interpreted the interviews, and decided what aspects to include in the case description. There is a possibility that through researchers' bias, only aspects in the case description are included that steer towards certain results. Furthermore, the case description might not have captured the complexity of a real-world situation, thereby questioning whether the dialogue tool can be applied to the context of an urban transformation. However, it can be concluded that the researcher tried to make the case representative of the real-world, thus when the redesigned dialogue tool is applied in the real-world somewhat similar results should be generated.

Third, the treatment is about the application of the artifact design, specifically looking at whether the artifact is implemented as specified and what other factors could have influenced the changes in the object of study (Wieringa, 2014). The simulation was set-up to represent a real-world setting as good as possible, but the underlying dynamics of a real-world situation could not be replicated. Those dynamics can influence the results of the implementation of the redesigned dialogue tool in a real case, so that should be considered when applied. Further, the relaxed atmosphere could have been a result of the participants already knowing each other and not being dependent on each other, thereby unintentionally influencing the results. Thus, there is a possibility that with the application the results are slightly different.

7 Conclusion & Recommendations

7.1 Conclusion

The purpose of this research was to redesign an existing dialogue tool such that it contributes to the early identification of value conflicts in public value co-creation discussions for urban transformations in railway zones in medium sized cities in the Netherlands. Design science principles were applied as the methodology to redesign an existing dialogue tool for this context, which included investigation of the problem context, design of the artifact and validation of the artifact. Through a literature investigation it was discovered that a collaborative governance structure should be set up by the initiator of urban transformations, and conflicting values should be managed early in the process to avoid dilemmas. Additionally, public value co-creation could facilitate the involvement of other stakeholders in the process and facilitate discussion of public values and conflicting values. However, the interviewed experts and practitioners do not involve other stakeholders in the front-end of urban transformations methodologically and do not explicitly discuss values and conflicting values in their process. The synthesized conclusions from the literature and practical investigation led to a design brief consisting of a design context, goal, and requirements. The requirements ranged from the artifact being applied to the context of an urban transformation, facilitating public value co-creation, and improving the materials to produce relevant learning outcomes.

Through an iterative design process the final artifact was developed and improvements were gathered from a test workshop for which a simulation of a public value co-creation process about an urban transformation was created. A similar simulation of a public value co-creation process was created to validate the final artifact, the redesigned dialogue tool, in accordance with the design requirements. Through independent observations, a post-simulation survey and observations by the facilitator several conclusions were reached. First, the application of the dialogue tool facilitated public value co-creation by creating an open atmosphere where multiple public and private actors collaboratively worked to solve problems and find solutions. In addition, it can be concluded that by applying the redesigned dialogue tool, the most important values of the participants could be discovered and used in the workshop with the actor card. Moreover, it facilitated discussions about interpretation of values and conflicting values, which is also supported by the produced outcomes. Decision-making and reaching conclusions on coping mechanisms proved to be difficult in the simulation, so a vision for the urban transformation could not be formed. Nonetheless, the results show that the outcomes could be useful in urban transformation projects, as participants were positive about using the learning outcomes in their daily work.

Currently, practitioners in urban transformations are not involving stakeholders in the front-end of their projects, although it is seen as essential from a theoretical perspective. It can be concluded that the tool is applicable in the context of an urban transformation, and participants acknowledged that relevant outcomes were produced. Thus, it is recommended that practitioners apply this tool in the front-end of their urban transformation projects thereby involving multiple stakeholders. However, the complexities of an urban transformation case and the social constructs with its stakeholders have not been entirely considered in the validation, so results of these applications might be slightly different.

In conclusion, the redesigned dialogue tool can be used as a methodological approach by initiators and stakeholders in urban transformation projects in railway zones in medium sized cities in the Netherlands to get an overview of the perspectives of others, as well as to identify values, conflicting values, and coping mechanisms in a public value co-creation setting.

7.2   Recommendations

7.2.1   Usage of the Redesigned Dialogue Tool

The tool is intended for initiators of urban transformations, such as a municipality, in railway zones of medium sized cities in the Netherlands. It is recommended for practitioners and experts working in urban transformations to involve other stakeholders early in the project to identify values and conflicting values. It was validated that the redesigned dialogue tool produced useful outcomes for the front-end. Furthermore, the results showed that it contributed to the understanding of other participants' perspectives, which is needed for collaborations to find integral solutions to the complex spatial challenges in the coming years. Thus, it is recommended that the redesigned dialogue tool is applied.

There are a couple options of applying the tool. First, the tool can be played using the general case description that was created for the final workshop and the prefilled in actor cards. The purpose should then be to create awareness of different perspectives among actors and to take participants out of the everyday dynamics. A second option is to use the case description, but have the participants fill in the actor cards themselves. This has a similar purpose, with added benefit that the participants can also discover the value palettes of other actors and conflicting values that are relevant. A third option, is to use the case of the own urban transformation and the prefilled-in actor cards, thereby creating awareness among the participants of other perspectives and already discovering some important value dynamics. The fourth option is to use the case of the own urban transformation and have participants fill in their own actor cards. This option is most recommended by the researcher, as the output of the assignments is directly useful in the project and awareness of the different value perspectives is created. A last option is to use either the own case or the general description, but have participants represent another role card during the workshop. This way, participants learn to consider other perspectives and create understanding of each other's perspectives. An additional advantage is that disputes from underlying tensions between actors are prevented, and a more open atmosphere is created.

For each option it is also possible to have multiple sessions, where first infographic one is played and in a second session infographic two. Furthermore, it was concluded that facilitation of the session is necessary, and it should be played with an even number of participants, so either four or six, so pairs ca be easily formed. Also, the facilitator should aim to switch collaboration partners more often, such that a greater overview of conflicting values can be created. Lastly, the amount of time needed for the total session should be at least 2.5 hours, but it is recommended to take 3 hours.

7.2.2   Improvements and Future Outlook

The materials could be improved by making the information on the infographic more accessible for participants who are not active in an academic context that are involved in the urban transformation project. This way, the tool could possibly be applied to participation between the municipality and local residents and companies and makes it more accessible to other stakeholders in an urban transformation. Another suggestion is to replace the last pillar of infographic 2 with an assignment to create an escalation model, thereby also updating the integral approach card to make it match. The integral approach card should also be updated by introducing a section where the actors can indicate where on the scale of two conflicting values they are positioned.

Further, a recommendation for further research is to validate the redesigned dialogue tool such that the results are externally valid. The tool should be applied in a real-world case in the front-end of an urban transformation and the participants should be connected to the case and each other. This way, it can be evaluated whether the tool can be used in the complexity of an urban transformation, and additionally the influence of social constructs can be evaluated.

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Appendix I: Practical Investigation Interview Questions

Categorie 1	Categorie 2	Hoofdvragen	Subvragen	E1	E2	P1	P2
Practitioners	Introductie	Kan je kort vertellen wie je bent en hoe je betrokken bent bij de gebiedsontwikkeling [stad]?				x	x
		Kan je kort vertellen wie je bent, welke ervaringen je hebt met gebiedsontwikkelingen en wat daarin jouw rol was?		x	x		
	Proces	In welke fase zit de gebiedsontwikkeling [stad] momenteel? Welke processmatige stappen zijn net gezet en welke komen er nu aan?				x	x
		Hoe wordt het proces van de gebiedsontwikkeling momenteel aangepakt, kijkende naar het stationskwartier? (start tot conceptversie)				x	X
			Hoe is de noodzaak voor transformeren ontstaan? Komt dat door beleidsstukken, of is er een ander leidende principe?			x	X
	Externe partijen	Welke andere partijen dan de gemeente zijn er bij dit proces betrokken?				x	X
			Welke rol hebben deze partijen binnen het proces? (design, implementatie, initiator)				X
			Op welke manier worden ze er nu bij betrokken? (wekelijks, maandelijks)			x	X
		Hoe verloopt de samenwerking binnen de gemeente?				X	
			Hoe verloopt de samenwerking tussen private en publieke partijen?			X	
			Hoe verloopt de samenwerking tussen publieke en publieke partijen?			X	
			Wie neemt er besluiten?			x	X

			Hoe zijn de samenwerkingsprocessen ingericht, en wie neemt het voortouw daarin?			x	x
	Waarden gebiedsont-wikkeling	Wordt er bij deze gebiedsontwikkeling binnen de gemeente, tussen publiek-publiek en tussen privaat-publiek specifiek gepraat over waarden?				x	X
			Welke waarden spelen er een belangrijke rol voor de gemeente?			X	
			En welke waarden spelen er een belangrijke rol voor andere partijen?			x	
		Spelen er bij deze gebiedsontwikkeling waarde conflicten of dilemmas?				x	X
			Wat voor waarden conflicten zijn dat?				X
			Tussen welke partijen spelen er waarde conflicten?			x	
			Hoe wordt er omgegaan met deze conflicterende waarden?			x	X
		Is er behoefte om meer inzicht te krijgen in welke waarden conflicten er spelen vroegtijdig in het proces? (voor planvorming fase)				x	X
			Welke partijen zouden daar geinteresseerd in zijn?			X	x
Experts	Proces	Hoe wordt het proces van een urban transformatie normaal gesproken aangepakt? (start tot conceptversie)		x	X		
			Is er een leidend principe? Zijn er beleidsstukken van invloed?	x	X		
			Is er in de huidige aanpak ruimte voor waarden verschillen?	x	X		
	Samen-werkingen	Is er bij de gebiedsontwikkelingen sprake geweest van samenwerkingen tussen publieke en private partijen?		x	X		
			Hoe werden die samenwerkingsprocessen ingericht?	X	x		
			Welke rol hebben deze partijen binnen het proces? (design, implementatie, initiator)		X		
			Wie neemt er besluiten?	X	X		
	Waarden Gebiedsont-wikkeling	Wordt er bij een gebiedsontwikkeling binnen de gemeente en/of tussen de gemeente en externe partijen gepraat over waarden?		X	X		
			Op welke manier wordt er over waarden gesproken?	X	X		
			Spelen er dan ook waarde conflicten of dilemmas?	X	X		

			Zo ja, wat voor waarden conflicten zijn dat en tussen welke partijen spelen deze?	X	X		
		Is er behoefte om meer inzicht te krijgen in welke waarden conflicten er spelen vroegtijdig in het proces? (voor planvorming fase)		X	X		
			Welke partijen zouden daar geinteresseerd in zijn?	x			
	Artifact	Worden er nu al workshops aangeboden om samenwerkingsprocessen te verbeteren?		x	X	x	X
			Worden er nu ook workshops aangeboden om te kijken naar waarden van verschillende partijen en conflicterende waarden?	X	x		
		Ik wil een workshop opzetten dat gaat over waarden en waarde conflicten. Welke belangrijke elementen moet ik echt niet vergeten?		x	X	x	
			Wie zou daar bij moeten zijn?	x	X		x
			Hoe lang zou zo'n workshop mogen duren?			x	
		Met welke elementen van een workshop stimuleer je samenwerking tussen verschillende actoren?	Wat doe je als je merkt dat de samenwerking niet loopt, bijvoorbeeld als er meer conflicten zijn dan synergiën? Hoe ga je daar mee om?	x	x		
			Worden er nu ook workshops aangeboden om te kijken naar waarden van verschillende partijen en conflicterende waarden?		x		
		Ik wil een workshop opzetten dat gaat over waarden en waarde conflicten. Is daar behoefte aan?			x		

Appendix II: Actor Cards

Actor cards testworkshop
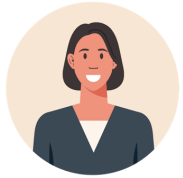
ONTWIKKELAAR

De ontwikkelaar wilt tijdens een gebiedsontwikkeling grondeigenaar worden en daar iets op ontwikkelen. Het doel is om winst te maken, maar ook de uitstraling van het gebied is belangrijk.

INVLOEDEN OP WERKZAAMHEDEN

Intern
Financiële afwegingen
Hiërarchische organisatie

Extern
Marktwerking (materialen)
Regels en voorschriften (omgevingsplan etc.)
Marktwerking (vraag en aanbod)

WAARDEN

Proceswaarden
Verantwoordelijkheid

Prestatiewaarden
Efficiëntie

Productwaarden
Uitstraling
Functioneel
Innovatie

WAARDEN GEBIEDSONTWIKKELING

Waarden
Efficiëntie

Normen
Altijd binnen budget en tijdsplan werken

Voorwaarde
Projecten moeten niet langer dan 2 jaar duren

Waarden
Uitstraling

Normen
Modern karakter en aansluitend op woonidealen doelgroep

Voorwaarde
De te huren woningen en kantoorruimtes moeten voor 75% verhuurd zijn voor start.

MOBILITEIT

ProRail is de grondeigenaar van het station en het doel is om het station aan te laten sluiten bij de situatie na de gebiedsontwikkeling. Het doel is om een goed functionerend station te ontwikkelen wat toekomstbestendig is. De rol kan wisselen van actief tot pro-actief en alles ertussenin.

INVLOEDEN OP WERKZAAMHEDEN

Intern
Handelingsperspectief, als leidraad voor samenwerkingen.
Afwegingen/prioritering regels voor stationontwikkelingen.

Extern
Soorten samenwerkingsprocessen (rol/governance).
Initiator van gebiedsontwikkeling.
Station niet toekomstbestendig.

WAARDEN

Proceswaarden
Vertrouwen (transparantie, integriteit, eerlijkheid)
Samenwerking

Prestatiewaarden
Effectiviteit

Productwaarden
Functioneren (bereikbaarheid, toegankelijkheid)
Duurzaamheid (toekomstbestendig)
Comfort

WAARDEN GEBIEDSONTWIKKELING

Waarden
Duurzaamheid

Normen
toekomstbestendig station, de basis moet lange tijd functioneren.

Voorwaarde
De basis van het station moet minstens 50 jaar meegaan.

Waarden
Vertrouwen

Normen
Actoren moeten transparant zijn en informatie delen waar dat nodig is.

Voorwaarde
Alle beschikbare informatie wordt met elkaar gedeeld.

WATERSCHAP

Het waterschap functioneerd als een adviesorgaan voor de gemeente wat betreft een gebiedsontwikkeling. Zij staan voor een duurzame omgeving en staan voor water en bodem sturende beslissingen.

INVLOEDEN OP WERKZAAMHEDEN

Intern

Beleidsdoucmenten intern

Extern

Beleidsdoucmenten extern
Normen vanuit rijkswaterstaat

WAARDEN

Proceswaarden

Transparantie
Betrouwbaarheid
Veiligheid

Prestatiewaarden

Effectief

Productwaarden

Kwaliteit
Duurzaamheid

WAARDEN GEBIEDSONTWIKKELING

Waarden

Duurzaamheid

Normen

Bescherming tegen overstromingen door max. wateropslag

Voorwaarde

..m3 wateropslag in de stad

Waarden

Kwaliteit

Normen

Oplossingen moeten bescherming bieden voor minimaal aantal jaar

Voorwaarde

Oplossingen moeten minimaal 100 jaar bestendig zijn

OMWONENDE

De omwonende heeft geen grondbezit in het gebied, maar wilt graag dat het een fijne omgeving wordt. Door middel van participatie projecten worden de omwonenden geinformeerd, maar meebeslissen is vaak niet mogelijk.

INVLOEDEN OP WERKZAAMHEDEN

Intern

Persoonlijke motivatie door NIMBY gevoel

Extern

Sociale kringen
Omgeving

WAARDEN

Proceswaarden

Participatie
Transparantie

Prestatiewaarden

Efficiëntie

Productwaarden

Uitstraling
Functionaliteit

WAARDEN GEBIEDSONTWIKKELING

Waarden

Participatie

Normen

Informatie krijgen en meedenken over plannen en beslissingen in het gebied

Voorwaarde

Openbare publicaties met informatie en informatie avonden

Waarden

Functionaliteit

Normen

Het gebied moet functioneren volgens de eisen van de bewoners.

Voorwaarde

Eisen bewoners moeten worden verzamelt

STEDENBOUWKUNDIGE

De stedenbouwkundige werkt bij de gemeente wat de initiator van het proces is. Daarbij is het ook de verbindende factor tussen alle partijen, zo probeert zij een zo goed mogelijk plan te ontwerpen voor de ontwikkeling.

INVLOEDEN OP WERKZAAMHEDEN

Intern

Prioritering door budgetten.
Wetgeving

Extern

Beleidsdocumenten over maatschappelijke problemen.
Budgetten vanuit verschillende instanties

WAARDEN

Proceswaarden

Transparantie
Betrouwbaarheid
Samenwerking

Prestatiewaarden

Effectief

Productwaarden

Integraliteit
Duurzaamheid

WAARDEN GEBIEDSONTWIKKELING

Waarden

Samenwerking

Normen

Belangrijke stakeholders bij het proces betrekken.

Voorwaarde

Stakeholder analyse en afwegingen maken

Waarden

Integraliteit

Normen

Waarde creëren voor het collectief, dus meerdere maatschappelijke problemen oplossen

Voorwaarde

Zoeken naar integrale, grensoverschrijdende oplossingen binnen budget van €...

Actor cards workshop

ONTWIKKELAAR

Een ontwikkelaar is vaak een geldschieter en uitvoerder van plannen van de gemeente. Zij worden vaak pas betrokken bij de gebiedsontwikkeling wanneer de plannen op tafel liggen, waarbij de gemeente wil dat zij de gemaakte plannen gaan uitvoeren. De ontwikkelaar wilt liever eerder betrokken worden in het proces om zelf met oplossingen en suggesties te komen waardoor er betere mogelijkheden ontstaan.

INVLOEDEN OP PROCES

Interne factoren die invloed hebben op hoe de ontwikkelaar in het proces staat zijn financiële overwegingen, maar ook de ervaringen van eerdere projecten spelen een grote rol.
Externe factoren zijn de plannen van de andere actoren in de gebiedsontwikkeling en ook de marktwerking, kijkende naar materiaal kosten maar ook vraag en aanbod van het eindproduct. Ook het bezwaar maken van omwonende is een externe factor die grote invloed kan hebben.

WAARDEN

Proceswaarden	Prestatiewaarden	Productwaarden
Samenwerking	Effectiviteit	Kwaliteit
Transparantie	Efficiëntie	Innovaties

Waarden
- Samenwerking

Normen
- Betrokkenheid in proces, relatie kunnen opbouwen en gezamenlijk kijken naar oplossingen

Voorwaarde
- Vroegtijdig in proces samenwerking starten en open staan voor suggesties

Waarden
- Kwaliteit

Normen
- Product blijft lang functioneel en er is duurzame huurstroom

Voorwaarde
- Product behoudt minstens 30-40 jaar beloofde functies

MOBILITEIT

ProRail is de grondeigenaar van het station en het doel is om een goed functioneren station te ontwikkelen wat ook toekomstbestendig is. Dus het station moet aanlsuiten op de situatie na de gebiedsontwikkeling. De rol van ProRail kan wisselen van actief tot passief en alles ertussenin.

INVLOEDEN OP PROCES

Een interne factor die een invloed hebben op hoe ProRail zich in het proces positioneerd is het handelingsperspectief, deze wordt gebruikt als leidraad voor samenwerkingen en beslissingen. Een andere interne factor zijn de afwegingen/prioritering regels voor stations ontwikkelingen, en daarbij ook de huidige staat van het station.
Een externe factor is het soort samenwerking wat ProRail aangaat, dus welke rol en governance structuur er wordt gekozen. Daarnaast heeft de initiator van de gebiedsontwikkeling ook invloed op het verloop van het proces.

WAARDEN

Proceswaarden	Prestatiewaarden	Productwaarden
Vertrouwen (transparantie, integriteit, eerlijkheid)	Effectiviteit	Functioneren (bereikbaarheid, toegankelijkheid)
Samenwerking		Duurzaamheid (toekomstbestendig)
		Comfort

Waarden
- Vertrouwen

Normen
- Actoren moeten transparant zijn en informatie delen waar dat nodig is

Voorwaarde
- Alle beschikbare informatie wordt met elkaar gedeeld

Waarden
- Duurzaamheid

Normen
- Toekomstbestendigheid van station, basis moet lange tijd functioneren

Voorwaarde
- De basis van het station moet minstens 50 jaar meegaan

WATERSCHAP

Een waterschap richt zich op het waarborgen van de waterkwaliteit en de waterveiligheid bij een gebiedsontwikkeling, d.m.v. het toetsen van plannen en het wel of niet verlenen van vergunningen. Ze zijn bereid om mee te denken om plannen te realiseren en zouden graag eerder in het process betrokken willen worden.

INVLOEDEN OP PROCES

Een interne factor die invloed heeft op hoe het waterschap beslissingen maakt is de regelgeving, dus wat er in de waterschapsverordening en het beleid staat. Er is ook ruimte voor maatwerk, dus bestuurlijke krachten spelen ook mee.
Een externe factor zijn de maatschappelijke opgaven en de daarbij komende kansen voor het waterschap om deze te combineren met eigen belangen.

WAARDEN

Proceswaarden	Prestatiewaarden	Productwaarden
Rechtmatigheid	Effectiviteit	Functionaliteit
Transparantie		Kwaliteit
		Duurzaamheid

Waarden
Kwaliteit

Normen
Hanteren gelijke risico's voor overstromingen/ faalkans

Voorwaarde
Eens in de 10.000 jaar

Waarden
Rechtmatigheid

Normen
uitleggen overwegingen voor vergunningen voor gelijke speelkansen

Voorwaarde
Voldoen aan het beleid

OMWONENDE

Bewoners worden steeds meer betrokken in de planvormingfase. Ze verenigen zich om draagvlak te creëren en vertegenwoordigers spelen relevante informatie over de gebiedsontwikkeling door van de gemeente naar de bewoners en andersom. Het betrekken en informeren van omwonende gebeurt ook via social media en traditionele media.

INVLOEDEN OP PROCES

Een interne factor die invloed heeft op hoe omwonende in het proces staan is de persoonlijke situatie, denk daarbij aan gezinssamenstelling, financiele situatie, fysieke en mentale staat, eigendomssituati en de ervaringen met gebiedsontwikkelingen.
Een externe factor is de huidige omgeving ten opzichte van de nieuwe plannen. Ook de media en de sociale kringen kunnen invloed hebben op hoe de bewoners in het proces staan.

WAARDEN

Proceswaarden	Prestatiewaarden	Productwaarden
Transparantie	Efficiëntie	Uitlegbaarheid keuzes
Betrouwbaarheid		
Betrokkenheid (mogelijkheid tot)		

Waarden
Transparantie

Normen
Communiceren over besluiten, rectificaties etc.

Voorwaarde
Informeer treffende partijen binnen een week na belangrijke besluiten, rectificaties etc.

Waarden
Betrouwbaarheid

Normen
Eerlijk communiceren en ook over sensitievere onderwerpen

Voorwaarde
Gedeelde informatie moet eerlijk en up to date zijn

STEDENBOUWKUNDIGE

De rol is het vertalen van de visie in een stedenbouwkundigplan, daarbij probeer je een balans te vinden in de verschillende opgaven. Dit proces begint met het bedenken van grote lijnen en zal steeds meer ingevuld worden, wat uiteindelijk leidt tot concrete plannen voor het gebied.

INVLOEDEN OP PROCES

Een interne factor die invloed heeft op hoe de stedenbouwkundige te werk gaat zijn financiële middelen, het is van belang dat de plannen financieel haalbaar zijn. Daarbij moet de stedenbouwkundige beslissingen maken tussen belangen, kwaliteit en kosten.
Een externe factor die invloed heeft op de beslissingen zijn de regels over de maatschappelijke opgaven gedefinieerd door de overheid, bijvoorbeeld de aandacht voor energietransitie, duurzaamheid etc. Ook de omgeving heeft invloed op de beslissingen, evenals de gebruikers, omdat de plannen uiteindelijk voor hen en de toekomst ontwikkeld moeten worden.

WAARDEN

Proceswaarden	Prestatiewaarden	Productwaarden
Flexibiliteit	Effectiviteit	Uitstraling
Duidelijkheid		Kwaliteit
		Integraliteit

Duidelijkheid

Waarden	Waarden
Duidelijkheid	Kwaliteit
Normen	**Normen**
Genoeg tijd om de wensen en eisen van belanghebbende te verzamelen.	Uitstraling en gevoel is aangenaam voor gebruikers van gebied.
Voorwaarde	**Voorwaarde**
Vastgesteld stedenbouwkundig programma van eisen.	Vooraf en achteraf toetsen van plannen bij gebruikers.
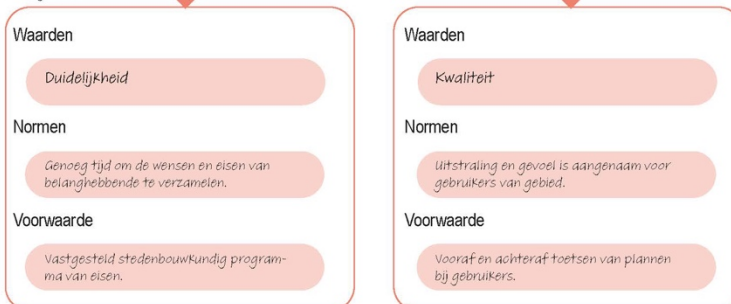
Appendix III: Case Description

Studiestad

Studiestad is een middelgrote stad met zo'n 75.000 inwoners, gelegen in de provincie Noord-Holland in Nederland. In het centrum van de stad ligt een treinstation, het middelpunt tussen centrum Noord en centrum Zuid. De gemeente heeft het initiatief genomen om het stadscentrum te transformeren, door de sterk verouderde uitstraling en de woningbehoefte. De openbare ruimte is ster verouderd en voornamelijk ingericht voor doorgaand autoverkeer (50 km/h) en weinig ruimte voor andere weggebruikers. Ook het station is niet meer toekomstbestendig, evenals een aantal kantoorpanden in de binnenstad.

Studiestad centrum zuid

Het gebied kenmerkt zich met stedelijke bouwblokken met functies van wonen en werken. De uitstraling van de openbare ruimte in combinatie met de verschillende complexen is onsamenhangend en sterk verouderd. Naast het station aan de zuidkant ligt een busstation met een aantal haltes, wat aansluit op de doorgaande weg tussen het stationsplein en de binnenstad. De binnenstad is voornamelijk in het bezit van twee ontwikkelaars. Verschillende bedrijven huren kantoorruimtes en winkelruimtes in de panden en ook de woningen zijn voornamelijk huurwoningen. Het station is van ProRail en de openbare ruimte is in het bezit van de gemeente.
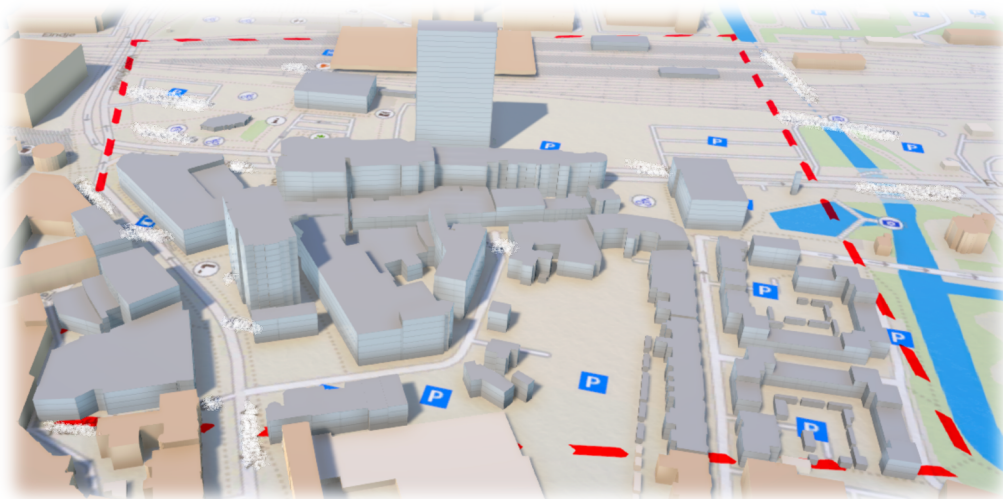
Studiestad centrum noord

Dit gebied kenmerkt zich als bedrijventerrein met veel verschillende lokaal en regionaal georiënteerde bedrijven. Vlakbij het station staat een grote vervallen loods, inmiddels verworven door de Wet Voorkeursrecht gemeente. De openbare ruimte is in handen van de gemeente en de rest van het gebied heeft een versnipperd grondeigendom. Er zijn gevestigde bedrijven die hun panden bezitten, grondeigenaren die panden verhuren aan bedrijven. Het gebied is voornamelijk een 50km/h zone.
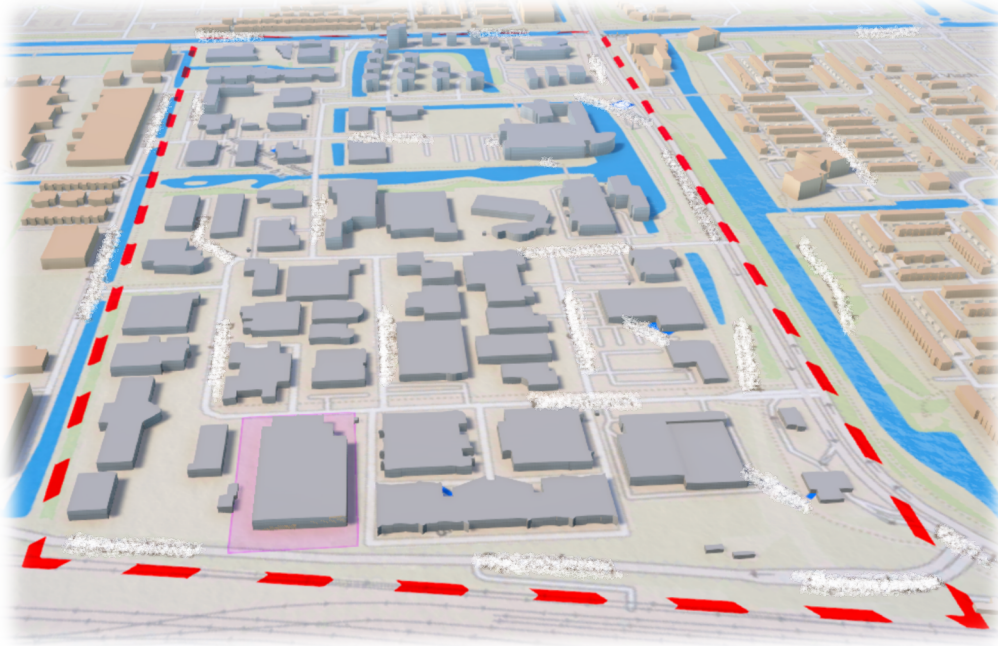
Doelstellingen gebiedsontwikkeling

De gemeente heeft al een aantal plannen bedacht en uitgewerkt in vier doelstellingen, die ze graag willen bespreken met de andere actoren:

1. Wonen
   a. Er moeten zo'n 10.000 nieuwe woningen voor verschillende doelgroepen komen in het centrum. In centrum zuid wil de gemeente vooral stedelijke appartementen voor jonge professionals. Centrum noord is meer geschikt voor een mix van woonvormen, waar zowel stedelijk als dorps gebouwd kan worden. Hier zullen huidige bedrijven plaats voor moeten maken.

2. Mobiliteit
   a. De gemeente wil de openbare ruimte opnieuw inrichten met een focus op voetgangers en fietsers. Doorgaande autoverkeer wordt omgeleid en de huidige weg tussen het station en studiestad centrum zuid wordt een fietsstraat met auto's te gast. De rest van de openbare ruimte in centrum zuid wordt een 30 km/h zone, waarbij sommige straten helemaal afgesloten worden voor auto's. De parkeernorm in het centrum gaat omlaag. Verder krijgen voetgangers meer ruimte en veiligere overgangsplekken en fietsers krijgen langere routes en meer stallingsopties.

3. Integraliteit/ diversiteit
   a. Om sociale verbinding te stimuleren en de stad een levendig karakter te geven, staat integraliteit en diversiteit centraal in de plannen. Verschillende maatschappelijke als commerciële voorzieningen komen bij elkaar en de stad wordt ingericht met de functies wonen, werken en recreatie door elkaar.

4. Duurzaam en adaptief
   a. De openbare ruimte wordt met duurzame innovatieve oplossingen ingericht. Denk aan slimme wateropvangsystemen, groene infrastructuur en adaptieve gebouwen. Ook worden er meer groene stroken, parken en tuinen aangelegd om biodiversiteit te bevorderen. Andere actoren worden gestimuleerd om ook circulaire en klimaatadaptieve plannen te ontwikkelen.

Appendix IV: Redesigned materials

Infographics

Waarden praatplaat 2

Het doel en de noodzaak van het omgaan met tegenstrijdige waarden is het creëren en behouden van duurzame waarden op de lange termijn voor de samenleving, de publieke organisatie en haar stakeholders. Maar waar in de organisatie en het proces van een gebiedsontwikkeling zet je je handelen in? Hoe kan je gebruik maken van waarden die om je heen spelen bij het omgaan met de relevante waardenconflicten? Het doel van deze praatplaat is om handvatten te bieden om een waardentactiek vast te stellen.

Huidige keuze in borging

Informatie

Coping wordt beschreven als een strategie om met complexiteit om te gaan en dus met waardeconflicten. Zien actoren de conflicten als bedreiging of kans?
- Defensief (of/of): actoren die het als een bedreiging zien willen confrontatie vermijden en het conflict uit de weg gaan. Ze geven grenzen aan niveaus, afdelingen, fasen ter verantwoording van waardeafwegingen.
  - Ontkoppelen is het scheiden van tegenstrijdige elementen (tijd: eerst ene aanpakken, dan andere)(ruimte: verschillende compartimenten maken).
  - Compromissen kunnen gesloten worden door minimum normen vast te stellen.
- Actief (beide/en): actoren die het als een kans zien zullen proberen waardesystemen te combineren tussen niveaus, afdelingen en fasen. Ze proberen een balans te vinden en synthese te bereiken.

Effecten:
- Gunstig effect: actoren bereiken consensus
- Beperkend effect: actoren bereiken compromis of geen compromis.

Iconen

- of/of
- beide/en
- gunstig effect
- beperkend effect

Opdracht

1. Kijk naar relevante en mogelijk relevante tegenstrijdige waarden. Wat gebeurt er bij uw organisatie tijdens een gebiedsontwikkeling om de waarden te borgen?

2. Wat zijn de effecten van deze manier van waarden borgen op een gebiedsontwikkeling als geheel? Plaats iconen op de opdrachtenkaart.

Optimalisatie van waardedynamiek

Informatie

Door de betrokken actoren of de situatie te veranderen ontstaan er nieuwe mogelijkheden om om te gaan met tegenstrijdige waarden. Effect op waardeperspectief:
- Tijd (wanneer):
  - Parallel laten lopen: zorgen voor interactie en betrokkenheid bij besluitvorming van waardesystemen die normaliter op een ander niveau of in een andere organisatie spelen.
  - Naar voren halen: waardesysteem informeel laten meespelen vroegtijdig.
  - Uitstellen en/of verlengen:
    - Verlengen: andere waardesystemen laten meespelen/ uitbereiding van waardesystemen
    - Uitstellen: gebruik maken van dominante waarden in andere fasen.
- Level/ruimtelijk (waar):
  - Topdown: prioritering van waarden door gebruik hiërarchie
  - Bottom-up: vrijheid voor experimenteren en minder directe verantwoording

Iconen

- Parallel laten lopen
- Naar voren halen
- Uitstellen en/of verlengen
- Top down
- Bottom-up
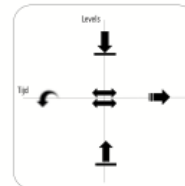
Voorbeeld

- Parallel laten lopen: participatie gedurende voorverkenningsfase
- Naar voren halen: vroegtijdig overleg met beoordelingsorgaan, zoals vergunningsverlener.
- Uitstellen en/of verlengen: aantal ontwerpbeslissingen open laten voor latere fase
- Top down: politieke kracht inzetten
- Bottom-up: symbolisch 'onder de vlag van' bestaand lokaal netwerk werken

Opdracht

Kijk naar 'relevante' en 'mogelijk relevante' tegenstrijdige waarden.

1. Bespreek coping patronen voor deze waarden. Een coping patroon laat zien je hoe omgaat met waardeconflicten: hoe, wanneer en op welk niveau. Leg uit hoe, en plaats een icoon voor tijd (wanneer) en level (op welk niveau).

2. Wat voor mechanismen zijn de coping patronen? Geef aan of de coping patronen een defensief of actief mechanisme is.

Professionele aanpak

Informatie

Het coping patroon van tegenstrijdige waarden kan invloed hebben op de rol van actoren in een gebiedsontwikkeling.
- Bestuurlijk: verantwoordelijk voor het beleid en de kaders.
- Ambtelijk: verantwoordelijk voor de uitvoering van het beleid en de kaders.
- Operationeel: verantwoordelijke voor uitvoering van taken en zaken op korte termijn.

Iconen

- Bestuurlijk
- Ambtelijk
- Operationeel

Opdracht

Hoe kunnen de copingpatronen worden toegepast bij jouw rol in een gebiedsontwikkeling?

1. Wat voor effect heeft het coping patroon op uw rol binnen de voorverkenning en verkenning fase van een gebiedsontwikkeling? Denk hierbij aan de bestuurlijke, ambtelijke of operationele niveaus van de rol. Plaats een icoon bij rol en leg kort uit.

2. Hoe ziet de integrale aanpak van deze voorverkenning voor de gebiedsontwikkeling eruit? Maak samen een plan van aanpak over welke waarden van belang zijn, welke coping patronen toegepast worden en wat de rollen zijn van de actoren.
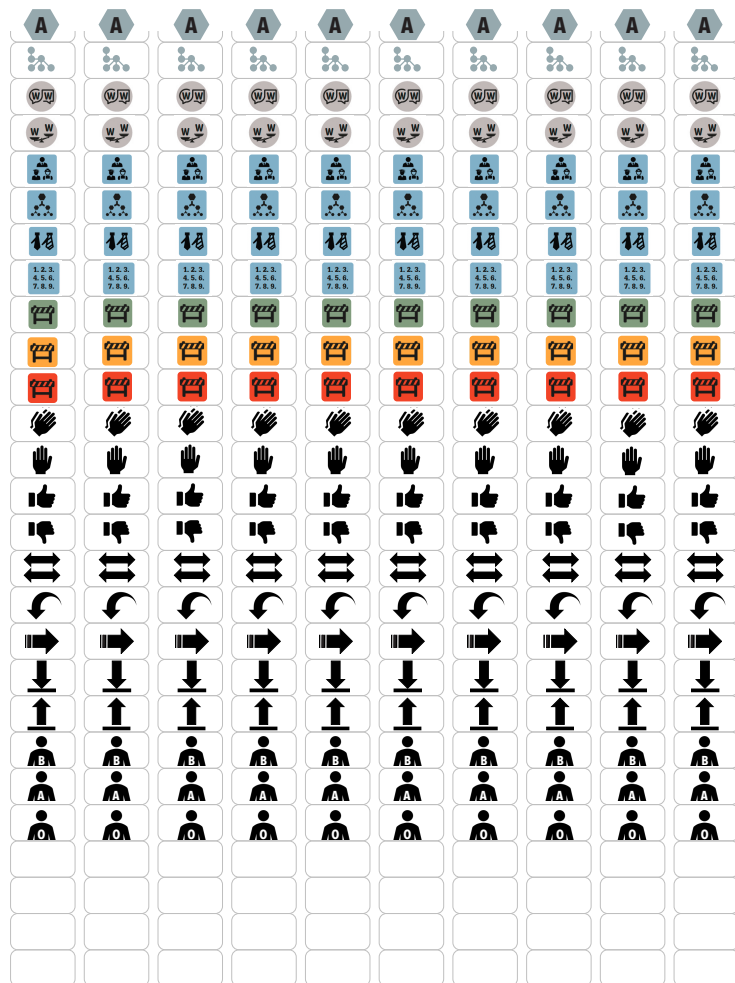
Uitkomst

De uitkomst is een overzicht van tegenstrijdige waarden en de coping patronen die hierbij passen. Dit kunt u meenemen naar een volgende 'echte' gebiedsontwikkeling.

Voorbeeld

COPING PATRONEN

Relevantie | Omgang | Effect | Tijd | Level | Rol

Icons

Appendix V: Survey Results

Results test workshop

Table 13: Survey results test workshop

Category	Statement	Disagree	Slightly disagree	Neutral	Slightly agree	Agree
Case description	De case description and the infographics were well connected					5
Co-creation	I liked participating in the workshop					5
	I was able to collaborate well during the workshop			1		4
	I got enough space to express myself during the workshop					5
Workshop structure	I was able to make the assignments without consulting the facilitator with more questions	1	3	1		
	There was enough time to make the assignments			3	2	
	The presentation was complete and clear				3	2
	The presentation and materials were well connected				2	3
Materials	The appearance of the materials was good				2	3
	The infographics were intuitive			2	1	2
	The actor card was intuitive		1	1	2	1
	The information on the infographic was complete and clear		1		1	3
	The case description and infographics were well connected					5
	The actor card was useful during the workshop					5
	The assignment card matched the assignments well				1	4
	The presentation and materials were well connected				2	3
Learning outcomes	Through this workshop I learned something about values and conflicting values in an urban transformation				3	2

Table 14: Survey results open questions test workshop

Learning outcomes	Explain your previous answer about learning outcomes.	It is fun to learn about relevant perspectives.
		That interpretation of values is important.
		I think it is useful take a bit more time for the final workshop, so participants have more time to delve deeper into the workshop.
		It forces you to look at other perspectives.
		Interesting to take on a role in an urban transformation.

Results workshop

Table 15: Survey results workshop

Category	Statement	Disagree	Slightly disagree	Neutral	Slightly agree	Agree
Case description	De case description and the infographics were well connected				3	2
	I used the case description to formulate answers for the assignments		1		3	1
Co-creation	I liked participating in the workshop				1	4
	I was able to collaborate well during the workshop					5
	I got enough space to express myself during the workshop					5
	I was able to solve problems together with other participants				2	3
Workshop structure	I was able to make the assignments without consulting the facilitator with more questions		2		3	
	There was enough time to make the assignments			2		3
	The presentation was complete and clear				2	3
	The presentation and materials were well connected				2	3
Materials	The appearance of the materials was good					5
	The infographics were intuitive			1	3	1
	The actor card was intuitive				3	2
	The information on the infographic was complete and clear		1	1	2	1
	The case description and infographics were well connected				3	2
	The actor card was useful during the workshop			1	1	3

	The assignment card matched the assignments well				1	4
	The presentation and materials were well connected				2	3
Learning outcomes	Through this workshop I learned something about values and conflicting values in an urban transformation				2	3
	I am more aware of the added value of early collaboration			1	1	3
	I think that the information from this workshop is relevant and applicable in my work on urban transformations			1	2	2
	I will apply the learning outcomes from the workshop in my work				3	2

Table 16: Open question answers

Learning outcomes	I think the workshop is/is not useful to put into practice, because	Is useful. But especially because it brings together actors and stimulates conversations about values and interests.
		Is useful, because you learn about and develop understanding for each other's perspectives
		It provides insight in conflicting values through which [possibly] more understanding arises for each other's values.
		It gives insight in own and others' values, which is useful and valuable. Some definitions are difficult to understand and scientifically formulated, which makes it difficult to find out what is meant.
	What should change about the workshop so it can be applied in practice?	Optimization and a professional approach are strategic choices that depend on the specific attitude of case-specific parties
		I would take another critical look at the formulations/texts
		I don't know whether the language is easy to understand for all stakeholders. Personalities also play a role in arriving at a solution/approach.
		You can divide the presentation into smaller chunks, for example briefly explaining each column of the discussion board instead of providing an explanation per discussion board
		It remained somewhat theoretical