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Making way for design thinking in the public sector: a taxonomy of strategies

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ABSTRACT

Public organizations are increasingly turning to design thinking to address wicked societal issues, enhance innovation, and improve services. However, in general, public organizations do not provide the most receptive context for design thinking. To be applied effectively, design thinking requires sufficient tolerance for uncertainty, capacity for risk-taking, receptiveness to new ideas, and flexibility to learn and adapt. Public organizations, instead, favor rationality, stability, and accountability, and are therefore generally characterized as rigid and risk-averse. Additional efforts are thus required to make way for design thinking within this context. Until now, research on strategies to support the application of design thinking in a public sector context is limited. In this paper, 14 design thinking projects in the public sector were analyzed to identify these strategies, resulting in a practical framework of strategic actions to *build confidence, form an alliance, generate support, enhance compatibility,* and thereby enable design thinking in the public sector. Accordingly, this study contributes to the theory and practice of design thinking for public issues.

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1. Introduction

In recent decades, public sector organizations have been confronted with an expansion and exacerbation of wicked problems such as climate change, income inequality, and mass migration (Brown et al. 2010), as well as increased civic distrust, unrest, and activity (Rosanvallon and Goldhammer 2008). These developments fundamentally challenge the way public organizations operate. Conventional design approaches to address public issues appear to fall short in this regard (Head 2008; Peters 2018); they are increasingly seen as too technocratic, reductionist, closed, incremental, and unresponsive (Crosby

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Hart and Torfing 2017; Turnbull 2018). Present-day's wicked problems call for more innovative, open, collaborative, iterative, and participatory design approaches instead (Sørensen and Torfing 2011; Geuijen et al. 2017; Osborne 2018).

As a consequence, "design thinking" is rapidly gaining interest (Clarke and Craft 2019; Howlett 2020; van Buuren et al. 2020). Design thinking refers to the way designers from creative and engineering disciplines such as graphic, product, and service design think and work in order to come up with innovations that intend to improve our lives (Brown 2009; Cross 2019). It is considered to be suited to address wicked problems (Buchanan 1992) and claimed to enhance innovation, participation, and responsiveness (Parker and Heapy 2006) and thereby improve services, productivity, outcomes, democracy, and regulation (Bason 2010). For these reasons, public organizations across the globe are increasingly experimenting with design thinking (McGann Blomkamp and Lewis 2018).

However, effectively applying design thinking within this context is no sinecure (Bason 2017; Schaminée 2018; Tromp and Hekkert 2019). Several authors have pointed out that design thinking may be an awkward fit with established design practices and organizational structures and cultures found in public organizations (Junginger 2015; Kimbell and Bailey 2017; Lewis McGann and Blomkamp 2020; Bason and Austin 2022; Blomkamp 2022). Attempts to apply design thinking within this context thus easily result in issues of misunderstanding, resistance, rejection, and incompatibility (Carlgren Elmquist and Rauth 2016; Dunne 2018; Elsbach and Stigliani 2018; Sangiorgi et al. 2019), or, "friendly fire" as Schaminée (2018) succinctly calls it. If these issues are insufficiently prevented or dealt with, design thinking may be thwarted along the way (Liedtka Salzman and Azer 2017; Schaminée 2018).

In the literature on the application of design thinking in the public sector, three ways to deal with these issues can be distinguished. Some authors suggest adapting design thinking to the context within which it is applied (Clarke and Craft 2019; Howlett 2020). Others contend that the context itself needs to be transformed in order to better accommodate design thinking (Sangiorgi 2011; Deserti and Rizzo 2014; Dorst 2019). Third, rather than aiming for a better fit, it is suggested to make additional efforts to facilitate the application of design thinking (Nusem Matthews and Wrigley 2019; Starostka et al. 2021). As of yet, research related to *how* this is done in practice is limited. This paper, therefore, aims to answer the question: what strategies do designers and civil servants involved in design thinking projects in the public sector employ to support the application of design thinking? In doing so, this research provides insights that are essential to realizing the potential of design thinking in the public sector.

The first section of this paper illuminates why design thinking may be an uncomfortable fit with established design practices and organizational structures and cultures found in public organizations. It also identifies some known strategies relevant for supporting the application of design thinking within this context. Next, the methods applied to answer the research question are outlined. In section four, the findings of the research are described, showcasing a broad repertoire of strategies that both deepen and complement existing literature on this topic. In the final two sections, these findings are discussed and directions for further research are explored.

2. Literature review

For a long time, a rational-instrumental logic underpinned design in public organizations (Clarke and Craft 2019). Early scholars, such as Simon, Lasswell, and Lerner were instrumental in this. They argued that a scientific approach to problem-solving results in better, more effective solutions for public issues (Simon 1950; Lasswell and Lerner 1951). Design, in this view, ought to be knowledge- and logic-driven, using inductive reasoning to offer theoretical explanations for issues, and deductive reasoning to anticipate outcomes of solutions (Hermus van Buuren and Bekkers 2020). As such, it implies sequential design practices of problem identification, goal definition, and solution finding, conducted by technical experts (Enserink Koppenjan and Mayer 2013). Moreover, it is an exercise of reduction; of making problems, goals, and solutions amenable to scientific questioning (Turnbull 2018). Design, as such, is thus also plannable, predictable, efficient, and therefore accountable and attractive.

Nowadays, this conventional perspective on design is mostly seen as an ideal type. Boundedly rational (Simon 1990), expert designers not only rely on scientific knowledge, logical reasoning, and analytical skills but also on cognitive heuristics such as satisficing (Simon 1955), incrementalism (Lindblom 1959), and mixed scanning (Etzioni 1967). Moreover, all kinds of institutional, political, and ideological factors condition design efforts as well (Howlett and Mukherjee 2014). As such, fully rational design hardly occurs in reality. Nonetheless, this is still regarded as a normative ideal in most public organizations (Turnbull 2018), which is also evidenced by the ever-sounding call for more evidence-based policies. Rational-instrumental design practices thus still dominate the field (Hermus van Buuren and Bekkers 2020).

Correspondingly, most public organizations are geared toward these design practices. Weberian principles of bureaucracy - such as task specialization, a chain of command, formalization, and centralized authority - as introduced a century or so ago still define the structure of most public organizations (Du Gay 2005; Goodsell 2014). Many public organizations thus encourage caution, obeying authority, and respecting tradition, predictability, and stability (Parker and Bradley 2000; Harrison and Baird 2015; Slack and Singh 2018) and prefer to operate in standardized ways according to precise planning and programming (Chapman 2004; OECD 2017). Attempts at reform, as postulated by New Public Management and New Public Governance, supplemented rather than replaced or fundamentally altered the established practices, structures, and cultures of public organizations (Torfing et al. 2020). Pollitt and Bouckaert (2017) characterize these attempts as a form of sedimentation, in which new layers settle on top of old layers, which, in turn, essentially remain intact. The rational-instrumental logic is thus deeply and firmly embedded in the DNA of most public organizations.

Design thinking, however, follows a creative-purposive logic (Sanders and Stappers 2008). Creativity, rather than rationality, is central in design thinking (Lewis McGann and Blomkamp 2020); it is inspiration-driven (Hermus van Buuren and Bekkers 2020) and employs abductive reasoning to come up with solutions for public issues (Kolko 2010; Dorst 2011). This, however, implies that the solution does not follow logically from the problem, no sequence of steps can be defined that guarantees results, many possible solutions exist, and any solution that is conceived requires

validation (Lawson 2005). Design thinking is therefore inherently open-ended and non-linear, and necessarily exploratory and experimental (Roozenburg and Eekels 1998). As such, it requires sufficient tolerance for uncertainty, capacity for risk-taking, receptiveness to new ideas, and flexibility to learn and adapt (Bason 2010; Manzini 2015). The organizational context within which design thinking is applied needs to provide these conditions in order for design thinking to be successful (Brown 2009; Dorst 2015; Liedtka Salzman and Azer 2017; Lewis 2021).

There is considerable agreement on how such an organizational context looks. Tolerance for uncertainty, capacity for risk-taking, receptiveness to new ideas, and flexibility to learn and adapt are generally found to be fostered by an organizational context with an organic structure, adhocracy culture, and processes of mutual adjustment (Bason 2010; Elsbach and Stigliani 2018). Such a context has little task specialization, heterogeneous departments, flat hierarchies, wide spans of control, and decentralized authority (Gibson et al. 2012). In addition, responsiveness, autonomy, creativity, and experimentation are valued (Cameron and Quinn 2011). Moreover, work is defined in an evolutionary, ad hoc manner based on ongoing interactions and frequent face-to-face communication (Jones 2013). These organizational traits allow sufficient freedom for open-ended processes to unfold in a non-linear manner according to the insights gained from exploration and experimentation (Gibson et al. 2012; Jones 2013; Huczynski and Buchanan 2013).

In Table 1 below, established design approaches in public organizations and design thinking, as well as their associated organizational characteristics, are compared. The design approaches are compared in terms of reasoning, process, and main source of content (based on distinctions made in Roozenburg and Eekels 1998; Lawson 2005; Owen 2007 to describe design approaches). In turn, the organizational characteristics are compared in terms of structure, culture, and the way work is defined (corresponding to distinctions made in Martin 2009; Gibson et al. 2012; Jones 2013; Huczynski and Buchanan 2013). Although these distinctions are not comprehensive, they serve well to highlight the key differences as described above.

As can be seen, established design practices and organizational characteristics that are often found in public organizations are fundamentally different from the practices and organizational characteristics associated with design thinking (Dorst 2015; Blomkamp 2022). This explains why design thinking may be an awkward fit within this context. Existing "design legacies" within public organizations are at odds with design thinking and potentially hinder its application (Junginger 2015). As Schaminée (2018) states: "the core of public organizations in question has a near-allergic reaction to the design approach.". Indeed, introducing design thinking in this complex and

Table 1. A comparison between established design approaches in public organizations with design thinking, and their associated organizational characteristics.

		Conventional design	Design thinking
Design approach	Reasoning	Induction, deduction	Abduction
	Process	Predetermined, sequential	Open-ended, non-linear
	Content	Knowledge- and logic-driven	Inspiration-driven
Organizational characteristics	Structure	Bureaucratic	Organic
	Culture	Hierarchy, stability, predictability	Autonomy, creativity, risk-taking
	Work	Formalization, standardization	Evolutionary, ad hoc

layered context may result in misunderstandings, conflicts, practical difficulties, cultural clashes, and structural incompatibilities (Carlgren Elmquist and Rauth 2016; Dunne 2018; Elsbach and Stigliani 2018; Sangiorgi et al. 2019). To enable and support its successful application, additional efforts are needed (Liedtka Salzman and Azer 2017; Schaminée 2018).

The literature on the application of design thinking in a public sector context suggests three distinct approaches to do so: adapting design thinking to the context, transforming public organizations to better accommodate design thinking, and facilitating the application of design thinking.

First, several authors point out that design thinking often insufficiently takes into account established ways of thinking and doing in public organizations (Junginger 2015; Clarke and Craft 2019; Howlett 2020). To be effective, design thinking needs to seek synergies with existing design legacies (Junginger 2015; Schaminée 2018), incorporate lessons from traditional design approaches concerning the challenges faced when designing within this context (Clarke and Craft 2019; Howlett 2020), or integrate traditional design values (Peters 2018). In other words, design thinking needs to be adapted to better fit within the context of public organizations.

Vice versa, it is suggested that the application of design thinking requires a transformation of public organizations (Sangiorgi 2011; Deserti and Rizzo 2014; Dorst 2019). To better accommodate design thinking, public organizations need to develop the necessary capabilities (Malmberg 2017). This is often done by building individual design thinking competencies (Rizzo Deserti and Cobanli 2017). In addition, the need for "institutional work" – i.e. changing established design legacies within public organizations – to develop design capability in public organizations is increasingly recognized (Komatsu et al. 2021; Lewis 2021; Vink et al. 2021a). To enable design thinking, it is argued, public organizations need to adopt a more "human-centered model of public governance" (Bason and Austin 2022).

A third approach concerns facilitating design thinking in spite of the differences with conventional design approaches and the unfavorable conditions within public organizations (Nusem Matthews and Wrigley 2019; Starostka et al. 2021). This approach includes enhancing awareness and understanding of design thinking (Nusem Matthews and Wrigley 2019), helping public organizations navigate the struggles and tensions that may arise when applying design thinking (Starostka et al. 2021), or bypassing potentially impeding structures, cultures, and practices altogether (Bason 2010), for example, by setting up a "public sector innovation lab" (McGann Blomkamp and Lewis 2018). As such, this approach is about greasing the wheels of design thinking within public organizations, rather than establishing a better fit.

Although the literature provides several suggestions on how to support the application of design thinking in the public sector context, little empirical research has been conducted in this regard. As of yet, our understanding of *how* approaches of adaptation, transformation, and facilitation are executed in practice is thus limited. Moreover, these approaches are often considered in isolation from one another. Yet, they are not mutually exclusive. In practice, we expect that they are combined. As of yet, a comprehensive, integrated perspective is missing. A more thorough analysis of the different strategies to support the application of design thinking in a public sector

context that are applied in practice can thus help both theory and practice of design thinking for public issues.

3. Methods

This research aimed to inductively establish an empirically substantiated overview of different strategies applied to support the application of design within a public sector context. Informed by Yin (2017), a multiple case study design ($n = 14$) was used.

3.1. Case selection

For this research, a case was defined as a project in which design thinking was applied to come up with a design proposal – i.e. a strategy, service, policy or product – to address a public issue. Cases were pooled from the work of three leading design agencies in The Netherlands and Denmark, namely Twynstra Gudde, Ideate, and the Danish Design Center. Each agency is known as a forerunner in the field with extensive experience of applying design in a public sector context and was therefore assumed to have developed a sophisticated repertoire of strategies to support the application of design within that context. Cases were selected according to the following criteria:

1. It involved the planning and execution of a design thinking trajectory to develop a design proposal for a public issue;
2. It was commissioned by a public organization;
3. The project took place in a public sector context;
4. The project was recently completed and well-documented;
5. According to the key people involved, strategies to support the application of design thinking were required;
6. The collection of cases encompasses a wide variety of domains and includes all levels of government.

Together, these criteria ensured that each case allowed in-depth analysis, revealed strategies to support the application of design in a public sector context, and increased the likelihood that the collection of cases covered a broad spectrum of strategies, following a maximum sampling strategy (informed by Patton 1990). This enabled us to establish an empirically substantiated overview of the different strategies that can be employed in different public sector contexts. In doing so, this research offers a broad basis for both future research and practitioners applying design thinking for public issues. An overview of the cases is given in Table 2 below.

3.2. Data collection

Based on Galletta (2013), semi-structured interviews were conducted with key people involved throughout the entire design project, including designers, civil servants from

Table 2. Case study overview.

Case number	Case title	Design Agency/Agencies	Country	Government level	Domain	Year	Description	Number of participants interviewed
1	Citizen's House	Danish Design Center, Blue Bakery, Urgent Agency	Denmark	Local	Culture	2015–2016	Design of concepts for a citizen-centred community center.	4 (3 designers, 1 civil servant)
2	Future Mobility in Rural Areas	Danish Design Center	Denmark	Local	Mobility	2018–2019	Design of concepts to enhance mobility in rural areas.	4 (2 designers, 1 civil servant, 1 politician)
3	Smart Greater Copenhagen	Danish Design Center	Denmark	Regional	Technology	2017–2018	Design of a strategy to support technological innovations.	3 (1 designer, 2 civil servants)
4	Innovation Strategy for the Capital Region	Danish Design Center	Denmark	Regional	Healthcare	2016–2017	Design of a strategy to enhance innovation capabilities.	4 (2 designers, 2 civil servants)
5	From Projects to Platforms	Danish Design Center	International	International	Innovation	2018	Design of a toolkit for a platform-based approach.	3 (2 designers, 1 civil servant)
6	Buurbouw	Twynstra Gudde, Tabo Goudswaard, VanBerlo	The Netherlands	Local	Infrastructure	2014–2015	Design and implementation of a neighborhood initiative platform as part of a large infrastructural project.	7 (2 designers, 4 civil servants, 1 stakeholder)
7	Extreem Weer	Twynstra Gudde	The Netherlands	Regional	Climate	2017–2019	Design of concepts for climate adaptation.	6 (1 designer, 5 civil servants)
8	Aardgasvrije Wijken	Twynstra Gudde, MV Design, Matching Futures	The Netherlands	National	Energy	2018–2020	Design of concepts for the energy transition.	5 (2 designers, 3 civil servants)
9	Landbouw Innovatie Campus	Twynstra Gudde, Tabo Goudswaard	The Netherlands	Regional	Agriculture	2016–2017	Design of an agriculture innovation campus.	4 (1 designer, 3 civil servants)
10	Bewonersinitiatief Kreekrugpad	Twynstra Gudde, Matching Futures	The Netherlands	Local	Urban planning	2017–2019	Design a citizen initiated plan for a local park.	4 (2 designers, 2 civil servants)
11	Verbinding Tussen Landbouw en Natuur	Twynstra Gudde	The Netherlands	National	Agriculture	2020	Design of frames to reconnect agriculture and nature.	6 (4 designers, 2 civil servants)
12	Fit to Serve	Ideate, Duneworks	International	International	Energy	2016–2021	Design of a strategy and a tool to support the transition toward service-driven business models.	3 (1 designer, 1 civil servant, 1 stakeholder)

(*continued*)

Table 2. Continued.

Case number	Case title	Design Agency/Agencies	Country	Government level	Domain	Year	Description	Number of participants interviewed
13	Doortrappen	Ideate, Hogeschool Utrecht, U-create, Twynstra Gudde	The Netherlands	National	Mobility	2015–2019	Design of a programme to support safe cycling behavior of elderly people.	4 (2 designers, 1 researcher, 1 civil servant)
14	Veilig Blijven Rijden	Ideate	The Netherlands	National	Mobility	2016–2017	Design of a programme to support safe driving behavior of elderly people.	6 (2 designers, 4 civil servants)

the commissioning governmental organization(s), politicians, and employees from stakeholder organizations. As can be seen in Table 2 above, at least three actors were interviewed per case, totaling 57 respondents, resulting in over 600 pages of empirical material.

In each case, documentation of the design project was provided. Depending on the sensitivity and availability of the material, this included contracts, plans, presentations, and intermediary as well as final reports. The documentation was used as supplementary data, but also served as support material for the interviews; timelines, depictions of the processes, and images and photos of the different stages were used as memory aids throughout the interviews.

In each interview, participants were asked to reflect on the design project to (1) identify conditions and success factors in applying design thinking and how these were realized in the project, (2) elaborate on challenges and barriers that were encountered throughout the project and how they were dealt with, and (3) distinguish any additional strategies that were employed to facilitate the application of design thinking. As the interviews unfolded, topics and concepts as mentioned in the literature review were brought into the conversation. In doing so, insights were gathered regarding strategic decisions made throughout the project.

3.3. Data analysis

Interviews were transcribed in full and, following the steps outlined by Braun and Clarke (2006), a three-round thematic analysis was conducted. In the first round, strategies related to adapting to, transforming of, or facilitating within established design legacies were sought and data was coded accordingly. However, many strategies found in this first round of analysis were not directly aimed at established design practices or organizational characteristics. Also, strategies did not exclusively fall under the categories of adaptation, transformation, and facilitation. For example, many respondents pointed out the importance of "creating visibility" to support their design thinking efforts. This can be considered as an adaptation but also serves the purpose of facilitation. Hence, this initial structure was abandoned in the second round of the thematic analysis. In this round, the different strategies that are mentioned in the literature review – such as seeking synergies with existing design legacies, building design thinking competencies, and enhancing awareness and understanding of design thinking – served as starting points. These strategies were confirmed, complemented, reframed, and clustered resulting in four distinct strategic aims and several different strategic actions to realize these aims. In the third and final round, the categorization was again checked with the data, resulting in a final ordering and naming of strategies, as elaborated on in the next section.

4. Findings

Our analysis revealed a wide variety of strategies to support the application of design thinking in a public sector context. As mentioned above, we found that the

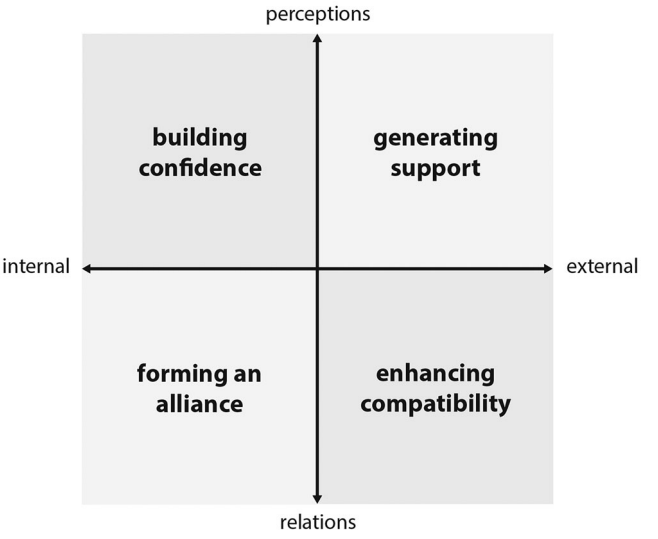

Figure 1. A taxonomy of strategies to support the application of design thinking in a public sector context.

distinction between adaptation, transformation, and facilitation is not so clear-cut in practice. Moreover, many strategies did not explicitly deal with established design practices or organizational characteristics. After three rounds of analysis, a categorization emerged that is more true to the practice.

We found that the strategies differed both by target group and objective. They were targeted at the people that were part of the project group or they were targeted at the people that were part of the context within which the project took place. In addition, the strategies aimed to establish favorable attitudes toward design thinking or to establish beneficial connections and interactions with(in) the project. In other words, they were either internally or externally focused and served to establish either beneficial perceptions or relations. According to these dimensions, we established a taxonomy of strategies to support the application of design thinking in a public sector context that consolidates our findings in a comprehensive framework (see Figure 1 below).

As can be seen, we identified four overarching strategic purposes to support the application of design thinking in a public sector context: building confidence in design thinking, forming a design thinking alliance, generating support for design thinking, and enhancing compatibility between the design project and the external context. Accordingly, we distinguished several different strategic actions corresponding to each strategic purpose (see Table 3 below for an overview). In all 14 cases, a combination of strategic actions was employed to serve each of these distinct purposes. This confirms our expectation that strategies to support the application of design thinking in a public sector context are combined in practice. They should be seen as mutually reinforcing, rather than mutually exclusive. Below, each of the identified strategic purposes and corresponding actions will be described in detail.

Table 3. An overview of different strategies to support the application of design in a public sector context.

Strategic purpose	Strategic action
Building confidence: enhancing faith in design thinking.	• **Creating a safe setting:** fostering an atmosphere that is supportive, trusting, and open (cases 1, 3–10, 12–14). • **Providing clarity:** explaining the thinking and doing behind design thinking (cases 1–4, 6–14). • **Showing the potential:** illustrating what design thinking has to offer (cases 1–3, 6–9, 12–14). • **Offering guidance:** providing help and advice to steer the project in a fruitful direction (cases 1–9, 11, 13, 14). • **Giving training:** providing opportunities to build design thinking capabilities alongside the project (cases 1, 3, 7, 8).
Forming an alliance: establishing a group of design thinking advocates.	• **Building relations:** investing in strong interpersonal connections between the people involved (all cases). • **Creating a group identity:** establishing a sense of belonging to the group of people involved (cases 4, 6, 8, 9, 13). • **Promoting engagement:** asking for a contribution from the people involved (cases 1–9, 11–14).
Generating support: obtaining political buy-in, leadership, and managerial consent, stakeholder endorsement as well as community approval for the design thinking endeavors.	• **Showing progress:** presenting intermediate results (cases 1, 3–9, 11, 13, 14). • **Looking for traction:** taking the course that generates enthusiasm (cases 1, 3, 5–9, 11, 13). • **Producing attractive work:** devoting efforts to deliver appealing (intermediate) results (cases 1–9, 11–13). • **Creating visibility:** (publicly) showcasing the design thinking work (cases 1–9, 12–14). • **Cultivating empathy:** establishing an understanding of the feelings and perspectives of the people addressed by the project (cases 1, 3, 7, 8, 11–14). • **Reducing liabilities:** lowering the threshold for taking part in, as well as leaving the project (cases 6–9, 11, 13, 14).
Enhancing compatibility: reconciling the design thinking project with the external context.	• **Seeking alignment:** adjusting the design thinking approach to the context within which it is applied (cases 1, 4–9, 11, 13, 14). • **Boundary spanning:** superseding boundaries between the project and the client and stakeholder organizations (cases 1–9, 12–14). • **Bypassing existing structures:** steering clear of (potentially) constraining organizational structures and processes (all cases). • **Flying under the radar:** keeping the project out of sight of decisive actors (cases 6, 11).

4.1. Building confidence

It takes confidence to engage in a process in which both the course and content are unclear and which is at odds with the usual way of working. Especially for people that operate in a context that emphasizes predictability and control. Oftentimes they are unfamiliar and uncomfortable with uncertainty. To ensure fruitful collaboration and smooth progress, they need to have faith that the approach will eventually lead to a good result. We identified five strategies that aimed at building confidence

among the participants in the design thinking project: creating a safe setting, providing clarity about design thinking, showing the potential of design thinking, offering guidance throughout the project, and giving design thinking training.

4.1.1. Creating a safe setting

In each case, the designers made sure to create a safe setting – a setting that is supportive and trusting, welcomes quirky ideas, and allows for failure – in which everyone feels at ease to go out of their comfort zone. This was done in different ways. Setting an example and being transparent about doubts and uncertainties was one way to build trust. In some cases, experts such as researchers or professors were brought in to give a workshop or play an advisory role. In *Aardgasvrije Wijken*, for example, the designers involved a self-proclaimed "imperfectionist" to emphasize the value of failure. Additionally, elements of play, gamification, and humor were employed in several cases, including roleplays to encourage participants to try new roles, card games to facilitate open dialogue, and innovation competitions to stimulate the generation of radical ideas. In *Landbouw Innovatie Campus* an entire experience was built, as one of the civil servants described:

> "We also founded the Carrotshape Appreciation Club. That was like an experience session about the appreciation of our food and the way it is presented. It worked really well. You could really see that it created freedom in thinking. Everybody sort of detached from their preconceived views."

4.1.2. Providing clarity

Next, in all cases, the designers put in considerable effort to explain the rationale behind design thinking and its consequences for the process, both before and throughout the project. During each step, it was ensured that everyone involved had a clear understanding of why the step was taken, how it related to the previous steps, and what steps might follow. In doing so it became clear what to expect and what not to expect – and why. This not only brought a sense of comfort but also an understanding of what is needed to support the process. One of the designers in *Veilig Blijven Rijden* described this:

> "For each step, it is really important to keep repeating what you are doing and why. That really helps. Because when you design there are always moments of chaos but when you do it more often you know you will get through eventually. But not everyone is a designer, so these people need this kind of security."

4.1.3. Showing the potential

To enhance confidence in design thinking, all designers stressed the importance of conveying its potential. This was done by giving examples of successful design outcomes in the past or suggesting what values and outcomes design thinking might achieve in the particular case at hand, as illustrated by one of the designers in *Buurbouw:*

> "By continuously explaining the value of this new way of looking at things to the stakeholders you also bring them on board in this uncertain process. They do not know what it will bring, but for each party, this process holds a promise. And you can take

away this discomfort of not knowing what it will bring by translating this potential to their interests."

4.1.4. Offering guidance

In most cases, the people involved were not passive bystanders but active participants throughout the project. Together with the designer, they shaped the process and its outcome. The role of the designer was not simply to design but also to engage all participants, facilitate the process, and steer the project in a fruitful direction – in other words, to strengthen faith in the approach and build the courage to keep going. As explained by one of the designers in *Aardgasvrije Wijken*, this role is especially important in the uncertain phases of the design project:

> "When you are at a very high level of abstraction in the process, this is going to raise questions, like: "Are we really going in the right direction?" and "Where does this lead to?". Our role is to guide everyone through this. This means, on the one hand providing sufficient support, but on the other hand, allowing meaning to emerge. As a designer, you cannot set the direction yourself completely, but you are very instrumental in whether the others will find and embrace a new perspective or solution."

4.1.5. Giving training

In some cases, opportunities to develop design thinking capabilities were included alongside the design project. This ranged from a light afternoon workshop to more elaborate training throughout the design project. Such opportunities served as reasons in themselves to engage in the project and also helped instill confidence in the approach. Many of the civil servants found this very valuable, as illustrated by one of the civil servants in *Extreem Weer:*

> "For me maybe a bit less, but for many colleagues, this was really stepping out of their comfort zone. And it really helped to get some practice and theory in this. And then really applying it. It was super educational. But also a bit of a wake-up call."

4.2. Forming an alliance

The abductive mode of reasoning underlying design thinking, the uncertainty and open-endedness it entails, and the explorative, experimental, and non-linear approach resulting from it can be seen as risky, making it susceptible to skepticism and vulnerable to critique. Especially when design thinking is applied in a context that is geared toward predictability, stability, and control, it needs to be championed by everyone involved to prevent or overcome disruptions. Accordingly, efforts were made to forge a group of design thinking ambassadors. This serves mutual reassurance and collaboration within the group and also enhances the group's capacity to generate support and establish compatibility. Three strategies were identified to do so: building relations between the people involved, promoting their engagement, and creating a group identity.

4.2.1. Building relations

In most cases, considerable time and energy were invested in establishing strong relations. There was oftentimes a partnership instead of a traditional client-contractor relationship. Rather than commissioning or dividing the work, much of it was deliberately done together. This required many moments of formal contact and also provided many opportunities for informal contact. The conversation generally continued in the corridor, at the coffee machine, with lunch, or in (off-hour) phone calls and messaging. In doing so, a sense of togetherness and enthusiasm was established, as illustrated by one of the civil servants in *Extreem Weer*:

> "We also had this app group in which we sent pictures to each other and said things like: "It's going really well!". This created some sort of excitement within the group. Like: we are doing this together, and it's going well and it's going to be great."

4.2.2. Creating a group identity

To support the forging of a design thinking alliance, efforts were made to establish a group identity, a feeling of being part of something. In most cases, this involved finding a catchy name for the project. In some cases, the team was given a name as well. In *Buurbouw,* for example, they referred to themselves as the "opportunity team". In *Aardgasvrije Wijken,* the designers even created a group ritual:

> "We designed this prop to ask questions. And we designed it as a ritual. That was a conscious choice. Because then people become part of the ritual."

4.2.3. Promoting engagement

To form a group of design advocates, many designers and civil servants stressed the importance of promoting engagement and thereby establishing ownership. As mentioned, in many cases, everyone involved actively took part in the design project. The course and content of both the process and the outcome of the project were often decided together. Although the designers naturally took the lead in this, they made sure everyone contributed in their own way to the project, which enhanced their investedness and commitment to the project as well as to each other. One of the designers in *Doortrappen* described this:

> "What also helps is to make people co-owner. You need to give them a role in the process. That doesn't have to be big, but you need to pull them in. So every step we involved them, and invited them to think with us."

4.3. Generating support

To get things done it is crucial to have support - especially in a bureaucratic, hierarchical context. This helps obtain resources, create possibilities, establish a sense of urgency, and empower people. Support can be contagious: when some people are on board, others are likely to follow. As such, it helps to generate support for design thinking on all levels, with all groups of stakeholders. Correspondingly, to obtain political and leadership buy-in, managerial consent, stakeholder endorsement, and community approval, six strategies were identified: showing the progress of the project,

looking for traction when choosing directions and selecting ideas, producing attractive work, creating visibility of the design project, cultivating empathy for the people addressed by the design project, and reducing liabilities associated with the design project.

4.3.1. Showing progress

Many designers stressed the importance of developing and demonstrating intermediate results to survive in the result-oriented environment of public organizations. In doing so, they showed that they were making progress, which, in turn, helped maintain or expand support. In some cases, when results were not shared, this led to impatience and opposition. One of the designers in *Landbouw Innovatie Campus* described this well:

> "With the government you have to call out your milestones. You have to account for what you do to the administration. But the results are just very different from regular ones. It is not so much about a policy plan or a reduction of emissions, but it's about the amount of entrepreneurs that look at their environment differently. Or about meetings that took place. These kinds of things. You really show the process results."

4.3.2. Looking for traction

In many cases, support was simply generated by pursuing directions, ideas, and solutions that were supported in the first place. The designers were keen in detecting what generated the most excitement or enthusiasm and shaping the design project accordingly. In doing so, they gradually built a "coalition of the willing" as the process unfolded. One of the designers of *Aardgasvrije Wijken* describes this as follows:

> "We tried to find out what made them "turn on". So we had an idea of what direction to follow. And then you see that this creates a lot of energy. Which is also an invitation for this new way of thinking."

4.3.3. Producing attractive work

Most of the designers and civil servants involved in the cases also stressed that the appeal and appearance of the outputs, at intermediate and final stages, can help generate support. Captivating stories, surprising insights, creative ideas, and attractive prototypes that emerged throughout the project were prominently featured in external communication. Materials were presented in esthetically pleasing lay-outs with attractive visuals. One of the civil servants of *Future Mobility in Rural Areas* mentioned that this was a deciding factor in obtaining buy-in:

> "I mean, it looked nice. That was something that really sold their ideas. Their plan really looked nice. That's simply the way it is."

4.3.4. Creating visibility

In every case, the designers and civil servants invested in enhancing the visibility of the project. In doing so, they attracted support from a wider audience while also providing an opportunity for politicians and leaders to gain public attention. Visibility was created in different ways. Often, this was done by showcasing the design work at

events, conferences, and other podia. Sometimes, media attention was deliberately sought. In a few cases, the design work was branded to enhance visibility and recognizability. This included developing a name, logo, visual style, and website. One of the designers of *Buurbouw* explained this well:

> "You actually want to organize a kind of approachability. And by making this visual language, and showing how it could function, it becomes concrete and they start to understand it."

4.3.5. Cultivating empathy

In several cases, real, captivating stories of the people addressed by the design project were brought to meetings with more distant politicians and executives. Engaging interview quotes, photos, and raw video and audio material were utilized to share the feelings, perspectives, and lifeworld of the target group of the project, thereby creating a sense of urgency and fortifying political, leadership, and management buy-in. For example, one of the designers in *Smart Greater Copenhagen* used "soundbites" – small audio recordings of an interview conducted as part of the design project - in a steering group meeting:

> "We used the soundbites for presenting to the steering group. The whole purpose of this is that you can reflect and relate more when you hear a sample, instead of something I will tell you myself. You get a whole other experience and commitment when you actually hear it yourself. When they actually got these insights, they were also much keener to support the process."

4.3.6. Reducing liabilities

It can be difficult to obtain support for a process in which both the course and content are unclear. Hence, in some cases, the project was broken down into separate phases. After each phase, the client and stakeholder organizations were given the option to either withdraw from the design project or support the next phase. This reduced the liabilities associated with the design project; it made it easier to take part as well as to withdraw. In doing so, the threshold of committing to such an uncertain process was lowered, as explained by one of the civil servants in *Doortrappen:*

> "What worked well in this case was that we took small steps the whole time. We didn't immediately say: we need one million and in three years you will have something amazing. With small projects we explored if this had potential. And each time we looked at how we could find a financial construction for the next step."

4.4. Enhancing compatibility

As explained, design thinking requires a context that allows for exploration and experimentation, whereas the public sector context is oftentimes organized for exploitation and execution. To be effective, efforts need to be made to enhance compatibility between design thinking and the context within which it is applied. Four strategies were identified to reconcile design thinking with the external context: seeking alignment with the context within which design thinking is applied, boundary

spanning between the design thinking project and the client and stakeholder organizations, bypassing existing structures that may constrain or hinder the design project, and flying under the radar (i.e. working out of sight of decisive actors).

4.4.1. Seeking alignment

In many cases, the designers made deliberate efforts to align the design work with the context within which it was done. Depending on the context, alignment entailed different actions, such as adjusting to the particular organizational cultures and values at play, using the same language that was used within the organization, aligning with existing work processes, or using familiar working formats. One of the designers in *Veilig Blijven Rijden* illustrated this well:

> "The municipality of Amsterdam is working a lot with Lean and Agile. And before Agile comes Lean and before Lean comes design thinking. So by bringing it in relation to these two, that are already commonplace, makes them see it."

4.4.2. Boundary spanning

Various kinds of boundary-spanning activities were also undertaken to enhance compatibility, including making connections with and between other organizations or departments within the client or stakeholder organization and coordinating efforts with adjacent processes and projects. Oftentimes, "boundary objects" – that is, visualizations, personas, scenarios, or prototypes – were made to help establish a common language and thereby support these activities. In addition, these activities relied heavily on (the presence and capacities of) boundary spanners, such as civil servants with strong networks within the organization, account managers of stakeholder organizations, or local community ambassadors. These boundary spanners often had a good overview of relevant developments within their organization or community, translated the design work in a meaningful way, and importantly, helped shield the design project from external disturbances. One of the designers in *Doortrappen* illustrated the importance of boundary spanners well:

> "I think this is what makes it or breaks it. That you have someone inside of the organization that understands the process, but also the organization. Not everyone gets it, so this person has to be able to translate things and also do what is needed to make it work. Someone inside of the organization that knows their way, someone that stands up for you and the process, someone that is really behind the approach."

4.4.3. Bypassing existing structures

In all cases studied, some kind of "structural bypass" was created. Obviously, employing an external agency to conduct the design trajectory is a structural bypass in itself. Besides that, design thinking trajectories were generally placed within a research or innovation program, thereby allowing sufficient freedom while remaining in the lee of everyday politics and administration. Moreover, separate, relatively autonomous project groups dedicated to the design trajectory were often established. In Denmark, such groups can be created under the law. As one of the civil servants in *Future Mobility in Rural Areas* explained, this allows the administration to work with politicians on innovation projects:

> "We have possibilities to make these small extraordinary groups within the law, which give the politicians a bit more workspace with the experts. It is called paragraph 17.4. And because I was part of this extraordinary group I had a chance to talk with the politicians directly. It was great."

4.4.4. Flying under the radar

In a few cases, hindrances were avoided by simply flying under the radar. Rather than creating visibility or involving many people in the design thinking activities, some activities were deliberately undertaken out of sight of the stakeholders, leadership, or client organization to prevent the project's forestallment. A civil servant in *Buurbouw* explained this well:

> "We really tried to keep things under the radar also. So we didn't take center stage saying: "Look at us doing all these cool things with Buurbouw". But that was for us the way to go. Don't ask for too much, but just do it. Because before you know it, everyone will be involved and then there is always someone that has a good reason to not do it at all."

5. Discussion

Our study reinforces the view that additional efforts are required to effectively apply design thinking in the public sector (Liedtka Salzman and Azer 2017; Schaminée 2018). By analyzing 14 design projects in the public sector, we identified a wide variety of strategies to support the application of design thinking in this context. This includes strategies suggested in the literature, such as seeking synergies (Junginger 2015; Schaminée 2018), building design thinking competencies (Rizzo Deserti and Cobanli 2017), enhancing awareness and understanding (Nusem Matthews and Wrigley 2019), and bypassing existing structures and cultures (Bason 2010), as well as additional strategies such as creating a safe setting, building beneficial relations, establishing group identity, and creating visibility. Our findings also provide an in-depth account of how these strategies are used in practice. As expected, these strategies are used in combination rather than in isolation. As such, this research confirms, deepens, and expands existing knowledge about effectively applying design thinking to address public issues.

Our findings also put existing knowledge in a new light. In the literature on applying design thinking in the public sector, there appears to be a strong focus on the differences between design thinking and established design legacies in public organizations (see, for example, Clarke and Craft 2019; Howlett 2020; Lewis McGann and Blomkamp 2020), and how these differences can be dealt with or overcome (see, for example, Junginger 2015; Rizzo Deserti and Coblani 2017; Schaminée 2018). However, most of the strategies identified in this study do not address these differences head-on; the three approaches that are distinguished in the literature to do so – adaptation (Junginger 2015), transformation (Sangiorgi 2011), and facilitation (Starostka et al. 2021) – are but implicitly reflected in our findings. Practitioners have a different focus. Essentially, issues with applying design thinking arise in the social interactions between the people directly or indirectly involved. To be effective,

practitioners thus seek to make these interactions productive by fostering favorable attitudes toward design thinking and establishing beneficial relations. This social side of applying design thinking in the public sector is often overlooked (Vink et al. 2021b). Based on this insight, we consolidated our findings in a taxonomy of strategies that brings this social dimension of enabling design thinking to the fore. This taxonomy offers a comprehensive framework that both facilitates theory building and helps guide efforts to effectively apply design thinking for public issues.

In this regard, the taxonomy can also be seen as an application of existing typologies of the different roles that are needed to support design thinking. To build confidence, form an alliance, generate support, and enhance compatibility, the designer needs to perform the roles of facilitator, coalition builder, lobbyist, and entrepreneur respectively. Correspondingly, participants from the client or stakeholder organization need to adopt the roles of visionary, collaborator, ambassador, and boundary spanner. These roles are frequently described in the literature on roles in design (Inns 2007; Tan 2012; Blomkamp 2022) and public sector innovation (Dickinson and Sullivan 2014; Van der Wal 2017) as well. In light of this, more research is needed to determine what capabilities and team compositions are required to be effective.

In addition, some participants pointed out the pitfalls and dilemmas within and between strategies. For example, providing training may require more time and thus compromise efficiency. It also comes with higher costs, which may raise rather than lower the threshold of applying design thinking. Similarly, flying under the radar may backfire later on in the process, as it can give the impression that things were done behind the backs of decision-makers. Moreover, flying under the radar can also be at odds with creating visibility. These tradeoffs and tensions should be considered when applying the strategies identified in this study. To be effective, practitioners need to be able to smartly time and combine strategies. Additional research is needed to better understand the advantages, disadvantages, and timing of the different strategies, as well as the synergies and tensions between them.

Furthermore, besides providing training to build individual design competencies, none of the strategies identified in this study are directly aimed at reconfiguring established design legacies. At present, hardly any institutional work is undertaken to support the application of design thinking (Komatsu et al. 2021; Lewis 2021; Vink et al. 2021a). By focusing on the interactions between people, existing practices, routines, norms, and structures of public organizations remain in place. The strategies identified in this research are thus mainly effective in making the application of design thinking a one-off success. To support the application of design thinking in the public sector in the long run, additional strategies need to be found that instigate lasting organizational change (Komatsu et al. 2021; Vink et al. 2021a), or even a "tilting of whole systems toward new ways of working" (Lewis 2021). This is an important topic for further research.

In light of this, it should be noted that this study only included cases conducted by external design agencies commissioned by public organizations. Although design thinking is often still organized externally (Lewis 2021; Whicher 2021), and this study thus reflects the current reality of design thinking in the public sector, this is an important limitation of this research as it might explain why hardly any institutional

work was undertaken. Reconfiguring established design legacies is notably difficult from the outside in (Olejniczak 2020; Lewis 2021; Villa Alvarez Auricchio and Mortati 2022) and in many cases, there was very little room for this (which frustrated some of the designers that were interviewed); it was not part of the brief, and engagements with design thinking were only temporary. This limitation also makes our findings particularly valuable for the work of design agencies and public sector innovation labs, but perhaps less applicable for internal design thinking initiatives. Institutional work may be especially important for these initiatives. These initiatives may thus also apply more strategies related to this. Research on strategies to support the application of design thinking within public organizations could therefore complement our findings.

Another limitation is that our research merely included cases conducted in The Netherlands and Denmark. In these countries, design thinking has gained considerable traction in the past decade or so. Interestingly, applying design thinking within these countries is still rather challenging. This reinforces the notion that more strategies aimed at reconfiguring established design legacies are needed to bring design thinking to the next level (Komatsu et al. 2021; Lewis 2021; Vink et al. 2021a). In countries in which design thinking is still relatively new, however, design thinking initiatives may predominantly rely on facilitation strategies to support its application. Enhancing awareness and understanding of design (Nusem Matthews and Wrigley 2019) may be particularly important here. In light of this, it may be interesting to investigate relationships between strategies to support the application of design thinking and the level of design awareness or usage in public organizations, for example, by linking strategies to existing models of degrees of adoption such as the public sector design ladder (Design Council 2013).

Finally, our research included cases from a variety of domains and administrative contexts with different cultures and traditions. Although this enabled us to identify an expansive set of strategies to support the application of design thinking and thereby establish a broad basis for future research, contextual differences that are important to take into account when employing these strategies were obscured. Additional insights related to what strategies work well in what kind of situations and contexts are needed to complement our findings and make them more practically applicable.

6. Conclusion

Our study of 14 design thinking projects in the public sector resulted in an expansive and in-depth account of the different strategies that are employed to support the application of design thinking within this context. In the literature related to this, there appears to be a strong focus on the tensions and differences between design thinking and existing design legacies (Clarke and Craft 2019; Howlett 2020; Lewis McGann and Blomkamp 2020), and how these can be prevented, dealt with, or overcome (Junginger 2015; Rizzo Deserti and Coblani 2017; Schaminée 2018). However, our findings show that practitioners have a different focus. They focus on establishing productive interactions between the people directly or indirectly involved in design

thinking projects by fostering favorable attitudes toward design thinking and establishing beneficial relations. Based on this insight, we developed a taxonomy of strategies to support the application of design thinking that brings this social dimension of enabling design thinking to the fore. The taxonomy distinguishes four overarching strategic purposes (building confidence, forming an alliance, generating support, and enhancing compatibility) and corresponding actions (18 in total) and thereby offers a broad basis for future research as well as guidance for practitioners to enable and support design thinking in the public sector.

This research also enhances our understanding of the limited impact design thinking currently has in the public sector (Olejniczak 2020; Lewis 2021; Villa Alvarez Auricchio and Mortati 2022). Practitioners are mainly occupied with making the design thinking project a one-off success rather than instigating lasting change within public organizations. Established rational-instrumental logics and traditional models of public administration thus remain dominant. There is still much work to be done to better accommodate design thinking within public organizations (Komatsu et al. 2021; Lewis 2021; Vink et al. 2021a). This research is thus also a cue for academics and practitioners to work more closely together and not only realize inspiring design projects but simultaneously look for ways to leverage these projects to drive organizational change.

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