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# Destination design: identifying three key co-design strategies

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## ABSTRACT

Collaborative approaches to destination design require conscious and reflexive stakeholder involvement in activities and decision making. Design science studies such participatory processes by observing design teams in practice. From these observations, scientists have identified design strategies and processes that design teams use to support their work in identifying problems and developing solutions. Observing design processes in tourism destinations provides an opportunity to identify successful co-design strategies for destination design. This study presents three key co-design strategies based on data collected from five living labs in five destinations. Each co-design strategy is presented with a recommended use, suggestions for stakeholder involvement, and activities to develop solutions efficiently and effectively with the available resources. Together, the strategies provide a framework to optimise decision-making in relation to shaping destination design processes, and to validate processes and outcomes.

## ARTICLE HISTORY

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## KEYWORDS

Destination design; co-design strategy; design process; participatory design; living lab

## Introduction

Destinations struggle with the complexity of satisfying the needs of all their stakeholders in balancing tourism growth, protecting the natural environment and maintaining the well-being of the host community (Fyall & Garrod, 2019). Consequently, Destination Marketing and Management Organisations (DMMOs) are shifting away from primarily representing and marketing destinations abroad to actively having tourism contribute to (local) sustainable development by influencing tourism development, visitor flows and destination capacity. Scholars have participated in this shift and framed this new approach to destination management as destination design (Koens et al., 2021b; Volgger et al., 2021). This shift towards destination design and its goals is not new, but they were already visible in the functional view on (collaborative) tourism planning (Keogh, 1990; Sautter & Leisen, 1999), which had its origin in the concept of designing vacationsapes (Gunn, 1972). This raises a question of whether destination design amounts to old wine in a new bottle, or whether it represents a valuable new perspective.

Volgger et al. (2021) argue that tourism planning literature has long since focussed on developing the supply side of tourism for economic reasons, while there has been little attention given to the demand side of co-creating tourism experiences, and even less attention on the impacts on other stakeholders in the host community. In contrast, destination design can contribute to a shift away

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from traditional tourism planning. As a meta-discipline, design can assist in incorporating the stakes of stakeholders and can involve them in decision-making through various participatory techniques. Destination design encompasses a range of methods to create a detailed plan of action to develop a destination towards a more desirable future, compared to its current state (Koens et al., 2021b; Volgger et al., 2021).

In this sense, there is growing consensus in the literature that design science has the potential to make an important contribution to tourism literature and practice (Fesenmaier & Xiang, 2017; Smit et al., 2021; Stienmetz et al., 2020). Yet, there is also consensus on the fact that design science has not yet been able to validate its methods and processes for use in designing the specific fuzzy, soft systems that shape tourism destinations (Checkland & Poulter, 2020) because these systems have negotiated rather than natural boundaries, memberships and goals (Röling & Wagemakers, 1998). Simultaneously, within the on-going shift away from traditional tourism planning, design thinking in various shapes and forms is already applied in practice when stakeholders collaboratively develop detailed plans for their destination (Cross, 2011; Scuttari et al., 2021). Consequently, as Smit et al. (2021) argue, it is the in-situ development of these plans that provides an opportunity for researchers to observe and conceptualise destination design processes and methods as a crucial step in maturing the application of destination design.

The objective of this paper is to contribute to the evolution of destination design by identifying three key co-design strategies. Each strategy represents an archetype of how specific design methods and tools, adopted in a specific underlying design process model, could shape destination design in practice. The paper introduces these three destination design strategies by combining insights from literature with data collected in five destination living labs, in which diverse groups of stakeholders collaboratively developed plans for their shared future. The Discussion section explains how each of these co-design strategies has its own purpose and recommended use, and why it is important to consciously choose one of these strategies in the early stages of a destination design process. The three strategies identified are validated through a focus group with representatives from the living labs. Together, the strategies provide a framework to (1) optimise decision-making in relation to shaping destination design processes in real life, and (2) validate specific methods and processes involved in real life destination design contexts. The co-design strategies are based on theoretical constructs adopted from design science that actively support reflexivity and the development of procedural knowledge.

## Literature review

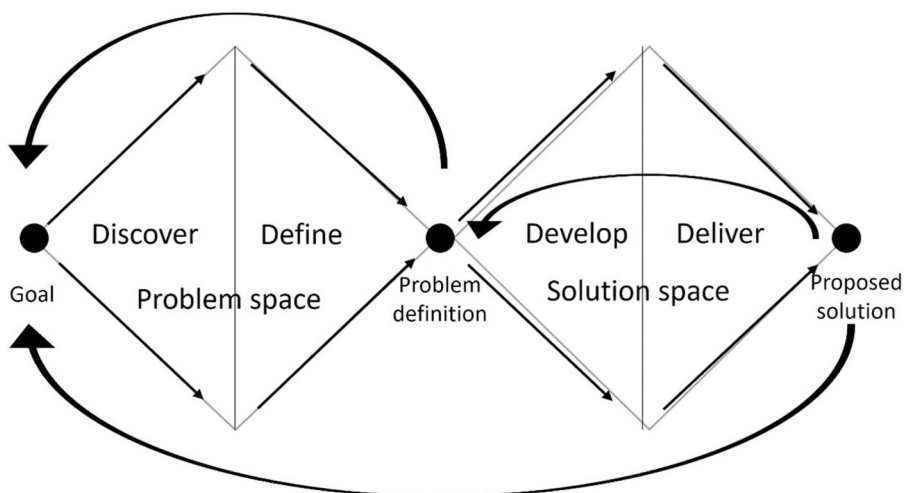
One of the challenges in sustainable development of destinations is the fact that destinations, as tourism experience systems, are in a constant state of change (Kuščer et al., 2017). They change due to the inherent natures of tourist attractions and businesses, which emerge and decline as part of their economic lifecycles (Koens et al., 2021a). Depending on how tourists combine different activities, modes of transportation and accommodation into their personal trajectories (Beritelli et al., 2020), different stakeholders, jointly, shape tourism experience systems and are inter-dependent for their long-term (economic) success. Moreover, the impacts of economic success have direct and indirect consequences for other stakeholders, such as residents, retailers, the natural environment and other tourism and hospitality businesses. Acknowledging that the stakes and impacts of these direct and indirect stakeholders lead to incompatible and even conflicting solutions defines tourism destinations as soft systems (Checkland & Poulter, 2020).

The development of tourism experience systems should never be a goal in itself. Instead, a sustainable development strategy should contribute to achieving a balance between tourist experiences, natural viability, economic prosperity, equity, the resilience of the place visited and more (Koens et al., 2021a). Therefore, developing the tourism experience system should be informed by local stakeholders, such as residents, cultural institutions, environmental NGOs, government and tourism and hospitality entrepreneurs (Hatipoglu, 2015; Presenza et al., 2015). Moreover, mobilising the resources and knowledge of these stakeholders in a smart way can improve the tourism

experience system for all stakeholders within the system boundaries, thereby acknowledging the destination's carrying capacity and avoiding unwanted social and environmental impacts. While design science can contribute to this effort by orchestrating the contributions of different stakeholders in co-designing their collaboratively envisaged future, validating the effectiveness of these design orchestration efforts requires research into the processes and underlying strategies adopted for doing so (Kimbell, 2011; Smit et al., 2024). A co-design strategy in this context can be described as a conscious approach to collaborating in or with a diverse group of stakeholders to identify and unravel (different perspectives on) complex problems and solve them 'through collective forms of creativity and generative design thinking' (Sanders & Stappers, 2012, p. 22).

These underlying co-design strategies are usually based on specific design process models, which are applied in many different fields to help designers structure stakeholder contributions to, and activities within, the process of designing new or improved products, services and systems. A design process model can be described as a description or visualisation of a process structured around a set of activities that are needed to create a product, service or system (Smit et al., 2021). A process model provides detailed information on these activities, their intended outcomes, how, when and why they are executed, who should be involved and for what reason, and in which order these activities should take place. In this sense, design process models guide designers just like specific methodologies inform researchers in other fields of science. Ultimately, these models also provide procedural knowledge, in the form of guidelines, methods and tools, that improve the chances of successfully co-designing product-service systems together with stakeholders (Blessing & Chakrabarti, 2009). Therefore, design process models are well suited to assist designers in (participatory approaches to) destination design.

Design professionals and academics agree that basically every design process is organised around a problem space and a solution space (Dorst and Cross, 2001; Smit et al., 2021). Both need to be addressed in the right way, oftentimes simultaneously or, at least, iteratively, to ensure that the design process results in the right solution to the right problem. The British Design Council (2019) has visualised this essence of the design process in the generic Double Diamond process model (Figure 1). In this model, the left-side diamond represents the problem space, and focusses on the discovery and definition of the problem. The right-side diamond represents the solution space, and focusses on developing and delivering solutions. The solution space ends when evaluation shows that the design presented is in fact a solution(s) to the problem defined in the problem space. Simultaneously, this evaluation can improve the problem definition, leading to a new cycle



**Figure 1.** Double diamond process model (adapted from British Design Council, 2019).

of the design process. Experienced design teams never follow a strictly linear trajectory from problem to solution. They iterate continuously between problem space and solution space, adjusting and detailing both as they learn more during the process.

Despite its usefulness, the Double Diamond process model does not describe the exact activities that a design team should undertake, nor which methods to use or how to integrate gathered insights in a design; this is where a design process model comes in. Developing appropriate models for destination design as a theory of practice (Bourdieu, 1977) requires observing the processes of design teams as 'a contingent set of practices' (Kimbell, 2012, p. 129). Doing so allows us to perceive design activities as being distributed among various individuals and objects, collectively engaging and interacting in the process of designing and creating designs. Design researchers (e.g. (Dorst and Cross, 2001; Kimbell, 2012) use protocol studies and participatory observation to collect data and model the process of designers in practice, such as architects and industrial designers. In protocol studies, design teams working on the same assignment are studied by design researchers to compare their processes. Participatory observations are (auto-) ethnographic studies of single cases, like the way Stuart and Tax (2004) developed a process model to design service experiences in hospitality and tourism based on observations of a theatrical production and interviews with stakeholders. Similarly, developing process models for destination design could benefit from researchers participating in, and observing, design teams in destination design practice.

Understanding what to observe and how to interpret stakeholder interactions and decision making is crucial. Therefore, this study adopts the four key characteristics of process models for tourism experience design by Smit et al. (2021) as a reference point for its observations. According to Smit et al. (2021), destination design processes can be described by observing how (1) problem and solution evolve over time, based on how (2) design teams use their capabilities to (3) collect tacit and explicit knowledge with stakeholders through different activities. Moreover, (4) observations need to describe the procedural knowledge and design competence required to manage and validate the destination design process as it unfolds.

## Methodology

This study is the result of observing and participating in destination design processes in five different, European destinations as part of a Horizon2020 project. For each destination, by observing how different design teams adopted different co-design strategies to collect tacit and explicit knowledge with stakeholders, the co-evolution of problem and solution over time could be tracked. Moreover, by participating in discussions between the different destinations on which tools and methods to use for taking next steps in the process, it was possible to record the protocol adopted in each destination.

The five living labs that formed the basis for the data collection for this study were all part of the same EU funded Horizon 2020 project focussing on participatory development of sustainable cultural tourism in rural areas and urban periphery. Within the broader Horizon 2020 project focus, each living lab narrowed the focus to their destination's context in terms of their needs, opportunities and objectives. The aim of the living labs was to experiment with participatory approaches, tools and methods for tourism development by bringing together a wide range of stakeholders from the regions, municipalities and/or neighbourhoods involved. The stakeholders included residents, tourism and hospitality entrepreneurs, cultural institutions, NGOs and governments. Each living lab manager crafted the process to iteratively cycle through the various stages of the Double Diamond process model. They organised meetings and workshops with local stakeholders, through which they defined the problems and goals, and developed solutions for them. Each living lab and each destination had its own unique characteristics and focus, therefore, different design processes emerged. To allow for knowledge exchange and reflection, the living labs were supported by a coordinator and participatory design researchers in monthly meetings. The set-up of the living

labs allowed for both a protocol study as well as participatory observation; the process, activities and decision making were well documented in reports and minutes of meetings, while simultaneously allowing researchers to partake in a range of design activities (Figure 2).

This study adopts a two-stage approach to developing and validating key co-design strategies for destination design. *First*, data was collected on the design processes of each of the five living labs as they evolved over their lifetime (18-24 months). The characteristics of the five processes were compared, leading to the identification of three main types of co-design strategies. In the *second* stage, the three co-design strategies were presented to the living lab managers, a living lab researcher and design experts in a validation focus group. According to Fern (2001), focus groups can be used to determine 'consistency between scientific explanations and everyday knowledge' (p. 10). Cross-validating theory and observation in this way builds confidence in scientific knowledge through



**Figure 2.** The living lab locations.

qualitative common-sense (Campbell, 1988). In this study, cross-validation was achieved through developing theory about design strategies based on the living lab data and then validating this theory by presenting it back to the living lab managers and design experts.

### **Stage 1: identifying the design process of each living lab**

To identify the characteristics of the design process adopted by each living lab, data was collected from a variety of sources: (1) *the project proposal*, (2) *living lab documentation*, (3) *meeting minutes and documents* and (4) *semi-structured interviews*. These different sources of information allowed for triangulation of data (Olsen et al., 2004; Sainaghi et al., 2019). *The project proposal* included case-by-case descriptions of the need to develop cultural tourism in each of the destinations. *The living lab documentation* included a range of public and confidential documents such as reports about living lab meetings, pictures of activities, policy documents, stakeholder and swot analyses, and communication towards local participants. *The meeting minutes and documents* reported on monthly coordinating meetings between living lab managers in which they reflected on the ongoing activities and gave each other feedback. One of the authors of this paper participated in these meetings and in various design activities in the living labs. *The semi-structured interviews* were held as part of the evaluation stage of the project; for each of the five destinations, a living lab researcher met with the living lab manager and, in a separate interview, a participant (see Table 1). As the living lab management in Finland was shared between three people, all three were part of a group interview.

The data of each living lab were analysed using reflexive thematic analysis (Braun & Clarke, 2021) and using theoretical codes (Saldaña, 2016) based on the characteristics of design processes for tourism experience systems (Smit et al., 2021) and the double diamond process model (Design Council, 2019). The analysis identified: (1) the purposes and goals of each living lab, (2) the approaches adopted by the design teams, (3) the activities in the problem and solution spaces, and (4) the stakeholder selection and their subsequent involvement in the process. This resulted in five descriptions of the processes adopted in the living labs. Comparative analysis of these five processes, as observed in practice, led to the conceptualisation of three distinct co-design strategies, which are presented in the Findings section of this paper. Comparative analysis in this study refers to identifying similarities and differences between the processes adopted in the living labs based on the characteristics of each. Based on this comparison, argumentation was developed as to how and why the strategies adopted were conceptually similar or different.

### **Stage 2: validating the co-design strategies**

In the second stage, a focus group was organised to which all the interviewed living lab managers were invited (see Table 2). The focus group allowed the managers to discuss their personal experiences, reflections and observations on the living labs. Although not all managers were able to participate, their perspectives and experiences were represented in the focus group by the living lab

**Table 1.** Overview of the ten semi-structured interviews.

Interview	Destination living lab	Role in living lab	Professional role	Gender
1	Split, Croatia	Living lab manager	Tourism academic	Male
2	Split, Croatia	Living Lab participant	Tourism entrepreneur	Female
3	Rotterdam, the Netherlands	Living lab manager	Living Lab facilitator	Female
4	Rotterdam, the Netherlands	Living Lab participant	Social design professional	Female
5	Scheldeland, Belgium	Living lab manager	DMMO professional	Female
6	Scheldeland, Belgium	Living Lab participant	Tourism policy officer	Female
7	Huesca, Spain	Living lab manager	Regional development academic	Male
8	Huesca, Spain	Living Lab participant	Tourism entrepreneur	Male
9	Utsjoki, Finland	Living lab managers	Three design academics	Female
10	Utsjoki, Finland	Living Lab participant	Sustainable tourism policy officer	Female

**Table 2.** Focus group participants.

	Role	Expertise / job	Country	Gender
1	Professor	Design academic	The Netherlands	Male
2	Living Lab Manager Utsjoki	Design professional	Finland	Female
3	Living Lab Scheldeland	Destination Marketing professional	Belgium	Female
4	Living Lab Manager Rotterdam	Tourism academic	The Netherlands	Male
5	Living Lab Expert	Tourism academic	Austria	Female
6	Focus group moderator	Destination design academic	The Netherlands	Male

expert that had executed the interviews. The purpose of the focus group was to validate, and further substantiate, the characteristics of the co-design strategies that had been conceptualised. Participants of the focus group were also asked to link the different living labs to each of the identified strategies through elaborating on their characteristics from their practical experiences and the challenges, opportunities and risks encountered during the process.

Validating observed concepts post-hoc poses a methodological challenge. Focus groups are carefully planned discussions ‘designed to obtain perceptions on a defined area of interest in a permissive, nonthreatening environment’ (Krueger, 1988, p.18). A focus group, contrary to many other qualitative methods, offers an opportunity for participants and a moderator to interact freely to validate their experiences and expertise on specified topics or situations through an interactional event (Jung & Ro, 2019). Therefore, it is a method well-suited to retrospectively studying processes in a tourism destination development context (Wilson et al., 2001). The ‘focal point’ of the group was to explore differences and similarities in the three identified co-design strategies. The focus group was developed in line with the guidelines of Breen (2006). The focus group lasted 90 min and was held online. Both audio and video were recorded. The focus group was analysed using narrative analysis of the recordings, supported by a cleaned version of the transcript generated by Microsoft TEAMS (Greenwood et al., 2017; Saldaña, 2016). Narrative analysis allowed for identifying stories and anecdotes about actual events in the living labs as illustrations of characteristics of different co-design strategies. Moreover, it allowed the researchers to take the dialogical development of the conversation into account (Riessman, 2008), highlighting consensus or debate on specific topics, as well as the topics’ importance, by identifying distinguishing quotes and arguments for particular viewpoints (Breen, 2006).

It is important to note here that the identification of these three key strategies was not based solely on the empirical data presented in this paper, but was also informed by the authors’ years of observing and participating in a range of comparable design and co-design processes in practice and studying relevant literature. For clarity’s sake, however, the Findings section of this paper limits itself to presenting empirical evidence of the conceptualised co-design design strategies based on the methodology presented above. In the Discussion section, the strategies are further validated by relating them to the most recent literature.

## Findings

The aim of the first stage of this study was to identify key co-design strategies through analysing and comparing the design processes adopted in five living labs, based on the characteristics of process models to design tourism experience systems, as identified in the literature. Although the living labs were all established with similar goals related to developing solutions for cultural tourism development, the local situation, context and stakeholder involvement differed. Moreover, the living lab managers had freedom to develop their own approach to manage the design process of their respective living labs. Creating descriptions of the co-design processes adopted in the various living labs allowed the researchers to analyse the processes and identify commonalities and differences, as well as the rationales behind them in each destination context. A summary of the characteristics is provided in Table 3. From the comparative analysis, three generic co-design strategies for



**Table 3.** Key characteristics of the five living lab processes.

Living lab	Starting point, purpose and levels addressed	Activities in problem and solution space for collecting tacit and explicit knowledge	Design team and stakeholder roles	Process, problem and solution validation	Type of solution / outcome
Split	Strategically defined, narrowed down to feasible tactical opportunities	<ul style="list-style-type: none"> <li>• Priority setting</li> <li>• Solution oriented</li> <li>• Problem definition based on shared tacit and explicit knowledge</li> </ul>	<ul style="list-style-type: none"> <li>• Bottom-up</li> <li>• No separate decision-making unit</li> </ul>	<ul style="list-style-type: none"> <li>• Continuous validation with stakeholders</li> <li>• Solution validated after prototyping</li> </ul>	<i>Tactical:</i> programme for capacity development; first step towards achieving strategic goals set at the start
Rotterdam	Strategically defined at city level, but redefined from neighbourhood perspective after problem analysis	<ul style="list-style-type: none"> <li>• Primarily problem oriented – gathering information to redefine priorities before developing solutions</li> <li>• Sharing of tacit and explicit stakeholder knowledge through artefacts</li> </ul>	<ul style="list-style-type: none"> <li>• Bottom-up</li> <li>• Independent design team</li> <li>• Separate decision-making unit</li> </ul>	<ul style="list-style-type: none"> <li>• Continuous reflection on process and progress with design team</li> <li>• Problem and solution validation activities with stakeholders and steering group through artefacts</li> </ul>	<i>Strategic:</i> strategic roadmap with recommendations for policy development and infrastructure investment
Scheldeland	Strategically fixed narrowed down to operational level with tactical requirements	<ul style="list-style-type: none"> <li>• Solution oriented, tacit knowledge oriented</li> <li>• Sharing of tacit and explicit stakeholder knowledge through artefacts and solution prototypes</li> </ul>	<ul style="list-style-type: none"> <li>• Top down and bottom-up</li> <li>• Separate decision-making unit</li> </ul>	<ul style="list-style-type: none"> <li>• Designer led</li> <li>• Fixed process and activities</li> <li>• Solution validation with decision making unit after presenting prototypes</li> </ul>	<i>Operational:</i> new tourism product business model prototypes to connect different municipalities
Huesca	Strategically defined, strategy operationalised after priority setting	<ul style="list-style-type: none"> <li>• Problem-oriented gathering of tacit and explicit knowledge</li> <li>• Focussed solution-oriented activities after priority setting</li> </ul>	<ul style="list-style-type: none"> <li>• Bottom-up within strategic requirements</li> <li>• No separate decision-making unit</li> </ul>	<ul style="list-style-type: none"> <li>• Solution validation with stakeholders</li> </ul>	<i>Tactical &amp; operational:</i> new tourism product prototypes; living lab as destination leadership vehicle for collaborative product development
Utsjoki	Unchanged after initial problem definition at operational level	<ul style="list-style-type: none"> <li>• Solution oriented based on shared tacit knowledge of problem</li> <li>• Tangible solution prototypes developed</li> </ul>	<ul style="list-style-type: none"> <li>• Bottom-up</li> <li>• No separate decision-making unit</li> </ul>	<ul style="list-style-type: none"> <li>• Designer led, flexible process</li> <li>• Validation after prototyping</li> </ul>	<i>Operational:</i> cultural awareness communication and education materials

managing the design process were identified: (1) a creative, solution-oriented strategy; (2) a knowledge-based, solution-oriented strategy; and (3) a priority-setting, problem-oriented strategy.

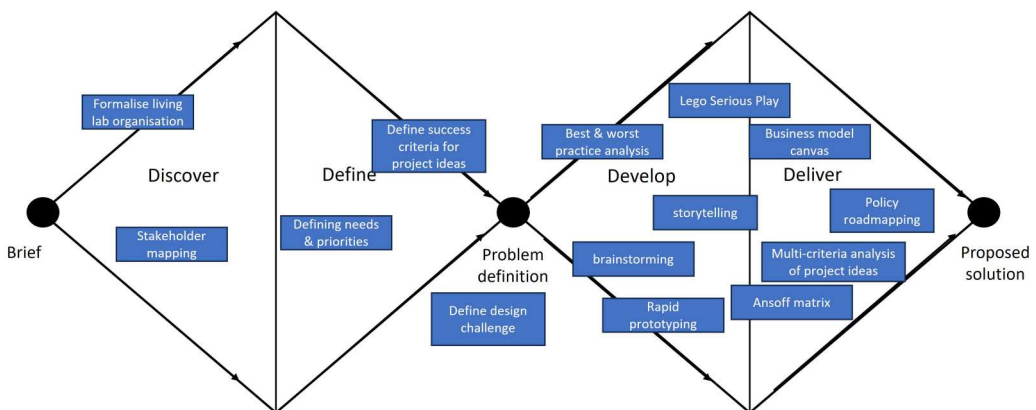
A co-design strategy is defined as being *creative, solution-oriented* when stakeholders engage in a limited number of activities during the initial problem definition and goal determination stage, instead, dedicating most of their effort to developing solutions. The solution development efforts typically involve generative/ creative exercises with diverse groups of participants who do not routinely work together because not all of them represent the local tourism system. Most of the activities are

predetermined by experienced designers and the aim is to deliver a solution before a set deadline within the resources available (see Figure 3). Iterations are planned into the process, to further define and detail solution prototypes that are conceptually developed early on in this process. To finish, the proposed solutions are presented to a decision-making unit; this unit will also have been involved at the start of the process in determining the goals for the co-design process. Consequently, most of the activities in this co-design strategy focus on the solution space.

This co-design strategy was observed in the Scheldeland living lab and to some extent in the Utsjoki living lab. In the Scheldeland living lab, the goal was predefined at a strategic level by the DMMO. As the living lab manager indicated, ‘the goal [...] was to do a proposal for a new product in three working groups’. The Scheldeland living lab was facilitated by a design professional who had predetermined the activities for the participants based on a brief provided by the DMMO. Most of the activities used ideation techniques to come up with specific ideas for new tourism products, and their business models, using local natural or cultural resources. Other activities focussed on analysing, specifying and selecting these ideas to narrow down the options. This approach supported a relatively fast-paced process of developing ideas into operational solutions, such as introducing a historic steam train ride through a regional natural park. The living lab researcher noted that she ‘[...] had the feeling that they were sort of pragmatic [...] or quick about finding an agreement on what they wanted to work on’.

A *knowledge-based, solution-oriented* strategy also focusses most activities on the solution space. However, in contrast to the previous strategy, here participants are already familiar with each other and with the local tourism development challenges. Problem definition and goal determination are based on the existing tacit, and explicit, knowledge of the participant group. Participants are invited to participate in the co-design process based on both their (expected) prior knowledge and experience, and their roles as representatives of key stakeholders in the local tourism system. Consequently, the solutions developed fit within the capabilities and resources that the stakeholders can bring to the table. Input from stakeholders beyond the tourism system is gathered as part of exploring the problem space but these stakeholders are not involved in developing or testing solutions. Consequently, the activities in this co-design strategy are balance between problem and solution space.

The processes adopted by the Split and Utsjoki living labs had many of the characteristics of this strategy. Both living labs were set up as a continuation of existing networks of local stakeholders in the tourism system. In reflecting on their approach (see Figure 4), the Utsjoki living lab design expert noted that they ‘[...] chose solution focussed methods, because we had [the problem] clear already in the beginning and I think because we had a lot of tourism entrepreneurs in our stakeholders, we

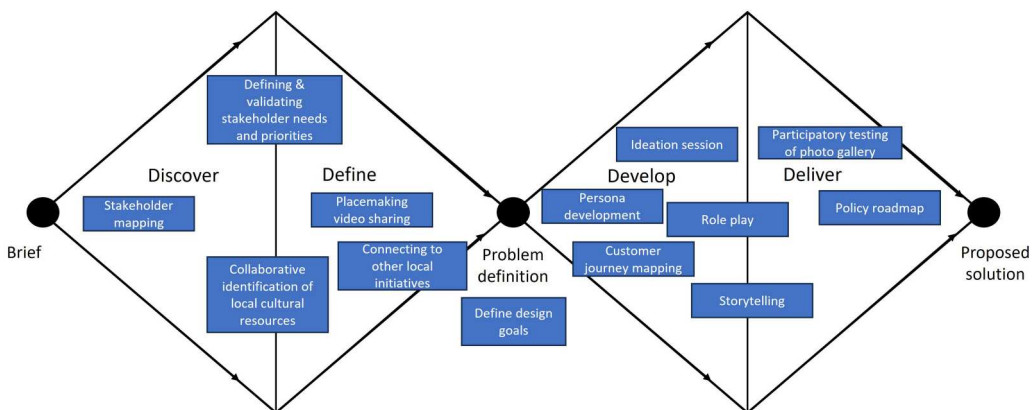


**Figure 3.** Activities in problem and solution space in the Scheldeland living lab.

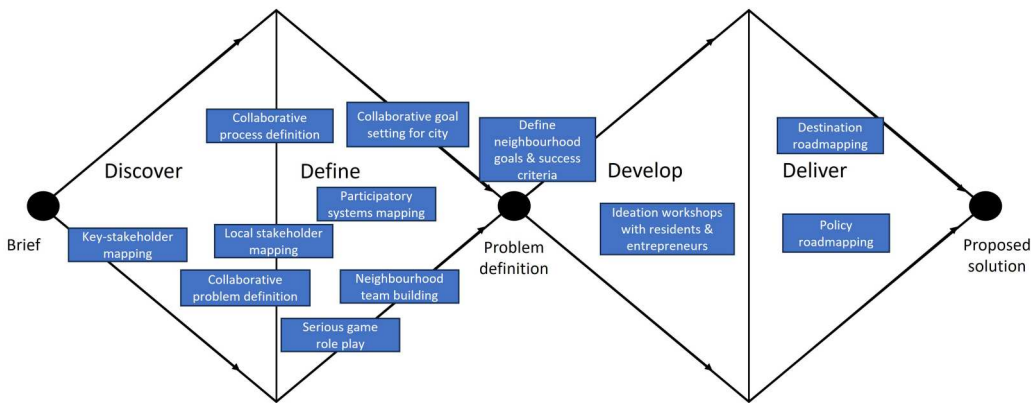
were focusing on the solution'. Similarly, the participants of the Split living lab started from a shared goal to 'among other things, reduce knowledge gaps of important stakeholders in the area' (Split living lab, Terms of Reference document). In Split, as they further explored potential solutions through engaging in different activities, they decided to redefine the problem they were working on to, 'first, to raise awareness of the potential of cultural tourism development and, secondly, to grow the capacities of critical stakeholders to do so' (Split living lab manager, interview). The solution orientation in these labs was partly the result of shared knowledge among the participants and partly the consequence of inviting solution-oriented thinkers. The participants wanted to spend their time, efficiently, to solve predefined local problems within available resources but also within their own areas of interest.

The third strategy identified, a *priority-setting, problem-oriented strategy*, is characterised by continuous refinement of the problem definition through knowledge and information that is gathered and exchanged during various activities with a diverse group of stakeholders. Ultimately, the process leads to a specification of goals and requirements, and to identification of development avenues for solutions. As a result of the in-depth problem-oriented focus, the next stage, to develop solutions, can be done more effectively and through a more limited number of activities linked to the solution space. This co-design strategy supports building coalitions between stakeholders and collaborative prioritisation of solution avenues for the most important and urgent problems. However, in applying this strategy, it is important to proactively scope the objectives and tourism system under design to avoid escalation of the defined problem beyond the purpose of the design process and beyond the capabilities, resources and mandate of the stakeholders involved. Consequently, most of the activities in this co-design strategy focus on the problem space.

The Rotterdam living lab was a typical example of applying this approach (see [Figure 5](#)), where various iterations of the problem definition led to initiating two living labs in two different neighbourhoods instead of having one at a city level. In a third neighbourhood, the idea of developing new tourism offerings was abandoned because the problems identified were so complex that developing tourism could only partly solve the problems and, potentially, could be counterproductive if not handled carefully, in close consultation with other neighbourhood development efforts. Iteratively redefining the problem space supported specification of possible solution avenues before ideating these with relevant stakeholders. In the two neighbourhood living labs, local stakeholders, together with representatives of the municipality and DMMO, developed plans for cultural tourism that would benefit quality of life in the neighbourhood while simultaneously reducing visitor pressure in the city centre. One participant noted in an interview that,



**Figure 4.** Activities in problem and solution space in the Utsjoki living lab.



**Figure 5.** Activities in problem and solution space in the Rotterdam living lab.

it was also interesting to see that a lot of participants do have roots in [the neighbourhoods] that we were researching, but then when you're talking about a [roadmap], and you're also discussing physical interventions, then there's this whole new type of timeline that comes into the equation, which is the municipal and governmental timeline and the complexity that it takes to actually develop big ideas.

By consciously planning activities to establish (negotiated) consensus on priorities, and communicating these to a wider group of stakeholders, participants in Rotterdam's two living labs were stimulated to abandon their individual ambitions and develop solutions that fit the new, shared priorities. One participant voiced this as follows: 'I think the [ideation] washing machine [method] forced people to let go of their preferred option and actually think about solving a problem that might not necessarily be their own first go-to solution'.

The approach in the Huesca regional living lab also had characteristics of this strategy. As many of the participating stakeholders were unfamiliar with each other, their collaborative discovery of the problem space led to collaborative development of new tourism experience offerings by newly formed coalitions of geographically connected municipalities and entrepreneurs with support of the regional DMMO. Some activities in this living lab were purposely planned to support this team building. The living lab manager stated that 'the dynamics have produced constructive debates, enhanced collaboration between participants and facilitated communication between the Huesca living lab stakeholders'. Moreover, some of the activities adopted in the problem space in the Huesca living lab supported both the development of a shared understanding of a regional identity, and opportunities that shared natural and cultural resources offer beyond the direct interest of individual participants. The Huesca living lab manager noted that, similar to the Rotterdam living lab, stimulating 'empathy and opportunity objectivization, as well as strategic planning to set targets for achieving these objectives, were the tools most appreciated by the participants in Huesca living lab'.

## Discussion

Engaging in an extensive protocol study and participatory observation, to compare five parallel living labs, offered a unique opportunity to observe design processes as input for developing a theory of practice (Bourdieu, 1977; Kimbell, 2012). Even more so, given that the five living labs observed in this study all aimed for the same objective – to co-design cultural tourism with local stakeholders – but deployed different processes to do so. Each living lab was managed by representatives of these key stakeholders who together formed the design teams that decided on activities, methods, locations and stakeholders' representation and participation and thus developed their own strategy.

A comparison of these living labs showed that the strategies that emerged in each of them were the result of the objectives set for that particular living lab. However, they were also the result of the stakeholder participants' willingness to participate and their actual input. Each of the design teams, both reflexively and opportunistically, kept their design process going by balancing, first, the stakes of their destination's stakeholders and, second, the available time and resources. All of the living labs struggled to keep participants on board when the design activities and input required were not directly linked to a participant's direct interests, or when potential outcomes would not benefit their interests in the short-term. These dynamics are typical for soft systems approaches to design (Checkland & Poulter, 2020) and, obviously, also reflect the heuristic daily practice of destination management (Scuttari et al., 2021). Consequently, although all of the living labs had the same initial focus objectives, some ended up with rather operational solutions, whereas others presented more tactical, or even strategic, solutions.

A key observation of this study is that all of the design teams would have benefitted from more structured reflection on the characteristics and requirements of possible solutions (and their implementation) in relation to the problems identified at an early stage in the design process. In fact, it is fair to say that a more conscious choice, upfront, of design strategy would have helped the living labs to achieve their goals more efficiently (Smit et al., 2021). A clear choice of design strategy would have assisted them to determine, pro-actively, which stakeholders to involve in different phases and what commitments, resources, and mandates to request from them. Scoping their processes in support of a clear strategy would have helped them to define how and when to collect tacit and explicit knowledge (on either problems or solutions), and how and when to feed this knowledge back to specific stakeholders. Continuously reflecting on what is needed to orchestrate effective, timely contributions from different stakeholders, while maintaining trust between stakeholders and creating commitment towards shared goals requires procedural knowledge.

A conscious choice, at an early stage in the design process, to adopt one of the co-design strategies for destination design identified in this study, could very well prove to be an important step towards a more effective and reflexive approach to applying such strategies in practice. Moreover, the strategies can form the basis for a next step in growing our understanding of destination design from a process orientation towards design as a strategic means to an end (Wrigley & Straker, 2017).

As indicated in the Findings section of this paper, the co-design strategies identified in this study are not solely the result of studying and comparing the living labs presented in this paper; they are also the result of years of participatory observation of similar design projects and studying relevant literature. As such, these three strategies represent a coalescence of the state of the art in destination design and reflect a key ingredient for its maturation.

The *creative, solution-oriented strategy* can be observed in studies reporting on tourism innovation and product design, such as the application of the Stanford d.school process in sustainable tourism development (Font et al., 2018; Stanford d.school, 2017) and other rapid-prototyping approaches to tourism experience innovation (Jernsand et al., 2015; Tussyadiah, 2017). This strategy is particularly useful in situations where product development or innovation is needed as a result of opportunities identified in the problem space and where solution prototypes are needed to collect feedback from tourists and local stakeholders. Consequently, this co-design strategy is best adopted for developing solutions at an operational level (e.g. bookable tours, tourist information apps, VR applications). However, a risk of this strategy is that it evolves into a process of iteratively improving solution prototypes without revisiting the problem space, which can lead to using a lot of time and resources for the development of a beautiful solution that does not meet the project brief or the technical or legal requirements identified in the problem space. This is exactly what happened in the Scheldeland living lab presented in this paper.

The *knowledge-based solution-oriented strategy* is, so far, probably the most commonly adopted strategy in destination design by DMMOs, as it brings stakeholders together who have knowledge about, and a direct stake in, tourism and destination development. With this strategy, destination

design processes focus on developing solutions based on shared interests and goals. *The Sankt Gallen model for destination management* (Beritelli et al., 2015) and related studies on visitor flow management and destination design road mapping (e.g. Beritelli et al., 2020; Koens et al., 2021b) are key representatives of this strategy in the literature. This strategy is also reflected in the literature on destination capability and leadership (e.g. Sainaghi et al., 2019; Sainaghi & Baggio, 2017; Zehrer et al., 2014). A risk of this strategy is that solutions are developed by stakeholders with the highest interest in tourism development, leading to solutions that are beneficial for them but that do not necessarily tackle the problems of a wider group of stakeholders affected by the tourism system (Jóhannesson et al., 2015). Avoiding this risk requires repeated iteration back to the problem space to check the extent to which solutions actually solve the problems identified. Consciously planning reflective activities to iterate back to the problem space, or initiating a decision making or advisory board, can be beneficial here. This strategy requires smart stakeholder management as solutions that do not benefit, or even possibly hinder, key tourism stakeholders to reach their individual goals will lead to withdrawal of commitment and resources by these stakeholders.

Finally, the *priority-setting, problem-oriented strategy* is best adopted in design projects that aim to change, renew or innovate (parts of) complex product-service systems. In such projects, the problem space needs to be clarified in more detail and problems identified need to be compared and prioritised before sensible and logical solutions can be developed that fit the wider system of the destination. Emphasising, and continuously revisiting, the problem space ensures that solutions developed contribute to achieving strategic priorities. In the literature, this strategy is reflected in processes for multi-level service and experience design (e.g. Patrício et al., 2011 and Tussyadiah, 2014) in which strategic goals scope the requirements for tactical and operational solutions. Adopting this co-design strategy is recommended in destinations where the tourism area lifecycle (Butler, 1980) is at a stage where reflection, and a subsequent decision, are needed on how tourism can (further) contribute to the quality of life in the destination through planned decline, stagnation or growth in under- or over-visited destinations (Koens et al., 2021a; Uysal et al., 2011).

## Conclusion

Although, researching design strategies and processes is still relatively new to tourism, other fields have studied them extensively for decades already. It is not surprising that similar strategies to those identified in this study have been observed in other fields (e.g. Kruger & Cross, 2006; Matthews et al., 2006). Obviously, designing for soft systems (Checkland & Poulter, 2020) such as tourism destinations is different from product design, but simultaneously working with ill-defined problems (Dorst, 2006) and complex stakeholder systems (Jones, 2018) is not unique to tourism. The emerging awareness of the value of this design knowledge in tourism academia is much needed in the light of the challenges tourism faces in the future.

This study contributes to maturing the theory on destination design by presenting three key co-design strategies for destination design. Together they provide a framework to optimise decision-making in relation to shaping destination design processes in real life. Moreover, this study provides a methodology for empirical validation of solutions developed using the three strategies based on the theoretical constructs of design processes, through continuous and iterative reflection on the problem and solution spaces before, during and after completing the design process. Finally, this study shows the value of observing and monitoring destination design in practice to develop new procedural knowledge on destination development.

The co-design strategies presented in this study provide destination management leaders and organisations with three distinct strategies for participative destination design including their recommended use, suggestions for stakeholder involvement and for efficient and effective development of solutions with available resources. The study emphasises the importance of scoping both problem and solution spaces as part of selecting one of the presented strategies and their related activities.

- (1) The *creative, solution-oriented strategy* is best adopted in situations where operational or tactical problems require operational solutions. Ideation activities with stakeholders can help identify possible solutions. Prototyping and testing these potential solutions form the core activities in this process strategy.
- (2) The *knowledge-based, solution-oriented strategy* serves situations where tourism stakeholders need to develop tactical solutions for problems and opportunities occurring in or as a result of the tourism system. Participating stakeholders need to have knowledge on the problems, and/or solutions, and have the resources and mandate to implement them.
- (3) The *priority-setting, problem-oriented strategy* is best adopted in situations where destination development can contribute to mitigating strategic problems beyond the tourism system, for instance, by creating job and entrepreneurship opportunities or contributing to heritage and nature conservation.

Furthermore, this study makes two societal contributions by highlighting, first, how the adoption of specific destination design strategies can contribute to mitigating societal problems and, second, how to orchestrate partnerships between stakeholders that contribute to the sustainable development of cities and communities. Moreover, this paper presents some of the challenges for destination design teams for contributing to sustainable development in relation to stakeholder management, and ill-aligned and ill-defined problem and solution spaces. Paragraph: use this for the first paragraph in a section, or to continue after an extract.

## Limitations and further research

This study creates awareness of the existence of different co-design strategies for destination design and their recommended use, challenges and risks. As with any academic work of this nature, its aim is to stimulate other researchers to study destination design from a methodological perspective and consider the role this knowledge can play in (sustainable) destination development. More extensive research is needed in this emerging area of tourism research. The researchers of this study acknowledge the limitations that need to be considered when considering its contribution and results. Obviously, the exploratory nature and findings drawn from five living labs in five countries of the European Union is the most significant limitation. Furthermore, the living labs were set-up and funded as part of an academic research project. One of the project's aims was to test design methodologies for destination development. Therefore, participatory design academics and their interests were part of the dynamics of the living labs. Although these academics focussed solely on facilitating the process (and collecting data on the process), their participation needs to be considered as a limitation of the study (Goebel et al., 2020).

The evidence presented in this study confirms and presents (new) theory on strategies and processes for destination design. Moreover, it provides valuable insights for its application in practice. It is in this practice that we can learn more about destination design and how knowledge gained through studies such as this one, can be, and must be, extended or adapted to build and validate the procedural knowledge needed for destination design to mature.

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