

Designing destinations for good: Using design roadmapping to support pro-active destination development



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ABSTRACT

This conceptual paper develops and justifies a pro-active, design-driven approach to sustainable destination development. Using insights from design science, it helps explain the limited practical usability of concepts such as the Tourism Area Life Cycle, by noting that these often focus on an aggregated 'topological' level of destination design, while a focus on experiences and product development on a 'typological' and 'morphological' level is key to constitute change. The 'Tourism Destination Design Roadmap' is introduced, its potential to scrutinise 'visitor flows' is explored as well as ways in which it can contribute to developing desirable qualities in a destination, while minimising negative impacts. The paper concludes by highlighting its conceptual contribution and identifying directions for future research.

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Introduction

The development of tourism destinations often is analogous to the well-known Aesopian fable 'the goose that lay the golden eggs', with destinations struggling to prevent tourism from spoiling that what makes them unique and special. This problem was already recognised in the 1970s (Plog, 2001), but has come to the forefront again due to the 'overtourism' debate, which addresses situations in which tourism excesses harm locals' well-being. In spite of the identification of an increasing number of strategies and best-practices to manage or mitigate overtourism, destinations seem unable to move away from a growth paradigm even when this is likely to lead to decline in the long run (Koens et al., 2018). It has been argued the COVID-19 pandemic may provide overvisited destinations with an opportunity to make a fresh start and transform tourism to become more sustainable, better serve the 'public good' and allow for 'human flourishing' (Ateljevic, 2020; Brouder et al., 2020, p. 8), but very few practical perspectives to achieve such a transformation have been developed yet.

In a way this is not surprising. While the relationship between tourism and destinations has been a key theme in the tourism literature for years, most of this work has focused on analysing and understanding impacts on destinations. This is exemplified by one of the most influential concepts in the tourism literature, Butler's (1980) 'Tourism Area Life Cycle', which has helped to better understand the interaction of tourism with destinations for over 40 years, but whose insights have proven to be difficult to implement in practice (Haywood, 1986; Lagiewski, 2006). With some notable exceptions (e.g. Dredge, 1999; McKercher, 1995), rel-

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atively little research has been undertaken on how to instigate change in practice (e.g. through policymaking). As a result, such processes have long remained relatively undertheorised and poorly understood. Is it, for example, possible to plot or influence a lifecycle (Beritelli, 2019)? In recent years, destination design has started to gain momentum as a concept in the academic literature as a reference point for investigating the theoretical and practical question of how destinations can stimulate sustainable tourism (Beritelli et al., 2020; Dolnicar, 2020; Richards, 2020). It has been argued that “design thinking can be invaluable for pioneering pro-sustainability initiatives” (Scuttari et al., 2021, p.1) and prove a powerful instrument to tackle sustainability paradoxes. Key elements of design thinking are to elicit “reflective conversations with the situation [at hand]” (Schön, 1983, p. 268) and to collaboratively explore implications of possible interventions (Cross, 2011), which are essential to set in motion a transition towards a system based on resilience and sustainable development. Design science and design thinking can thus help overcome social and institutional barriers that limit formalised policymaking processes to prevent excesses such as overtourism (Koens et al., 2019; Scuttari et al., 2021).

This conceptual paper takes a transdisciplinary approach to provide two original contributions to the burgeoning debate on design in tourism. First, insights from tourism management and design science/thinking are combined to provide an explanation for why it is so difficult to apply models such as the Tourism Area Life Cycle in practice. Second, a practice-oriented destination design roadmapping framework is introduced that can be used by destinations to increase their design capacities within the context of tourism destination development. This paper explores and illustrates how this framework can be used by stakeholders within destinations to take a pro-active approach to sustainable development of tourism by pro-actively accounting for the needs and wants of visitors and residents.

Literature review

Destination development, the importance of the tourism area life cycle

To appreciate the impacts of tourism development on destinations over time the Tourism Area Life Cycle is a useful starting point. In essence, it is a stage model of the evolution of tourism in a destination. The stages represent conditions that are expected based on the relation between visitor numbers and their changing needs and wants, existing products, the nature of host-guest relations and pressures placed on natural and cultural resources (Butler, 1980, 2009; McKercher, 2005). While the Tourism Area Life Cycle was not the earliest model to describe the evolution of tourism destinations, it has become one of the most influential concepts in tourism. This is probably due to its effective visualisation of tourism development by means of an S-Curve evolutionary trajectory, which had already proven to be popular to depict ‘product life cycles’ of consumer products (Ma & Hassink, 2013).

Within the Tourism Area Life Cycle, tourism starts with a ‘discovery’ stage, which describes a situation when a destination starts to attract visitors on a more or less regular basis (Fig. 1). Such visitation may lead to a ‘take off’ stage, in which destinations begin to invest in infrastructure and marketing, and visitor numbers start rising. The ‘maturity’ stage is reached when tourism has become more or less embedded in the destination. This entails not just a regular stream of visitors, but also a change in the organisation of tourism, with non-local stakeholders increasingly dominant in the production of tourism goods and services. Following the maturity stage, destinations can move towards the ‘stagnation’ stage, where tourism starts to impose tourism-oriented valorisation dynamics. At this point, negative impacts also become increasingly visible, not least the damage it causes to less competitive sectors of the urban economy (Russo, 2002). In extreme cases, destinations, or parts thereof, can become tourism monocultures, which reduces their attractiveness (McKercher et al., 2015), and could set off an entrenched spiral of ‘decline’ unless action is undertaken to ‘rejuvenate’ the destination (Butler, 2009).

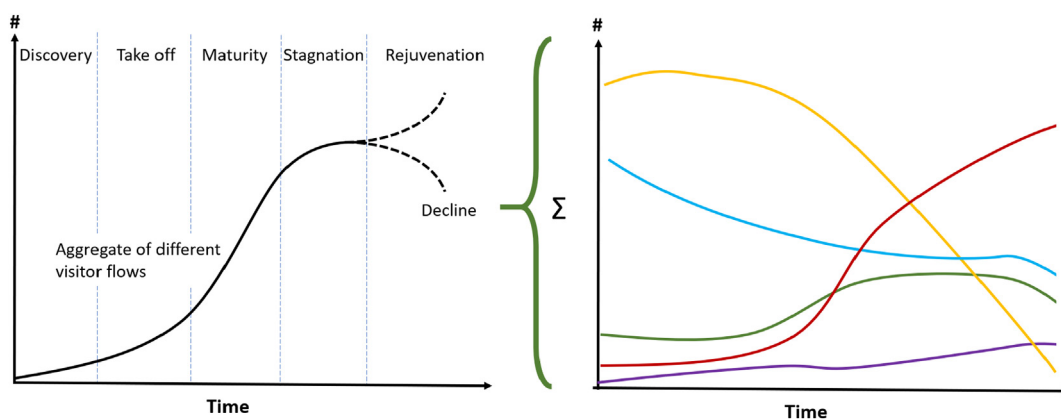


Fig. 1. Tourism area lifecycle (left) versus interconnected lifecycles of visitor flows.

Source: Beritelli, 2019; Tourism area lifecycle based on Butler, 1980; the different coloured lines on the right-hand side represent individual visitor flow life cycles.

The concept of the Tourism Area Life Cycle has proven highly useful to analyse tourism developments in a destination. The model aligns with principles on sustainable development in that both concepts are based on the reference point that overuse and overdevelopment of a destination (i.e., exceeding the 'natural limits' or carrying capacity) ultimately leads to a decline in appeal or eventual destruction of that destination (Butler, 2010). It provides a useful interpretation to appreciate how the process of carrying capacity evolves, and that deliberate management and appropriate action can prevent decline (Ho & McKercher, 2015). A well-managed 'stagnation' stage has even been argued to represent some sort of state of sustainability on a destination level (Butler, 2010). To prevent decline, "management should be proactive, smoothing the fluctuations foreseen by the cycle and favouring a balanced relation between the costs and benefits originated by tourism" (Russo, 2002, p. 167). The importance of this perspective was brought to the forefront again within the overtourism debate, with digital tools now also used to measure visitor numbers and appreciate the carrying capacity in destinations (Camatti et al., 2020). Too rapid a growth of visitor numbers in relation to infrastructure and service development can lead to perceptions of overtourism in all stages of the Tourism Area Life Cycle, which again emphasises the need to take action already in the early stages of tourism development (Butler, 2019).

At the same time, the Tourism Area Life Cycle has its limitations, particularly when it comes to its practical implementation. The linear depiction of development within the Tourism Area Life Cycle does not fit with the complexities and uncertainties that destinations cope with in real life. As Butler (2010) and Getz (1992) point out, the Tourism Area Life Cycle is based on a premise of continuous economic growth and attracting more visitors as the ultimate goal, with rejuvenation as the main strategic option at the end of the destination life cycle. However, issues with overtourism in multiple destinations have fuelled a debate regarding the desirability of such growth (Milano et al., 2019). Moreover, recent work highlights that continuous growth is uncommon, as destinations go through multiple smaller life cycles (McKercher & Wong, 2021). This line of thought resonates with ideas from resilience and systems thinking, in particular the adaptive cycle model, which can be seen as a more complete (systems-view) perspective on the Tourism Area Life Cycle as it allows the trajectory of a destination to change over time depending on cross-scale systemic interactions (Cheer & Lew, 2018). Theoretically, this suggests that communities could influence the development of tourism in their destination, but this is not necessarily reflected in practice. Possibly due to the emphasis on the destination, rather than on individual and group practices, there appears to be an implicit tendency to expect stakeholders to adapt to the existing (tourism) system rather than challenge that very same system (MacKinnon & Derickson, 2013).

In line with most destination management tools, the Tourism Area Life Cycle uses overarching metrics such as destination-wide tourist numbers or bed nights to determine the state of tourism (McKercher, 2005). Such a perspective is enticing to policymakers, as it provides a seemingly objective benchmark for destination management, but it does not account for the fact that issues regarding tourism are often highly localised and time specific, nor does it provide insights on the impacts of individual and group activities (Haywood, 1986). In addition, an underlying assumption is that it is possible for a single entity to manage and direct tourism development (Butler, 2010). In practice, this is often not the case. From the early 2000s onwards, destinations have given up more and more control of planning and online tourism services (e.g. short-term rental) have made visitor streams less visible and thus controllable. Moreover, visitors increasingly seek experiences that are not based so much on ticketed attractions but on everyday local life and the localhood of an area (Frisch et al., 2019; Russo & Richards, 2016), and cultural experiences (e.g. museums, city walks, festivals) are often enjoyed not just by tourists, but also by locals or day-trippers (Koens et al., 2018). This makes it more difficult to appreciate the specific impact of tourism on a destination.

These issues limit the ability of the Tourism Area Life Cycle to support the development of an integral strategy for sustainable destination development in practice. Butler (2010) himself acknowledges this and notes that the Tourism Area Life Cycle has been mostly ignored rather than applied in tourism destinations. He argues that it should be seen as an academic rather than a practical or predictive model and that its true strength is its ability to provide an overarching cross-sectional overview that provides insights into potential issues that come with tourism development, without specific guidance on how to prevent them. The Tourism Area Life Cycle thus continues to serve a purpose, but additional theoretical and practice-oriented approaches may be required to enhance its relevance as a pragmatic paradigm for destination design (Brouder & Eriksson, 2013). More specifically, "tourism leaders and decision makers need to know which processes work, or not, when, where and why" (Haywood, 2006, p. 54). Within evolutionary economic geography, concepts such as path dependence and coevolution are already used to better appreciate the specific dynamics of tourism evolution. One of the recommendations stemming from this work is that there is a need to develop a better understanding of the "complex interplay and coevolution of overlapping sets of interrelated products, sectors and local institutional environments within the tourism area" (Ma & Hassink, 2013, 2014, p. 595).

Alternative conceptualisations of destination development

McKercher (2005) notes that a destination should be seen as a geographically clustered amalgam of experiences rather than as a single product. Such a conceptualisation takes a market-specific rather than a destination-specific orientation and focuses on collections of tourism experiences as key for effectively managing tourism destinations (Stienmetz et al., 2020). Balanced destinations are those that have a healthy mix of products that range from mature, capstone attractions to newly developing services and experiences. This suggests that destinations actually represent a collection of tourism life cycles, which could be at different stages in their individual life cycle, and that a portfolio analysis tool may be useful to consider the life cycles of all different products in a holistic way.

Beritelli et al. (2015) advance this argument by suggesting to look at visitor flows to better appreciate the time and place-specific impacts of tourism development. Visitor flows can be defined as flows created by different daily sequences of activities engaged in by visitors, or local users looking for a leisure experience. In more practical terms, a visitor flow more or less equates to a half or full day

programme, often but not exclusively as part of a longer trip (Beritelli et al., 2020). What kind of, and how many, activities visitors include in these flows depends on their goals and desires, as well as the number of activities that can be enjoyed within such a programme. Visitors thus “engage on different stages and require different services” at different times (Beritelli, 2019, p. 2; Stienmetz et al., 2020). For example, visitors may participate in ‘desirable’ cultural daytime activities (e.g. museums, galleries), but a few hours later actively seek out the nightlife, which may be seen as a transgressive activity that motivates anti-tourism feelings (Eldridge & Smith, 2019). This contrasts with aggregated classifications of visitors into generic segments (e.g. the resident, the cultural tourist, the party tourist) or psychographic traits (e.g. dependables or venturers; Plog, 2001), which fail to do justice to this complexity (Cruz-Milán, 2019).

Demand for tourist experiences is dynamic, depending on shifts in preferences of visitors, but also on supply and competition. Some key cultural attractions have been visited by multiple flows for over hundreds of years (e.g. the Pantheon), while flows to other attractions have been more recent (e.g. townships). Due to changes in demand and supply, flows commonly do not last forever but each follow a specific life cycle pattern. The Tourism Area Life Cycle can be seen as the amalgamation of all these visitor flows (Fig. 1) (Beritelli, 2019, p. 2).

For destinations and individual businesses, it is dangerous to base success on a single visitor flow. This could be observed during the COVID-19 pandemic when destinations and businesses that relied heavily on international visitor flows suffered more than those that were also part of domestic or local visitor flows. However, even in ‘normal’ times, it is necessary to be able to adapt to, anticipate on and respond to ever-changing pressures (Hartman, 2020). Having a rich portfolio of visitor flows is one way to create more adaptive and resilient tourism systems. Strategic use of visitor flows could also increase the benefits that tourism can bring to places, such as maintaining services or public infrastructure, keeping shops open, or increasing liveability in a place through enriching experiences for local city users (UNWTO, 2018). Greater insights into and control over the life cycle position of all of these interrelated visitor flows could therefore provide a practical way forward to purposely influence the resilience of a destination as a whole. While it is impossible for a single entity to manage tourism development on a destination level, knowledge of different visitor flows, and their life cycle positions help assess the health of supply and demand networks in a destination (Tremblay, 1998). By combining insights of different visitor flows, it also becomes possible to assess the dynamics that drive flows in a destination portfolio, including current strengths and weaknesses of visitors flows in relation to the perceived needs of the destination (Beritelli et al., 2019; Beritelli et al., 2020).

Such information is useful when developing new products and attracting visitors that contribute to the quality of the destination, which has been suggested as a useful way forward for future destination development. For example, the Destination Innovation Matrix (Gardiner & Scott, 2018) focuses on ways in which existing and new markets can be linked to suitable existing and new experiences within the destination. The Saint Gallen Destination Management Framework (Beritelli et al., 2015) suggests a circular six step model to operationalise the management of tourism in a destination. It starts with identifying and synthesising different visitors flows to appreciate destination management through a new holistic lens. It then focuses on identifying system experts, processes and tasks for different visitor flow. Commonly a table is used for this, in which horizontal lines include networks, interdependencies and processes of individual visitor flows, while vertical columns allow for comparison between different visitor flows based on their commonalities, interdependencies and differences (also with regards to required services and experiences). Such a table allows for identifying challenges within an individual visitor flow, but also challenges that stretch across multiple visitor flows (e.g. traffic, excessive use of resources). The final steps focus on asking stakeholders to prioritise, reformulate or initialise tasks to address the issues identified in the horizontal and vertical analysis.

This model provides useful insights for looking at practical ways to influence the development of a destination (Beritelli et al., 2015). The emphasis on nurturing an ecosystem of different visitors, activities and visitor flows that consist of a combination of visitor activities, allows for more flexible and a more diverse range of responses. In this setting, management would not entail trying to control tourism, but rather leading or steering visitors though intervening in a complex ecosystem of exchange relationships. Simultaneously, there is still ample room to “extend the methodological toolbox to observe, reconstruct and analyse visitor flows”, also through transdisciplinary approaches to tourism planning and design (Beritelli et al., 2020, p. 10).

Destination design

Appreciating different levels of destination design

Increasingly, insights and methods from design sciences and design thinking are being introduced into the tourism literature. Works by for instance Tussyadiah (2014), Fesenmaier and Xiang (2017) and Scott et al. (2017) have shown how integrating design science and social science methods can positively impact the field of tourism. Most work, however, has focused on units of analysis smaller than that of the destination, for instance adopting bottom-up approaches to designing or improving experiences for tourists at a micro level (see e.g. Trischler & Zehrer, 2012 or Jernsand et al., 2015) or human-centred design of tourism information technology (Stankov & Gretzel, 2020; Font et al., 2021). Such work can be difficult to scale up to the complexity of the destination as a whole. Others have taken a more top-down approach, starting from a strategic level down to an operator level. This makes it possible to design on a larger scale (e.g. festivals, theme parks) (Das & Mukherjee, 2008; Smit & Melissen, 2018). However, these approaches still fail to incorporate the complexity of destination development, where the diverse range of stakeholders with contrasting interests on strategic issues makes constrains effective governance (Koens et al., 2019; Phi & Dredge, 2019). Furthermore, destinations are not stable. Instead, they operate at the so-called edge-of-chaos, often close to reaching a point of bifurcation, which makes it hard to design destinations in a top-down way without involving key stakeholders in the process (Russell & Faulkner, 2004). In the end, the direction developments actually take, depends on policy, but also on

entrepreneurial success as well as macro developments outside the tourism system (e.g. COVID-19, financial crises). It is this complexity, especially in well-developed destinations, that makes it hard to steer the development of tourism or visitor flows in a particular direction. This highlights the need for structured and coordinated efforts involving multiple stakeholders at different levels, to help manage pressure coming from 'traditional' forces (knowledge, money and formal power of public bodies) and top-down planning methods that may limit sustainable solutions (Koens et al., 2019; Scuttari et al., 2021).

To overcome these issues, Smit et al. (2020) and Tussyadiah (2014) have pointed out the benefits of a transdisciplinary design perspective to provide a more in-depth conceptualisation of experience system design, that incorporates the benefits of bottom-up and top-down approaches (see also Smit & Melissen, 2018, 2020). Of particular importance for this paper, is the notion that (destination) design processes for experience systems include six different levels of design (Smit et al., 2020), four of which are of particular importance for designing the actual tourism experience system, while the other two relate more to processes of practical implementation and retirement of experiences (Fig. 2). For a destination, at the *topological* level overall strategic objectives are determined (e.g. what kind of tourism/tourists a destination wants and what their societal, economic and environmental impact should be); the *typological* level details the characteristics of possible solutions to achieve these objectives (what kinds of visitor flows and related value propositions fit these objectives); the *morphological* level provides the choices of elements that together shape the value propositions for specific visitor flows (e.g. accommodation, heritage, attractions, tours); the *preparation* level focusses on designing the planning and executing the construction of elements of the morphological design; the *staging* level involves the operational aspects of implementing/using the final morphological design in the destination (e.g. staff encounters, marketing activities, apps and websites); while finally the *retirement* level specifies what happens to (parts of) the system when they are no longer in use. Sustainable design of destinations requires both attention to the overarching tourism design, which needs to fit with and contribute to the sustainable development of a destination, as well as its practical implementation (i.e. constructing elements of the morphological design in a sustainable way with reusing or recycling in mind).

The reasoning of Smit et al. (2020) provides an explanation for the difficulty of destination design using aggregated tools such as the Tourism Area Life Cycle. For example, prior to the COVID-19 pandemic the then head of the Destination Management Organisation of Amsterdam acknowledged that the city was at the top end of the Tourism Area Life Cycle and, based on this, either wanted less tourists or a greater carrying capacity (the topological level) (Van Der Avert, 2016). With this in mind, a variety of well-intentioned policy measures were designed at the typological level (spreading visitors; 'cleaning up' the red-light district) and morphological level (maximum of overnight stays in short-term-rental services; apps to minimise queues). However, by starting at the topological level and then working down the remaining levels of design, relatively little attention was paid to the inherent underlying complexity of tourism impacts. Only limited attention was paid to issues such as the competition for space between visitors and local users in the areas that visitors were spread to, the influence of marketing by individual businesses and the impact of social media, the continuing demand for popular areas and the gentrifying effect of cleaning up contested spaces. Consequently, measures have had only limited effect and discontent with tourism excesses actually continued to increase (Koens et al., 2018).

In practice, it is at the morphological level, where different stakeholders interact, that the actual carrying capacity and attractivity of tourism for visitor flows is determined. The morphological level includes available travel modes, accommodation (types and volume), restaurants and programming, accessibility and ticketing of cultural venues and heritage sites that together truly shape a tourism system (Beritelli et al., 2020). At the same time, the quality of decision making at a typological level is often dependent on the economic and political system of the destination, how well different stakeholder groups are organised and the cooperation between them. In many destinations, this has proven to be a key weakness in tourism management. In fact, individual stakeholders may have incongruent or even conflicting, typological perspectives, and may very well independently develop and implement a wide variety of alternative solutions (at the morphological and staging level), resulting in a hodgepodge of experiences and visitor flows. Based on the logic of Hardin's (1968) tragedy of the commons, such a lack of cooperation and

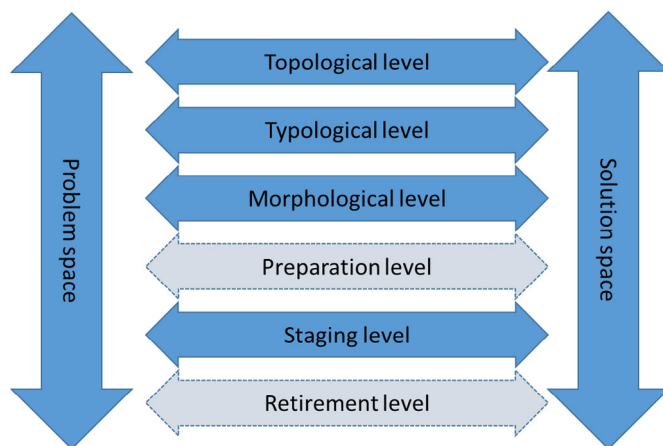


Fig. 2. Six levels of design for interventions at a destination level. Source: Smit et al., 2020.

coordination will result in a social trap that hinders sustainable development of the destination as a whole. In order to prevent tourism excesses in a destination, concerted joint action will have to be taken on the supply side of a destination (Butler, 2009; Koens et al., 2019, 2020; Melissen et al., 2016).

Design roadmapping as a means to design complex systems

The discussion above highlights the complexity of successfully designing and developing destinations. This requires combining a clear vision with the ability to build bridges between stakeholders operating at the topological, typological and morphological levels, while remaining highly adaptive to a constantly changing environment. Notwithstanding the difficulty of this situation, it is useful to consider that it is not unique to tourism. Other industries, such as consumer electronics, have similar characteristics of ongoing development of product elements at morphological level (i.e. hard- and software), from a range of actors within and at the fringe of the system, that force brands to continuously update and innovate their products to remain competitive. To cope with these challenges and to keep a grip on their innovation and investment priorities, their life cycle analysis methods have evolved into design roadmapping tools, which have proven essential for long-term success (Kim et al., 2018). Analogously, this paper conceptually applies the principles of design roadmapping to sustainable destination development as an evolution of the Tourism Area Life Cycle and other tourism life cycle analysis tools.

The starting point in design roadmapping is the customer experience and competitive positioning. This leads to a continuous (re-)development and improvement of the offered products and services (Kim et al., 2018) and a so-called co-creation of mass-niche products (Gilmore & Pine, 2000), in which the consumer can create her own personalised product from a variety of available parts, leading to mass production of an almost infinite number of unique products of the same type. In a way, design roadmapping can therefore be seen as a logical candidate to represent the next evolution with regards to the thinking on destination life cycles in tourism as well. It provides reference points that are also particularly relevant to tourism (destination) contexts, given that tourists increasingly (co-) create their own personalised visitor journey by engaging in a variety of different activities offered by the destination. Unique visitor journeys of the same type then accumulate into visitor flows of similar experiences, each with their own lifecycle and seasonal characteristics, thus creating tourism's version of mass-niche production.

The tourism destination design roadmap (TDDR) for pro-active destination development

Consequently, although developed in and for a different context, the principles of design roadmapping can very well be used to assist destinations, as the design challenge is very similar. It can help destinations make conscious choices with regards to the types of experiences that are to be offered, the specific groups of visitors that these experiences should serve, as well as (stimulating) the development of new resources (e.g. hotels, cultural heritage and attractions) to satisfy visitors' experience needs and goals. Such an approach to designing (a system for) customer experiences (Font et al., 2018; Smit et al., 2020; Smit & Melissen, 2018) makes it possible to pro-actively develop an offer consisting of a mix of attractive destination touchpoints representing a range of activities for specific (groups of) tourists while accounting for current and future interests of all relevant (local) stakeholders, including carrying capacity and social, economic and environmental impact on (specific parts of) the destination. It could be used to identify core and peripheral experiences for specific visitor flows (Beritelli et al., 2020; Tussyadiah, 2014), and to develop value proposition portfolios at typological level that build on available tangible and intangible destination resources at morphological level (e.g. attractions, events and accommodation), while accounting for sustainable development and retirement of resources at preparation and retirement level respectively. Together, all of these aspects can represent a coherent reference point for a more impactful destination design that fits with that what is perceived as important in a place (Richards, 2020) – the objectives established at the topological level of the design process.

Shaping the design process in this way allows for ensuring that the ultimate design not only supports environmental sustainability, but also stimulates equality and quality of life, which represent key elements of sustainable and resilient destination design (Koens et al., 2019). To further expound the way in which design roadmapping principles could be used in a tourism context, we have developed a Tourism Destination Design Roadmap (Fig. 3). In doing so we continue in the spirit of the Tourism Area Life Cycle, as well as portfolio mapping tools and destination matrices, which took inspiration from and share underlying principles with research on product life cycles (Gardiner & Scott, 2018; McKercher, 1995, 2005). With this Tourism Destination Design Roadmap we seek to bring recent insights from flexible and adaptive user centred approaches within product and service design (Kim et al., 2018) into the tourism literature and stimulate the debate with regards to new ways of destination analysis, planning and development in practice.

As discussed earlier, destinations commonly attract a variety of distinct visitor flows, all of which can be in different stages of their life cycle (Beritelli et al., 2019). The Tourism Destination Design Roadmap takes as its starting point a specific tourism flow and assists in developing a future-oriented perspective on further development of the tourism system for such a visitor flow. With this, it provides an alternative framing to explore the potential impacts of changing experience-supporting features and support resources (Beritelli et al., 2015), with the deliberate aim of facilitating stakeholders to make changes that fit with their (shared) perceived future vision for their locality, not only from a tourism perspective but from a wider sustainable development perspective. In the Tourism Destination Design Roadmap, the top row provides a development timeline with phase 0 being the starting situation and subsequent phases continuing further in time. The first column on the left provides an overview of the four key elements that shape the Tourism Destination Design Roadmap:

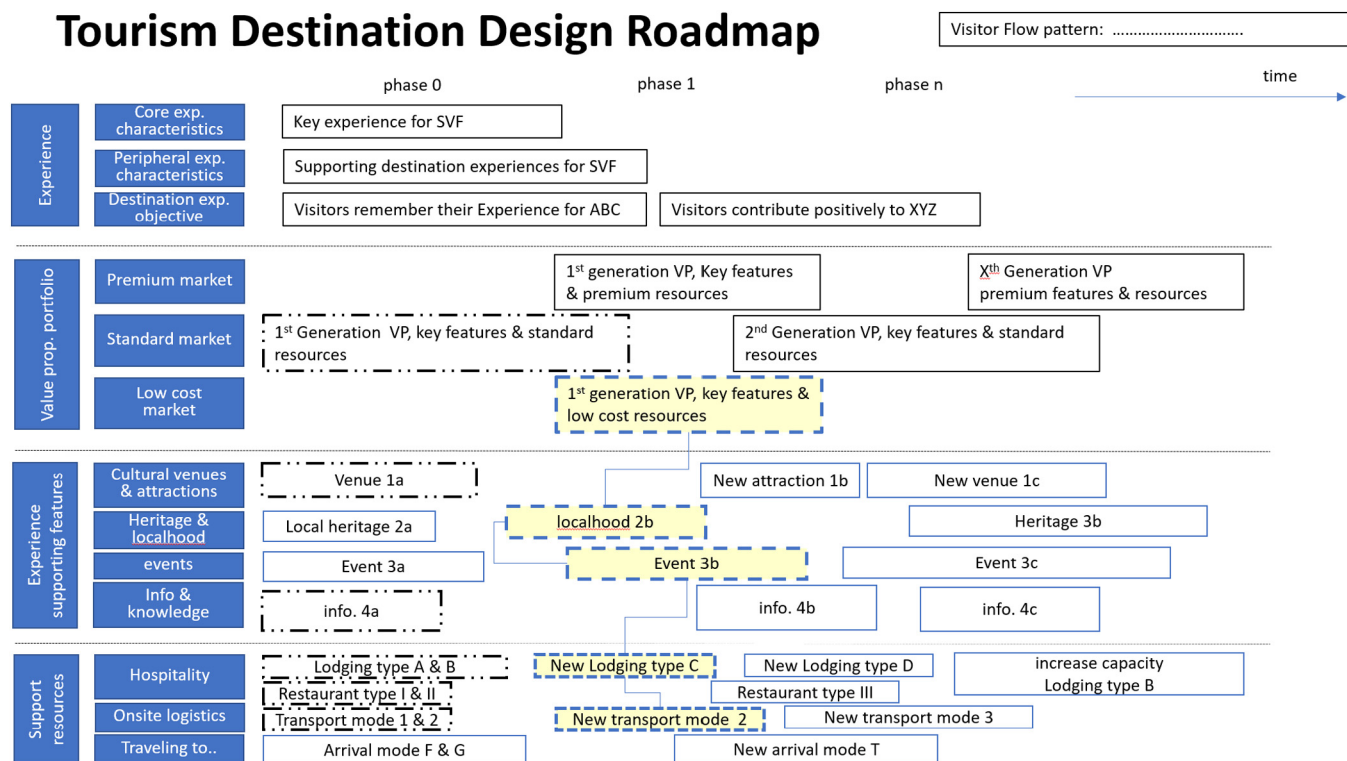


Fig. 3. Example of a Tourism Destination Design Roadmap (TDDR).
 Source: authors, inspired by (Kim et al., 2018).

1. Starting at the top of the model, the *experience* provides a typological description of the experience that the tourism system provides for a particular visitor flow. This could, for example, be a relaxing half-day on a beach consisting of activities such as sun bathing, beach sports, swimming and having a drink or meal on the beach or at a beach restaurant. Such an experience will have core characteristics that are essential (e.g. a beach) and peripheral characteristics (Stienmetz et al., 2020; Tussyadiah, 2014) that support the core experience (e.g. facilities for food and drink). Besides merely describing the characteristics of the experience, it is also useful in a design roadmap to set the objectives for facilitating the particular visitor flow. These are generally derived from decisions at topological level and to ensure sustainable destination development it is important to also explicitly include specific ambitions with respect to environmental, social and economic impacts (e.g. job creation, reducing carbon emissions, avoiding gentrification of the area).
2. The *value proposition portfolio* is the operationalisation of the experience on a typological level, where supply and demand need to meet in designing the tourism experience offer (Cabiddu et al., 2013). It entails specific value proposition alternatives for a variety of visitors whose needs and wishes can be met by specific core and peripheral characteristics. In other words, these value proposition alternatives describe how experience needs and wishes of specific target markets can be met based on availability of specific (types of) activities, attractions and support resources.
3. The available *experience supporting features* are morphological elements in the destination (different kinds of activities, attractions, services, etc.) that meet *some* of the characteristics of the experience defined in the top rows of the roadmap.
4. The *support resources* also are morphological elements that are not directly aligned with a specific experience or visitor flow, or sometimes not even specifically aimed at tourism, but that can still represent key requirements for tourists in a destination (e.g. accommodation, public transport, retail), and thus will commonly be part of the ultimate experience of most visitors in one way or another.

When developing a design roadmap for a tourism destination, the current state of affairs for all of these key elements can be entered under Phase 0. This provides an overview of the current state of the visitor flow at a typological and morphological level, with a clear link to objectives at topological level. This overview assists in analysing the current tourism offer in a destination, identifying what currently seems to be missing to meet the needs and wishes of specific types of visitors, link these observations to what is in the development pipeline, all in a similar way as suggested in existing flow-based literature (Beritelli et al., 2015). Moreover, it can also be used to analyse expected social, environmental and economic impacts of a visitor flow, as well as to establish the requirements for meeting ambitions with respect to these same impacts, by examining and combining the impacts of individual elements of this flow both for the current situation *and* possible future situations (phase 1, 2, ... n). This makes it possible to appreciate what is missing and/or what is hindering progress towards meeting those ambitions but also to assess

possible unwanted impacts of desirable future situations from a visitor experience perspective. For instance, further developing specific support resources could enhance a range of visitor experiences but developing and maintaining these resources could come at unacceptable environmental costs. In such situations, roadmapping can prove a valuable tool to assist in balancing outcomes from multiple perspectives.

Obviously, such insights are interesting from a purely academic point of view but, and possibly more important given the analysis presented in previous sections, the Tourism Destination Design Roadmap can also be used to actually take control of a visitor flow in practice by assisting on decision making with respect to development and retirement priorities. The roadmap clearly shows how adding new or improved elements on the supply side – be it creating new or improved experience supporting features such as new attractions or events that incorporate a higher ‘sense of localhood’, or the development of support resources such as hotels, public transport and retail – leads to portfolio improvements that provide potential visitors with new options to extend their stay or choose for a lower or higher quality level. In other words, the roadmap allows for depicting how the value proposition portfolio will evolve and how this creates new or adjusted value proposition alternatives for specific markets. Prioritising and planning these elements make it possible for destinations to take control of separate or interconnected visitor flows (Beritelli, 2019), while at the same time staying agile and ready to adapt if needed, for instance based on expected social, environmental and economic impacts. For example, if a goal is to stimulate experiences that engage low cost travellers with localhood (with the objective to contribute to the liveability of this area), then developing the products in the yellow boxes of Fig. 2 provide opportunities for developing a new value proposition based on designing and staging an experience that suits this particular group of visitors. The combined development of lodging type C, together with the development of event 3b, localhood 2b and new transport mode 2 may very well suit this kind of desired experience and, at the same time, contribute to the liveability of the area.

To further clarify the workings of the Tourism Destination Design Roadmap, consider the fictitious example of Axelake, an economically deprived suburb of Amsterdam that used to receive a small number of visitors interested in the local architecture, but which has seen visitor numbers dwindle in recent years. Following extensive consultation with local stakeholders and market research, the local government and local entrepreneurs decide that the modern urban youth culture in the area could constitute the basis for a promising new visitor flow that could contribute to the quality of life in the neighbourhood. The emphasis on youth culture fits with the trend of visitors seeking ‘authentic’ real-life experiences (i.e. New Urban Tourism), and might help turn the area from a peripheral attraction into a half-day visitor experience, where tourism has a positive impact on the immaterial cultural heritage, the local economy, infrastructure and public facilities (e.g. keeping shops open and increasing demand for public transport). Realising this objective requires a suitable portfolio of value propositions that are related to modern street culture and are aligned with what specific visitors need and wish for in their visitor experience. This could include, for example, value propositions based on street art (e.g. graffiti) or food and beverage (e.g. beer brewing). In this case, the life story of famous local rap artist ‘Don Vincent’ can be seen as an example of a sound basis for a value proposition based on modern youth music. This proposition could include as core experiences an AR tour where people visit important places in Don Vincent’s life (providing educational background information on the area), and ‘rap’ classes or ‘tourist friendly’ rap battle nights (giving local youth an opportunity to get involved and showcase the value of ‘their’ neighbourhood). In this case accommodation is not a key priority, but it may be in the future.

This visitor flow is but one of many that can be developed. In itself, it will probably not make a massive difference. However, by combining multiple visitor flows in a destination, it becomes possible to have a greater impact and develop destinations in ways that are more adaptive and build community resilience. The core experiences of one value proposition could, at the same time, serve as peripheral experiences for other value propositions. By strategically developing new features and resources over time, it is possible to create or renew visitor flows (e.g. by means of new combinations of experiences or including temporary elements such as pop-up experiences). Combining and jointly analysing the collection of individual roadmaps that together shape (part of) a destination can thus assist in overall destination design by clearly showing the implications for various visitor flows of, for instance, the (gradual) retirement of an experience or purposely changing the role of an experience in different visitor flows. As the typological level represents the starting point for each individual roadmap, using the Tourism Destination Design Roadmap is actually better suited to provide assistance and guidelines for developing visitor flows and experiences that fit with the particular situation of specific neighbourhoods and the particular needs and wishes of specific types and groups of visitors than destination-wide analytical tools, such as the Tourism Area Life Cycle, and could thus represent a welcome addition to the current destination development toolkit.

Destination development based on applying a design approach rooted in “deliberately emergent strategy” (Lindstedt, 2015, p. 90) can assist in adaptive destination development and mitigation of negative impacts, for instance through more pro-active design of a tourism offer that contributes to the quality of the visited neighbourhoods. Having more control over visitor flows also allows for a more efficient use of support resources. For example, in this case, existing tram and railway connections may be rebranded as the ‘modern urban culture line’ or a specific ticket can be created that includes transport and access to activities of multiple visitor flows. The additional income that comes in via tourism can thus support the upkeep of such infrastructure, also for local use.

It is important to note though that, while the Tourism Destination Design Roadmap provides opportunities for identifying and developing appropriate interventions, it should not be seen as a panacea. Applying this roadmap may very well assist in getting stakeholders on board with analysing the current situation and designing interventions, but success is not guaranteed and developing visitor flows is still dependent on the willingness of stakeholders to cooperate. Existing visitor flows can break down when a stakeholder quits, and no alternative for the service she offered can be found. Especially for visitor flows that (have come to) depend on a

few key stakeholders in the system, there is a risk of excessive dependency and (ab)use of power. In such a situation the Tourism Destination Design Roadmap can help identify alternative options but integrating these into the visitor flow may be hindered by powerful stakeholders who fear losing out. A similar issue can be observed when trying to develop new visitor flows or further develop an existing visitor flow into a new phase. To achieve this, it may be necessary to develop specific new products or services, integrate existing services into a(nother) visitor flow, or create alignment between different potentially competing visitor flows. Such developments depend on cooperation and understanding among different stakeholders, not all of whom may have previous experience with or understanding of tourism. In a way, this is not dissimilar from other design processes that depend on co-creation and bottom-up development (Font et al., 2018; Jernsand et al., 2015). While it goes beyond the scope of this paper to fully discuss how to achieve this, it is useful to refer to earlier work that has sought to address this issue.

A key first step in convincing stakeholders to get and stay involved is collaborative (informed) reflection, which involves creating spaces where stakeholders can learn and experiment together, but also coordination of such efforts through policymaking and institutional support (Frantzeskaki et al., 2012). In such a setting, a variety of workshops and sessions can be held, to stimulate a shared understanding among potential frontrunner businesses and other local stakeholders. This can for example be achieved through serious gaming, as this offers a non-confrontational environment for stakeholders to discuss benefits and disadvantages of future tourism development (Koens et al., 2020), although it can also be achieved via other, more conventional discussions and workshops. When discussing the future of tourism, the focus should not exclusively be on economic gain, but also on the production of social, cultural and environmental value (Phi & Dredge, 2019). Within such settings, the Tourism Destination Roadmap could present a welcome addition to already available tools and formats to assist in such discussions among stakeholders, especially with respect to drawing attention to the benefits of working together to maximise the communal value of separate and interconnected visitor flows.

Conclusion

This paper has introduced concepts from design science and design thinking to further understanding with regards to sustainable destination development. The distinction between different levels of (destination) design helps explain why existing models that operate at a topological level, such as the Tourism Area Life Cycle, have had relatively little practical impact over time (Butler, 2009). The topological level is useful for analysing overarching aggregated developments retrospectively, but in practice tourism development takes place at the typological and morphological level. To be able to take a pro-active approach and truly influence the life cycle of a destination, it is more useful to focus on these design levels. In recent years, a growing set of literature on destination development and management has already started to focus on these levels (e.g. Beritelli et al., 2015, 2020; Dolnicar, 2020; Reinhold et al., 2019). Most of this work has focused on an increased understanding of the dynamics of existing destinations and identifying mechanisms that determine travel choices. Based on such analyses, it has been argued that there is a requirement for academics and tourism planners to investigate and develop different activities in parts of a destination and facilitate the creation of interconnections between activities in a dynamic ecosystem of supply and demand exchanges (Beritelli et al., 2020).

The Tourism Destination Design Roadmap as introduced in this paper provides a conceptualisation that addresses this need. It builds upon earlier work on visitor flows to provide a holistic and systemic perspective that starts from a typological and morphological level, to support destinations to take control over development of tourism. It offers a pro-active approach towards the development of visitor flows by linking visitors' needs and wishes with (other) experiences and support structures that help improve the (perceived) quality of the destination, also for locals. As such, it fits with and contributes to earlier work on destination design (Beritelli et al., 2015; Fesenmaier & Xiang, 2017; Stienmetz et al., 2020). In particular, it addresses the call for taking into account sustainability and resilience in destination design (Koens et al., 2019), by providing insights into the interrelations of different levels of destination design, and the need for coordinated efforts by stakeholders at these levels. It also highlights interdependencies and indirect collaborations between stakeholders, and their impact on the destination through current and future visitor flows.

Theoretically, this paper contributes to the literature on destination planning in a number of ways. Building on the pioneering work on visitor flows of Beritelli et al. (2015), it reiterates how a diverse variety of interconnected visitor flows contribute to the Tourism Area Life Cycle of the destination as a whole (Beritelli, 2019), and explores ways to extend upon elements of the St. Gallen Model for Destination Management. The Tourism Destination Design Roadmap that is introduced in this paper illustrates how destination development can benefit from applying design science concepts. In particular, it shows how applying roadmapping can create a framework to assist in fully appreciating the dynamics underlying the creation, adjustment or extension of visitor flows on a typological and morphological level and, in this way, support the active development of "visitor flows that might be of relevance for the future" (Beritelli et al., 2015, p. 72). As such, the roadmap provides stakeholders in the destination the opportunity to discuss what they see as desirable futures and benefits that tourism could bring to their community or destination. By stimulating the aligned (re)development of visitor flows, the roadmap may contribute to a more future-oriented 'vertical flow analysis' (Beritelli et al., 2015, p. 80), that not only helps overcome existing challenges that stretch across multiple visitor flows, but also assists in maximising future potential benefits that specific combinations of visitor flows can bring (e.g. stimulate development of facilities, stimulate communal pride).

A further contribution is drawing attention to the distinction between topological, typological, morphological, preparation, staging and retirement levels of destination design, which extends thinking on the Tourism Area Life Cycle through allowing for a clearer analysis of the complexity underlying the life cycle. In combination with the work on visitor flows, this may help to explain the difficulty of predicting when transitions between stages of the life cycle take place. In addition, it provides insights

that may help understand, predict *and* influence why, where and how tourism development takes place at a certain stage in the Tourism Area Life Cycle (Haywood, 2006). Such insights may also be relevant to further understanding and application of the concept of resilience. Resilience has gained momentum in recent years as a cutting-edge conceptual and analytical tool in relation to sustainable and dynamically robust destination development (Cheer & Lew, 2018) but has also been criticized for being difficult to implement on a destination level, as the complexity is too great and local actors are implicitly expected to fit to an existing (tourism) system that is taken for granted, rather than actively work towards changing it (MacKinnon & Derickson, 2013; Sanchez et al., 2018). The Tourism Destination Design Roadmap may provide an alternative way of framing tourism development and help with analysing ways to provide local stakeholders with greater agency.

The paper also contributes to work relating to evolutionary economic geography. Insights stemming from the Tourism Destination Design Roadmap may be used as reference points to further work that recognises multiple, co-evolving, tourism development paths (Ma & Hassink, 2013), as well as assist in building understanding on how stakeholders can disrupt existing (pro growth) governance models and move beyond formerly prosperous paths that have become problematic for long-term destination development (Brouder, 2017). To fully appreciate the theoretical value and relevance of the concepts in this paper though, more research is required that tests the framework in a range of contexts.

On a practical level, the roadmap provides a planning tool that is agile and adaptive in nature. This inherent flexibility is particularly useful in times of rapid changes such as the current pandemic and may also be useful in operationalising ideas stemming from resilience in the post-pandemic build-up or other transformative and sustainable tourism agendas (Ateljevic, 2020; Brouder et al., 2020). It can help resolve a weakness in current policy responses, where the emphasis is often on managing negative tourism impacts (e.g. overtourism) and applying best-practice solutions with relatively limited attention paid to the specifics of the local context, or the way in which they fit within an overarching vision of a destination (UNWTO, 2018).

Simultaneously, it has already been mentioned that tourism may be too complex for it to be 'manageable' by a single stakeholder (Butler, 2010). The thoughts put forward in this paper, point to a different way of dealing with tourism. Rather than seeking to 'manage' tourism, the Tourism Destination Design Roadmap allows stakeholders to change tourism by means of developing new experiences and resources that fit with visitor demand, but also benefit the destination and its overarching strategic tourism plan. Such an approach may be more realistic and practically doable than trying to control a tourism destination as a whole or simply copying solutions that worked elsewhere.

The Tourism Destination Design Roadmap may even be used for a structured degrowth strategy in areas that are perceived as being overvisited and want to return to a more sustainable form of tourism. By mapping out all key elements linked to different visitor flows, it becomes possible to better understand value propositions for different groups and this information can be used to gradually decrease the attractiveness of undesirable activities and experiences, or even entire visitor flows. Simultaneously, analysing all roadmaps that represent the amalgam of tourism life cycles in a destination increases the ability to do this in a coordinated and structured way, making it possible to reduce the dependence on tourism with less negative impact for those working in tourism. As such, insights from the paper may help destinations take control of their overall life cycle and develop tourism for good when they start rebuilding themselves following the COVID-19 pandemic.

Of course, to be able to design visitor flows, coordination and cooperation between stakeholders is highly important. However, achieving this is far from straightforward. As Boom et al. (2021) highlight, stakeholders often have incongruous perspectives that hinder an integral development of tourism destinations, with some seeking growth, and others wanting stricter regulation. This confirms the complexity of tourism planning through involving different partners (Scott et al., 2008), which is key for designing visitor flows. Without some sort of coordination or agreement on what an overarching vision for a destination could be, it is unlikely that complementary and destination-beneficial visitor flows can be developed. As such, for successful destination design, further research should focus both on new ways to get local stakeholders to work together and the possibilities to create visitor flows that can fit with the needs and wants of specific parts of a destination. This paper suggests that design roadmapping could play a key role in both and, as such, the authors hope to have contributed some useful reference points for research in this area *and* ensuring practical applicability of findings in real life tourism destination development.

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