Chapter 15
Designing Trajectories of Experiences: In Museums, Around Museums, or Including Museums

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Abstract Recently, museums have increasingly become parts of ecosystems of people and organizations in their functioning. As a consequence, museum experience designers are stimulated to think in a holistic way, about experiences of people that engage with networks including the museum, as well as about the role of individual museums within such ecosystems (Vermeeren et al in Museum experience design – crowds, ecosystems and novel technologies, 2018a). This raises the questions of: What are ways in which a museum experience relates to experiencing its embedding context? And, what does this imply for the process of designing the museum experiences? In two design case studies, four ideas for museum experiences have been developed based on different ways in which museums relate to their embedded network. The ideas illustrate how the focus of the design may be different depending on the role the museum plays in the overall experience, and how the design process is complicated by having to deal with a larger group of stakeholders when designing. Finally, all ideas came forth from taking a broader view of the potential museum target group than seeing them solely as visitors to the museum. This was seen as crucial for inspiring solutions to museum experiences beyond more traditional museum visiting experiences.

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15.1 Introduction

One of the current trends in the functioning of museums is the change from a focus on single museums to one on connected museums (Vermeeren et al. 2018a), museums as parts of networks of people and organizations. In terms of designing for experiences this trend implies that one no longer only designs for visitors' experiences before, during, and after museum visits, but that one thinks in a more holistic way, about experiences of people that engage with the system of connected people and organizations as a whole, as well as about the role of individual museums within such ecosystems (Vermeeren et al. 2018a).

The above raises the questions of: What are ways in which a museum experience relates to experiencing its embedding context? And: Will the museum experience be central in an arrangement of surrounding smaller experiences? Will the museum experience be one of many elements in a trail of experiences? What does this imply for the process of designing the museum experiences?

In this chapter, we explore such issues, based on two design cases. First, we discuss the case of the Mauritshuis, a Dutch museum famous for its rich collections of Dutch Golden Age paintings. We discuss the design of a mobile application (an app) for the Mauritshuis aimed at providing young adult visitors of the Mauritshuis with a more engaging way of appreciating its paintings, at the same time raising interest for and connecting them to modern Dutch culture outside of the Mauritshuis. We will briefly summarize how the app is designed to fulfill the above promise.

The second case concerns the search for a way of connecting small, local heritage museums (we named them Hidden Gems) to an audience of young adults, aged 18–30, by addressing thresholds that were identified to be limiting the likeliness of young adults visiting these museums. Solutions were sought in connecting small museums to the world outside the museums themselves. Three conceptual designs were developed: a label for branding the group of small museums as a whole, a platform for connecting performing artists to the small museums, and a pop-up hostel for solo-travelers, designed for multi-day travels along multiple cultural heritage locations.

We will discuss, and reflect on, challenges we encountered, as well as on implications of designing museum experiences that extend to beyond the individual museum visiting experience.

15.2 Design Case 1: The Mauritshuis

The Mauritshuis study was conducted as the second author's Master Graduation project at the Faculty of Industrial Design Engineering (TU Delft) in collaboration with The Mauritshuis[1] and museum design agency Kiss the Frog[2] (Shih 2015).

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[1]http://www.mauritshuis.nl.

[2]http://www.kissthefrog.nl.

The Mauritshuis is a Dutch art museum, in the center of The Hague, mainly exhibiting paintings from the Dutch Golden Age period (seventeenth century), including Rembrandt and Vermeer. Many of its visitors not only visit the museum for its paintings, but also for its historic building, and its elegant, romantic, and cozy atmosphere. According to a Needscope study conducted by TNS-NIPO[3] for the Mauritshuis, the museum fulfills visitors' needs for *enrichment* (providing visitors with in-depth information about the Golden Age paintings) and *reflection* (stimulated by its relaxing atmosphere).

A study by the Dutch Museum Association in 2010 showed that the museum sector in the Netherlands would meet at least three challenges in the near future: cuts in subsidies, an increase of the number of international tourists, and the rise of the digital generation (Museumvereniging 2010). These challenges motivated the Mauritshuis to look for new potential visitors. One of these is the group of *young adult travelers*. The starting point for the new design became: *create a conceptual design for the Mauritshuis that will improve the art appreciation of young adult travelers, and at the same time motivates them to explore the local culture outside the museum.*

15.2.1   Designing an App for the Mauritshuis

An experience design approach was taken consisting of three main phases (see Shih et al. 2016 for more details): (1) identifying the needs of the young adult travelers, through interviews and *contextmapping* sessions (Sleeswijk-Visser et al. 2005); (2) developing a variety of design ideas and converging toward one conceptual solution (this included two types of brainstorm sessions); (3) developing the solution in more detail and evaluating it with users in the Mauritshuis. Figure 15.1 presents an overview of the design process.

15.2.1.1   Identifying the Needs of Young Adult Travelers

In line with the signaled trend of seeing museums as parts of networks of organizations and people, the starting point for this project was to design a museum experience embedded in a more comprehensive travel experience. Thus, from the start, a broad perspective had been taken for identifying the needs of young adult travelers, a perspective broader than that of visiting the Mauritshuis. Needs of young adult travelers and visitors to the Mauritshuis were identified in two different studies. In the first study, 16 young adults from various cultural backgrounds visiting the Mauritshuis were interviewed, to learn what aspects of the museum lead to positive experiences, and to observe and discuss how they behaved as individuals as well as in groups when going through the Mauritshuis.
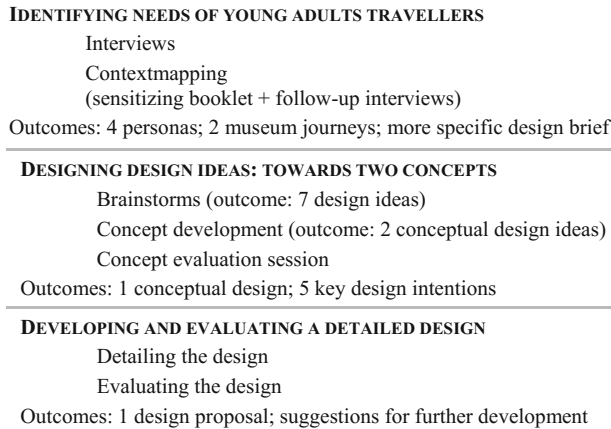
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[3]http://www.tns-nipo.com/.

IDENTIFYING NEEDS OF YOUNG ADULTS TRAVELLERS
    Interviews
    Contextmapping
    (sensitizing booklet + follow-up interviews)
Outcomes: 4 personas; 2 museum journeys; more specific design brief

DESIGNING DESIGN IDEAS: TOWARDS TWO CONCEPTS
    Brainstorms (outcome: 7 design ideas)
    Concept development (outcome: 2 conceptual design ideas)
    Concept evaluation session
Outcomes: 1 conceptual design; 5 key design intentions

DEVELOPING AND EVALUATING A DETAILED DESIGN
    Detailing the design
    Evaluating the design
Outcomes: 1 design proposal; suggestions for further development

Fig. 15.1 Phases in the Mauritshuis project design process

A contextmapping study (Sleeswijk-Visser et al. 2005) was conducted as the second study involving young adult travelers (non-visitors of the Mauritshuis). The contextmapping study consisted of two phases: *sensitizing booklet* and *follow-up interview session*. The aim of this study was to learn about the values and interests of young adult travelers when traveling abroad, as well as understanding how these values and interests influence museum experiences. For the contextmapping study, seven participants (young adults: three Taiwanese, one Chinese, one German, one Spanish, and one Turkish) were asked to use a sensitizing booklet for a few days, to bring back memories of travel experiences of a trip they had made in their recent past. The booklet was aimed at making them reflect on the topic before having an interview. It helped them remember their travel purposes, their interests, their travel schedules, their social interactions, and how they explored local life during their trips. This was done by providing them with tasks such as mapping a timeline of a day on their trip, mapping their social network during the trip, asking them to describe their best or most impressive moments, their personal way of exploring local life, as well as thinking of an imaginary, desired way of exploring the local culture.

In the follow-up interview session, participants shared, explained, and discussed the information in the booklets, and were then asked to elaborate on the timeline of their travel, as represented in their booklet by making a visual collage of it. The collages were shared and discussed among participants.

The combined results of the two studies led to four personas (i.e., *high art seekers*, *hipsters*, *famous attraction seekers*, and *outgoers*), who could be clustered around two typical museum journeys (*individual foreign explorers*: high art seekers and hipsters; *foreign experience seekers in groups*: famous attraction seekers and outgoers). One of the conclusions was also that all personas would like to *talk to locals to learn more about the country*, and to get specific information that would be useful for traveling, while hipsters, high art seekers, and outgoers would even be willing to travel along with locals. Things all personas would like to explore are

local food, *local events*, *local places undiscovered by the majority of the tourists*, *local scenic views*, *common history, and unique attractions*. These insights, derived from the study with young adults as non-Mauritshuis visitors, proved to be of crucial importance for inspiring the way in which the designed museum visiting experience would be connected to modern culture outside the museum.

15.2.1.2 Designing the App: Generating Ideas, Converging Toward a Solution

Based on the needs of the young adult travelers, ideas were generated through two brainstorm sessions. These sessions led to seven ideas, which were then merged into two conceptual designs that were evaluated by role-playing the use of the conceptual designs in a simulated museum environment with paper prototypes (see Fig. 15.2).

It was concluded that the final design would be based on a combination of two conceptual designs and that it would need to have the following characteristics (formulated as design intentions); it should *(1) motivate the young adult travelers to look into the details of the paintings; (2) awaken young adult travelers' interests in the paintings; (3) make the young adult traveler's museum experience joyful and fun; (4) evoke the young adult travelers' interests in the Dutch local culture by connecting the traditional culture depicted in paintings to the current culture;* and *(5) motivate the young adult travelers to explore the local culture after leaving the museum.*

15.2.1.3 Detailed Design: The Treasure Hunt App

The final design proposal was a treasure hunting museum app that also contains the function of giving travel tips to the young adult travelers for exploring The Hague. The treasures to be found are elements in famous as well as less famous paintings that connect to stories that are interesting for the young adult travelers.

When starting the app, a short movie briefly introduces the treasure hunting game. Visitors should then select a room to go to. When entering the room they would engage in a *"find the painting"* game based on hints. For example, a hint such as "light and shadow" could refer to Ruben's painting "Old Woman and Boy with Candles"[4]. Having found the painting, the app depicts it, but in the depicted painting a few details would be different from the real painting. The player of the game indicates in the app the location of the difference and is then provided with the opportunity of listening to an audio fragment about or related to that detail, narrated by a young adult, local to the city of The Hague. Typically in the audio fragment,

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[4]https://www.mauritshuis.nl/en/explore/the-collection/artworks/old-woman-and-boy-with-candles-1150/.

Fig. 15.2 Stills from a video taken of role-playing the conceptual designs in a simulated museum environment with paper prototypes

the story would start by explaining the painting and the depicted aspects of traditional Dutch culture, and would then connect the story to modern Dutch culture. After having identified five "treasures" (stories related to identified differences), travel tips related to the modern Dutch culture topics would be unlocked. For example, in the app version of the painting *Still Life with Cheeses, Almonds and Pretzels*[5] the color of the beer bottle would be changed from brown to green, referring to the color of the modern Dutch beer brand Heineken, and one of the breads would be changed into a bread roll with a Dutch "kroket" (popular meat snack) with the travel tip explaining where to get such a snack.

Thus, the app not only serves as an engaging museum visiting app, but through its collected travel tips also serves as a guide for further exploring modern Dutch culture outside the museum (see Fig. 15.3).

15.2.1.4 Evaluating the Design

The app was tested with nine visitors to the Mauritshuis (age 18–34 years old) from various countries. Participants matched the profiles of the personas of "hipsters" and "popular attraction seekers'. The aim of the test was to evaluate the extent to which the design would fulfill the five design intentions. For the test a partly functional prototype of the app was used, which allowed playing the game, but was limited to just a few treasures, and participants had to search for them in a predefined order.

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[5]https://www.mauritshuis.nl/en/explore/the-collection/artworks/still-life-with-cheeses-almonds-and-pretzels-1203/.
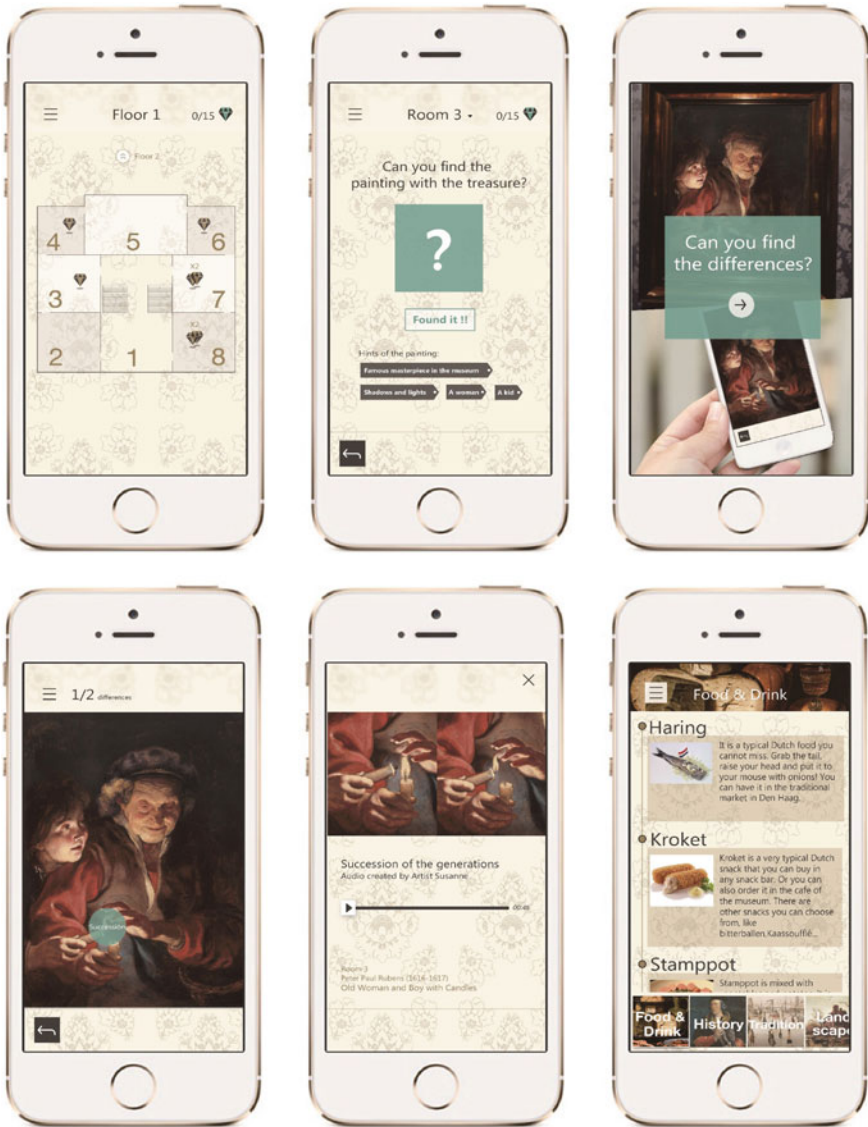
Fig. 15.3 Example screens from the app. From left to right: (top row) select room to visit, find the painting with the treasure, explanation of finding a treasure, (bottom row) treasure found in painting, audio fragment after finding treasure, travel tips

The test results showed that the treasure hunting game triggered participants to interact with the paintings, and had increased their interests to explore the paintings and listen to the audio stories. Participants very much liked the idea of introducing the local culture through the visit to the Mauritshuis, and then further exploring it in

the city. They appreciated the audio stories about the local culture, but would also have liked to get some more information about the artwork themselves. The travel tips, categorized by different topics (such as Food and Drink, Landscapes, and History) were considered very useful for filtering what they would want to do in the city of The Hague. They emphasized that the travel tips indeed should be unique and recommended by the locals.

15.2.1.5 Interim Conclusion

In sum, in this design case, the starting point was to inspire the design through placing a museum visit in a larger encompassing context of experiencing local culture. This required a study on the needs of the potential visitors in relation to this embedding experience specifically, rather than to the museum visit per se. It resulted in an app that enhanced the museum visit experience and that in a playful way linked the objects in the museum to places that the young adults could visit in their further traveling.

15.3 Design Case 2: Hidden Gems Museums

In the second case study—the Hidden Gems study—we explored ways of connecting small local museums to young adults. This study was conducted as the third author's Master Graduation project at the Faculty of Industrial Design Engineering (TU Delft). It was done in collaboration with the Academy for Digital Entertainment of NHTV Breda University of Applied Sciences and two Dutch provincial heritage institutes: Erfgoedhuis-ZH and ErfgoedBrabant (van der Laan 2017).

The Hidden Gems project focuses on small, local museums that tell the story of the territory they are in through the objects they display. Their collections of objects are usually very specific and specialized: they are often about local history, or about a way of life that does not exist anymore (for example, craftsmanship—see in (Vermeeren and Calvi 2018b). Examples of such museums in the Netherlands are the museums Molenaar Old Tractors[6] in Berkel and museum De Timmerwerf in De Lier.[7] Molenaars Old Tractors is a small museum with a collection of 85 tractors of a specific brand (McGormick). It was founded by the father of the current owner, who was the first in the village to own a tractor in 1939. The current owner, 4 years old at that time, and his wife tell the stories of the quality of the brand and of how the tractor was used. The tractors are shown in the shed of an eighteenth century museum farm where the current owners live. Also about the farm, they have

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[6]http://www.molenaarsoudetractoren.nl/.

[7]http://www.detimmerwerf.nl/.

interesting stories to share. Museum De Timmerwerf is a museum of carpentry. In a preserved carpenter's workshop volunteers demonstrate how the objects that are exhibited can be used, and tell stories about what the life of a carpenter looked like in the old days. The type of small museums we focus on in this study typically has an authentic feel. It is because of this authentic feel, and because one often finds these museums in small villages in rural areas, that we refer to these museums as Hidden Gems. In the Hidden Gems project, the young adults of age 18–30 years old have been identified as a potential target group of visitors.

15.3.1 Overview of the Design Approach

The initial brief for the project was *to develop a number of conceptual designs that can motivate young adults to get and stay engaged with small museums*. Thus, the challenge was to identify opportunities for aligning the needs and interests of young adults to those of the small museums, and to turn those opportunities into conceptual designs. Hence, the project started with studying the typical characteristics, needs, strengths (etcetera) of small museums, as well as gaining a better understanding of the young adults' needs and interests and their current barriers in engaging with the small museums (phase one). In the second phase, design criteria were formulated and seven conceptual design directions were envisioned. The design directions were then evaluated using the design criteria, and three ideas were selected to be further developed in the conceptual design phase. These three ideas were evaluated with museum volunteers, young adults and the provincial heritage institutes (phase three). Figure 15.4 presents an overview of the process.

15.3.1.1 Analysis of Small Museums' and Young Adults' Interests

In search for possible ways of relating small museums to young adults, the project started with a study on the characteristics, strengths, possibilities, and organization of the small museums.

Small Museums Together with the provincial Heritage Institute Erfgoedhuis-ZH, a list of museums was compiled as cases to start this phase with. It consisted of 16 museums, 13 of which fell in the category of museums we targeted, and three were bigger, but were still included to better be able to identify what is specific for small museums. Observations were done in these museums, focusing on staff, visitors, location, subject matter, and presentation of the subject matter. There were informal conversations with 20 museum staff members and semi-structured interviews with 6 staff members. Additionally, during the period of observations, conversations, and interviews, the 13 small museums were sent an extensive survey about their staff, visitors, income, goals, problems, needs, and wishes. Nine of the museum staff members responded, of which two from the same museum. The authenticity of the

Fig. 15.4 Overview of the Hidden Gems design process

ANALYSIS: IDENTIFYING NEEDS OF YOUNG ADULTS AND CHARACTERISTICS AND STRENGTHS OF SMALL MUSEUMS

Observations in museums

Interviews, conversations, surveys with museum volunteers

Surveys with young adults

Interviews/conversations with solo-travelers and hostel staff members

Outcomes: characteristics of small museums, interests and needs of young adults, thresholds for visiting small museums

DESIGN: DEVELOPING DESIGN DIRECTIONS

Formulating design criteria

Searching for connections between young adults and small museums

Brainstorming and creating design directions

Evaluating design directions and selecting conceptual designs

Outcomes: design criteria, 3 conceptual designs

EVALUATION: CONCEPTUAL DESIGN EVALUATION

Detailing the conceptual designs

Evaluating the conceptual design with museums and young adults

Outcomes: promotional leaflets, evaluation results, recommendations.

experience in the small museums and of their locations was observed as an important asset of the small museums. The staff of these museums has a passion for the museum and found preservation of the heritage much more important than making money through additional visitors. However, they were also aware of the need for digitization and digital presence (via websites and social media). For realizing that need the skills of the staff formed a problem though, as these volunteers generally are not so familiar with the digital world. Further, the location of the museums is usually a given. They are bound to the location they are in, as this often forms part of their heritage. A problem with that is that in many cases these locations do not have optimal connections to public transport or main roads. Additionally, because these museums run on volunteers and visitor numbers are very small, many small museums have very limited opening hours (for example, only on Saturday or Sunday afternoons). Figure 15.5 shows an overview of the main conclusions about the small museums.

Young Adults (Aged 18–30) To gain a better understanding of the world of the young adults, initially a survey was sent out focusing on young adults in relation to museums (50 respondents). As in the Mauritshuis case, there proved to be a need for taking a broader perspective on the needs of young adults. Thus, another survey was sent out focusing on young adults in relation to their activities (52 respondents). From the surveys, it became clear that within the group of young adults it is mainly the solo-travelers that visit museums. However, the surveys also showed that solo-travelers usually do not visit *small* museums (which is confirmed by the observations in the small museums, where no solo-travelers were seen). After the surveys, 25 conversations with solo-travelers and 10 hostel staff members were held

- Small museums would like to have more visitors
  - o   Opening hours are a threshold
  - o   Location is a threshold
- The specificity of the museum subject could be a threshold for visitors
  - o   Presentation of the subject is very standard (no interactivity)
  - o   Not much variation in exhibitions
- Small museums have too little volunteers to maintain more opening hours
  - o   Volunteers are nearly all 45+
  - o   Volunteers are enthusiastic and involved with the subject
- Small museums are not very well known
  - O   Budget for advertisement is too low
  - O   Advertisement is done at the wrong places

Fig. 15.5 Main conclusions from the study on small museums

Solo-travelers…
- Look for fun
  - o   Fun activities
  - o   Fun social experiences
- Look for new experiences (something different)
  - o   Interest in culture
  - o   Interest in authentic experiences
- Choose their activities based on word-of-mouth
- Are sensitive for 'must-see' activities
- Are interested in meeting people
  - o   Fellow travelers
  - o   Locals
- Are restricted by their budget
  - o   They choose well-established activities
  - o   More specific activities are based on personal preferences (affinity to the subject)
- Duration of their stay differs a lot
  - o   Some stay days
  - o   Others stay for months

Fig. 15.6 Main conclusions from the study on solo-travelers

at 5 different hostels. Additionally, an online analysis was done about travelers' trends in relation to this target group to find out what drives them. Figure 15.6 provides an overview of some of the important findings on the solo-travelers.

The study made clear that solo-travelers would potentially be very interested in the Hidden Gems museums. These museums possess a set of characteristics that provide an "authentic" experience and solo-travelers are very interested in authenticity and in experiencing something unique. Thus, instead of changing the Hidden Gems museums themselves and running the risk of destroying their authenticity, the choice was made to deal with the thresholds that keep the solo-travelers from visiting them.

Three main thresholds were identified as follows:

1. *Visibility*: solo-travelers are not aware of the existence of Hidden Gems museums

2. *Location*: the museums are mostly in villages and it takes considerable time to visit them, especially in relation to the time that currently can be spent on visiting the museum.
3. *Lack of social experiences*: solo-travelers pick their activities largely based on the chance to meet new people, especially of their own age. Currently, however, young adults do not visit these museums, so there will be no such social experiences.

Note that the choice of dealing with these thresholds implies that opportunities were sought in the context in which the museums function, and in their relationship to the outside world, rather than in improving exhibits per se.

15.3.1.2 Developing Design Directions

Based on the findings of the analysis phase, a set of design criteria in the form of requirements and wishes were formulated. Requirements included for example: *keeping the authenticity of the location; appealing to millennial solo-travelers; the potential for drawing in new visitors for the museums; and facilitating positive word-of-mouth advertisement.*

In the initial design phase, seven design directions were developed, which were then further developed into three conceptual designs, focusing on different levels of detail in terms of segments of potential visitors.

15.3.2 Three Conceptual Designs

Three conceptual designs were developed: a Hidden Gems label (targeted at a general audience for small museums), Amuse-um (targeted at young adults), and a pop-up hostel (targeted at solo-travelers as a subgroup of young adults).

15.3.2.1 Conceptual Design 1: Hidden Gems Label and Platform

The first conceptual design consists of a shared platform for Hidden Gems museums. It basically is a label assigned to museums that possess the Hidden Gems characteristics mentioned in Fig. 15.5. An accompanying website would make these museums visible on the Internet.

The rationale behind the label is as follows. The specificity of the subject, the size of the collection, and the time needed to reach the locations make return visits, from anybody other than locals unlikely (even if visitors had a very pleasant experience). However when the "experience" is labeled "Hidden Gems", and when many other museums with that label can be found in the Netherlands, visitors may be inclined to visit another "Hidden Gems" museum somewhere else. Thus, instead

Fig. 15.7 Proposed logo for
the Hidden Gems network
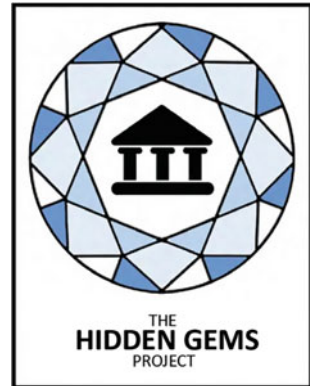
of inciting return visits to a specific museum, these museums could incite "return" visits to other "Hidden Gems" museums and vice versa. With a network of these "Hidden Gems" all over the Netherlands (or even beyond), the number of potential visitors could increase substantially.

Thus, this conceptual design proposes a solution for the *visibility* threshold, by making use of creating a network of similar museums that as a whole has a better chance of making itself visible (Fig. 15.7).

15.3.2.2 Conceptual Design 2: Amuse-Um: Location-Based Performance Community

The second Hidden Gems design idea consists of an Internet platform for bringing together Hidden Gems museums and location-based performance artists. The platform hosts communities of performers and of small museums that are interested in connecting the two. Through this platform, performers can find places with a specific authentic or otherwise interesting atmosphere that would match their preferred kind of performances. Museums, in turn, can offer their spaces as a place for such performances and through which they can reach a new audience. Their visit could leave performance visitors with a good memory of the museum as a location, leading to positive ratings on the platform and making the museum more visible. Moreover, the platform would allow for expanding the museum experience, by adding performances to the museum visit, as well as allowing for the social experience of meeting other visitors with similar interests afterward. A museum visit, in this case, could, prior to the performances, consist of short explanations about the traditional, local culture the museum represents, and the visit could be concluded by a social activity such as having a drink together. This expansion of the museum experience can make undertaking the relatively long trip to the museum more worthwhile to the young adults.

Fig. 15.8 A fictional website illustrating a platform where museums and performers meet

Thus, this design deals with the three identified thresholds by connecting the world of small museums to a largely unrelated world outside of the museum context, namely that of location-based performers (Fig. 15.8).

15.3.2.3 Conceptual Design 3: Pop-up Hostel

The third Hidden Gems idea consists of a mobile, pop-up hostel. This idea focuses on a subgroup of the young adults, namely the solo-travelers. Nowadays, many of these solo-travelers visit hostels in the bigger cities, for shorter or longer periods. For them also, the aspects of visibility, remote location, and lack of social activities are often thresholds for visiting the Hidden Gems. A pop-up hostel that travels through the countryside visiting Hidden Gems would make the travel an inherent part of their holidays (instead of a time-consuming but necessary activity for reaching the museum) and would turn the museum visit into a social experience.

The pop-up hostel consists of a van or recreational vehicle with a trailer, containing all necessities for a sleepover. From the museum's perspective, one of the strengths of this idea could be the word-of-mouth advertising through this initiative. Solo-travelers typically select their destinations based on word-of-mouth recommendations, also through social media. The more interesting the travels and the museum visits, the more it will lead to positive reviews and new visits. The initiative for pop-up hostels visiting specific museums would largely be at the organization exploiting the pop-up hostel, whilst the role of the museum could be limited to just making themselves visible to such organizations. Museums themselves can decide on the extent to which they want or do not want to expand the experience around the museum visit. This ranges from just opening the doors for

Fig. 15.9 Storyboard illustrating a day in the trip of a pop-up hostel. Traveling from the Nationaal Sleepvaart museum in Maassluis, then visiting the picturesque village of Hellevoetsluis, and staying overnight near Hidden Gem museum ship Lichtschip 12 in Hellevoetsluis

the travelers to visit the museum, through museums opening their doors and arranging a campsite nearby the museum, to hosting the hostel at the location of the museum and organizing extra activities during the visit (Fig. 15.9).

Thus, this design concept builds upon the idea of connecting a small museum to the world of hostel visiting solo-travelers, as well as to other activities in the countryside around the small museum.

15.3.3   Evaluation

The three conceptual ideas were evaluated by checking them with the design criteria formulated at the start of phase 2 and by getting feedback from small museums, provincial heritage institute Erfgoedhuis-ZH, and young adults.

For each of the three conceptual design ideas a promotional leaflet was produced, in a style that would present the initiative as if it already existed (Fig. 15.10). These leaflets were sent to four small museums and the provincial Heritage Institute Erfgoedhuis-ZH for evaluating them in interviews.

For evaluating the ideas with the young adults, 20 travelers were interviewed in 2 hostels. They were presented with collages showing them the conceptual designs visually (Fig. 15.11). To them, the Hidden Gems platform was not presented as a separate idea, but as an umbrella platform for the other two initiatives.

To the museum volunteers, the Hidden Gems label and platform proved to be easy to understand. They were well appreciated by them. They spontaneously linked the label to other museums with similar characteristics. However, they emphasized that the label and platform should be low maintenance and preferably free or low cost to them. Therefore, an overarching organization managing this, or subsidies would be required for creating and maintaining the website. In general, the museums were most enthusiastic about:

Fig. 15.10 Leaflets
presenting the three
conceptual ideas for
evaluating them with
museums and the provincial
Heritage Institute
Erfgoedhuis-ZH

- the promotion and visibility the platform would provide
- the opportunity that the platform provides for finding museum-subject-related expertise or volunteers that may be shared among museums or with the outside world
- the easy and natural way of allowing communication between similar museums.

With respect to the Amuse-um idea, the museums showed an open attitude, but they also indicated they would not want to actively engage in organizing performances. However, they liked that the platform would facilitate activities that can take place in the museums. In general, the museums felt they needed to have more concrete, practical information about the initiative, before taking more interest in it. The young adults indicated that performances would indeed make it more worthwhile to travel the distance to the museums. They would prefer music performances. However, they also indicated there would be a considerable chance that they would look for music performances in the cities they are in, unless (for the travelers) hostels would organize trips to the museum performances.

For the pop-up hostel, museums showed more enthusiasm than for the Amuse-um idea. Two of them in particular very much welcomed the idea. During the interview, they spontaneously started showing places where the pop-up hostel could be placed, and they started brainstorming about extra possibilities for activities. For instance, Museum Bescherming Bevolking (a museum about civil protection in times of war) talked about providing army bunk beds, opening existing outdoor toilet facilities and was open to ideas such as showing movies or having campfires at night. Molenaars Old Tractors indicated to be willing to provide access to a canteen (which could also be used to sleep in), and the toilet in the

Fig. 15.11 Collages of the conceptual ideas, for evaluating them with travelers

farmhouse. A few days after the interview the museum even sent an email with the idea of organizing a beer-tasting event during a potential pop-up hostel visit.

In conclusion, it seemed that these museums would not only want to host the pop-up hostel, but would actually be willing to put some extra effort in accommodating the guests. They perceived the pop-up hostel as a fun experience for themselves as well as for their regular guests.

By the travelers, the pop-up hostel was indeed perceived as fulfilling a need and as resolving the most prevalent thresholds travelers may experience, namely distance and lack of social contacts. A very important issue about this design would be its cost. It should not be over 30 euros per night in order to be a realistic option for most solo-travelers. In terms of realization of the pop-up hostel, travelers clearly mentioned to be not very demanding. They need facilities such as sleeping accommodation, toilet, shower, place to cook, and a common area (living "room"/ "chill" space) but indicated that they would not require much from most facilities. The common area, however, would need to have a certain, specific atmosphere. This common area in combination with the museums and villages around them would be what these solo-travelers would base their choice on. The travelers also made clear that besides museums, other "Hidden Gems"-like activities should be included in their trips, in order to provide more variation. These activities should be specific to the visited locations and preferably have a typical Dutch character.

15.4 Discussion

In the Introduction section, we mentioned the current trend of designing for museums as parts of networks of people and organizations, instead of for individual museums (Vermeeren et al. 2017). We noted that for museum experience design this would imply that one no longer only designs for visitors' experiences before, during and after a museum visit, but that one thinks in a more holistic way about experiences of people that engage with the network as a whole, as well as about a museum's role within such network. Four design ideas from two design cases have been described illustrating different ways in which museums can be embedded in networks.

All four design ideas are based on connecting the museums to the outside world, though in different ways (see Table 15.1 for an overview).

The Mauritshuis app was designed with the content of paintings in the museum as the starting point. An experience was created around visiting multiple paintings in a playful way, with audio stories connecting the content to current local culture. After the museum visit, the visitor would get further travel tips based on the audio fragments that discussed the local culture. In other words the app focuses on the Mauritshuis, and then stimulates visitors to visit local, current cultural places.

In the Hidden Gems project, the Hidden Gems label and platform were based on a network of similar museums. This platform provides museums of a specific kind with a branding label and a website that connects them. It can thus stimulate return visits not to individual museums but to museums of a similar kind.

Amuse-um, the platform for location-based performances in museums, is yet another kind of network. Where the Hidden Gems platform is a platform on which museums only present themselves to potential visitors, Amuse-um is a platform for

Table 15.1 The various ways in which design ideas in the two design cases create a relation between the museum and the outside world

Case	Treasure hunt app (Mauritshuis case)	Hidden Gems label and platform	Amuse-um (Hidden Gems case)	Mobile hostel (Hidden Gems case)
Design focus	Content depicted on paintings in the museum	Authentic character of the museum	Museum as an interesting location. Performers in need of a location	Solo-travelers on tour
Mechanism of connecting the museum to the outside world	Suggest other places to visit, based on museum content	Make museums with a similar character visible and findable	Create a shared marketplace and communication platform	Make museums an interesting place to make a stopover

bringing together networks of performers and of museums. It serves as a kind of marketplace, where performers can offer their services to museums, and vice versa.

In the pop-up hostel idea, the museum plays yet another role. The design focuses largely on travelers, and incorporates the museums in the travels. The museums themselves can decide in agreement with the organization running the mobile hostel, what role it wants them to play: just being one of the places the hostel stops at for a regular visit, or being a place where special events are organized for the travelers that come by, or even organizing a place for the hostel to stay overnight, either at the location of the museum itself or in the neighborhood. In this network, the museum forms one of the experiences that are embedded in the larger trip of visiting multiple Hidden Gems across a certain region.

In all presented cases, lessons were learned, specifically related to designing experiences for situations in which a museum is not considered as a standalone place to visit, but as related to the outside world: as embedded in networks of institutions and people. These lessons relate to needs' identification at the outset of a project, to decisions with regard to what the central focus is in the design process, as well as to issues of ownership and networks of stakeholders involved in realizing the design idea.

15.4.1   Identifying Needs from a Broader Perspective

Experience design usually starts with identifying the needs, values (etc.) of the users one will design for (e.g., see Hassenzahl 2010 and Hassenzahl et al. 2010). This is very much in line with what Falk and Dierking suggest about museum visitor experiences, namely that the public seeks leisure experiences that meet specific identity-related needs and values (Falk and Dierking 2013). Thus, when designing for museum visitor experiences one should focus on museum visitors' identity-related needs and values, for which Falk and Dierking identified seven categories of motivations for visiting the museum. In our design cases we took a broader perspective: not only focusing on motivations for visiting a museum, but also on more general motivations and interests, such as those related to the travel in which a museum visit can be embedded. Based on this wider focus, personas can, for example, be developed as a complement to the museum visit role categories that Falk and Dierking (2013) suggest. Indeed, for connecting the Mauritshuis museum experience to the local, modern culture, the contextmapping study that focused on travel rather than on a visit to the Mauritshuis provided us with more inspiration than the interviews about actual visits to the Mauritshuis, enabling us to envision how the museum experience could contribute to enriching the travel experiences. In the Hidden Gems project, the inspiration for Amuse-um and the pop-up hostel came largely from conversations and surveys about young adults and their activities, rather than from discussing their museum visits.

We conclude that for a more holistic design that views a museum as being embedded in networks of people and organizations, the focus of a need

identification study at the start of a design process should take a broader perspective on the needs of the visitors, for example: looking into their day-to-day activities and interests; for example, viewing them as travelers, rather than as museum visitors only.

15.4.2   Balancing the Focus

One of the challenges we experienced when designing for museums as part of connected people and institutions, was that of balancing what the focus of the design should be. In the Mauritshuis case, when visiting a museum of classical art, much of the visitor's focus of attention should be on experiencing that art. On the other hand, the aim was to also raise interest in the local culture around the museum, and to later provide concrete help in exploring that local culture. Gradually raising that interest during the visit requires drawing attention to it, and thus getting away from the artworks themselves. The answers of the participants in the final user tests indicated how difficult it is to deal with this challenge. We recorded answers such as: "The information about the local culture takes me a bit away from the museum, maybe it should be less, but the intention of it is good" and "I did not expect to get information not directly related to the painting. The information is good, but not what I expected". On the other hand, one participant said: "I really found the story about how tall the Dutch are, interesting because I found it myself on the street that the people here are really, really tall … It is really interesting information" and "It is a good way to start exploring the city. […] Usually when you visit a different country, you don't have that. It is quite difficult sometimes to find a local when you travel".

In the Hidden Gems project, it is also clear that the conceptual design ideas varied much in their focus. While in the Mauritshuis project the main focus was on the artworks themselves, in the Hidden Gems project all ideas focused on other things than the objects on display. The Hidden Gems platform focused on finding the museum based on its character, the idea of Amuse-um focused on the atmosphere of the museum as a location, and the focus for the pop-up hostel was on the museum affordances for providing a stopover travel.

We conclude that when designing experiences for the museum in networks of people and other organizations, carefully and creatively considering the design focus opens up the space for developing unconventional solutions.

15.4.3   Ownership and Networks of Stakeholders

In the Mauritshuis project, the second author had initiated the idea of the design assignment herself, only after which collaboration with the Mauritshuis started. From that point on, the Mauritshuis was seen as the client, hence the focus was on

the Mauritshuis as having future ownership over exploiting the app. One could argue that for a truly holistic experience design approach one should start from the local culture (in this case in The Hague) instead of from the Mauritshuis. An interesting experiment would be to re-do the design project using that as a starting point. How would the design be different? Most likely, it would have focused on a "The Hague travel experience". We imagine that such a design would start from overviews of possible experiences in The Hague. However, such overviews would then lead to people visiting places to have the desired experiences, and it is very likely that specific designs would be designed for those as well.

Building such networks of designs not only requires that participating institutions (organizations, etc.) are networked digitally through their offerings, but also that they continuously keep each other up to date about their offerings, actively looking for how their offerings can be connected to other offerings in the network. We imagine this would require much collaboration between partners in The Hague network, probably including also technological and procedural standardization or an overarching organization.

In the Hidden Gems project, the three design ideas led to different models in terms of which stakeholders should be owners of the initiatives. While in the Mauritshuis the prime initiative would be at the museum, in case of the Hidden Gems platform an umbrella organization bringing together the museums would have to be found; one that could justify spending effort and time on setting up and maintaining the platform. The Amuse-um idea would be something that could grow from groups of volunteers in the world of performances (as the museums had already indicated that they would welcome it, but would not put effort in initiating it). In case of the pop-up hostel, probably a start-up company would be needed to organize such travels. That organization would then need to have close contacts with the museums to arrange interesting travels.

We conclude that when designing experiences for the museum in networks of people and other organizations, ownership of the design is not necessarily at the museum. New parties next to the museum will have to be involved in the process of developing as well as of exploiting the designed experiences.

15.5   Conclusion

We conducted two design case studies in which various ideas were developed for experiences in, around, or including museums that are part of networks of people and organizations. We learned that broadening the perspective that lies at the basis of the design brief may lead to new design opportunities. However, taking such an approach also implies that museums may not always be central to the design idea, and that ownership of the resulting initiatives or products may be either in or outside the museum itself. This can lead to new types of business models for running them.

References

Falk JH, Dierking LD (2013) The museum experience revisited. Left Coast Press, Walnut Creek (CA)

Hassenzahl M (2010) Experience design: technology for all the right reasons. (Carroll JM ed). Morgan and Claypool

Hassenzahl M, Diefenbach S, Göritz A (2010) Needs, affect, and interactive products – Facets of user experience. Interact Comput 22(5):353–362

Museumvereniging (2010) Agenda 2026: study on the future of the Dutch Museum sector http://www.museumvereniging.nl/Portals/0/6-Publicaties/Bestanden/Agenda%202026%20PDF%20v4%2035231%20eng%20hi-res.pdf

Shih H-C (2015) Treasure hunt in the mauritshuis (Master of science graduation report) Delft University of Technology, Faculty of Industrial Design Engineering

Shih H-C, Yoon Y, Vermeeren APOS (2016) Positive emotions for inciting behaviour - playing with paintings to enhance museum experience. In: Proceedings of design and emotion conference 2016, Amsterdam, 28–30 September 2016

Sleeswijk Visser F, Stappers PJ, van der Lugt R, Sanders EB (2005) Contextmapping: experiences from practice. CoDesign 1(2):119–149

Vermeeren APOS, Calvi L, Sabiescu A, Trocchianesi R, Stuedahl D, Giaccardi E, Radice S (2018a) Future museum experience design: crowds, ecosystems and novel technologies. In: Vermeeren A, Calvi L, Sabiescu A (eds) Museum experience design – crowds, ecosystems and novel technologies (this book)

Vermeeren APOS, Calvi L (2018b) How to get small museums involved in digital innovation: a design-inclusive research approach. In: Ciolfi L, Damala A, Hornecker E, Lechner M, Maye L (eds) Cultural heritage communities: technologies and challenges. Routledge

van der Laan R (2017) The Hidden Gems project – putting small local museums on the map (Master of science graduation report) Delft University of Technology, Faculty of Industrial Design Engineering

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