‘Co-creating value in a mobile application’
Co-creating value in a mobile application

Research into the perceived experience value of international students (18-35 yr.), who live in the Netherlands, regarding the use and co-creation of the mobile application of NLroute.
Preface
This project has been conducted in order of NLroute to the HBS Research Centre. The HBS Research Centre has in turn split the projects into two thesis projects and assigned them to Donique Klein Gunnewiek and Victor Bongers. The projects contained respectively a research into the experience of the Dutch landscape for Dutch millennials and one on the perceived experience value of international students (18–35 yr.), who live in the Netherlands, regarding the use and co-creation of the mobile application of NLroute. The latter research is the one before you.

In this thesis report you will read about the results of the research and the corresponding advice that is given to NLroute. The research consisted of interviews and literature research.

I would like to thank Michiel Flooren and Ellen Ruiter for assigning the thesis project to me and supporting me throughout the entire thesis project with advice and suggestions. An important factor in this thesis project was the communication with the client: NLroute. Saline Verhoeven and Pnina Avidar, contact persons of NLroute for this project, were always positive but critical in communication and for this I would like to thank them and I would like to wish them the best with their project for the future. I would also like to thank the students who have participated in the interviews. Finally, I would like to thank Gijs Theunissen for the feedback throughout the thesis project and the suggestions made.

October, 2015

Victor Bongers
Management summary

This thesis project was conducted for NLroute as part of a larger project assigned to the HBS Research Centre. NLroute is a startup organization that exists of seven routes in the Dutch landscape which lead the visitor beyond existing tourism attractions and which provide them with a unique experience of landscape and Dutch identity. These routes are supported with a book, maps, a website and the creation of a mobile application. The HBS Research Centre is a Saxion community based on researching the ‘hospitality sector’ consisting of lecturers, researchers, research assistants and students. This particular thesis project was about how to co-create value in the mobile application of NLroute with and for international students (18–35 yr.), who live in the Netherlands.

Reason and relevance of thesis project

NLroute is looking to develop their routes and the belonging products together with young and talented people. This explains their choice to assign this project to Saxion’s HBS Research Centre. The HBS Research Centre divided this project in two thesis projects and assigned these to two students. Donique Klein Gunnewiek investigated the experience of the Dutch landscape for Dutch millennials, while this thesis project, conducted by me, was about how to co-create value in the mobile application of NLroute with and for international students (18–35 yr.), who live in the Netherlands.

To understand how this is possible, the perceived experience value of international students (18–35 yr.), who live in the Netherlands, of using and co-creating the mobile application of NLroute was investigated. With this knowledge advice was given to NLroute on how to customize their product (the mobile application) for the segment and where opportunities for co-creation together with this segment lie.

In October 2015 the first pilot of the seven routes will be launched in Overijssel. The research from both projects helps NLroute in understanding how to attract millennials to visit the Dutch landscape and on how to create an effective mobile application that is interesting to students and in turn attracts them to visit the Dutch landscape.

Research methods

In this thesis project interviews were held and literature research was done. The objective of the research was: ‘To give insight into the perceived experience value of international students (18–35 yr.), who live in the Netherlands, regarding the use and co-creation of the mobile application of NLroute.’

The literature research outlined best practices in co-creation that could be used to come to a solid advice. With the help of interviews the perceived experience value of the students for co-creating and using the mobile application of NLroute was tested. The concept ‘perceived experience value’ was operationalized according to the theory of Prebensen et al. (2013) and used as the basis to create an interview guide for the interviews. The studies and the home country of the students, as well as the place they live in the Netherlands, were perceived as possible variables that could have an effect on the answers, therefore these belonged to criteria that were taking into account before the students were selected for the interview. A spread between these criteria has been maintained in the selection of the ten students who were chosen for the interviews.
Results
From the literature review four types of co-creation, that have been effectively used by large companies and that are applicable to the case of NLroute, have been retrieved; co-conception of ideas, co-design, co-experience and co-production. Important factors in the successful implementation of co-creation are the involvement of customers at different stages in the production process and a positive attitude of employees towards the concept of co-creation.
From the interviews it became clear that the students have limited knowledge about walking and cycling routes in the Netherlands, although most of them have visited the Dutch landscape for a walking or cycling trip. Their experience with similar mobile applications for leisure expenditure is also limited.
The students consider the cleanliness, safety and the fact that the landscape is green and flat to be attractive features in the Dutch landscape. They are willing to use the mobile application of NLroute to experience the landscape. The fact that such an application is more convenient than buying a book or a map and that it can provide you with up-to-date information motivates them to use it. Functions that they are looking for in an application are: practical information about the routes with suggestions and a list of the best/ most popular routes, social features and flexibility to change or add parts of the route.
They are also interested in helping to co-create this mobile application, because they see the potential added value that this can bring to the product.

Advice
NLroute is advised to customize the application to become more ‘social’ according to the needs of the researched segment. Functions like reviews, comments, pictures and chat are advised to be integrated within the application. These social functions are opportunities for users of the application to share experiences in the application, creating a co-created experience. Furthermore, NLroute is advised to give locals, who live alongside the routes, the opportunity to give tours to the users of the application. In the proposed updated application the users can meet up with locals as well as other users creating a shared experience of the Dutch landscape. Besides these examples of co-experience, co-conception of ideas is also integrated in the advice. By creating a function where users can directly contact NLroute and give feedback about the application and the routes, the users are involved in the ideation process to innovate the product (mobile application) of NLroute.
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NLROUTE
1. Introduction

This chapter contains the introduction of this thesis project, consisting partly of background information about the clients; NLroute and the HBS Research center. Furthermore this chapter describes the reason and relevance of the thesis project. Additionally, it contains the objectives and questions that are going to be answered in the advisory and research part of this thesis project. Finally, it concludes with a reading guide describing the rest of the chapters of this thesis project.

Background information HBS Research Centre

The HBS Research Centre is a Saxion community based on researching the ‘hospitality sector’ consisting of lecturers, researchers, research assistants and students. A key aspect of this research is ‘co-creation’; the student, client and researchers of the Research Centre try to solve a problem from the professional field in a way that is agreeable to all stakeholders (Saxion, n.d.). To come to a solution for such a problem from the field, the HBS Research Centre strives to use techniques from multiple disciplines. Furthermore, openness is an important aspect in the HBS research centre; results of researches are published and made available to the public (Saxion, n.d.).

Background information NLroute

NLroute is a platform founded by the NLroute project team that is going to be developed consisting of seven routes which lead the visitor through the Dutch nature. This team consists of five women and one man, each covering different aspects in the realization of the concept of NLroute; Pnina Avidar, Saline Verhoeven and Tatjana Trzin cover the architect part of the routes, Lennart Graaff deals with the project and organization and Irma Bannenberg focuses on concept development and graphical design, whilst Ulli Fischer covers the media aspect of NLroute.

The routes of NLroute take the visitor beyond existing routes, focusing on a unique experience of landscape and Dutch identity. The routes take the visitor to rural areas and economies, exposing local economies to international tourism (NLroute, n.d.). In order to execute this project NLroute uses creative technologies and develops their plans together with young and talented people. NLroute believes that there is more to explore for visitors travelling to the Netherlands besides the existing tourism attractions. NLroute will start with seven routes that can teach visitors about the development of the Dutch nation and the Dutch landscape over different timeframes. These routes can be followed by foot, boat, bicycle, public transport and by car. The routes will be supported with a book, maps, a website and the creation of a mobile application. The application is the actual product that NLroute offers the consumer; it bundles all the information of the routes.

‘NLroute consists of seven routes, which take the visitor through the Dutch landscape beyond the known tourism attractions. The routes show the rich variety in landscape and highlight the relationship between landscape and Dutch identity’ (NLroute, n.d.).
Reason and relevance of thesis project
Michiel Flooren, project manager of ‘Hopitality/Leisure and Landscape Development’ within the HBS Research Centre, has set up the link between the HBS Research Centre and NLroute. He met with one of the founders of NLroute and discussed the possibilities of working together. For NLroute this contributed to their idea of working together with young and talented people, while for the HBS Research Centre this contributed to their idea of finding interesting and challenging graduation projects for their students.
The research carried out by the students of Saxion (Donique Klein Gunnewiek and me) can help NLroute in understanding how to target students to take part in their routes.
The thesis project was part of a larger project assigned by NLroute to the HBS Research Centre. The total project existed of two individual researches; one that investigated how to co-create value in the mobile application of NLroute with and for international students (18–35 yr.), who live in the Netherlands, and one that investigated the experience of the Dutch landscape for Dutch millennials. These thesis projects were carried out respectively by me and by Donique Klein Gunnewiek.
The platform that the NLroute-team created was still in the startup phase at the time of the research for this thesis project. At the time the founders were co-creating the content of the platform with local stakeholders and sponsors. In October 2015 the platform will be launched in the Netherlands; at this time the content of the application and the business model of NLroute should be finalized. NLroute was already looking to segment their product to different target groups; of which students was one. In this thesis the segment was further specified to international students (aged 18–35), who are living in the Netherlands.
In this project the perceived experience value of international students (18–35 yr.), who live in the Netherlands, of using and co-creating the mobile application of NLroute was investigated. The advice given to NLroute outlines opportunities for the co-creation of value in the application and outlines the process of customizing the product for the segment. With these adaptations to the mobile application it can in turn attract the segment to the Dutch landscape; which is the objective of NLroute.

Advisory part
In the advisory part of this thesis, advice is given to NLroute on how to co-create value in the mobile application with and for international students (18–35 yr.), who live in the Netherlands, by looking at the perceived experience value of co-creating and using the mobile application. The advice concerns the opportunities of co-creating the mobile application and on how to customize the application to cater to the segment. These two aspects can bring value in the product (mobile application) for the chosen segment. Therefore, the objective for the advisory part is to outline opportunities to co-create the mobile application and to describe how NLroute can customize their mobile application for the segment in order to co-create value with and for international students (18–35 yr.), who live in the Netherlands.
The corresponding question that is answered in the advisory part is the following:
How can NLroute co-create value in the mobile application with and for international students (18–35 yr.), who live in the Netherlands?
Research part
The objective of the research was: ‘To give insight into the perceived experience value of international students (18–35 yr.), who live in the Netherlands, regarding the use and co-creation of the mobile application of NLroute.’ The research outlined the perceived experience value that the chosen segment has with using and co-creating the mobile application of NLroute by looking at best practices in co-creation and by looking at the three dimensions of perceived experience value (Prebensen, Woo, & Uysal, 2013); motivation, involvement and knowledge.

The research consisted of one main research question with corresponding sub questions.

Main research question
What is the perceived experience value of using and co-creating the mobile application of NLroute for international students (18–35 yr.), who live in the Netherlands?

Sub questions
- What are best practices in co-creation?
- What is the knowledge of international students (18–35 yr.), who live in the Netherlands, about similar applications in leisure expenditure and the routes through the Dutch landscape?
- What is the involvement of international students (18–35 yr.), who live in the Netherlands, regarding the co-creation and use of the mobile application of NLroute?
- What is the motivation for using and co-creating the mobile application of NLroute for international students (18–35 yr.), who live in the Netherlands?

Reading guide
In the second chapter of this thesis the theoretical framework that the project is based on is described. In this chapter the core concepts are explained and the relationship between these concepts and the rest of this thesis is explained. In the third chapter ‘Approach to research’ the design of the research is further explained by describing the data collection method, the sampling plan and the data analysis method of the research of this project. In the next chapter the results of the literature research are described. In this chapter an analysis is made of four companies successfully applying co-creation by looking at key success factors and the types of co-creation these companies use. In the fifth chapter the results of the interviews are described by linking them to the theoretical framework of this thesis. In the next chapter conclusions on the research questions are described.

The seventh chapter discusses the validity and reliability of the research done in this thesis project. Finally, the eighth and final chapter describes the advice given to NLroute. In this chapter three options for advice are discussed and analyzed, resulting in one type of advice given. In the remaining parts of the chapter the implementation with the related financial implications of the advice are described.
2. Theoretical framework

In the research questions the terms ‘student, co-creation of value and perceived experience value’ were introduced. The topic of the research in thesis was ‘the perceived experience value of international students (18–35 yr.), who live in the Netherlands, of using and co-creating the mobile application of NLroute’. Theories about these concepts that are in line with this topic have been selected to support the thesis. The concepts of ‘leisure motivation’ and ‘push and pull factors’ are introduced in this chapter and were used in this thesis to analyze the findings of the research part. Finally, the concept of ‘attitude’ is introduced; the use of this concept is explained below. All sources have been selected according to the AAOCC criteria. In the first part of the chapter definitions and models of these concepts are explained and the choice for certain definitions and models is further elaborated on. In the final part of this chapter the relationship between the core concepts is explained.

2.1 Core concepts

2.1.1 Student

In international terms a student is somebody who is formally enrolled in a college or a school and is engaged in learning (Dictionary.com, n.d.). In the Netherlands there are multiple definitions for the term ‘student’. The difference between the definitions lies in the fact that some institutions count people enrolled in MBO– education to students as well. In general only people enrolled to Universities or Universities of Applied Sciences are seen as students. In this thesis this general assumption was taken into account.

2.1.2 Dutch landscape

In this thesis the term ‘Dutch landscape’ is used to describe the natural areas in the Netherlands outside of the urban areas.

2.1.3 Co-creation of value

A definition of the co-creation of value is given by Coates (2009); “Co-creation is an active, creative and social process, based on collaboration between producers and users that is initiated by the firm to generate value for customers” (p.9). However, in the same article Coates also describes the concept as a relatively new discipline that lacks clarity.

According to Payne, Storbacka and Frow (2007) value is always co-created; the perception of the customer when using or an experiencing a product creates the value. Dialogue between the consumer and producer is now possible at each step in the process of creating or producing a good or service (Payne et al., 2007). Angrawal (2013) describes in an article for the ‘Asian institute of management’ that there are different examples of co-creation; knowledge sharing, creating expertise, emotion supporting and action-orientated co-creation. The latter relates to quality management and efficient self-service. Especially in service orientated companies and the business to business sector consumers are co-producers (Kohlbacher, 2008). It has been found that most product innovations do not come from within the organization, but from the end-users of the product (Hippel, 1977). Co-creation involves customers in the process of giving meaning and value of a product; it outsources value-innovation to the customers (Coates, 2009).
According to Prahalad and Ramaswamy (2004) co-creation of value is a result of the change in perspective of consumers; nowadays consumers want to exercise their influence with new tools as a result of their dissatisfaction with the options in products. Vargo and Lusch (2004) see co-creation as part of a new S-D (service dominant) logic in marketing. In this type of marketing, the customer is the co-creator of the value of the product. The S-D view is an acknowledged view that identifies service as the most important factor in exchange (Vargo & Lusch, 2004). Coates (2009) adds to this that in this logic “people are no longer seen as buying either goods or services, but products that provide a service and value that depends on customer experience” (p.6).

Payne, Storbacka and Frow (n.d.) describe 12 types of co-creation; co-conception of ideas, co-design, co-production, co-promotion, co-pricing, co-distribution, co-consumption, co-maintenance, co-outsourcing, co-disposal, co-experience; and co-meaning creation. In ‘appendix I’ the full explanation of these types of co-creation can be found. In other articles these terms are often combined or considered as having the same meaning. Co-production is often considered to be equal to co-creation; however Vargo and Lusch (2008) identify it as a subcategory of co-creation. Co-production links more to a G-D (Goods-dominant) logic in marketing (Vargo, Lusch, & O’Brien, 2006).

Hoyer, Chandy, Dorotic, Krafft and Singh (2010) describe four motivators for the consumer side to co-create new products; financial, social, technological and psychological motivators. Financial motivator being any monetary prizes or profit-sharing that are a result of co-creating a new product, intellectual property they receive is also counted as a financial motivator. Consumers, who are willing to co-create for social reasons, believe co-creating a product could enhance their social status or could allow them to be recognized in any way. Sharing ideas for technological innovations can also trigger people to co-create a product, the main reason for doing this is the technological knowledge they will gain for helping in the thinking process of creating the product. Finally, psychological motivators can be the cause of participating in co-creation; this can be factors as self-expression or pride.

In this research four types of the 12 types of co-creation mentioned by Payne et al. (n.d.) were used to analyze best practices in co-creation in the literature research and to eventually select a type of co-creation that suits the case of NLroute best; co-conception of ideas, co-design, co-experience and co-production. Furthermore, the co-creation motivators (Hoyer et al., 2010) on the consumer side were used to analyze the reasons for co-creation of the international students (19–35 yr.), who live in the Netherlands.
**Conceptual framework for co-creation of value**

Payne et al. (2007) have created a conceptual framework (figure 2.2) that allows a company to manage the co-creation of value. The conceptual model for co-creation of value consists of three elements; the customer process, the supplier processes and encounter processes between the two. The relationship experience describes the experience that the customer has with the company and the product. By implementing, planning and making use of co-creation opportunities, a company can co-create a product with its customers.

The relationship experience of the customer consists of emotion, cognition and behavior. Emotion reflects on the feeling that a customer has with a product; the preferences and attitudes that a person has. Cognition reflects to searching for information and deciding to buy a product. Behavior reflects to the experience a person has with a product (Payne et al., 2007).

According to Payne et al. (2007):

> Planning for co-creation is outside-in as it starts from an understanding of the customer’s value-creating processes, and aims at providing support for better co-creation of value. Value co-creation demands a change in the dominant logic for marketing from ‘making, selling and servicing’ to ‘listening, customizing and co-creating’ (p.89).

In this thesis the supplier side of the conceptual framework is used in order to give shape to the final advice that is given to NLroute. The advice consists of two parts; co-creation opportunities and planning, implementation and metrics (customization). The relationship experience (consumer side) is about the experience that a consumer has with a company, since in this thesis the product was non-existent; the relationship experience was replaced by the concept of perceived experience value.

- **Co-creation opportunities**

  There are many types of co-creation; e.g. self-service, engaging the customer in the experience and using systems to provide expertise for the customer (Payne, Storbacka, Frow, & Knox, 2008). Co-creation opportunities focus on the perspective of the service or product provider in order to involve the customer in the creation of the experience or product. Opportunities for co-creation can be found in technological breakthroughs, changes in industry logics and changes in customer’s preferences and lifestyles (Payne et al., 2007)

- **Planning, implementation and metrics (‘Customization’)**

  Planning refers to the service or product provider trying to understand the decision making process of the customer. Implementation refers to with which tools the service or product provider can involve the customer in the co-creation process, whilst metrics refers to the way a product or service provider can measure the performance of the relationship with their customers (Payne et al., 2007). In this thesis the relationship is non-existent at the moment, since the product is to be developed. The other two steps are in this thesis referred to as the customization of the product for the chosen segment, derived from the statement of Payne et al. (2007) that co-creation is about ‘listening, customizing and co-creating’.
2.1.4 Perceived experience value

Experience value is defined by Woodruff (1997) as “a customer’s perceived preference for and evaluation of those product attributes, attribute performances, and consequences arising from use that facilitate (or block) achieving the customer’s goals and purposes in use situations” (p.142). The perception of value that a customer sees in a product of service is critical in the decision-making process (Bolton & Drew, 1998). In this experience value not only quality and price play a part in decision making, but also functional, conditional, social, emotional, and epistemic utility value (Sheth, Newmann, & Gross, 1991).

In a book about the current issues in tourism, Prebensen et al. (2013) describe three types of antecedents for experience value: motivation, involvement and knowledge. Motivation relates to the motives of the consumer for choosing a product or service. Involvement relates to the emotional feeling that a customer has with a service or product; they are the customer’s needs and goals. Finally, the knowledge factor describes the expertise or experience that a consumer has with a service or product.

In this thesis the theory of Prebensen et al. (2013) regarding experience value was used, since the three antecedents of this theory were measurable regarding the product of Nlroute.

2.1.5 Leisure motivation

With regards to choosing an activity in leisure expenditure, people have different motivations. Culture is an important factor in leisure motivation. Another important factor is the social context in which a person lives (Chen & Pang, 2012). Goossen, Kruit, Donders and Rooij (2009) describe in an article for Wageningen University five motives in leisure expenditure; ‘being together’, ‘escape from daily life’, ‘interest’, ‘living the nature’ and ‘sportive challenge’.
The Leisure Motivation Scale

The Leisure Motivation Scale (LMS) of Beard and Ragheb describes the motives people have for choosing a type of leisure expenditure which is derived from Maslow’s Hierarchy of Needs (Griffiths, 2012). The model describes four dimensions:

- Intellectual: In this dimension the motive for choosing a type of leisure expenditure is to learn or discover something.
- Social: In this dimension the motive for choosing a type of leisure expenditure is to make friends or create relationships.
- Competence mastery: In this dimension the motive for choosing a type of leisure expenditure is to master, challenge or compete in something.
- Avoidance: In this dimension the motive for choosing a type of leisure expenditure is to seek solitude or to relax.

In this thesis the Leisure Motivation Scale of Griffiths (2012) was used to measure the leisure motivation of the students, which is part of the motivation for co-creating and using the mobile application of NLroute.

2.1.6 Attitude

Attitude is a concept which has been heavily researched. Two of the most influential definitions of attitude are: ‘An attitude is a disposition to react favorably or unfavorably to a class of objects’ and ‘Attitudes are enduring systems of positive or negative evaluations, emotional feelings, and pro or con action tendencies with respect to social objects’ (Greenwald & Bajani, 1995). The first definition also mentioned in the book of Fishbein and Azjen (1975) in which the authors try to conceptualize the idea of attitude and make the idea measurable. In this book the authors opt that all indices of attitude are in fact derived from a single response–measure and that most single response measures are verbal in nature. In this measure the person is asked to judge an object, person or event. In a later article Azjen (1995) explains that measuring attitude over a single item explicitly works by asking respondents to report directly about their attitude towards an object, person or event. Fishbein and Azjen (1975) mention that not all quantitative scales where attitude is measured over a single item are valid. Only scales that place the concept on a bipolar affective dimension can be valid; in other words scales where two exact opposites are measured. Azjen (1988) mentions Plato’s three dimensions (cognition, affect and conation) of attitude as being the most popular classification of the concept. Cognition reflects to perceptions of and thoughts about an object, person or event. Affect relates to the feeling a person has regarding an object, person or event and conation reflects to the intentions and commitment towards an object, person or event.

The single response–measure scale of Fishbein and Azjen (1975) was used in this thesis to create questions for the interview guide that measure the attitude of the international students. Attitude is part of the involvement of international students (18–35yr.), who live in the Netherlands, of co-creating and using the application of NLroute. This will be further explained in ‘Chapter 3’.
2.1.7 The Visitor Journey Cycle
The Visitor Journey Cycle is described as the experience that a visitor has in their leisure expenditure. It concerns the experience of the visitor before, during and after a trip or visit (Flooren, 2012). Push and pull factors (2.1.8) are the first step in the Visitor Journey Cycle. The second step is the experience that a visitor has during his trip or visit; it concerns the satisfaction or dissatisfaction of the visitor. The final step concerns the phase of experience of the visitor after the trip. In this last phase the visitor can choose for another visit or refer it to friends or family if the experience was positive.

2.1.8 Push and pull factors
In an article for the ‘Current Issues in Tourism’ Prayag and Ryan (2010) describe multiple definitions of push and pull factors regarding destinations. By comparing these definitions the authors come to the conclusion that push factors can be described as escape, novelty, social interaction and prestige, while pull factors influence when, where and how people travel. These pull factors are the features and attractions of the destination itself that pull the visitor towards the destination. Push factors are therefore the motivations of people to go to a destination, whilst pull factors can be described as the expectancy of the experience the destination has for a visitor.
The simplification of Prayag and Ryan (2010) of push and pull factors regarding destinations was used in this thesis to analyze the findings of the interviews.

2.2 Relationship between the core concepts
The main concept in this thesis was the co-creation of value. In the conceptual framework of Payne et al. (2007) the experience that the customer has with a product has a direct relationship with the co-creation and the relationship experience design from the perspective of the producer/supplier. Payne et al. (2007) state that “planning for co-creation is outside-in as it starts from an understanding of the customer’s value-creating processes, and aims at providing support for better co-creation of value. Value co-creation demands a change in the dominant logic for marketing from ‘making, selling and servicing’ to ‘listening, customizing and co-creating’” (p.189). Co-creation of a new product therefore starts by looking at the perceived experience value of the customer; what does it have to offer to the customer? And how does the customer feel about the product? This understanding will help the supplier in co-creating the final product and customizing it to the needs of the guest. The perceived experience value exists out of three antecedents; motivation, involvement and knowledge (Prebensen et al., 2013). The feeling the customer has towards a product is part of its involvement with the product and can be measured with the proposed single-item measuring scale of Fischbein and Azjen (1975). The product in this case is a mobile application that contributes to experiencing a destination. The internal motivations of a visitor to go to a destination can be explained as the push factors, while the features of a destination that attract a person towards it are described as the pull factors (Prayag & Ryan, 2010). Visiting a destination is part of leisure expenditure; the push factors or internal motivations to visit a destination can therefore be categorized as leisure motivation and can be measured with the Leisure Motivation Scale of Griffiths (2012). The push and pull factors are the first step in the Visitor Journey Cycle (Flooren, 2010). The next step in this cycle is the satisfaction during the trip and the last one is the memories about the trip that a person has which can lead to return trips or recommendations to friends or family.
3. Approach to research

The objective of this research was ‘to give insight into the perceived experience value of using and co-creating the mobile application of NLroute by international students (18–35 yr.), who live in the Netherlands’. The research consisted of literature research belonging to sub question 1 and qualitative research belonging to sub questions 2–4. In the first part of this chapter the research objective and the research strategy, the data collection method, the sampling plan and the data analysis method are described. In the last part the operationalization of the research is described.

3.1 Objective and strategy

In this research the perceived experience value of international students (18–35 yr.), who live in the Netherlands for co-creating and using the mobile application of NLroute was tested. To test this, four sub questions were created; one relating to best practices in co-creation and the other three relating to the three antecedents of perceived experience value mentioned by Prebensen et al. (2013). The answer to the first research question was investigated with the use of desk research, while the other research questions were investigated using qualitative research. In ‘appendix II’ a visualization has been made of the research strategy related to the advice given to NLroute.

Below the choice for the types of research is further explained.

Desk research

Desk research is a relatively cheap and fast way of research. It allows the researcher to use the results of earlier researches from other researchers in order to answer certain research questions or sub questions (Fischer & Julsing, 2009). In this thesis, literature research was chosen in order to look for best practices in co-creation. The objective of the literature research was ‘to give insight into best practices in co-creation.’

Field research

In this research the reasoning behind each antecedent of the ‘perceived experience value’ by the students was investigated. Testing the reasoning behind a phenomenon is called exploratory research; it can involve either qualitative or quantitative research (Baarda, 2010). No prior knowledge to this variable was available before the research; when no prior knowledge is available to the background of a certain phenomenon, qualitative exploratory research is usually used (Verschuren & Doorewaard, 2010).

Qualitative research is used to investigate attitudes of respondents or to dig deeper into the reasoning of the respondents. It is also used to map needs, expectations, preferences and future developments (Fischer & Julsing, 2009). Preferences, needs and expectations regarding this product were mapped in this research in the form of the three antecedents of ‘perceived experience value’. To understand these preferences, needs and expectations more in detail, it was necessary to dig deeper into the reasoning of the population, therefore qualitative research was used. Quantitative research is used to find frequencies or to test hypotheses derived from theory, whilst qualitative research focuses more on the perceptions of people (University of Wisconsin, n.d.).

In this research theory to the matter was limited, qualitative research was therefore used to investigate the perceptions of the population more in detail.
3.2 Data collection method

In this research the chosen form of data collection method was ‘in-depth interviews’. Fischer and Julsing (2009) mention that by conducting interviews it is easier to control the response of the sample and questions that are unclear to the respondent can be explained in detail. Additionally, conducting interviews allow you to cover certain preselected topics, while the structure of response is not yet set. This allows the respondent to frame their own answer, which creates deeper insight into the perspective of the respondent (SagePub, 2006). This insight into the perspective of the respondent was important for this particular research, because it concerned the motivation and involvement of the population.

In–depth interviews in qualitative research are relatively open; there is a structure made beforehand regarding the topics of the interview and some questions might be pre formulated (Boer, Bouwman, Frissen, & Houben, 2005). In this thesis project the three antecedents were first operationalized into sub aspects. A visualization and explanation of this can be found in ‘appendix III’. Additionally, measurable indicators (MI) were created to make these sub aspects measurable. In ‘appendix IV’ a visualization of this process is shown. The sub aspects were used as topics and the indicators helped to pre-formulate questions for the interview.

An interview in which topics, questions and the sample size are defined beforehand, but in which the structure is open is called a ‘semi–structured’ interview (Ghauri, 2005). Semi–structured interviewing was therefore the method of choice in this research.

The open structure of ‘in–depth interviews’ allowed the interviewee to add additional topics to the interview that were relevant for this project. Interviews can be done by mail, telephone or in person (Chauri, 2005). In this research interviews were done in person where possible, if this was not possible then video–chat via Skype was used to communicate.

In ‘appendix V’ the interview guide can be found that was used for the interviews.

In this interview guide the sub aspects of the ‘perceived experience value’ were used as sub–topics. New topics were created to structure the questions efficiently.

3.3 Sampling plan

In this research the population consisted out of international students (18–35 yr.), who live in the Netherlands. The population was too large to investigate as a whole; therefore a sampling plan was created.

The creation of a sampling plan is usually done in quantitative research; however in qualitative research the consideration of a representative sample is also important. It is important to understand who are involved and which respondents are most relevant (Chauri, 2005). In ‘appendix VI’ an overview has been made of the personal information of the interviewees including; study, age, home country, location in the NL, no. of years in NL, hobby/hobbies and sports. Although, the goal of this research was to explore the ‘perceived experience value’ and not to test set hypotheses on different variables, a spread between different variables was maintained to make the sample more representable. Subgroups within the population can have an important effect on the answers of the interviewees (Fischer & Julsing, 2009). The studies and the home country of the students, as well as the place they live in the Netherlands, were perceived as possible variables that could have an effect on the answers, therefore
these belonged to criteria that were taking into account before the students were selected for the interview. This type of selection based on criteria is called purposive sampling (Northeastern University, n.d). Purposive sampling is a type of nonprobability sampling (William, 2006). In this research nonprobability sampling was used over probability sampling because of the perceived effect that the variables mentioned above could have over the answers to the interview questions.

The ten students that took part in the interviews were all from different countries, creating a spread in international perspective on the questions, making it more representable. The students were mostly studying Architecture or Tourism and Leisure management and mostly living in Deventer or in the area of Delft. A spread in these two factors could have made the sample more representable.

The students were chosen from the network at Saxion of the student conducting this thesis project, the social network of the student conducting this thesis project and the networks of Saline Verhoeven and Pnina Avidar at respectively Delft University and Fontys University of Applied Sciences.

In this research ten interviews were held. To make an estimation of the sample size, two different sources were consulted; the 'HBO-Kennisbank' and an article from the ‘UK National Centre for Research Methods’. In this article Baker and Edwards (2012) state that they advise students in the graduation phase to conduct around thirty interviews. Astinova (2011) states in her thesis project a total of twelve interviews conducted; in a project where desk research was leading. Contrarily, Broekroelofs (2009) has conducted eight interviews in a graduation project, where qualitative research was used. It is clear from these three sources that the exact number of interviews that should be conducted in qualitative research is nonexistent. To be in line with other thesis projects of Saxion University of Applied Sciences, ten interviews were scheduled, with the option of increasing this number if the saturation level was not reached.

The saturation level is the level when more data doesn’t lead to more information (Mason, 2010). In this research this level was reached after around eight or nine interviews; answers of the respondents became similar, bringing no new information; therefore the research was stopped after ten interviews.

Ten students is a relatively small number of students to make generalizations about the whole population. However, the main aim of this research was not to make generalizations possible, but to gain insight into the ‘perceived experience value’ of the product of the client. The answers to the interviews provided insight to the matter.

### 3.4 Data analysis method

The data in qualitative research is often classified or coded in order to analyze it (University of Surrey, n.d.). After the first interview codes were made to structure the answers given. These codes were not linked to existing theory; this type of coding is called open coding (Gallicano, 2013).

These codes were then categorized under the different sub-aspects of the three dimensions of Prebenssen et al. (2013); this type of coding, linking the answers to existing theory, is called axial coding (Gallicano, 2013). A list of all the codes and the categorization can be found in ‘appendix VII’. Fragments that have been placed together according to these codes can be found in ‘appendix VIII’.

In this thesis the data was analyzed on a higher level. A higher level refers to a more interpretive analysis; interpretations and assumptions are made about the data (University of Surrey, n.d.). After coding the interviews a summary of the results per sub-category of the three antecedents of the
perceived experience was made. Finally, the results were analyzed based on the theory of the theoretical framework of this thesis.
4. Best practices in co-creation

In this chapter literature is analyzed concerning best practices in co-creation. In the first part of the chapter companies that have been mentioned multiple times in literature regarding co-creation and have a type of co-creation that could be suitable for NLroute are listed. In the second part of chapter an analysis of the types of co-creation of the companies mentioned in the first part is made. Finally, the success factors of co-creation are listed in the last part of the chapter. The co-creation examples from the professional field can be used in order to provide NLroute with solid advice about the co-creation of value in their mobile application.

4.1 Companies using co-creation

In order to find best practices in co-creation the internet was searched for literature containing examples of co-creation. Only examples of companies that returned in multiple sources were used in the selection of literature. Besides this, only companies that have a type of co-creation that could be suitable for NLroute were selected. As mentioned in the theoretical framework, 4 types of co-creation, out of the 12 mentioned by Payne et al. (n.d.), have been selected that could fit the case of NLroute; co-conception of ideas, co-design, co-experience and co-production. The other types of co-creation and their explanation can be found in appendix I and are not applicable for a mobile application as a product. Companies that fit both descriptions are Nike, Lego, Starbucks, Dell and Volvo.

Nike

Nike started as Blue Ribbon Sport in 1964; it was created by Bill Bowerman and Phil Knight. In 1971 the company changed its name to Nike inc, a name given to the company by Nike’s first employee; Jeff Johnson (Business Insider UK, 2014). The company has grown from a small distributor for the Japanese shoemaker Onitsuka Tiger (Asics) to one of the largest companies in the world. In 2012 the company ranked number 26 Interbrand’s Top 100 Brands list (Dilling-Hansen & Hedegaard, 2014).

As Nike is looking for constant innovation in sportswear and sport attributes they have create NikeID. NikeID allows customers to customize a specific range of sport shoes; the customer can choose colors, a name to put on the shoe and materials that are used on the shoe (Dilling–Hansen & Hedegaard, 2014). Besides shoes also bags can be personalized on the website of NikeID (Nike, 2015).

NikeID is one way how Nike involves their customer’s in the creation of their product, linking more to co-design and co-production. Another way is the creation of a competition for a select group of customers to create a new shoe (Coates, 2009). At the basis of these elements for co-creation is the dialogue with the customer and listening to the needs of the customer (Coates, 2009).

Nike also created special NikeID studio corners in their shops. In these corners the customers can interact with employees and tell them about their customized wishes for the shoes of Nike (Najjar, 2013).

Additionally, competitions to vote for the customer’s favorite design and joga.com; a platform where football players can talk about football and upload videos of their skills, were set up by Nike as tools for co-creation. Finally Nike tries to help the customer after sales with sport advice and coaching (Najjar, 2013).
LEGO

LEGO was founded in 1932 and is a toy company famous for its plastic bricks with which you can build nearly anything (Dilling-Hansen & Hedegaard, 2014). LEGO has always been ‘customer-driven’ and has been looking for products to cater to their segments. The path to success of LEGO was not without setbacks. A classic example of a step that Lego made that didn’t lead them to success was to target a new segment; kids who wanted ‘darker ’ tech. LEGO designed a new Hero to create a new character driven product line, however kids didn’t respond well to the new action hero without any history or context (Nazlioglu, 2013).

In 1998 Mindstorms was created by Lego; a combination of the brick of LEGO and robotics technology and software. It allowed the customers of LEGO to create their own robots. As a result of Mindstorms, multiple online communities popped up where the customers of LEGO shared ideas for the creation of LEGO products. LEGO accepted these unofficial platforms and used them to generate ideas for products themselves (Dilling-Hansen & Hedegaard, 2014). LUGNET is one of these online communities, nowadays LEGO also uses this platform to be in direct contact with their end-users (Coates, 2009).

Additional to Mindstorms, Lego has created a software program (DesignbyME) with which the customer can design LEGO constructions himself. The designs can also be shared via this software. For a fee the design can be actually created, with the picture of the consumer on the package. Moreover, some of the designs area actually taken into mass production (Najjar, 2013)

Starbucks

Starbucks, one of the biggest coffee companies in the world has a business model where value is in experience (Coates, 2009). In 2008 Starbucks lost part of its Experience Culture due to rapid expansion, which lowered customer satisfaction (Najjar, 2013). As a result, the company has created My Starbucks Idea to make customers and employees discuss about their products and experience. Within the discussions Starbucks places 1 or 2 employees to generate new ideas for innovation and test satisfaction of products by their customers (Kamp, 2009). On the website mystarbucksidea.com anybody can create an account and add an idea to Starbucks’ products. It is possible to watch ideas posted by others and to react on these. The employees of Starbucks that are active at the online community are called Idea Partners.

Besides, being the host of discussions and taking in part in these conservations, these employees also bring the most popular ideas to the relevant departments. If these ideas are chosen for implementation the Idea partners also report back on the online community how the implementation of the idea is going. The implementation of these results in turn leads to a better satisfaction in the store (Najjar, 2013).

Dell

In 2005 computer company Dell generated a major setback as a result of a blog of Jeff Jarvis about the problems he had with a laptop of Dell and his frustrations about the customer support of Dell. The New York Times posted an article about this creating major damage to the brand Dell (Frankwatching, 2015). In 2007 Michael Dell decided the company needed to listen to their customers and created Dell Idea Storm. The idea to create this online community came for Starbucks’ My Starbucks Idea. The online platform created new ideas for the product development team of Starbucks as well as changed
the brands status in a positive manner; the customer got the idea that he was being listened to (Frankwatching, 2015). The platform resulted in a customized product and better satisfaction of the customers of Dell.

4.2 Types of co-creation
The four companies mentioned above are all innovative companies looking for new ideas. What they all have in common is the drive to involve customers in creating new products or generating ideas to improve their existing products. The online communities they have created to interact with their customers to share ideas and involve them in this process links to co-conception of ideas of the twelve types of co-creation mentioned by Payne et al. (n.d.). Nike and LEGO also involve their customers in the process of the design of their products. This type of co-creation links more to co-design; the customer helps designing the product that he eventually will use. LEGO supplies the customer with the bricks to build, however the customer can build whatever they want with the bricks, in this way the customers produce the product together with the company, which is called co-production. Starbucks doesn’t only sell coffee, but provides their customers with an overall experience. This experience is created by the employees together with the customers; co-experience.

4.3 Success factors in co-creation
The success of these companies nowadays is a result of a set of choices in the past. LEGO, for example, started by targeting the wrong segment and created success eventually by listening to the customers actually interested in their toy bricks and by involving them in the process of creating new products. In a similar way Dell created success after creating a community where their customers could be heard, after a long period of downfall. It is important to notice that this community is also a marketing tool; by giving the customer the idea that he will be heard, the overall satisfaction of the company improves. For these companies and most mentioned above, the most important success factor is placing customers at the heart of product innovation. As Coates (2009) stated co-creation is, when done right, the outsourcing of value innovation to the customers.

However, co-creation is not only possible at the product development stage. In fact, a key to success in value creation is dialog with customers at all stages of the value creation process. This envelops the process from idea generation for new products to customer support after sales (Najjar, 2013). When we look at the case of Nike, we see co-creation at the heart of most stages; NikeID and competitions at the ideation and product innovation stage, joga.com at the usage stage and coaching and advice as customer support.

In order to effectively apply co-creation at all stages of the value creation process, a transformation of culture within the company is necessary. Internal reorganization is important in order to get the right feedback and ideas from the customers to the right department. This requires flexibility and willingness to change (Najjar, 2013).

Co-creation starts inside, by letting employees take part in the decision making process on how the company should implement co-creation. This type of internal co-creation can counter any protest within departments about the type of co-creation (Najjar, 2013).
5. Results of the interviews

First, the interviews were analyzed with the use of open coding. Open coding is the labeling of data, where you put together parts of the answers of respondents that have a certain theme, which is not based on existing theory (Gallicano, 2013). Secondly, axial coding was used to put fragments together linking the answers in the interview to the different sub-aspects of the antecedents of perceived experience value according to Prebensen et al. (2013). Axial coding refers to identifying relationships between the answers based on existing theory (Gallicano, 2013). All the codes can be found in 'appendix VII' and all the fragments relating to the codes can be found in 'appendix VIII'. The interview transcripts with the corresponding coding and the audio files of the interviews are separately added to this thesis in the form of a CD.

In this chapter the results are shown according to the three antecedents of perceived experience value according to Prebensen et al. (2013); knowledge, involvement and motivation. For each sub-aspect of the antecedents the results are discussed, analyzed and citations from the interviews are used to clarify the results.

5.1 Knowledge

5.1.1 Expertise

Four students were able to mention parts of walking and cycling routes in the Netherlands; two of them mentioned a route from north to south across the entire country. One student mentioned that these routes can be found anywhere and yet another saw a map with routes along the road somewhere, but forgot where it was. One of these students also mentioned that he had heard about routes close to Tilburg, but that he couldn’t find information about it himself. Only one student mentioned ‘VVV’ as an organization that provides information about walking and cycling routes, the other students did not know the names of these organizations.

The knowledge of the students about the walking and cycling routes is limited. Some students have heard about some routes, but have no specific information to where they are and which organizations provide information about them. As one student phrased it: “I know that there are specially prepared and developed routes. Even here around Tilburg, somewhere in the north but there is scarce information about it, I cannot find it. Or if I find it, it is in Dutch” (respondent 8, male).

5.1.2 Experience

Eight out of ten students had experience with walking and cycling routes in the Netherlands. Each of these students, who had undertaken a walking or cycling trip in the Dutch landscape, replied affirmative on the question of whether they enjoyed their trip or not. Three students mentioned walking and cycling trips in the area of Deventer, Apeldoorn and Zwolle. One of these students also went on a cycling trip in the area of Valkenburg and another also mentioned a cycling trip on Ameland. Another student mentioned a walking trip in the area of Nijmegen.

Walking and cycling are mostly done in the area of Deventer, Zwolle and Apeldoorn by the students. The students didn’t name any specific routes they follow; “Actually I did not check or something, I just go there and see if it is convenient to rent a bike or something and I just rent it” (respondent 9, female).
All the students who had already visited the Dutch landscape before the interview (eight out of ten), answered that they are willing to go for a return trip. They also replied affirmative regarding the question if they would recommend the trip to friends, three students already did recommend walking or cycling in the landscape to friends.

Two students used ‘Google Maps’ as an application to follow routes in their leisure expenditure. One student mentioned ‘Runtastic’ as an application where routes can be created. Another mentioned ‘ASIC’; an application meant for camping, which also has set routes to follow for walking/cycling. A student from Colombia mentioned that in his home country there is an application which provides you with rewards for the kilometers you cycle; the rewards are in the form of discounts at local restaurants, for example. Other applications mentioned were specific apps for travelling in a city with information about attractions and activities in the city.

Only a few students have experience with the use of applications for walking and cycling routes. The applications used (Google Maps, Runtastic, Asic) are applications that show routes or where you can map your own route, without any specific information about these routes. Therefore the students have no particular experience with similar applications for leisure expenditure in the Netherlands.

5.2 Involvement

5.2.1 Attitude

All the students who visited the Dutch landscape before the interview (8) responded affirmative on the question if they enjoyed the trip. Both students who had not visited the landscape before the interview were positive about visiting it in their leisure time.

Six out of ten students mentioned that the Dutch landscape is attractive because it is flat, which makes it "easy to cycle" (respondent 3, female) and “you can see for a very long distance” (respondent 7, female). Besides this, also the cleanliness (3), safety (2), quietness (1) and the fact that it is very green (3) is important to the students. One student mentioned the fact that the Dutch landscape is fully organized as attractive because it is so different from his home country. Two other students shared the opinion that the difference with their home country is attractive. Some students also mentioned the variety in landscapes (2) and the water areas (2) as attractive. One student mentioned the small villages as interesting in the landscape, while another considered the wind, making it easy to cycle, as a characteristic of the Dutch landscape that is important. Also the fact that all areas are close together and easy to reach was mentioned by a student.

The landscape is attractive to the students, since the students who visited it enjoyed their trip in their landscape and the students that hadn’t visited are willing to go there. Cleanliness, safety and the fact that the landscape is green and flat are most attractive to the students. In their opinion these characteristics are different from the characteristics of the landscape in their home country. “It is very clean and flat, so you can bike and bike well, in Nepal everything is mountains, so here in Holland you can relax and bike” (respondent 5, Male).
All students are willing to use such a mobile application for their leisure expenditure in the Dutch landscape. Two mentioned that they would use it only if it is not too expensive, while one mentioned only to use it if it is completely free. It can be concluded that the students are positive towards using the mobile application of NLroute.

Of all the students interviewed, one gave a clear indication that he wouldn’t be willing to co-create the mobile application of NLroute. Two other students doubted if they would co-create such a mobile application, one of them stated that she would only do it if she could see a prototype and she thought it is going to be successful. The rest of the students all stated that they are interested in co-creating the mobile application of NLroute. The motivation for co-creation is explained in '5.3.2 Co-creation motives'. Therefore, it can be concluded that most students are willing to co-create the mobile application of NLroute.

5.2.2 Relevance
The students considered the mobile application to be relevant because it makes information about the routes and the surroundings easy accessible (5) and a GPS function (4) in the mobile application would make sure you don’t get lost. A student mentioned parts of the routes are missing sometimes; therefore this function can help. Current information about the routes is mostly in Dutch, according to another student. Also, the possibility to meet other people (1) was mentioned by a student. The students consider the mobile application to be relevant if it contains the functions mentioned above. There are two aspects that have an impact on the relevance of the application for the students; the online connection and information should be provided in English. Considering the online connection “you should think about how to maybe provide free Wi-Fi in this landscape” (respondent 4, female). Regarding the current information about routes in the Netherlands, a student said; "most of it is in Dutch, so I give up" (respondent 9, female).

5.3 Motivation

5.3.1 Leisure motives
Nine students mentioned travelling in the Netherlands as an activity they undertake during their leisure time. The students travel mostly to visit cities (6), but also to festivals (2) and excursions for their studies (1). Shopping is mentioned by four interviewees as an activity they do in their leisure time. Furthermore, the students mentioned spending social time with friends (5) and sports (hiking and cycling) (7) to be part of their leisure expenditure in the Netherlands. The cities that the students mentioned where their leisure activities take place are; Amsterdam (6), Rotterdam (3), the Hague (3), Utrecht (2), Roermond (2), Valkenburg (2) Eindhoven (1), Almere (1), Delft (1), Deventer (1), Zwolle (1) and Ameland (1). Four students mentioned that they travel to these locations by train, one student mentioned a trip to Ameland by boat.

Eight students mentioned relaxation or getting out of studies/school as motivation for leisure expenditure in the Netherlands. Besides this, students also mentioned exploring the cities and country (3) and learning about the culture in the Netherlands (5). Some students (4) also mentioned spending time with friends and making new friends as reasons for the activities in their leisure time.
Sports, social time and travelling are most important activities in the leisure time of the students in the Netherlands. Their leisure activities mostly take place in the bigger cities and the train appears to be their favorite way of transportation.

Four students stated that visiting the landscape is mainly done to enjoy the nature and three students mentioned exploring the country and learn about culture as their main motivation. Another motive mentioned is the opportunity to meet local/new people (3). Spending time with friends (3), sports (2), food (1), art (1) and the fact that it is cheap leisure expenditure (1), were also mentioned. Of the students who had not visited the landscape, one of them would like to explore the landscape by motor, while the other would like to go biking and visit the landscape before winter comes. The students sometimes mentioned multiple motives for visiting the landscape, for example one student said: "When I go on my own it is relaxation, but most of the time it is exploring the area because I have a project" (respondent 4, female). Another student mentioned "to get rid of stress, to relax myself and be alone" (respondent 5, male) as motivation to visit the landscape as well as "to learn something; to meet local people and be involved in Holland" (respondent 5, male). Learning about culture, exploring the country, enjoying the nature and spending social time are the most important reasons for the students to visit the Dutch landscape.

Reasons given for using the mobile application of NLroute were that it is more convenient than buying a book or printing a map (2), that the information is up to date (2) and it can give you advice about where to go (3). The students gave practical reasons for being willing to use the application, as one student stated "I miss it now" (respondent 8, male).

5.3.2 Co-creation motives
One student explained that he is not willing to co-create; the reason for this is the fact that the student does not have enough time to participate in these kinds of activities. He is interested in the concept of co-creation though; he believes that if other people help to co-create the mobile application, it will be of additional value. Three students mentioned that they are willing to co-create because it will result in a product that is interesting for them and from which they can benefit from it the future. Another added that he/she would be tempted to use the application and therefore wants to help. One student mentioned a reason for co-creation is that it can help make friends and it is interesting to participate in events and visit the landscape. Finally, a student added that it is important to see the results of co-creation, that the company should keep you motivated and should create guidelines on what they want from you. The students find their motivation for co-creation mostly in the extra value they get in return regarding the mobile application, as one student stated; "For me it is not important that I get paid, but for me it is more interesting to see how the company is designing something that involves myself and my role in there design and how I can contribute to their design with my own experience and in the future I can benefit from it" (respondent 2, male). One student mentioned a social reason for willing to help.
Four students believe they can help NLroute with the creation of value in the mobile application by sharing their knowledge and experience with them on what is important to students and travelers; what information and features should be in the application. Two students mentioned that they could share their experiences in the application with other users. Another student would like to help with the design of the mobile application, while another would be more interested in testing and making suggestions for the mobile application.

The students believe they can help co-creating this application by sharing their experiences and knowledge with the creators of NLroute and with other users. As one student phrased it: “The only way with my ability is to share my knowledge/experience, what I think about how a product should be designed or what should be in there, what feature, what is good and what not as a traveler” (respondent 2, male).

Seven students mentioned sharing experiences in the application to be an important type of co-creation for NLroute; two of these students mentioned that this can be done, for example, by uploading pictures. Six students mentioned a type of co-creation fitting NLroute is a platform where customers can share ideas about the routes and where they can be listened to. Also, the possibility to create routes or to change them or add parts to them themselves is interesting to two students. One student mentioned that the interaction between the users is most important for this mobile application. Finally, one student mentioned that they could create a competition to find the best route.

Regarding the type of co-creation that fits NLroute, most students mentioned multiple types to be possible; “A mix out of all of them; to share ideas, but also design the app, as I said with categories, how it looks, that is attractive – Co-production also, so that they can make adjustments and change Yes, also sharing experiences on it. Share my own experience for the app but also what kind of experience you have in the app, so people can read your experience as well” (respondent 3, female). The types that were mentioned most were the creation of an online community to share ideas, sharing experiences in the application and being able to create or adjust routes.

5.3.3 Needs
Considering the need for activities in the Dutch landscape, three students mentioned to be interested in watersports; boat tours, kayaking and surfing. Climbing (1) and running/jogging (1) were also mentioned as sports that could be interesting in the Dutch landscape. One student had seen an outdoor theater in the area of Nijmegen and was interested in these kinds of cultural activities in other areas of the Dutch landscape. Furthermore, picnicking (1), camping (1) and the creation of events (1) were mentioned as activities students are interested in.

Regarding the need for activities it can be stated that half of the students are interested in sportive activities, while the other five each mention different activities linking to their personal interest.

Five students mentioned the need for practical information; what you can do, what you can see, how you can go about and a GPS function that shows your location. Of these five two mentioned that it should be possible to receive suggestions based on your preferences: “I think it would be useful if you can choose categories. If you want culture, you get the culture things” (respondent 3, female). Of these five students three also mentioned the need for a list of the best or most popular routes.
Four students opt for a more social application where users can share pictures, add comments/tips, post reviews and chat. One of these students mentioned that you should be able to create a community with friends within the application where you can discuss the planning for doing a route together or where you can share routes that you followed with friends.

Two students believe that the routes should be flexible; you should be able to add parts to the routes that you like.

Other functions that were mentioned; historical information over different timeframes (2), sport features like a calorie calculator or speedometer (2), language (Chinese/English) (2) a rating of guides (1) and the location of bicycle repair shops (1).

Most students mentioned multiple functions that the application should contain. Most important features to the students are practical information with suggestions and a list of the best/ most popular routes, social features and flexibility to change or add parts of the route. "It should have an English version of course, it could be more flexible, maybe I am not an expert and if the application is not flexible, they just set up the whole route and things, you need to follow the route and go cycling– if I don’t follow that, you will be lost. If it can add some share function; I mean if I do travelling with my friends” (respondent 9, female); in this quote two of the three functions mentioned above are mentioned. Also the language feature is mentioned by this student.
6. Conclusions
In this chapter the research questions are answered. First the sub questions are answered in paragraph 1–4. Finally, the main research question is answered in the fifth paragraph of this chapter.

6.1- Sub question 1: What are best practices in co-creation?
Nike, Lego, Starbucks and Dell are companies that involve their products in the innovation process for creating new products and improving their existing products. These companies do not use the same type of co-creation, but have in common that they listen to the ideas of their customers and use these ideas for their products. Creating (online) communities to share ideas between users and employees ('co-conception of ideas'), involving customers in the design of the product ('co-design'), create a shared experience between employees and customers ('co-experience') and involving customers in the production of a product ('co-production') are four ways these companies use co-creation. To effectively make use of co-creation, customers should be involved in all the stages of the value creation process and employees within the organization should share the drive of the organization to implement co-creation (Najjar, 2013).

6.2- Sub question 2: What is the knowledge of international students (18–35 yr.), who live in the Netherlands, about similar applications in leisure expenditure and the routes through the Dutch landscape?
The knowledge about walking and cycling routes in the Netherlands of international students (18–35 yr.), who live in the Netherlands, is limited. The students have no specific information about the routes or the organizations that provide information about them. Although, they haven’t followed any specific routes, most of the interviewed students have visited the Dutch landscape for walking and cycling trips. The last step of the Visitor Journey Cycle; the ‘after’ phase, concerns the memories that a person has after a trip that can lead to a return trip or recommendations about the trip to friends (Flooren, 2012). In this case the memories of the students are positive about this experience because they enjoyed the trip and are willing to recommend the trip to friends. The students also have limited knowledge regarding similar applications about the Dutch landscape. Mobile applications that were mentioned by the students show routes or allow you to map your own route, without any specific information about these routes.

6.3- Sub question 3: What is the involvement of international students (18-35 yr.), who live in the Netherlands, regarding the co-creation and use of the mobile application of NLroute?
The students are involved with the Dutch landscape; cleanliness, safety and the fact that the landscape is green and flat are ‘pull factors’ (Prayag and Ryan, 2010) that attract the students to the landscape. The students consider using the mobile application to experience the Dutch landscape if it makes information about the routes and the surroundings easy accessible and if it has a GPS function. Important for the mobile application is that information should be provided in English and an online connection should be provided to access it. The students are willing to get involved with the mobile application and most of them are also willing to co-create it.
6.4- Sub question 4: What is the motivation for using and co-creating the mobile application of NLroute for international students (18-35 yr.), who live in the Netherlands?

In their leisure time in the Netherlands the students mostly play sports, spend social time with friends and they travel to cities. ‘Push factors’ (Prayag and Ryan, 2010) that drive the students to the landscape are their desire to learn about Dutch culture, to explore the country, to enjoy nature and to spend social time with friends. ‘Enjoying the nature’ and ‘exploring the country’ link best to ‘living the nature’ of the five motives of leisure expenditure of Goossen et al. (2009) and to ‘Avoidance’ or ‘Intellectual’ on the Leisure Motivation Scale of Griffiths (2012). ‘To learn about Dutch culture’ also links to the ‘Intellectual’ dimension on the Leisure Motivation Scale of Griffiths (2012), while spending social time with friends links to the ‘Social’ dimension.

They motivate their willingness to use the mobile application of NLroute with practical reasons; it is more convenient than buying a book or a map, the information is up to date and it can give you advice about where to go and what to see.

Practical information about the routes with suggestions and a list of the best/ most popular routes, social features and flexibility to change or add parts of the route are the most important functions the students are looking for.

The students motivate their willingness to co-create the mobile application of NLroute by the value they will get in return from a product that fits their interest and needs. Looking at the four motivators of co-creation of Hoyer et al. (2010), this links more to a ‘psychological’ motivation; the students are willing to help because of their intrinsic motivation to be satisfied with the end-result of the product. Co-creation can be done by them, in their opinion, by sharing their experiences and knowledge with the creators of the application. Other options that are possible, according to them, are sharing experiences within the application and being able to create or adjust routes. The first type of co-creation, sharing experience and knowledge with the creators, can be named as ‘co-conception of ideas’ from the 12 type of co-creation of Payne et al. (n.d.). Sharing experiences within the application links to co-experience and creating and adjusting routes links to co-production.
6.5 What is the perceived experience value of using and co-creating the mobile application of NLroute for international students (18-35 yr.), who live in the Netherlands?

The students are in general willing to use the mobile application and are willing to help co-creating value in the mobile application. The value they see at the moment is the contribution it will make to experiencing the Dutch landscape by making information about routes easy accessible and by providing the students with suggestions on where to go and what to see. This is important to them because current information about routes in the Dutch landscape is often in Dutch or difficult to access for the students, resulting in limited knowledge about these routes for students. Additional functions like a list of the best/most popular routes, social features and flexibility to change or add parts of the route would bring extra value in the application for the students. They also believe they can help themselves with creating additional value in the application by sharing experience and knowledge with the creators, sharing experiences within the application with other users and by creating and adjusting routes themselves. The value they see in this process of co-creation is a product that fits their needs and helps them experience the Dutch landscape in a way that fits them.
7. Discussion
In this chapter the concepts of ‘validity’ and ‘reliability’ are discussed and related to the research of this thesis project.

7.1 Validity
Validity relates to the chance of systematic errors that can have an effect on the results of the research (Fischer & Julsing, 2009). Three types of validity are known in research; internal, external and construct validity (Fischer & Julsing, 2009). Below these types of validity are explained and related to the research of this thesis project.

7.1.1 Internal validity
With internal validity we check if there might be an alternative explanation for the results or the relationship between the results (Fischer & Julsing, 2009). Internal validity concerns the conditions under which the research was done (Casady, n.d.). To ensure the internal validity of the measurement procedure, the students were always interviewed alone and in a quiet environment. This was done to make sure they did not feel pressured to answer in a ‘socially desirable’ manner.
Furthermore, before every interview the researcher explained what the research was about and explained the central topics of the research, after this explanation the researcher always asked the interviewee if the explanation was clear to make sure every interviewee understood the central concepts. The researcher also asked the interviewee to ask questions during the interview if anything was unclear.
After the first two interviews of the research, the researcher asked the interviewees if there was need for adjustments to the interview guide. The first two interviewees didn’t feel there was need for adjustments as they thought the guide with the questions was clear and well structured.

7.1.2. External validity
External validity concerns the degree to if the results of the research can be generalized for the whole population (Fischer & Julsing, 2009). Shenton (2004) argues if generalizations in qualitative research are possible; some researchers believe it is possible, while others don’t believe it is possible. Although, results can differ in qualitative research as a result of the context in which the research is done, it doesn’t mean that the results are untrustworthy; it just reflects multiple realities (Shenton, 2004). It is therefore important to understand the context in which the research is done, when assessing the results. In this research ten students were selected, this is a relatively small number of students to make generalizations about the whole population. However, the main aim of this research was not to make generalizations possible, but to gain insight into the ‘perceived experience value’ of the product of the client. These interviews provided this insight into the matter. The insight created a perspective for NLroute to be able to design their product for the segment. The spread in home countries of the students created a wide range in perspectives on the matter. However, even with this wide range of perspectives, after eight or nine interviews answers still became similar, reflecting a saturation level. In future research on the topic a wider spread between studies and area where the student lives in the Netherlands are advised to look for variations in the results with this research.
7.1.3 Construct validity
Construct validity relates to if the research measured what was intended to be measured; it relates to the way of measurement (Fisher & Julsing, 2009). First of all, a critical view of the operationalization is important. It is important that the operationalization of the research covers the entire topic (Fisher & Julsing, 2009). In this research the general topic is the ‘perceived experience value’. The topic has been operationalized with the help of the theory of Prebensen et al. (2013). The sub aspects of the three dimensions of perceived experience value according to Prebensen et al. (2013) have been translated to measurable indicators related to this particular subject. The sub aspects have been used as sub topics in the interviews to understand which answers to which question relates to what sub aspect of the three dimensions. Using these sub-aspects in the interview made sure that the interview followed the structure of the theory and that answers eventually could be translated back to the theory of the three dimensions of perceived experience value as stated in the research questions. Another factor of construct validity is the expectation the researcher can have before the research (Fisher & Julsing, 2009). These expectations can influence the results if the researcher, for example, adjusts questions to receive an answer that suits his expectations or if the researcher interprets the answers in a way that suits his expectations (Fisher & Julsing, 2009). In this case the researcher used the structure of the interview guide with the precise questions as much as possible to make sure that these expectations were not taken into the interview. The results of the interviews actually were opposite to the expectations of the researcher. For example, the researcher expected that the students wouldn’t be willing to use the application or co-create the application; the opposite is true. Therefore, it can be concluded that these expectations had no effect on the result of the interviews.

7.2 Reliability
Reliability is the degree to which the results are independent of coincidence (Fisher & Julsing, 2009). Below three types of reliability are explained and related to the research of this thesis project.

7.2.1 Reliability of data collection method
The data collection method should be clear and specific in order to ensure the same results when the research is reproduced (Peters, 2005). In the case of this research this means that every interviewee should understand the questions and instructions and that these questions and instructions follow the same structure for every interview. Therefore before the interviews an introduction with an explanation of the core concepts was created, which can be found in ‘appendix IX’. To ensure the reliability the researcher stuck to these instructions and to the structure of the interview guide. Furthermore, follow up questions were written down before the interviews in order to follow the same structure in every interview, so that the reliability of the interviews was enlarged.

7.2.2 Reliability of sampling plan
A sampling plan is reliable when the same results will follow when the research is repeated with a different sample (Peters, 2009). Reliability concerns the accurate representation of the total population in a research (Golafshani, 2003). In the case of this research a relatively small group out of the total population has been chosen for interviews. In order to test the representability of the participants the researcher stopped the research after the saturation level was reached; after eight or nine interviews answers became similar relating to the saturation of answers. The question that follows is if new
information would have appeared if another sample was selected or if more students were selected for the interviews. The sampling plan is therefore not representative for the whole population, however by reaching a saturation level the sampling plan became more reliable and the insights are therefore valuable for the client.

7.2.3 Reliability of data analysis method
It is important that the analysis of data leads to similar results if repeated by a different researcher. The interviews of this research have been recorded and transcribed; the records and transcriptions can be found on the CD attached to this project. This procedure of analyzing the data is more reliable than for example making notes during the interviews and summarizing these after the interviews. The codes that were used can be found in ‘appendix VII’. The axial codes follow the theory of the theoretical framework of this project, linking the data to the theoretical concepts, creating stability in the analysis of the data. Of course the selection of fragments to each of these codes is still partly subjective. However, the theory has been used as much as possible as a structure for analyzing the interviews to ensure reliability of the data analysis method.
8. Advice
In this chapter the objective of the advice is first repeated. Furthermore, the possible options for advice are explained. In the next section the options are analyzed based on criteria that are explained in the same section, also the choice for type of advice is explained. In the next part the transformation of the application is explained by explaining the current situation of the application and describing a future scenario. To come to this future scenario the implementation of the advice is explained according to the PDCA cycle. Finally, the financial implications of the advice are described.

8.1 Objective
In the theoretical framework of this thesis, the conceptual framework for the co-creation of value by Payne et al. (2007) was described. From this conceptual framework it has become clear that to co-create value the supplier of a product should look for co-creation opportunities and should customize the product to the needs of the chosen segment. In this thesis project the product is the mobile application and the segment is international students (18–35 yr.), who live in the Netherlands.
The objective for the advisory part is therefore to outline opportunities to co-create the mobile application and to describe how NLroute can customize their mobile application for the segment in order to co-create value with and for international students (18–35 yr.), who live in the Netherlands.
The corresponding question that belongs to the advice is the following:
How can NLroute co-create value in the mobile application with and for international students (18–35 yr.), who live in the Netherlands?

8.2 Possible options
The advice to NLroute is given in two ways; how to customize the mobile application and how to co-create it together with the segment. Results from the interviews are used to understand how to customize the mobile application; especially the sub aspect ‘needs’ of the antecedent ‘motivation’ gives insight into what students are looking for in an application. The results are also used to look for co-creation opportunities regarding the mobile application; especially the sub aspect ‘co-creation motives’ gives insight into this. In the literature research four types of co-creation were selected that could fit the product of NLroute; co-conception of ideas, co-production, co-experience and co-design.

Below a list is made of three possibilities for customization with a corresponding possibility for co-creation. In this list the combination of the type of customization and co-creation is further explained. As a result of the literature review and the interviews one type of co-creation has been chosen as essential and will be added to the chosen alternative from the list below; co-conception of ideas. In part ‘8.3.3 Choice of type of advice’ the reason for using this type of co-creation is further explained.

1. Open application – ‘Co-production’
Flexibility is important to the students. The possibility to change routes, create routes and add new parts to routes were three ways mentioned how students would be looking for flexibility in such a mobile application. By customizing the application to be more open with these functions, it would allow the students to adapt these routes and add information about them themselves. The co-creation opportunity that links to this from the literature research is co-production.
In the results of the literature research the example of LEGO is mentioned, where customers can build what they want with the bricks of LEGO, in this way the end product is ‘co-produced’; LEGO delivers the bricks and the customers build the end product. In the theory co-production is explained as two or more actors that produce (part) of the offerings of a company together (Payne et al., n.d.). In this open application the end product will be ‘co-produced’ in the sense that NLroute provides the basic structure, routes and information in the application and the users can change these to their own likings.

2. Social application– ‘Co-experience’
Social features that were mentioned by the students were the possibility to share pictures, add tips and comments, post reviews and chat with other users. By customizing the application with these social features, the students can share experiences within the application. The co-creation opportunity that links to this social application is co-experience.

In the literature review the example of Starbucks was mentioned, where drinking coffee becomes a shared experience between employees and customers. The product you buy from Starbucks is not just the coffee; you visit them for the experience. In the case of this application the experience would be shared between the users of the application. Furthermore, some students mentioned that they are willing to learn about culture in their leisure time and are willing to meet new people. A way to provide them with both these needs is by integrating local tour guides in the application. These tour guides can be contacted within the application for a tour. The tour guides will be local volunteers, who are interested in meeting international people and showing them the area. With the new functions in this more social application users would also be able to meet other users, creating a shared experience of the trip in the Dutch landscape.

In co-experience actors involved have multiple encounters creating a shared experience (Payne et al., n.d.). In this social application these encounters would be in the social functions (chat, reviews, picture sharing and posting/reading comments) and in meeting local people and other users.

3. Profile based application– ‘Co-design’
Some students mentioned the need for specific suggestions. A way to do this is creating different profiles where the users can choose from (eg. cultural/historical/architectural) and based on this the user will receive suggestions for routes and activities in the Dutch landscape. A list of the best/most popular routes was also described as a useful way of suggestions. Customizing the application in this way also provides an opportunity for co-creation. In the literature the example of co-design is mentioned where customers of Nike can choose colors and elements for their shoes with Nike ID. In this application the user can choose the profile he wants and within this profile it is also possible to choose colors and elements in the application to design the application to the wishes of the users. In the theory of Payne et al. (n.d.) co-design is explained as “two or more actors sharing their respective design perspectives”. In this type of profile based application the user would choose its own colors, profile and is able to shift the design of the different functions in the application. These options of design elements would be provided by NLroute; in this way they give the user the possibility to implement his or her ‘design perspective’.
8.3 Analysis of the options for advice
In this section first the criteria are mentioned on which the options for advice have been rated. Finally, the ratings are shown and the options are analyzed based on the criteria and the choice for the best type of advice is explained.

8.3.1 Criteria
To come to the best possible advice from the options mentioned above, certain criteria have been set to which the options are analyzed.

Fitting needs
The advice should fit the needs of the students as mentioned in the interviews.

Feasibility
Implementing an advice can take time and money for the organization. Feasibility relates to the question if the advice can be managed within a reasonable timeframe for a reasonable amount of money.

Alignment with mission
The advice should fit the mission of Nlroute in order to create a product that they support.
The mission of Nlroute:
*NLroute consists of seven routes, which take the visitor through the Dutch landscape beyond the known tourism attractions. The routes show the rich variety in landscape and highlight the relationship between landscape and Dutch identity (Nlroute, n.d.).'*

Level of innovation
In order to create a mobile application that stands out from other application about leisure expenditure in the Dutch landscape, the mobile application should be innovative.

8.3.2 Analysis of the options
Below the criteria that the options are assessed on are rated between 1–5; 1 being extremely low and 5 being extremely high.

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<th>Needs</th>
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<tr>
<td>Social – ‘Co-experience’</td>
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<td>3</td>
<td>3</td>
<td>4</td>
<td>13</td>
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<tr>
<td>Open – ‘Co-production’</td>
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<td>1</td>
<td>5</td>
<td>10</td>
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<tr>
<td>Profile – ‘Co-design’</td>
<td>2</td>
<td>4</td>
<td>3</td>
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Figure 8.1 Assessment of criteria
Four out of ten students mention the need for a social application. Such an application requires additional functions like chat, reviews, picture sharing and being able to add tips or comments. These functions will take time to implement, but are feasible within a reasonable timeframe. The social application links to the mission because NLroute wants users to experience Dutch identity; meeting up with local people can help users to experience this in a unique way. Social applications exist, however few exist regarding travelling and definitively regarding travelling in the Dutch landscape; therefore such an application would be innovative.

2. Profile based application – ‘Co–design’ Score: 11
Two out of ten students mention the need for suggestions based on a chosen profile. Such an application is easily feasible; the information and the routes are already there, NLroute just needs to sort it in different profiles. This will take time, but it easier to implement than creating new functions in the application. An application based on profiles aligns with the mission in the sense that users can get the information that is interesting to them about the Dutch landscape and identity. In terms of innovation it is not extremely innovative; travelling applications often have the possibility to choose from different categories.

3. Open application – ‘Co–production’ Score: 10
Two out of ten students mention the need for a flexible application where routes can be changed or created to their likings. Such an application is complicated because there needs to be thought of a way to allow the users to add and change routes, while the application still maintains a certain structure. Therefore, feasibility for such an application is low. The balance between what is created by NLroute and what is created by the users is difficult to find for such an application. If the information and the routes are created mostly by users, NLroute wouldn’t be able to make sure the routes highlight the relationship between landscape and identity, which is part of their mission. Such an application would be very innovative; traditional applications for travelling usually concern destinations and information picked by the creator of the application.

8.3.3 Choice of type of advice
According to the scores given on the set criteria in the section above, the choice has been made to advice NLroute to customize the application to a more social application with opportunities for co–experience. Additional to the functions mentioned earlier also the ability to rate routes and see the rates of routes is added to the advice; since this has been mentioned in the interviews as well. It was part of the 3rd option ‘profile based application’; however it would also fit within such a social kind of application. From the literature review it is clear that co–creation is successful when customers are involved in different steps of the production process, moreover the most successful companies all have online communities where customers can share ideas about their products with the creators. The students in the interviews explained that they believe they can help NLroute by sharing ideas about the application with NLroute; this can be done either via an online community or as a function in the application. This second step of co–creation that is part of the advice is co–conception of ideas. An opportunity for this type of co–creation is integrated in the application by adding a part where users can immediately contact NLroute with feedback. A visualization of the advice is shown in ‘Figure 8.2’. In the following sections the implementation of the advice is further explained.
Add the following functions to the application: chat, ability to post and see comments, ability to post and see pictures, ability to post and see reviews and comments and ability to rate and see the rates of the routes
Add the ability for locals to give tours to the users of the application
Add the ability to contact NLroute in the application with feedback

Figure 8.2 Visualization of the advice

8.4 Transformation of the application

In the following section the current situation of the mobile application is first explained. After this a future scenario, in which the advice for the mobile application is implemented, is described.

8.4.1 Current situation

In ‘appendix X’ the current situation is visualized. The general set-up NLroute uses for the application is a standard design from the company ‘7scenes’. NLroute pays tuition to this company for using this design and the services of changing parts in the application to their needs or adding parts to it.

The first time a user opens the application he/she will receive the initial instructions on how the application works. After this a log-in screen is shown; the user can log-in with his/her account or create an account to log-in. The user logs-in and the home screen opens up. The home screen is the ‘program’ function and is part of the five functions that the user can choose; program, routes, map, my routes and information. In the ‘routes’ function the user selects a route, this route will then be available under the ‘program’ function; in this function the user can find information and instructions about the route. The ‘map’ function shows the route in a map of the area. All routes are downloadable and then offline available under ‘My routes’. In the ‘information’ section there will be general information. Some of the five functions mentioned above have sub-functions, which can be found on top in the application. At the moment this is the general set-up of the application.

8.4.2 Future scenario

Below the future scenario of the application is explained per function; two new functions are added to the application; ‘Chat’ and ‘Contact’.

1. Routes
The home screen will be the ‘routes’ function instead of the ‘program function’. All the routes will be shown with the ratings of other users next to them. The ratings will be shown in a zero to five starts system; zero being low and five being high.

2. Program
In the ‘program’ function the route that is selected is shown. Additional to the sub-functions ‘story’, ‘map and ‘instructions’ of the route there will be three more sub functions within this ‘program’ part; ‘reviews’, ‘comments’ and ‘pictures’. In the ‘review’ section the user can read reviews about the routes from other users. In the ‘comments’ section comments from other users about the routes are shown, furthermore in the ‘pictures’ section the user can see pictures from other users from the route. For
each of these three sub functions there is the possibility to share your own experiences; when you are in the ‘review’ section for example, there will be a button ‘add your own review’. Additionally, you can add comments and pictures to the routes yourself. Finally, in the beginning part of the ‘program’ function there is the possibility to rate the route yourself.

3. Map
Where the map first only showed the route as a part of the local area, it now also shows other users in the area. It is possible to click on a user; the application will tell you the gender, age and home country of the other user. If you think this person is interesting to meet, you can send him a ‘chat message’. This chat is then opened in the ‘chat’ function. On the map you will also see local people in the area that are willing to show you a part of the route and tell you something about the area. You can also send these a ‘chat message’ and the chat will open in the ‘chat’ function. With them you can discuss if they are available and what part of the route they can show you. These local people are not part of the organization of NLroute, but they are volunteers that have contacted NLroute to be shown in the application. Since they are volunteers payment is not necessary, but is optional if people like the tour of the local.

4. My routes
This section stays the same and will still show you the routes you downloaded to use offline.

5. Information
This section stays the same.

6. Chat
The ‘chat’ function is new. As explained before it starts chat conversations between users and local people if they are selected in the map. Additionally, there is a search sub function where you can search for the username of other users. If you know for example the username of your friend you can contact him via the chat to discuss when to meet up for a trip in the Dutch landscape.

7. Contact
The ‘contact’ function is new. In this function the user can contact NLroute to share ideas and knowledge about the routes and/or the application. This section will first show two elements; comments about routes and comments about the application. The user can choose one of these options and then type his/her comment in a text bar and send it to NLroute.

Visualization of the adaptations
In ‘appendix XI’ a visualization was made of all the adaptations in the application; ‘figure 8.6–8.8’ shows a visualization of the first two screens and the new function bar in the updated application and ‘figure 8.9’ shows a general overview of all new functions and elements in the application.
8.5 PDCA cycle

The PDCA cycle is “a concept of continuous improvement processes embedded in the organization’s culture” (Sokovic, Pavletic, & Pipan, 2010, p.478). The cycle exists of four steps; Plan, Do, Check and Act. The cycle starts with ‘Plan’ and ends at ‘Act’; since it is a continuous process the cycle then starts at ‘Plan’ again (Sokovic et al., 2010). Below the implementation of the advice for NLroute is explained per step of the PDCA cycle.

8.5.1 Plan

In this initial phase opportunities are recognized and plans for change are made (ASQ, n.d.). In this first phase the plans of new functions, sub functions and elements as explained in ‘8.5.2 Future scenario’ are discussed with the creator of the application; 7scenes. On the website of 7scenes it is mentioned that custom features to the application are discussable (7scenes, n.d.). The initial release date of the application will be the 15th of October during the first try-out of a part of a route of NLroute. Although, at the moment it is unclear when the entire platform will be launched, a timeframe is formulated for these adaptions to this application to be implemented. Together with 7scenes these adaptions should be done and the application should fully function three months after the initial meeting to discuss the adaptations. Furthermore, as stated in the results of the literature research, co-creation starts from within; employees should share the drive to co-create the product (Najjar, 2013). When the new adaptions are ready the users can send comments to NLroute for feedback on the routes and the application. In order to effectively make use of these comments they should be analyzed. One employee of NLroute can be in charge of weekly analyzing the comments; the most important comments or the most mentioned comments can be discussed in evaluation meetings of NLroute. Finally, a section on the website should be created where locals can contact NLroute to become a local tour guide as mentioned in ‘8.5.2 Future scenario’. One person of NLroute should be in charge of collecting the information of these guides and forwarding it to the application.

8.5.2 Do

In this phase the plans made in the previous step are carried out. In this phase 7scenes will adapt the application to the needs of NLroute, one employee is appointed to be in charge of the feedback of the users of the application and one employee is appointed to be in charge of registering the locals in the application. Additionally, a section on the website of NLroute is created by NLroute, where locals can register to give tours. Finally, the discussion of comments, provided by the users in the application, is placed on the agenda of future meetings.

8.5.3 Check

In this phase the results are reviewed and learning points are identified (ASQ, n.d.). In this phase the application should be adapted and checked to see if it is functioning according to the scenario described in ‘8.5.2 Future scenario’. Furthermore, a review is made to if the comments provided by the users are usable. Finally, NLroute should check whether users make use of the local tour guides.

8.5.4 Act

In this step lessons learned in the previous step are used to take action on (ASQ, n.d.). If the application is not functioning completely according to the future scenario, a new meeting with 7scenes should be created to discuss what to change to optimize the application to this scenario. Furthermore,
important feedback from users discussed in the meetings should be used in future plans to improve the product. Finally, if users don’t make use of the local tour guides, NLroute should review why this and look for ways to improve the situation and bring users in contact with locals.

8.5.5 Summary of PDCA Cycle

Below a summary is made of the steps mentioned in the PDCA cycle.

<table>
<thead>
<tr>
<th>Step</th>
<th>Plan</th>
<th>Do</th>
<th>Check</th>
<th>Act</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Discuss adaptations with 7scenes</td>
<td>– 7scenes adapts the application</td>
<td>– Application fully functioning?</td>
<td>– If necessary host a new meeting with 7scenes</td>
</tr>
<tr>
<td>2.</td>
<td>Feedback will be generated through the application and used to improve the application and the route</td>
<td>– Appoint employee to analyze comments</td>
<td>– Comments usable?</td>
<td>– Use comments to improve the application and the routes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>– Analyze comments</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>– The most important comments are discussed in meetings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Users will be able to meet local tour guides via the application</td>
<td>– Add a section to the website where local tour guides can sign up</td>
<td>– Users make use of tour guides?</td>
<td>– If necessary think of new ways to bring users in contact with locals</td>
</tr>
<tr>
<td></td>
<td></td>
<td>– Appoint employee in charge of adding tour guides</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 8.10 Summary of steps in the PDCA cycle
8.6 Financial implications
NLroute is a startup organization that is still looking to define their business model. In ‘appendix XII’ a proposed type of organizations is shown that is possible for NLroute. This type of organization is an ‘institution’ and according to NLroute this would be the ideal type of organization for them (Saline Verhoeven, personal communication, October 8, 2015).

The first figure shows the general structure as an institution; third parties provide input for their platform and NLroute sells contracts to marketing organization, adoption companies and to area controlling organizations. In this case NLroute would sell the rights to export the products to these three types of organizations. The organization itself would be in control of the content of its products, the innovation in their products, keeping the products up to date and to look for new partner and sponsors. Third parties would help them by providing input for their products (information, advice etc.).

8.6.1 Budget
NLroute has a total budget of €1,400,000. Of this budget 60% is available for the development of the content of the products and keeping the application up-to-date and innovating the application. That is a budget of €840,000. No specific details are yet available to how NLroute will divide this budget (Saline Verhoeven, personal communication, October 8, 2015).

8.6.2 Costs and revenues
The three steps mentioned in ‘figure 8.10’ can result in costs for NLroute. First of all, NLroute has a contract with 7scenes regarding a general structure of the mobile application. Adaptations in the application are discussable; however the application is still in the ‘demo’ phase, it is unclear what the application would look like exactly, therefore no information can be given regarding additional costs of extra functions in the application (7scenes, personal communication, October 7, 2015). The second step, analyzing the feedback of the application, is done by one of the members of the organization of NLroute. The third step, retrieving the information from the locals and forwarding it to the application, is also done by one of the members of the organization of NLroute. At the moment these members do not get paid and there are no plans for salaries in the future (Saline Verhoeven, personal communication, October 8, 2015).

As stated before in this chapter, the business model of NLroute is still unclear. NLroute therefore hasn’t exactly defined their revenue streams yet. If they will evolve into an ‘institution’ they will generate revenue for selling the contracts to export their products to other companies. NLroute also stated that the application could generate revenue in the future (Saline Verhoeven, personal communication, October 8, 2015); however, it is unclear if this is by direct payment of the users or by revenues of advertisements within the application. The co-creation of value for the segment will result in more users from the segment ‘international students’, since according to the results of the interviews, they are willing to use the application in their leisure expenditure in the Netherlands. The extra users can lead to extra revenues from advertisements in the application because usually companies pay more if the reach (amount of views) is larger. With more users it can also become more attractive for other companies to buy a contract of NLroute to export their product, leading to additional revenues.
Afterword

Day– to–day practice

It took me a while to find a thesis project, which delayed the start of my thesis semester with one quarter. I applied for this project which was open in ‘Our Saxion World’ with a strong motivation letter. However, in the first meeting with Mr. Flooren and Ms. Ruiter I had to acknowledge the fact that I didn’t prepare theoretical background for this assignment. When asked about some theories, I couldn’t respond with a relevant answer, however they still saw potential in me. Mr. Flooren stated: “I think up to now you have studied with a relative ease, it is up to us to push you to deliver quality work”. At the beginning I still didn’t see this myself, in result my ITP was rejected because it was not consistent enough. Although the project was not easy and it was difficult to find a clear structure (based on theory) in which I wanted to work, I should have put in more effort at the beginning. Eventually I passed the ITP on time, however at the TPD exam the same event occurred; I took the exam lightly and didn’t pass the first time. In my first attempt for the Thesis Proposal I worked on the different chapters separately, which made the project inconsistent; the theory, research and approach to advice didn’t follow the same structure. With the help of Mr. Theunissen I decided to change the Thesis Proposal entirely for the next exam. At the base of the Thesis Proposal should be a clear theory that I would operationalize to an interview guide and that could give form to the advice I would give to NLroute. I found this theory in the concepts of ‘co–creation’ and ‘perceived experience value’. After reading through many different papers about these concepts I came to a new structure with these concepts at the basis. In the next TPD exam I almost had this view of structure clear, however it was not completely consistent yet. My examiners were impressed with the use of theory and asked me to work it out a bit further, resulting in the passing of this exam. Looking back at this initial period in the semester I see some learning points. First of all, at the beginning I was mostly developing the project by myself; I didn’t ask for enough feedback. I had the possibility to ask feedback from my examiner as well from the contact persons of the HBS Research Center. I did consult them sometimes; however with more intensive contact with these stakeholders, I could have come to a clear structure sooner. Moreover, I took the assignments too lightly; I did not put in enough effort to come to a consistent Thesis Proposal, for example. In the first attempt I didn’t do enough literature research for my theoretical background and I did not check other thesis projects to understand how I could form my advice. In general the learning point for me is that intensive reading is sometimes necessary in order to start such a large project and that perspectives of other people can help you develop your own ideas. A strong point that I can mention about this initial period was the fact that I was flexible; I failed the initial TPD and I was flexible enough to turn it around completely and look for a different angle.

During the rest of the semester I had learned from the initial period and I asked for more consults with my examiner and with the contact persons of the Research Centre. I also had more contact with the client. The results of this was that I could use the different perspectives to keep a structure that kept the different stakeholders satisfied, for example; I used theory provided by the HBS Research Centre in my theoretical background and I developed the interview guide with their feedback. This allowed them to add parts in the interview guide that were interesting for them; an example of this is the question about what the students consider to be most attractive in the Dutch landscape. I also gave the client the possibility to assess the interview guide, allowing them to see what was going to be researched in the interviews. The structure as proposed in the Thesis Proposal gave me a clear guideline through the
rest of the semester. At the end of the semester I was rushing through some of the parts of the thesis project. I created, for example, a chapter with the results; however I didn’t discuss how I would do this before with my examiner. This resulted in a chapter that was not up to standard and where I had to change a lot. The same counted for the chapter about the literature review. I wanted to work too rapidly without enough considerations before I started writing. A learning point here is that if I would have discussed the structure of these chapters before with my examiner or the HBS Research Centre, I could have worked more effectively, which would have saved me some time. A positive point to mention is the time planning; the planning made in the proposal was realistic and gave me enough time for every part of the project. I also made clever use of my network and that of the client to reach students to interview.

In general I think I should take more time to structure the different parts of such a project before I start and consult more channels (contacts and other projects), so that I have a clear structure when I start writing. I should also read intensively into the theory before using it in practice. In a similar project in the future I would still make use of the way of time planning of this project because it was effective and realistic.

**Value for the industry**

At the start of the thesis project I have done literature research in order to find out what international students do in their leisure time in the Netherlands; however I couldn't find any sources of quality. The results of this research can therefore be valuable for the industry because they are unique. The results outline the fact that international students like to travel in the Netherlands; which can create opportunities for companies in the industry. The students mention that information about routes in the Dutch landscape is in general in Dutch or they can't find it all. They are willing to visit the Dutch landscape, but might not visit some areas because of this lack of information. To know this can be valuable for local companies in the area of the landscape; if they make sure they target this group with the right information, they might increase their customers.

The fact that these students are in general mobile could also be an opportunity for companies to organize specific travels in the Netherlands for international students.

Also, the need for open and more social applications can be interesting results for companies in the industry.

Finally, the students see potential in co-creating and are also willing to co-create; for companies in the industry this can be a way to involve this group in the creation process of their products.

Off course the research only involved ten international students; in order to come to a more reliable conclusion on the results mentioned above a larger group of international students can be researched. Furthermore, research can be done into the different characteristics of international students; for example, if the home country of the student has an effect on the evaluation of the Dutch landscape. Other variables that could have an effect and that can be researched are; study, gender and the area in the Netherlands where the student lives.
Personal value
This thesis has both been challenging and interesting for me. Challenging for me was to find a structure based on theoretical knowledge that could support the whole thesis. Also, interviewing the students was a new experience for me that was challenging, however that I enjoyed. Managing all the interest of the stakeholders and communicating with them, was challenging and also a nice way to improve my management skills. The interviews with the students and the results were interesting to me; I did not expect such an involvement with the Dutch landscape and such an involvement to co-create a product. The skills I have developed during this semester will definitely help me with future projects.
References


Astinova, M. (2011). Legal, social and economic issues of international students in Saxion University. HBO Kennisbank


Baarda, B. (2010). Research: this is it! Noordhoff Uitgevers: Groningen/Houten


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Appendices

Appendix I – 12 forms of co-creation

Table 2: A Typology of Forms of Co-Creation

The ten more discrete forms of co-creation are:

1. Co-conception of ideas refers to two or more actors collaborating on product concept innovation, e.g., Complex technological solutions, such as in the development of Airbus 380.
2. Co-design refers to two or more actors sharing their respective design perspectives, e.g., customized design solutions such as in Dell computers and sports shoes designs for Adidas.
3. Co-production refers to when two or more actors jointly produce all or part of the focal actor's (firm's) offering, e.g., IKEA self-assembly of merchandise.
4. Co-promotion refers to two or more actors collaborating on promotional activities related to a specific product, brand or other entity, e.g., Brand communities, such as BMW.
5. Co-pricing refers to collaborative pricing decisions that involve two or more actors and reflects their joint pricing perspectives, e.g., Radiohead 'pay what you want' downloads.
6. Co-distribution refers to when two or more actors collaborate to distribute goods and services, usually for end-use consumption, e.g., P&G/suppliers' shared consolidation.
7. Co-consumption involves collaboration during usage, as actors employ their resources (physical, social and/or cultural), individually or collectively, as co-consumers to determine and enhance their own consumption experiences, e.g., Wet Seal clothing online users.
8. Co-maintenance refers to two or more actors sharing in the maintenance services of a core product, e.g., Tesco’s hot line where customers report damaged or discarded trolleys.
9. Co-outsourcing refers to two or more actors, including suppliers, customers, competitors or other actors, collaborating in outsourced solutions, e.g., www.elance.com.
10. Co-disposal refers to two or more actors collaboration in disposal tasks, e.g., Columbia Sportswear’s use of recycled boxes.

The two more aggregative and cumulative forms of co-creation are:

11. Co-experience involves actors integrating their resources over time and across multiple encounters creating a shared experience, with different outcomes than those occurring in more discrete individual interactions, e.g., Tesco’s suite of sub-brands: Baby Club, Toddler Club, etc., that provide opportunities to co-experience at specific life-stages.
12. Co-meaning creation refers to interactions between actors that produce new meanings and knowledge through multiple encounters over time, e.g., On-line gamers' shared meanings.

Figure 2.1 A Typology of Forms of Co-creation (Payne et al., n.d.)
Appendix II – Visualization of research strategy

Below a visualization of the research strategy has been made. In the visualization it is clear that the results of the field research give input for the customization of the mobile application of NLroute, while the field research and desk research together give input for co-creation opportunities for the mobile application of NLroute.

Figure 3.1 Visualization of research strategy
Appendix III – From antecedent to sub-aspect

In the following table the perceived experience value is divided over the three antecedents mentioned by Prebensen et al. (2013). In the book the authors describes motivation as the needs and motives of a customer. The motives in this research are split in leisure motives and co-creation motives. Involvement is described as the personal feeling the person has with a product/service. In this case the product or service is non-existent at the moment, so a choice has been made to divide the concept over the attitude a person has the product and the relevance the product has for the segment. Knowledge is described as the experience or expertise a customer has with a product/service.

Figure 3.2 From antecedent to sub-aspect
Appendix IV - From concept to measurable indicator (MI)

In the following table the sub-aspects have been translated to measurable indicators relating to this research.

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Aspect</th>
<th>Measurable indicator (MI)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Motivation</strong></td>
<td>Leisure motives</td>
<td>Activities in leisure time</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reason for choice in leisure time (to learn, to socialize, to compete, to recreate)</td>
</tr>
<tr>
<td></td>
<td>Co-creation motives</td>
<td>Financial-, social-, technological- or psychological motivators</td>
</tr>
<tr>
<td></td>
<td>Needs</td>
<td>Function of the app (to learn, to socialize, to compete, to recreate)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Content (information about the landscape, information about activities, other?)</td>
</tr>
<tr>
<td><strong>Involvement</strong></td>
<td>Attitude</td>
<td>Willingness to use the application</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Willingness to co-create the application</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Willingness to visit the Dutch landscape (for what purpose)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Willingness to walk or cycle the routes of NLroute</td>
</tr>
<tr>
<td></td>
<td>Relevance</td>
<td>Relevance of the mobile application for experiencing the Dutch landscape</td>
</tr>
<tr>
<td><strong>Knowledge</strong></td>
<td>Expertise</td>
<td>Knowledge about existing routes in the Dutch landscape</td>
</tr>
<tr>
<td></td>
<td>Experience</td>
<td>Experience with apps to plan leisure activities (positive/negative)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Experience with routes in the Dutch landscape</td>
</tr>
</tbody>
</table>

Figure 3.3 From concept to measurable indicator
## Appendix V – Interview guide

<table>
<thead>
<tr>
<th>Topic</th>
<th>Sub topic</th>
<th>Main question</th>
<th>Sub</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leisure expenditure in the Netherlands</td>
<td>Leisure motives</td>
<td>- Which activities do you undertake during your leisure time in the Netherlands?</td>
<td>- Where do you go in the Netherlands to perform these activities?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Per activity, do you travel, and if so how many km’s?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- What would you say is your main reason for leisure expenditure in the Netherlands?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- To learn? To make friends or create relationships? To compete at something? Or to relax? (LMS)</td>
</tr>
<tr>
<td>Dutch landscape</td>
<td>Expertise</td>
<td>- What do you know about walking and cycling routes in the Dutch landscape (so outside urban areas)?</td>
<td>- Can you name areas in the Netherlands, where you know that these routes are?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Can you name organizations in the Netherlands that provide information about these routes?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Where do you have this knowledge from?</td>
</tr>
<tr>
<td>Experience</td>
<td>- Have you ever walked or cycled one of these routes?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------------------</td>
<td>---------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>If yes-&gt; ask sub questions and continue with topic 'co-creation'</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>If no -&gt; continue with sub topic ‘attitude’</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- What was your main reason for doing this?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(To learn? To make friends or create relationships? To compete at something? Or to relax? (LMS)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Did you enjoy walking or cycling the route (attitude)?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-What do you consider to be most attractive or appealing regarding the Dutch landscape?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Are there other activities that you would like to perform in the Dutch landscape?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Would you consider walking or cycling one of these routes again (satisfaction)?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude</td>
<td>- Are you willing to visit the Dutch landscape in your leisure time?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Are you willing to walk or cycle these routes in the Dutch landscape?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-Why? (motivation)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Why? (motivation)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- What other activities would you like to perform in the Dutch landscape?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The mobile application of NLroute</td>
<td>Relevance</td>
<td>- How do you think the mobile application of NLroute can contribute to experiencing the Dutch landscape?</td>
<td></td>
</tr>
<tr>
<td>---------------------------------</td>
<td>-----------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Needs</td>
<td>- What purpose do you think the mobile application should have?</td>
<td>- What content do you think relates to this purpose?</td>
<td></td>
</tr>
<tr>
<td>Attitude</td>
<td>- Are you willing to use such an application in your leisure expenditure?</td>
<td>- Why? (motivation)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- What function should be in the application for you to encourage you to use it?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experience</td>
<td>- What is your experience with similar mobile applications for leisure expenditure?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Co-creation</td>
<td>Attitude and co-creation motives</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Are you willing to co-create the application of NLroute?</td>
<td>- Why? (motivation)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- In what way do you think you can contribute to co-creating such an application?</td>
<td>- What do you think is in it for you, by helping to co-create this application?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Which of the following types of co-creation do you think</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
is useful for the mobile application of NLroute; ‘co-conception of ideas’, ‘co-design’, ‘co-production’, or ‘co-experience’? And why?
Can you give an example of how that type of co-creation can be used by NLroute?

<table>
<thead>
<tr>
<th>Personal information</th>
<th>- What is your major study?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- What is your age?</td>
</tr>
<tr>
<td></td>
<td>- What is your home country?</td>
</tr>
<tr>
<td></td>
<td>- Where do you live in the Netherlands?</td>
</tr>
<tr>
<td></td>
<td>- How long have you been living in the Netherlands?</td>
</tr>
<tr>
<td></td>
<td>- What do you consider to be your hobby/hobbies?</td>
</tr>
<tr>
<td></td>
<td>- Do you perform any sport activities on a regular basis?</td>
</tr>
<tr>
<td>Which ones?</td>
<td></td>
</tr>
</tbody>
</table>
Appendix VI – Planning and personal information

Planning

<table>
<thead>
<tr>
<th>Name</th>
<th>Date</th>
<th>Time</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yanti Tri Setiawan</td>
<td>25-08-2015</td>
<td>13.00</td>
<td>Saxion, Deventer</td>
</tr>
<tr>
<td>Andy Quang</td>
<td>25-08-2015</td>
<td>14.00</td>
<td>Saxion, Deventer</td>
</tr>
<tr>
<td>Steph Myhr</td>
<td>25-08-2015</td>
<td>16.00</td>
<td>Saxion, Deventer</td>
</tr>
<tr>
<td>Ioana Lonescu</td>
<td>27-08-2015</td>
<td>19.00</td>
<td>Skype</td>
</tr>
<tr>
<td>Pema Gurung</td>
<td>31-08-2015</td>
<td>12.00</td>
<td>Saxion, Deventer</td>
</tr>
<tr>
<td>Luis Guillermo</td>
<td>31-08-2015</td>
<td>14.30</td>
<td>Skype</td>
</tr>
<tr>
<td>Sylvie Chen</td>
<td>31-08-2015</td>
<td>20.00</td>
<td>Skype</td>
</tr>
<tr>
<td>Igor Sokolov</td>
<td>01-09-2015</td>
<td>18.00</td>
<td>Fontys, Tilburg</td>
</tr>
<tr>
<td>Olivia Lin</td>
<td>04-09-2015</td>
<td>12.30</td>
<td>Saxion</td>
</tr>
<tr>
<td>Lila Athanasiadou</td>
<td>04-09-2015</td>
<td>14.00</td>
<td>Skype</td>
</tr>
</tbody>
</table>

Figure 3.5 Planning of the interviews

Personal information respondents

<table>
<thead>
<tr>
<th>Name</th>
<th>Study</th>
<th>Age</th>
<th>Home country</th>
<th>Location</th>
<th>No. Of years in NL</th>
<th>Hobby/Hobbies</th>
<th>Sport</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yanti Tri SetiaWan</td>
<td>Tourism and leisure management</td>
<td>21</td>
<td>Indonesia</td>
<td>Deventer</td>
<td>4</td>
<td>Shopping</td>
<td>No</td>
</tr>
<tr>
<td>Andy Quang</td>
<td>Tourism and leisure management</td>
<td>23</td>
<td>Vietnam</td>
<td>Deventer</td>
<td>4</td>
<td>Photography and filming</td>
<td>Running</td>
</tr>
<tr>
<td>Steph Myhr</td>
<td>Tourism and leisure management</td>
<td>25</td>
<td>Germany</td>
<td>Deventer</td>
<td>3,5</td>
<td>Travelling, cinema, friends, sport, reading</td>
<td>Gym and cycling</td>
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<td>Swimming</td>
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<td>Deventer</td>
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<td>Socializing with friends</td>
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Figure 3.6 Personal information of the interviewees
Appendix VII – Codes

Open Codes

1. Leisure activities in the NL
2. Areas in the NL where activities are performed
3. Travelling for leisure expenditure in the NL
4. Reason for leisure expenditure in the NL
5. Knowledge about walking and cycling routes in the NL
6. Knowledge about organizations in the NL that host walking or cycling routes
7. Experience with walking and cycling routes in the NL
8. Reason for visiting the Dutch landscape
9. Enjoyed the trip?
10. Attractiveness of the Dutch landscape
11. Need for activities in the Dutch landscape
12. Willing to undertake another trip
13. Willing to recommend trip
14. Relevance of mobile application
15. Content of the mobile application
16. Willing to use the mobile application
17. Reason for (not) willing to use the application
18. Most important function of the mobile application
19. Experience with similar mobile applications
20. Willing to co-create the application
21. Reason for (not) willing to co-create
22. Contributing to co-creation
23. Type of co-creation fitting NLroute
24. Additional

If the person has not visited the Dutch landscape:

25. Willing to visit the Dutch landscape
26. Reason for wanting to visit the landscape
27. Willing to walk or cycle in the Dutch landscape
28. Reason for wanting to walk or cycle in the Dutch landscape

Axial coding – Codes per sub category

Knowledge

Expertise
5. Knowledge about walking and cycling routes in the NL
6. Knowledge about organizations in the NL that host walking or cycling routes

Experience
7. Experience with walking and cycling routes in the NL
12. Willing to undertake another trip
13. Willing to recommend trip
19. Experience with similar mobile applications

Involvement

Attitude
9. Enjoyed the trip?
10. Attractiveness of the Dutch landscape
16. Willing to use the mobile application
20. Willing to co-create the application
25. Willing to visit the Dutch landscape
27. Willing to walk or cycle in the Dutch landscape

Relevance
14. Relevance of the mobile application

Motivation

Leisure motives
1. Leisure activities in the NL
2. Areas in the NL where activities are performed
3. Travelling for leisure expenditure in the NL
4. Reason for leisure expenditure in the NL
8. Reason for visiting the Dutch landscape
17. Reason for (not) willing to use the application
26. Reason for wanting to visit the landscape
28. Reason for wanting to walk or cycle in the Dutch landscape

Co-creation motives
21. Reason for (not) willing to co-create
22. Contributing to co-creation
23. Type of co-creation fitting NLroute

Needs
11. Need for activities in the Dutch landscape
15. Content of the mobile application
18. Most important function of the mobile application

24. Additional
Appendix VIII – Fragments

Knowledge

Expertise

5. Knowledge about walking and cycling routes in the NL
No, not really(1)
Yes, definitely, as I know the Dutch has the biggest and longest cycling path of the whole world and also the most cyclists. So I think this is a very good thing and should be integrated also is other countries. That would be very nice and interesting, but yes of course because the landscape is so flat it is easier to cycle (2).
Nothing(3).
I know cycling routes are everywhere, I know in the Netherlands you can be at one point with the bike and go to the end of the country (4).
No for me it is not clear. Like the bicycle routes between cities, I haven’t use them so far (6).
I know one walking route, it can extent from the most southern point to the northern point. It is on the east side in the Netherlands, but I just read it, I haven’t visited it (7).
I know that there are specially prepared and developed routes. Even here around Tilburg, somewhere in the north but there is scarce information about it, I cannot find it. Or if I find it, it is in Dutch. In the Dutch landscape; I know the country is not that big, normally people go cycling – they use bikes to go to work or study, it is a normal way. That is what I know(9) I saw some map, kind of map, standing near the pass, with route things about all of the Netherlands but I cannot remember–(9)

6. Knowledge about organizations in the NL that host walking or cycling routes
No. (1)
No I don’t know (2).
No (3)
No (4).
Yes, in Deventer ‘VVV’. I go there, normally to their website, the website of Deventer or normally the city that you are in. And tourist information, it is the same like ‘VVV’ (5).
No, I am sorry (6).
No, I don’t know (7).
No, I have no idea (8).
Not really, I only say the specific routes in the specific places like the routes in the park, inside the park but not the city routes; from city to city (10).

Experience

7. Experience with walking and cycling routes in the NL
Well, we went to Bussloo ones from Deventer and also to Apeldoorn once. (1) R: Cycling, yes. (1)
In Nijmegen, once.. Walking (2).
The highlight of that trip was that we were lost, we didn’t know where to go, but then the funny thing was that it was fun and we got somewhere and the main thing was that we got to know each other better.

I have been to Ameland and there I did a biking trip thorough the Island; it was very beautiful. And usually I like to go – if you go a little bit further from the city center of Deventer there is a very beautiful landscape where you can bike and I do that sometimes, not always, but I like to do that.

No.

that is why they were also on time when Pnina gave use this excursion to Deventer and Zwolle; that is why they saw the real traditional country and the places where tourists don’t go. Valkenburg, yes. We also went there by bike; through the farms and it was very nice.

Actually I did not check or something, I just go there and see if it is convenient to rent a bike or something and I just rent it.

It depends, if existing routes look pretty nice, I do that, otherwise sometimes you start off with Google routes and then you end up somewhere else accidently. Sometimes, I only once used the actual cycling routes that they have with the numbers, but it was pretty much because I had to because I was out of battery on my phone so I had to somehow go to a city that I knew so I followed one of the cycling routes.

12. Willing to undertake another trip
Yes. (1)
Yes, why not (2).
Yes (3).
Yes, I would like to go in this Overijssel area and be more relaxed and enjoy the landscape more (4).
Yes, I would like that (5)
Off course (9).
Yes, yes off course (10).

13. Willing to recommend trip
Yes. (1)
Yes. (2)
Yes (3).
Yes, I actually recommended it to friends. Friends already went there (4).
Yes definitely (5)
Yes, I already did it. My other friends also want me to guide them through those routes as well. We are going to do the same stuff or something different, because I want something different. People already know, my friends from Russia they live all over the world and they travel, so they want me to be their tourist guide (8).
Yes (9).
Yes, off course, I already did recommend biking through the landscape (10).

19. Experience with similar mobile applications
No. (1)
Well, not really. At the moment the only apps that I use is provided by the train company, to get to know the time to travel and Google maps, for example, but not an app that is to discover the area (2). I remember that in Berlin I had that app. In Berlin and London I had an app where they offer free activities and guides, where you can find guides, for example like alternative tours and you could find guides in there. Also an app where there was always said what was on that day, for example in London you can do a lot and there you get suggestions on what you can do on that day (3).

Yes, I used to use for biking around Rotterdam, I did a research project in Rotterdam and we used very stupid application because we couldn’t find any other applications to map our routes and the time of the route and we use Runtastic and something about skiing, because we had no option to trace our routes and find our way. Runtastic and some kind of skiing app (4).

When I was in Belgium, to get around in Brussel they have a sort of app 'Brussel city', with that app you could get so many information about museums and all the attraction sites. So I have that, I have experience of using that kind of app. It was very helpful (5).

No, not so far. Well, in Bogota they have an application, I think it is very cool, it is called ‘Bical’. It gives you rewards if you used your bicycle. For example, it has a GPS and it tracks where you have been in the city and if you were biking and if you make a lot of point with the kilometers on the bicycle, they have a discount in a restaurant or like 50% discount in Burger King. Something like that, it could be if you go to a certain place at a certain time you may have a discount (6).

Yes, I have used it called ‘triposo’ and my map. These two I have used and I think it is very convenient (7).

No (8).

I do know one application it is called ‘ASIC’ it is about camping and the route but I do not use that often because they just set up a whole program and you can only follow there guide, so it is not flexible for me(9). The one I said, that one maybe (9).

I follow the routes from Google maps; I try to get more scenic routes, so not next to a highway for example(10). I never used any other apps for bike routes or orientating myself (10). Not really, I am not aware of any, at least in terms from going from places to places. I have used like the ‘9292’ app for taking the trains and busses but I never use a more social app for travelling (10).

Involvement

Attitude

9. Enjoyed the trip?
   Yes. (1)
   Sure, of course (2).
   Yes (3).
   In the area of Overijssel I really enjoyed it; it was a very beautiful trip; I had a very good mark, so it went well (4).
   In Nepal we are not used to using bikes, but in Holland it is something that you have to learn, so I really enjoy it. I really enjoy cycling (5).
   Yes (8).
   Yes, I did but I am not an expert, so sometimes it is tough for me; cycling (9).
Actually, in certain places I enjoyed it more than others, like the northern islands, I went to Terschelling; it was really nice, a bike route around the islands. The dunes because it is something that I am not familiar with, this kind of landscape (10).

10. Attractiveness of the Dutch landscape
Because there is a special bicycle route, it is safe and quiet, so you can cycle slowly and talk with friends. (1) The villages. (1)
I think the identity of the Dutch, landscape is very flat and there is a lot of water. You don’t see this that much in other countries (2). Because it is easy to cycle and you have a lot of wind. And I think for me it is not a problem, but maybe for some others.. for me it is a positive point (2).
I think the landscape is nice in the Netherlands. It is quite similar to my home–(3) the country side is nice, it is green and the sun is shining. It is not dirty, it is fresh air. Blue skies and.. that is what I would say. It is also easy to cycle here. In Germany there are some places with a lot of hills and it is really exhausting sometimes. Here if you just want to go for an hour, you can actually get quite far as well. About the landscape, it looks nice and it is green, that is what I would say (3). Yes, and also the general atmosphere in the Netherlands is positive I would say (3)
It depends on the area; I thought the Dutch landscape is everywhere the same. I think it is really different actually; the Overijssel area, with the hilly parts of it is extremely different from the island area that I found and the area around Delft which is more flat. And I think it is appealing for the water areas. I think the most interesting thing– you expect it to be the same everywhere, and when it is not the same you pay attention to that (4). Another super interesting thing for me in the Dutch landscape is that you feel secure, unlike any other country in Europe, even UK that is thought to be the most secure area; it is not like the Netherlands (4).
Dutch landscape is a little bit different than Nepal, but still it is green/clean, that is something I like (5). The green and that it is very clean, that is the best answer to give if I compare it with my own land. It is very clean and flat, so you can bike and bike well, in Nepal everything is mountains, so here in Holland you can relax and bike (5).
The Netherlands is very different to my home country, because there we have a lot of mountains, like really high, and it is not that flat (6).
It is very flat and very– you can see for a very long distance, maybe because it is all flat or.. In my home country it is mostly mountains, so it is very different (7).
That it is fully organized (8). Dutch people don’t like it, but I am from Russia where everything is wild and you can go from one city to another and travel 5 hours along the rail route and there will be nothing, no people, nothing specially cut, nothing specially grown, just nature. In the Netherlands it is vice versa, everything is specially prepared, the grass is accurately cut; for us it is very nice, for international people from abroad it is really nice to see. When you are in the forest the grass is like the lawn in front of your garden (8).
Most attractive, maybe it’s country side view. I just compare it with my Chinese lifestyle. The preserve the environment well and the Dutch culture, their traditional clothes; the first year this really attracted me (9).
It is very versatile even though the country is really small (10). The fact that it is so contentence in a way, you’ve got the forest, you’ve got the dunes, you’ve got the ‘cow landscape’– (10) The towns as well, even though the towns are a bit repetitive, but it is still nice to see the differences. I have never been to
the nother part; like Groningen (10). Yes, yes and the fact that it is so close to each other, you don’t need to take a plane to go to a completely different landscape (10).

16. Willing to use the mobile application
Yes. (1)
Depends on how much I have to pay for it. If it is not so expensive, then definitely (2).
Yes, is depends on how much it will cost I would say. I would use it for free (3).
Yes off course I would (4)
Yes definitely (5)
Yes, yes (6).
Yes, as long as it not too expensive (7).
Yes (8).
Off course, yes (9).
Yes, sure (10).

20. Willing to co-create the application
Yes. (1)
From my point of view, I think off course (2)
Depends, how it works (3).
Yes (4)
Yes (5)
Yes. I guess I would do it (6)
Maybe (7)
I don’t like such activities myself doing this, but I like it when other people share and add some information and co-create and improve the products. I like this (8).
I am willing to but I don’t have ability to create because I don’t have technological things (9).
Yes, sure (10).

25. Willing to visit the Dutch landscape
Yes, I would very like to (7).

27. Willing to walk or cycle in the Dutch landscape
Yes, yes. I would like to (6).
I think both are fine, but maybe cycling first and the next time walking (7)

Relevance

14. Relevance of the mobile application
Well, in my opinion it will be very useful. Especially for a foreigner, cause then you don’t need to open the map or did kind of thing and you have special recommendation routes. Maybe, if this application is successful then you can also meet other people during your trip. (1)
I think it would make it easier. A lot easier, especially when you are new in the city then it will also make you more confident. When you just walk and discover, without worrying about being lost. Also to get to the destination or some site that you really want to visit or to see. It saves your time, not to walk randomly (2).

Maybe (3)

It can certainly be about organization, because I always download maps and stuff and check and that is not that interesting. I think a problem is the Wi-Fi thing, if you think of a successful application you should think about how to maybe provide free Wi-Fi in this landscape. So organization is most important (4)

It helps you to achieve-- it makes it accessible and easy to access information (5)

I think a good idea could be if you have a historical part, like for example, if you go somewhere in the landscape and the app can give you a brief summary of the history; what happened or if it is significant for the Dutch history. The same with buildings and the landscape in the cities, if you find a renown building in a city; the app could explain a little bit more; who designed it or what is the purpose (6).

I think most important is an accurate position, GPS, because especially in more natural places it is not easy to recognize rows or paths (7).

If it were in English and all the information were in there, integrated in this application, it would be nice (8).

No, even if I have it, most of it is in Dutch, so I give up (9). It is assistant to help you. To be honest, I like travelling but I really have poor sense of direction, so google maps is very useful for me, of course those kind of applications, yes (9).

And even the routes sometimes or more easily accessible, because sometimes part of the routes are missing and you get lost; it is really interesting but sometimes you are completely in the middle of that cow field (10). Ok, if it is something that consumes less battery than Google maps, has also spots around that you can go. That it is more-- if it is following a route then it is more precise I think, then yes I would consider that or if you can recommend the spots that you like best (10).

Motivation

Leisure motives

1. Leisure activities in the NL

Shopping, mostly shopping. Going to big cities like Amsterdam and Rotterdam and going to outlets in Roermond and Batavia (1).

Well, my leisure activities mostly are; hanging around with friends in different cities, exploring and sometimes shopping or photography activities. In some sites or architecture area (2)

Actually, I like travelling, so I like to go to different cities and look at them. I also like to cycle, city trips and to go to the beach (3). We did it from Deventer, there is a lake 45 minutes from here, we cycled there a lot of times (3).

Sometimes I bike through the landscape, but I also bike to go to certain places where you can eat and buy local stuff. So this and maybe I go to movies and cities and maybe shopping (4). I think activities with friends are mainly conferences or events about urbanism or barbecues (4).
Normally when I have free time, I would spend some social time with my friends, with my roommate. I am still a student; an international student, so I will spend my social times mostly with my roommates (5). I like going to festivals; in Holland festivals are very popular. Nowadays with electronic music, I really like to go with my Dutch friends, especially in Amsterdam (5). I spend most of my time visiting the main cities because I am an architect, so it is what I must and I am fond of it. I also visit cities that are not so touristic like ‘Almere’ and I also visit this very Dutch touristic town in the– next to the sea (6) No I think that is all, all related to walk through the cities and spend time in open air taking pictures. When I travel I am not that interested in– It is more like trying to somehow capture the spirit of the city of the country (6).

My leisure time.. Doing.. I haven’t lived here for long, but I think it will be doing sports and attending some culture activities like, I might attend some violin classes or singing courses (7). boats, cycling and stuff. I wanted (8) I go for sports and the guys in summer we went to ‘Zeeland’; to explore ‘Zeeland’ and we wanted to do that by bike (8). Mostly, I like travelling, so most of my leisure time I find a parttime job to do and then save money to travel (9). Yes, the island there I did camping, hiking and cycling there. I went there three days, it is amazing. In summer it is really amazing (9). Go out with my friends off course, like girl things; shopping or dinner or something. And just doing going to some small town like Kampen; it is near Deventer. That one is a beautiful small town, I just walk around– and also maybe some kind of live music, I did attend ‘white sensation’–(9) Mainly, I did some excursions. I commute to the University every day, but in my leisure time I like going from city to city because it is pretty easy here in the Netherlands (10). To cycling, yes. I go to art events, I don’t do that much on my free time (10).

2. Areas in the NL where activities are performed
Amsterdam, Roermond. Valkenburg, we also went there (1). Mostly in the city, but it is also easy accessible than the outside area (2). For architecture mostly Rotterdam, because it is modern and the urban area is very impressive. For nature I mostly go to ‘Den Haag’ for the beach and.. also Amsterdam for culture, also architecture with some old buildings and for shopping as well (2). I went to Amsterdam a lot, I really like Amsterdam. Also the place, I forgot the name, ‘Kinderdijk..’. the one with the windmills. We tried to do some sightseeing, but in the end, after four years.. We also went to the beach (3).

Well, I usually bike in the nearby area around Delft, because I live in Delft. So I’m not used to bike on long distances yet, but I am training (4). Amsterdam especially, Utrecht, Eindhoven (5).

Amsterdam, Rotterdam and the Hague. I also visit Utrecht and Almere. I visited famous buildings and famous cities. I also visited Nijmegen on the border with Germany, that was not that interesting it was more like just going through– we passed by to go to Germany (6).

At campus or also travelling might be taking a large part of the leisure time (7) the Hague, Rotterdam, Amsterdam (8) Deventer and Zwolle (8) Valkenburg, Yes(8)

Many places, but most interesting one is in ‘Ameland’ (9).

Yes around Utrecht or we went to Biesbosch on the south and to the forest around the Kröller Möller Museum–(10)

3. Travelling for leisure expenditure in the NL
Mostly by train (2).
I travel a lot in the Netherlands for these activities, because of my University projects. I biked through the landscape around Zwolle area, that was during a project on how landscape could become attractive. When I biked to the northern islands a lot; Texel and Terschelling (4).

I like to go to the beaches, for instance Scheveningen. I was also in Ameland and I want to go one time to Texel (5). I would go by train, train usually and if I want to go to island of course by boat. Normally I use the train (5).

Both are ok, but right now I might be more interested in landscaping areas, because I have visited a lot of urban cities, metropolitans, so right now I want to have some leisure landscapes (7).

For sure by train. From Tilburg it is one hour or– (8)
Mostly by train and walk together (9).

4. Reason for leisure expenditure in the NL
If you mean going to nature, in our country we have better nature so we are not interested, but probably some small cities like Volendam, that have the real culture and Dutch custom and eat the fish ‘Haring’, that is probably interesting (1).
Just to relax(1).

the main reason would be relaxing. If I have a day off then I just go with friends to..(1)
Just to explore the country I am living in and to see how the difference is with the Netherlands and the other countries around also, because I think the Netherlands has quite a unique landscape and identity(2). To learn and to relax at the same time (2).
I think it is for fun, relaxation. Like, I don’t know, not to be bored at home and also to learn about the country, to get to know the Netherlands and all the nice places (3). I like to travel, so I like to get to know different cultures and cities and everything (3). Yes. And also to get fresh air. If you study and have to learn it is always good to go out and just to get some fresh air, and since there are no hills here.. (3)
For the biking trips further than around Delft, the first motivation were my projects, so I went to discover on my own those places, to experience them. Around Delft it’s just for relaxation (4).

Definitely to experience the culture of how the Dutch people celebrate the festivals. In Nepal we do it completely different than they do here in culture. So culture is important (5). Definitely to make friends and broaden my network and also about entertainment. Like you said, the relaxation; it is a way to entertain myself and be out for my regular life, to enjoy myself (5).
I want to say, what interests me the most are the cities and the architecture (6).

More to relax I think (7).
To learn I would say (8). Countries, people and other stuff (8).
Yes, relaxing of course and my friends and sometimes I like to stay alone; travelling can keep me out of some stressful things and I do travelling alone and can make new friends (9). Yes. For a serious part the culture is different from China, so I want to learn more (9).
Getting out of school, pretty much; hanging around with friends. Having quality time with friends, so not talking about school all the time (10).

8. Reason for visiting the Dutch landscape
Sport, spending time with friends. (1) R: Well, both. Not really the sport then, probably. More spending time with friends.(1)
Just for fun, with friends and discovering the area, when it is sunny and nice outside (2). because by the time I was there, there were new friends. And we didn’t know each other that much; we were both new in that city. It was just to explore a little together (2).

The main reason is that it looks nice, all the green, it is very green and the windmills. If I think about the Netherlands, I think about windmills (3) The Dutch culture is really friendly, open minded, you always feel welcome. It is not about the landscape maybe, but more about the people (3).

When I go on my own it is relaxation, but most of the time it is exploring the area because I have a project. This is how I work (4). when I go to this area. I want to know people; I want to understand how they live there and the landscape (4). Food, art and the landscape (4).

Definitely more to relax and enjoy the nature and see Dutch landscapes. If you go outside the cities, there is peace, for me it is to get rid of stress, to relax myself and be alone (5). Yes, to learn something; to meet local people and be involved in Holland (5).

It was pure interest and to see different sides of the same country, so to make your impression from it (8). Around the landscapes and farms it is more to relax and to see nature, some nice places, to enjoy sun and lakes. Not during rainy days or so (8).

Because you can see more on the way and actually, I mean Europe, the whole environment here is quite– it is not that fast. I mean compared to China (9). Quiet and the people lifestyle is slow, so you can, you can use the cycling or the foot way and you can see more. I think it is a more suitable way (9).

To explore more, yes (9). It is cheap, it can save money for students and if I go with my friends it is interesting, we do cycling together so we can share ideas and the time becomes slow (9). To learn; normally if there is some people, I will ask them or try to talk with them and maybe they can explain something but just me alone it is difficult, I just walk around– (9)

Mainly it is more for visiting parks than for visiting specific towns (10).Yes and also to see this country (10). Mainly to see the different landscapes because I know most of them are artificial. It is still really beautiful landscape (10).

17. Reason for (not) willing to use the application

It is more handy, then finding the route by yourself.(1)

Well then I get the information that I want.(1)

As a tourist sometime I feel that I need to know where I am going and the location I am in. Not just the route, but also the information around to show what can be interesting to see. So I think beside information, also to learn about the area, to get good advice about what to do over there (2).

So I print my route, just because it’s hard to access any application or online landscape, because you don’t have wifi (4).I always get lost when I travel by bike (4).

It is more convenient than buying a book, because buying books when travelling– the information has its time. Sometimes it is already old information, but in an application you can update new information very quickly (7).

I miss it now (8).

Because actually right now I only use Google maps for this and there is pretty good connectivity through out the Netherlands, so you can use your phone anywhere, so I think it would be interesting to see more things like this. I mean it would be the same as if you have like information spots but kind of more interactive if you can change locations (10).
26. Reason for wanting to visit the landscape
In my home town I have been riding a motorcycle across the central mountain of our country, so I remember the experience was fantastic because of the natural landscapes and the magnificence of the sceneries, so I would like to do something similar again (7).

28. Reason for wanting to walk or cycle in the Dutch landscape
Now we are at the end of the summer, so I would say to enjoy the weather before the winter comes. That would be a good argument and also because I would like to know better the Dutch landscape. I know people say everything is flat, but there is also debilitation that can grow. I would like to go - I don’t know if the Netherlands has a natural reservoir, if they have I would like to go there. If I go biking it would be even better (6).

Co-creation motives

21. Reason for (not )willing to co-create
Then you have the things that are important to you. Because you create it by yourself, then it is only the things that you are interested in. (1) because the product is aimed to benefit myself (2). At the end if that is something that contributes to my experience while being here and my future adventures as well (2). For me it is not important that I get paid, but for me it is more interesting to see how the company is designing something that involves myself and my role in there design and how I can contribute to their sign with my own experience and in the future I can benefit from it (2). Then in the future I would benefit from what they have created with my involvement (2).
if you can just give them suggestions and maybe also anonymous, maybe like you can just say that would be nice, or that would be nice. It would be nice if they have a guideline of what they want to be in it as well (3). And that you can also see the results, so that you know if you give them ideas, what it will result in. I don’t know if I – if there would be an email and they would ask me to give ideas, I would like to have a website or anything, where I can click and get information about the project and I need to understand it and everything. They motivate you with text, that you are willing to participate (3). if the application is running successfully I can also use it for what I can suggest for others and also in the last years I always took care off the exchange students and that would be nice if, like I did activities with exchange students and that could also help me if the app has suggestions what we could do (3). because I am tempted to use such an application (4)
Well, it would be nice if you are able to find people with the same interest and make friends and also to participate in some events that involve going to places and visit the landscape (6).
Maybe I would see the prototype first and if I think it is very possible to be popular, then I think it is ok (7). I think it is because if it is popular an app then we can – because I think many of the information depends on the crowds, their experience – so if it is popular than the information is more useful (7). I think knowledge or the chance to meet some people with the same interests (7).
I never ever did that before. So companies and other stuff try to attract me; it is an unpaid thing, that’s why I don’t have time for this. If it is not for my development; I am not into marketing, so for me it is of no use but then when something is improved I like this. When do use special prepared people or just ordinary customers (8).
If it is something that I am going to use then sure it would be interesting to see how it will be developed and helping out. A product that is actually easy to use and interesting for me. When you use an app there is a part of the app you don’t like or if it is customized for you, it is never actually customized for you.

22. Contributing to co-creation
Well, then I can share the information, what students think is interesting and what is important for them. Those kind of things. The only way with my ability is to share my knowledge/experience what I think about how a product should be designed or what should be in there, what feature, what is good and what not as a traveler.

My own experiences, what I am missing, what kind of information I am missing or what I want; my ideas, my experience, what I had in the last years of my study.

And maybe just because I am also a designer I understand how it is important it is to involve the people to make your product better.

I will help other users to get information, I would be actively involved in being interactive in the app so the other users can benefit out of it. I would be just contributing, sharing my experiences, it is not something that I will earn, just I will share my experiences so that people can benefit out of it or people have the right information. It is definitely helpful.

I am more comfortable if I just like give my experiences, how I want biking from one place to another, what I found there, if I say nice people or if I ate in a nice place on the route and something like that.

I think I can help in the concept idea, in the prototype idea, and then if in it there is some integration with disciplinarians I might be able to help. Maybe by designing.

Maybe like suggesting and testing, because I know a big part of it is testing it, how it works and how it actually works with co-creation because I know it is not really as clear cut as it sounds. For sure when it comes to funding probably and putting places on the app, if it completely open, maybe people want to advertise their café or something, so they will– when you have these suggestions; like go there, there is like a discount and this and maybe that is not an interesting place, maybe it is for the money.

23. Type of co-creation fitting NLroute
More sharing ideas. They can combine both. It has to be user friendly. Yes, maybe the user can upload pictures, that they can share them.

Let me think.. The last one; the experience is most important. All are suitable, but the experience is most important, because at the end what you get is the experience of using the app. If you don’t have a good experience then the entire process, from ideas to production, would not work and would be worthless, because it does not give an experience that is good for the customer. The experience is something that is most important. Sometimes you might get unexpected ideas from the customers that you haven’t thought about because they are the users, they know what they want and they know what they like. You as the provider sometime you don’t get the same point of view or the same angle when you design the product.

A mix out of all of them; to share ideas, but also design the app, as I said with categories, how it looks, that is attractive. Co-production also, so that they can make adjustments and change.
Yes, also sharing experiences on it. Share my own experience for the app but also what kind of experience you have in the app, so people can read your experience as well (3).

Maybe co-production would be interesting because people that experience very nice can actually map them. An online platform that could map interesting routes, a platform, this can become interesting because in this way there is not NLroute and other designers that propose some routes, but actually a lot of people that experience and maybe they can give hints about on what is on the way, how long it took them. So I think co-production would be the most interesting because it could create a collective platform (4).

Yes the interaction is most important within the app. It means people are able to review the comments, chat, social talk, to see pictures; pictures say more than words. If you can add pictures in the app about your experience then people will see the pictures and get informed about the experience (5).

I think the third one; co-experience (6). If one is able to create a community, it is probable that they will give ideas to new products in the sense that they will tell you why they could wish to have routes or in the landscape (6).

I think the idea sharing is interesting, I am also interested in this part and also the last part; how to make it in a real application, I am also very interested (7).

Specifically for this project it could be great if those who experience something, tried some routes or suggestions from the application, they could share their experiences and this could be already enough. They could mark the cycling route was fantastic for example; I saw this and that, and that, so other users know how it operates and what to expect from it. So just sharing impressions is already nice to introduce here (8).

Yes, true and probably there could be some opportunity to make your own routes; 10 people tested this thing and this to the application because it is very nice. Not planned by the producers, by those who developed this application, but already by those who use it (8).

Maybe they can create an even on the internet, like Facebook group, they can share their ideas about this and they pick up–(9) Yes, some kind of– evaluate what is best and–(9) Maybe they can have some travelling activity, who wins this campaign can get a free for one travelling to somewhere like this (9). Yes, maybe. Maybe they can share their experiences because I think this travelling application, the most important things is to get the people to use it in the first steps. So maybe they can use twitter or something that people can try it and share their experiences on Twitter or Facebook. And from there can get more customers; it could be like this (9).

Maybe the second one; co-experience, I think. Because it is not a product that you– it is a product that you use in your everyday life, but it is not something that– like a pair of sneakers, for example, that you going to wear. So I think it is more about–(10) Yes, how you use it and what kind of experiences you want from it. Instead of very technical stuff on the production; how it looks like, maybe how it looks like is important but it is not the most important thing on this (10).

Needs

11. Need for activities in the Dutch landscape

Picnic, walking not really. Picnic mainly (1).

for example I have seen once an outdoor theater integrated in the nature in Nijmegen. Where there was dancing, or acting in the nature, for example in the river or in the forest, they make a whole tour that you can just walk. Through the nature while enjoying the theater. Really interesting (2).

Yes if they would offer some, maybe. I would do that spontaneously. If they have some offers why not, like boat tours, like speed boats, for example (3). Yes, like hiking, I don’t know if you can actually do a lot of hiking here, yes but you can still walk (3)
Not necessarily (4) And I was bit surprised that you cannot camp, it is difficult to camp (4). Running, and jogging (5)
Yes and make events (6).
I would like to try surfing, but I don’t know how to do it (7). Wave surfing (7).
Probably kayaking..(8) Sure, people go to see the Netherlands because of the water, partly. I think it would be a nice activity also, to not go by tourist boat in Amsterdam, but also to kayaking somewhere, that would be nice (8).
No, to be honest there is not that much activity; variety of activities here, so only that kind of activity (9).
Yes, actually, in the Dutch landscape, I don’t know. To go climbing but I know this is not possible here–(10)

15. Content of the mobile application
And in the application maybe you can find the best route, taken by dutch tourists or what, then you can go by yourself there. Now you have the application, you don’t need to find the information yourself and you can read the review from other users. (1)
To get information(2) Yes, also. It should be integrated somewhere in the mobile app that when you want to want to go this way or another way, then with that direction you also get informed about what you can do there, activities that you might experience or location that might be interesting to you according to your preferences (2). if you integrated a kind of feature that can connect your friends together, for example, if you are in a group and you can connect to each other via an app, even within a group you can still have the location as a preference, but at the same time be connected with your friends in the group. For example, I would like to go the museum, but my friend not, he wants to go for the river for example, but then we can still connect through an app. I think this is a good point to keep in contact still and to show each other where we are and what is interesting and not to get lost with each other (2). add language feature to the mobile application, for example, for Chinese students (2).
I think it would be helpful if you can cycle and you would use GPS and the app shows you on the GPS where you are and so on. What activities you can do around, if there is a nice building or museum, or something you can do (3). I think it would be useful if you can choose categories. If you want culture, you get the culture things.. (3) Also you could do the most popular ones, they could categorize it like this (3). Yes also the ones who are famous. If you do like a certain map, a certain route and there is a really nice place where you have to go, but you actually don’t know, you can actually look that you really need to go there (3).
I don’t know, it can also trace your route and maybe measure your speed or whatever like those bracelets; they are very fashionable. Maybe it can say something about your speed (4). Yes, sport, organization and I think it would be really nice to also have a route (4) I would like to know interesting routes that this application indicates and maybe it can say somehow very diagrammatically why they are interesting. What points does this route link (4)Yes highlights, schematically and where it takes you and maybe how you could return to the scene point using an alternative route (4).
Let’s say you walk and it can measure the time that you have walked and how many calories you have burned; that kind of information for your personal health, you can obtain (5). then with my ID in the app, I could add pictures that people can see, write some comments, so that I have the access to the right information. It would be also great that you can chat. If you write a review and people want to chat with the person you went, if you write a review and some other person reads that review and if he want to chat to get more information that could be one tool (5).
Yes, information, like historical information and the app could also have historical pictures of the places to tell the people how the landscape has been transformed during time; how it changed. That would be great (6).

I think information is the most important and maybe if it is possible that we can ask someone who has already visited here, that would also be good (7). To visit some lakes you might need a guide or something and it is better to know which guide is reliable or something (7). Maybe historical (7). For example, by the area, if I want to see this area; how can I explore it? By bike? There can be special options for; by bike, by train and nice points to see; some attractions there and if I can do this in one mobile application by just pointing and clicking on some area that would be nice (8). Also suggestions on what to see and how/what is the best way to see, for example, the best way to explore this lake is to go around it by this path, you know, like the path is on the map and take a bike here and stop there, here is a very nice place to see the lake and here is a nice part with some sand to lie down; if I have this in one application, I don’t have to google anymore, that would be nice (8). Yes, information. The main thing would be information. I would be looking for the place; how to get there, what to see there and what is the best way to explore it (8).

It should have an English version of course, it could be more flexible, maybe I am not an expert and if the application is not flexible, they just set up the whole route and things, you need to follow the route and go cycling—if I don’t follow that, you will be lost (9). If it can add some share function; I mean if I do travelling with my friends, that I can share. It can have a community thing, because I don’t live with my friends, we are separated in different cities, that we can set up the whole travelling things together, just via the application. Like I just set up first day the actions and he can set up the second day. We can discuss and maybe have a chatroom there—(9) Yes, kind of. And the whole route can be decided by both, by all of us (9).

Yes, kind of. Maybe you want to have a bigger, you find a nice café or a tiny village, maybe it is nice if you put in on the app (10). Yes, that would be nice, maybe in certain places I know that the landscape changes really fast, so maybe if it is how it was before or how it changed or how it was constructed, afterwards it turned into a park. That would be also very interesting (10).

18. Most important function of the mobile application
That you can communicate with other users. Sharing your experience, that is really important.(1)
For me the most important for the mobile app would be the location, the map should be updated and the information given must be correct and the information given has to be valuable(2)
I would say information, but also ideas what you can do. Suggestions, like they say there is a nice place where you can go in the Netherlands and you can go (3).
I think it should be about time, how much time it takes you and according to the distance what the difficulty is. And suggestions (4).
For me, the top ten Dutch landscapes in the app. All the rating of people, so that if you scroll to one location, let’s say the landscape in ‘Den Haag’ or people can post reviews, it makes it easier for people, for new people; newcomers when they come here as a tourist. Then you always want to know how other people have experienced it (5).
GPS and how to find the fastest route or you can have an option, that says it is not the fastest, but the most beautiful or most— that you can have better pictures. Maybe there are a lot of suggestions; it could be helpful if you can have the points where you can check your bicycle if you have some problems (6).
It should be a flexible thing, where I can choose— giving suggestions, but also give me different ways and opportunities to see what to see there and how to get there. For example it would be nice, so again the lake or some forest; I don’t want to see this specific routes, I want to see options; so by bike.
in this way or in that way, stop here or stop there, so preferences and choices but also suggestions and well planned routes, already established. Those are proven and those are to be decided for you, so if I don’t know what to see there, I want to use this planned route or next time I would see something else, more. That would be nice (8). Maybe see what other users recommend and like routes and maybe make up my own routes; that would be useful. If you have a suggested route and then it is open for further suggestions (10).
Appendix IX – Introduction and explanation of ‘co-creation’ for the interviews

Introduction
Thank you for being willing to attend to this interview. Before we start I would like to introduce my thesis project to you and explain what the interview will be about.

Client
This thesis project is part of the projects assigned to the HBS research Centre. The client of this thesis project is NLroute.

NLroute
NLroute is a platform founded by the NLroute project team that is going to be developed consisting of seven routes that take the visitor through the Dutch nature. The routes of NLroute take the visitor beyond existing routes, focusing on a unique experience of landscape and Dutch identity. NLroute believes that there is more to explore for visitors travelling to the Netherlands besides the existing tourism attractions. The platform will start with seven routes that can teach visitors about the development of the Dutch nation and the Dutch landscape over different timeframes. These routes can be followed by foot, boat, bicycle, public transport and by car. The routes will be supported with a book, maps, a website and the creation of an application. The application is the actual product that NLroute offers to the consumer; it bundles all the information of the routes.

Thesis project
The mobile application that supports the routes of NLroute should be interesting for all ages. In this thesis project the interest of students for using the mobile application is tested. Furthermore, the interest for co-creating the mobile application is also tested. More about the concept of ‘co-creation’ will be explained to you later on in the interview. With the results of this interview I would like to advice NLroute on how to customize their mobile application to the segment ‘students’ and how they can co-create this mobile application together with students.

Co-creation (in own words)
Co-creation is about creating a product together with the end-users of a product, by listening to the needs of the end-users and thereby involving them in the production process. Co-creation is possible for various products and services. An example is for example Nike’s ‘NikeID’; this is a part of their website where customers can customize their shoes with text, use of colors and other elements. This type of creating the product together with the end-user is called ‘co-design’. Another example is that of Starbucks, who have created an online community ‘My Starbucks Idea’ where customers can share ideas about the products of Starbucks, Starbucks monitors these ideas and sometimes uses them to improve their products. This type of co-creation is called ‘co-conception of ideas’; sharing ideas to improve products. Additionally, Starbucks wants coffee to be an experience created by employees and customers together; ‘co-experience’. These are just 3 types of co-creation that are possible. Co-creation is possible at different steps in the production process; it is possible when products already exist to innovate or improve the products. Regarding the mobile application of NLroute the product is non-existent at the moment. Co-creation is therefore about creating and designing this mobile application together with you; the end-user.

-> Ask if there are any questions about the concept of co-creation
Appendix X- Current set-up of the mobile application

In the following figure the initial instructions screen of the application is shown.

![Initial instructions screen](image1)

Figure 8.3 Initial instructions screen

Below a general visualization of the set-up of the application is shown. Important to notice is the lowest bar where the five functions of the application are shown; program, routes, map, my routes and information. The blue bar at the top highlights the sub-functions within the main function of the application; the red arrows below show the sub functions ‘Story’, ‘Route’ and ‘Instructions’ within the ‘Program’ function.

![Visualization of the application](image2)

Figure 8.4 Visualization of the application

In the following figure these functions are highlighted.

![Five functions in the application](image3)

Figure 8.5 Five functions in the application
Appendix XI- Visualization of adaptations in future scenario

In the figure below the two new functions are included in the application.

![Figure 8.6 Functions in the future scenario](image)

The following section is the first section where the user chooses a route. Next to the name of the route will be a rating in a five star system; zero being low and five being high. An example is shown next to the route of ‘Naarden’ below.

![Figure 8.7 Opening screen; ‘routes’](image)
After choosing a route (‘Naarden’) the following screen will show. The functions ‘story’, ‘map’ and ‘instructions’ will stay, additional to this will be the functions; ‘reviews’, ‘comments’ and ‘pictures’. The user can also rate the route himself in the option below the stars.

Figure 8.8 Second screen; ‘program’
Below all functions (Grey bar at the bottom of the application) with the corresponding new sub-functions (Blue bar at the top of the application) and new elements (Everything between the grey and blue bar) are visualized.

<table>
<thead>
<tr>
<th>Function</th>
<th>New sub–function</th>
<th>New elements</th>
</tr>
</thead>
</table>
| Program        | - Reviews: see + add reviews  
                 | - Comments: see + post comments  
                 | - Pictures: see + add pictures                  | 'Rate this route'                                 |
| Routes         |                                                                                  | 'Rating of the routes'                            |
| Map            |                                                                                  | 'See and contact locals'                          |
|                |                                                                                  | 'See and contact other users'                      |
| My routes      |                                                                                  |                                                   |
| Info           |                                                                                  |                                                   |
| Chat*          | - Search; search other users  
                 | - Open chats; see open chats                             | 'Chat with other users'                           |
|                |                                                                                  | 'Chat with locals'                                 |
| Contact*       |                                                                                  | 'Contact NLroute with feedback about the application' |
|                |                                                                                  | 'Contact NLroute with feedback about the routes'   |

*New function

Figure 8.9 New functions, sub–functions and elements in the application
Appendix XII - Type of organization NLroute

Figure 8.11 NLroute as an institution (Saline Verhoeven, personal communication, October 8, 2015)

Figure 8.11 NLroute; executive (Saline Verhoeven, personal communication, October 8, 2015)