An Approach for Businesses to Increase Customer's Willingness to Share Personal Information Online

A Case in the Airline Industry

Emma Slot

TUDelft Delft University of Technology

accenture
High performance. Delivered.

An Approach for Businesses to Increase Customer's Willingness to Share Personal Information Online

A Case in the Airline Industry

by

Emma S.G. Slot

In partial fulfillment of the requirements for

the double degree of Master of Science in

Science Communication

& Systems Engineering, Policy Analysis, and Management

TU Delft — Delft University of Technology

accenture — *High performance. Delivered.*

Author

Name	Emma Slot
Student number	4080068
Email	emmaslot@msn.com
Double Degree	MSc. Science Education and Communication (SEC), Science Communication
Master Program	Track, Faculty of Applied Sciences, Delft University of Technology
	MSc. Systems Engineering, Policy Analysis and Management (SEPAM), Faculty of Technology, Policy and Management, Delft University of Technology

Graduation Committee SEC

First Supervisor	Dr. Ir. Steven Flipse, Science Education and Communication, Faculty of Applied Sciences, Delft University of Technology
Second Supervisor	Dr. Maarten van der Sanden, Science Education and Communication, Faculty of Applied Sciences, Delft University of Technology
External Supervisor	Drs. Jolien Ubacht, Section Information and Communication Technology, Faculty of Technology, Policy and Management, Delft University of Technology
Professor	Prof. Dr. Marc de Vries, Science Education and Communication, Faculty of Applied Sciences, Delft University of Technology
Company Supervisor	Lennart Boer, Junior Consultant, Accenture Digital Interactive
Company Supervisor	Johannes van Dam, Senior Manager, Accenture Digital Interactive

Graduation Committee SEPAM

Chairman	Prof. Dr. Ir. Marijn Janssen, Section Information and Communication Technology, Faculty of Technology, Policy and Management, Delft University of Technology
First Supervisor	Drs. Jolien Ubacht, Section Information and Communication Technology, Faculty of Technology, Policy and Management, Delft University of Technology
Second Supervisor	Dr. Ir. Maarten Kroesen, Section Transport, Infrastructure and Logistics, Faculty of Technology, Policy and Management, Delft University of Technology
Company Supervisor	Lennart Boer, Junior Consultant, Accenture Digital Interactive
Company Supervisor	Johannes van Dam, Senior Manager, Accenture Digital Interactive

TU Delft — Delft University of Technology

accenture
High performance. Delivered.

Preface

This thesis is written for my double degree master program Science Communication and Systems Engineering, Policy Analysis & Management. Twelve months ago, I decided to write an integrated thesis that would meet the thesis criteria of both master programs. This implied that I had to find a framework for my thesis that includes and integrates elements from both masters This was a high aim and a big challenge, but looking back, also a nice way to end both my masters after four years of studying the degrees

Stakeholder management was a significant part of my thesis; not only did I have to manage two committees at Delft University of Technology, I also wrote my thesis for my graduation company Accenture. Besides, I worked with Transavia Airlines, which was the case study for my reserach. In short, I had two faculties and two companies that expected high quality deliverables from me. Getting input from them in time and keeping them up to date was not always easy, but definitely an experience from which I learned a lot.

I would like to thank Jolien Ubacht for her biweekly thesis support during the last year. Not only could we discuss all aspects of my thesis, we also discussed holidays and shared cookies. Besides, I would like to thank Steven Flipse for his support in our meetings in Delft and in our early morning Skype meetings, while he was in the United States. He assisted me how I could translate my scientific findings into relevant practical insights. Moreover, I want to thank Maarten Kroesen. Although our meetings were sometimes short and I was not always good prepared, he was a big help in my data analysis.

I would also like to thank Lennart Boer from Accenture. Our daily chats about how my thesis is going, was a good outlet. Besides, the Accenture interns and colleagues were a great motivation to get at the office early in the morning The year at Accenture was a true pleasure for me with the perfect balance between hard working and the necessary fun times. Besides, I would like to thank Jochem Meijer and Nick Brandts for giving me access to Transavia and Transavia's customer data. Last, I would like to thank Jaco van Zijll Langhout for giving me the opportunity in June 2016 to work at this thesis topic at Accenture Digital and for being my supervisor until December 2016.

Last but not least, I would like to thank my dear friends and family that have always supported me finishing this '*big masterpiece*'.

Abstract

Introduction

In the last two decades, major changes in communication between companies and customers have occurred. A digital business to consumer market has arisen, in which communication changed from a face-to-face exchange of information and products or services to an exchange via online channels like company websites and social media. Customer values changed over time, instead of a low price and high quality, customers demanded more of products or services. Offering personalized services became a way for companies to meet the customer demands and differentiate themselves in a highly competitive online environment. Business ecosystems were created by which the services are offered and in which the customers' data is gathered and exchanged.

Research problem and knowledge gaps

In this digital era, customers became hesitant to share personal information online. Customers became suspicious about the amount of data that is collected about them and see this data flood as an intrusion of their privacy. The consequence is that companies and their business ecosystems can offer less personalized services or offer services that not fully serve the customer's needs and values. As a result, companies may struggle to really get to know the customers, to offer them the right online services, and to start a deeper customer relationship. While customers at the same time deal with privacy concerns and services in which they are not interested.

Two main knowledge gaps can be identified:

- It is unclear to what extent and under which conditions customers are willing to provide personal information online to organizations.
- It is unclear what businesses should do to make customers willing to share personal information online and what the implications of this action would be on the business and its ecosystem.

Research question and methods

Based on the identified knowledge gaps, the aim of this research is *to offer businesses an approach to increases customer's willingness to share personal information online.* To develop this approach, the research is centered around the following main research question:

How can businesses increase the customer's willingness to share personal information online?

To answer the main question, the research is divided into three subsequent research parts, in which different research methods are used:

The first part is the creation of a scientific conceptualization of customers sharing information online and businesses offering services online. Based on a literature review, an overview of relevant concepts for the model is created. The second part is the validation of customer conditions from the conceptual model. Customer data, gathered by a customer survey in the case study, is the input for the validation. In an analysis of the survey results, the relation between the conditions and information sharing is validated. The third and last part is the development of an approach for businesses to increase customer's willingness to share information online, based on the customer condition that is validated and can be influenced by a company. In a literature on the valid customer condition, an overview of constructs which the approach should include is identified. These constructs are validated in exploratory customer interviews and transformed into a tool. Use cases with examples from the case study describe the functionality of the tool.

Main findings

Part 1: Conceptual model of information sharing and online personalization
Online services offered by businesses based on and in return for personal customer information are defined in the study as online personalized services. For both information sharing and online personalization, categories and conditions are identified.

Categories of personal information that customers may share are defined as follows: context, identifiable, preferences, lifestyle information. Moreover, the conditions for sharing information that are addressed in literature are trust (personal and institutional), demographics (age, gender, and digital skills), benefits (non-monetary and monetary), and the context (domain and effort). Second, categories of personalization that businesses may offer that are found in literature are alert, make easy and cross-sell, and enrich. Besides, there are two factors identified that influence the online personalization by businesses: costs (customization, trust building, and security and liability) and benefits (improved services, targeted marketing, and third party sales).

By combining the findings, the scientific conceptual model of online information sharing and online personalization is created and presented in Figure 1. This overview gives a better insight in the complex relationship between the customer and the company and their motivations
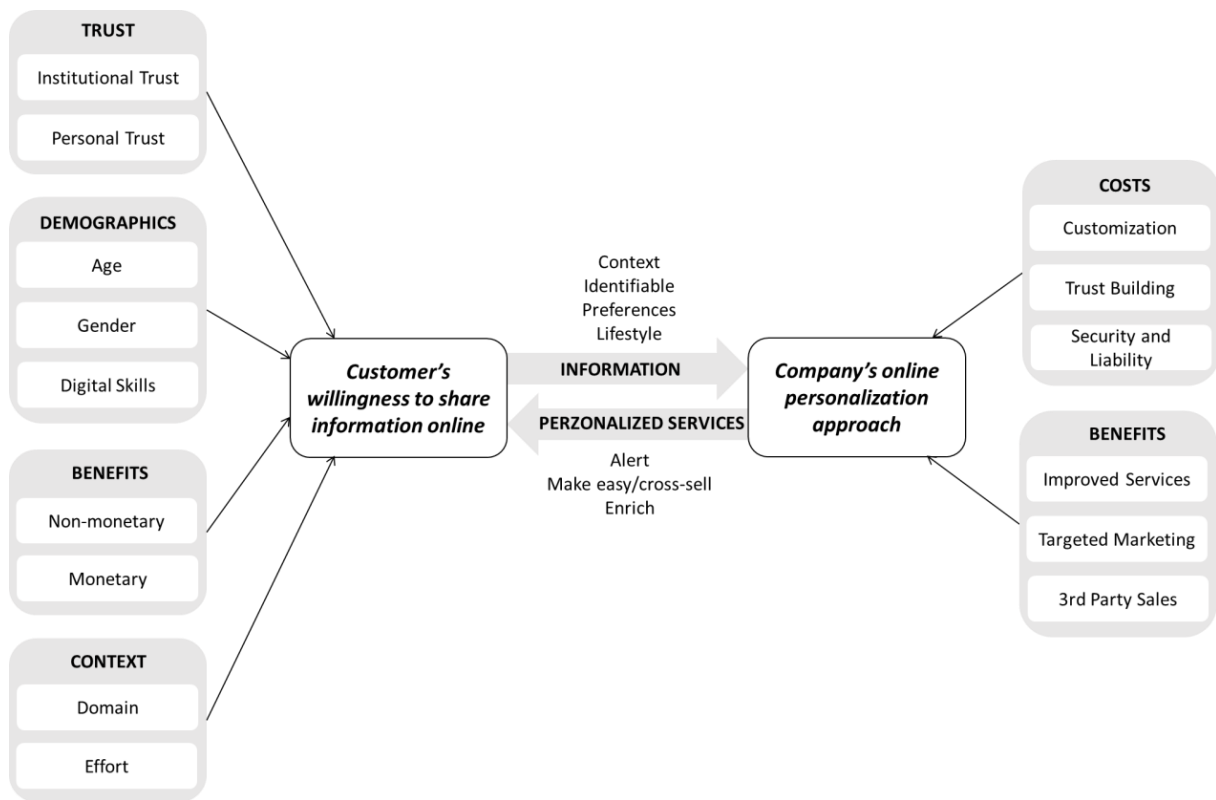
4

Figure 1 Conceptual model of sharing information and providing online personalization

Part 2: Validation of customer conditions (institutional and personal trust, control, and social media use)

In the second part, the conditions for customers to share information online are validated in the Transavia Airlines case study. Transavia is a low-cost Dutch airline company, that aims to offer high quality customer hospitality and digital services. A random sample of Dutch Transavia customers were questioned, to which the conclusions will also apply. After the analysis of the survey data, only about half of the customer conditions from the conceptual model is validated. Customers with a high institutional trust and/or a high personal trust are more willing to share personal information online. Besides, customers that are frequently active on social media are willing to share more, but frequent online shoppers are not necessarily willing to share more. Also, customers that want control on their data are less willing to share. The conditions age and gender did not have a significant relationship with information sharing. Lastly, based on the analysis, monetary and non-monetary benefits have a negative effect on the willingness to share information.

Part 3: Trust building approach to increase customer's willingness to share personal information online

'Institutional trust' is a valid customer condition and is a condition that can be influenced by businesses. This condition is, therefore, the basis for developing a trust building tool for businesses to increase their online trustworthiness. From a literature study, four online trust building principles have

5

been developed: experience, security, transparency, and trusted sources. Each of the principles contains multiple constructs from literature, which are validated by exploratory customer interviews. The tool is a visual presenting the trust building constructs per principle, within the business and within the ecosystem (Figure 2).
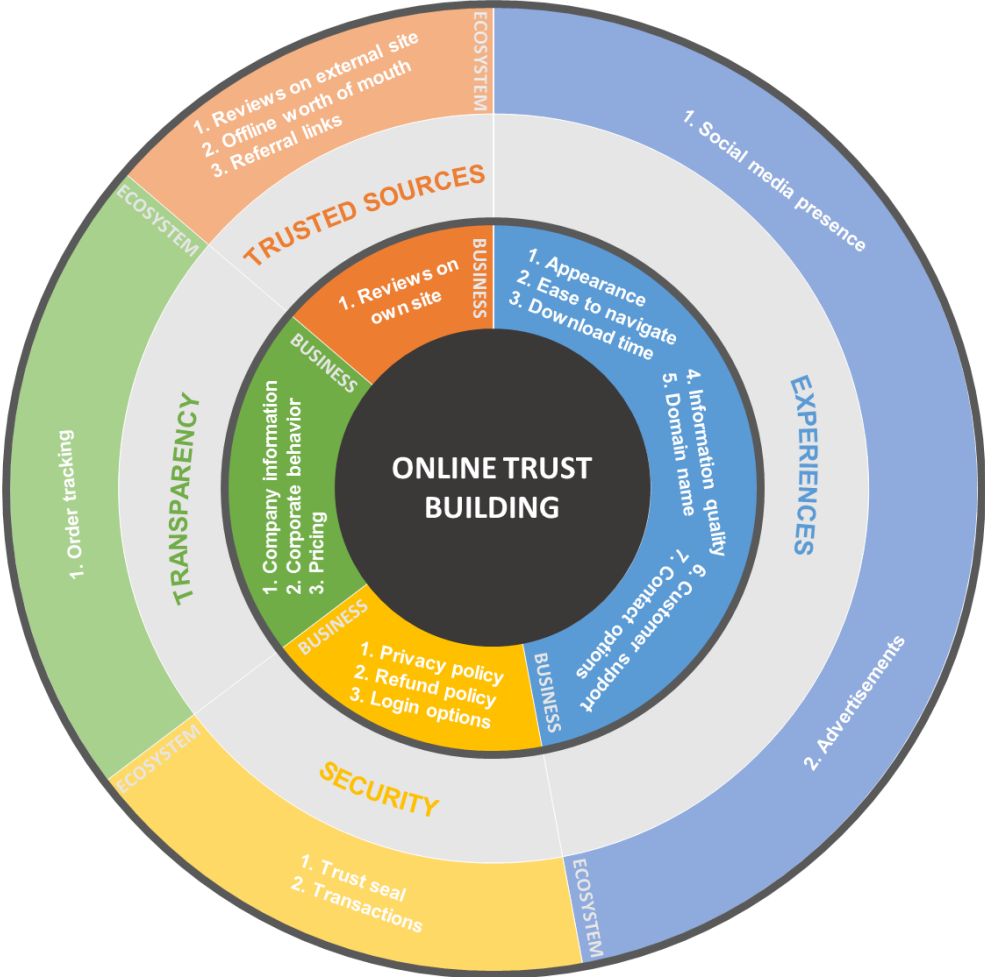

Figure 2 Online trust building tool

The trust building tool can be used by businesses as a starting point to discuss and possibly improve their online trust performance. The functionality of the tool can be illustrated by five use cases. These use cases are: check the presence of constructs, improve constructs, identify tensions due to constructs, propose a strategy that includes constructs, and utilize the ecosystem. All cases are illustrated by examples within the Transavia case.

Based on the validation of conditions and the insights on online trust building, a revised conceptual model is presented in Figure 3. The customer conditions identified from literature are replaced by the valid customer conditions. The initial costs for businesses are replaced by costs related to the online trust building principles.
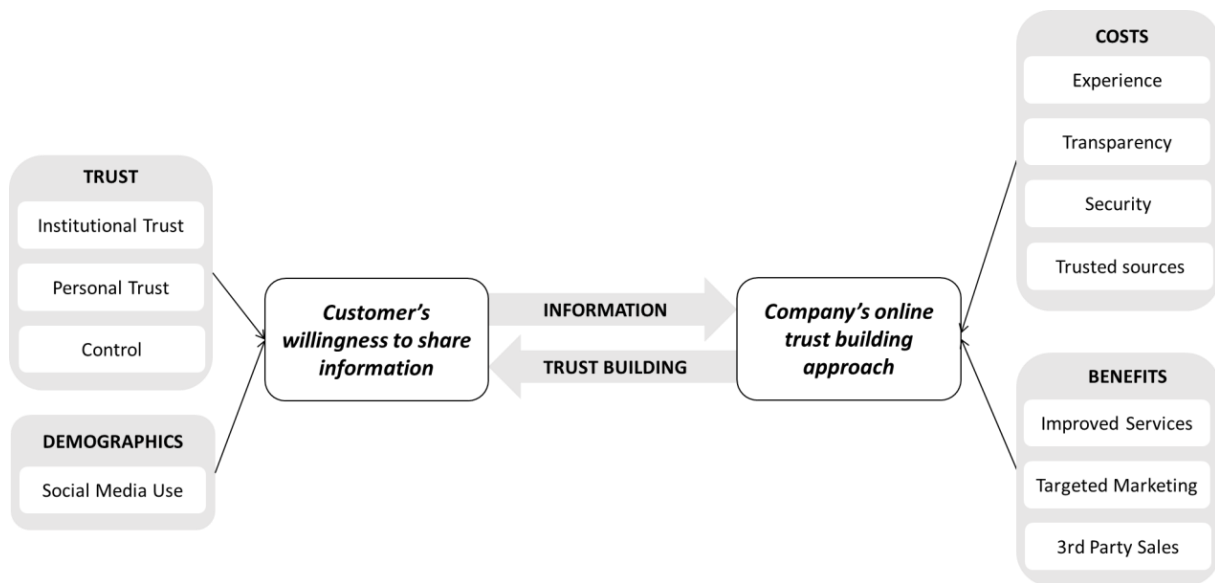
Figure 3 Conceptual model of online trust building

Scientific and practical relevance

The scientific contribution of this research are the extensive overviews on the categorization of both information and online personalization. Moreover, overviews are created on the various conditions for information sharing and factors influencing online personalization. By presenting and structuring these complex concepts, a categorization and final list of conditions and factors that could be used in this but also in other studies is proposed. The consequence of being all-inclusive was that a broad number of conditions could be validated and, therefore, insight is provided into what relevant conditions are, which can be the focus of this and other studies. A list of trust building constructs, validated by customers, and the translation of this list into a tool with guidelines has also not been presented yet in literature.

The tool meets the four dimensions of responsible innovation: anticipation, reflexivity, inclusion, and responsiveness (Stilgoe, J, Owen, R., Macnaghten, 2013). It is therefore a contribution to the SEC research agenda on Responsible Innovation.

The practical contribution of this research is that the tool can be used to assess and improve a company's online activities on trust building. It can also be used to identify elements where trust clashes with other goals of a company. Besides, the tool can show a business new input for a business strategy. Lastly, ideas on how a business can make better use of its ecosystem could be proposed.

Accenture, and consultancy firms in general could use the tool to improve the online trustworthiness of their clients. The tool can be the starting point of a discussion with a client manager involved in the company's online activities. This discussion might lead to new small work packages in projects in which

Accenture is involved. In the case of Transavia, the tool was a starting point for a discussion about various online choices and has led to several insights into its current online activities.

Discussion and future research

There is a major discrepancy between the conceptual model and the valid conditions in this research. Various reasons may explain this discrepancy. First, the conceptual model tried to offer a representation of complex concepts and human behavior, which resulted into debatable decisions on how to include these complex concepts. Besides, there are some concepts included that are only proven by one author or disproven in other studies. Moreover, the definition and structure of the survey statements may not have led to a perfect representation of the customer's true attitudes.

Six suggestions for future research are presented. First, future research can validate the influence of the context condition, by applying the conceptual model in varying case studies and by using scenarios in the survey. Second, future research can study what the turning point is of sharing information for a monetary benefit. Third, future research can validate trust building constructs in a way that includes different methods and larger customer sample sizes. New research may reveal the differences in online trust for different cultures and nationalities. Fourth, future research can look at prioritizing the trust building constructs to create a more efficient tool. Fifth, future research can apply the tool in more cases to identify a better overview of the functionality of the tool. Last, additional studies on the extent to which A/B testing can measure the increase in trust can be conducted.

Table of Contents

List of Figures

List of Tables

1 Introduction

This chapter presents the introductory part of the research by placing the research context (paragraph 1.1), and describing the research problem (paragraph 1.2). Furthermore, the research design including research questions and methodology is provided (paragraph 1.3), and the scientific and practical relevance of the research are given (paragraph 1.4). The chapter ends with a conclusion in paragraph 1.5.

1.1 Research context – Business challenges in customer service through the developments in digital communication

In the last two decades, major changes in communication between the company and consumer have occurred. Communication has shifted from face to face, letter and telephone, towards communication via websites, social networks, email and mobile phones. In the dot-com bubble between 1997 and 2002 and the years that followed, new digital technologies emerged and became adapted to a wide audience. Physical contact was no longer necessary to communicate and it became possible to have communication from anywhere in the world to anywhere at low costs. A new digital business to consumer market arose, in which businesses have to face the implications of this digital change. After a literature study on the impact of digital communication on businesses' practices towards their customers, four general challenges due to digital communication for businesses have been identified:

1. Differentiate due to increased global competition
2. Meet changing customer values
3. Integrate business efforts in business ecosystems
4. Collect and use increasing amount of customer data

To deal with these challenges, organizations have to develop a comprehensive digital approach that enables a better digital relationship with customers. In the following, each of the challenges and the resulting need for personalized customer services are described. It will become clear that digital personalization is a key approach for businesses but that this has not yet developed as an empathic design.

1. Differentiate due to increased global competition

For businesses, digital communication meant a shift to much wider markets. The potential customer base increased from local to worldwide, but so did the competition. Since companies no longer have to build networks of local agents and offices, more companies started to take advantage of low barriers of entering the digital market (Hoong, 2013). To capture the attention of the wider markets and maintain customer loyalty, businesses have to constantly come up with innovative strategies (Ingleton

& Thomas, 2011). Important business strategy elements are price, products and experience (Good, Pagel, & Gibbons, 2015). Upstart rivals may undercut prices "on small volumes, forcing bigger companies to do the same" (Hirt & Willmott, 2014, p. 4). Competitors of NBC Universal Media, LCC may compete with CBS Broadcasting Inc., but should be cautious of the services of Netflix, Inc. (Heald & Ref, 2015). The intimate, personalized digital experiences as delivered by companies such as Amazon, Google and Apple have spoiled consumers (Mylavarapu, 2014). "New competitors can be smaller companies that will never reach scale but still do a lot of damage to incumbents" (Hirt & Willmott, 2014, p. 4).

2. Meet changing customer values

At the same time, customer values were changing because of the increased comfort with technology (Hoong, 2013). Customers are more intelligent, informed, connected, and have more options to choose from (Good et al., 2015). They control "every aspect of the conversation, the timing, the channel, and the content" (Killian & McManus, 2016, p. 540). Customers became more inclined to complain when things go wrong and expect better services from a company (Hoong, 2013), like viewing in-store product inventory online. Customers will also expect firms to be ahead of them, like knowing what they need before they themselves have shown the need (Good et al., 2015). Customers have been making their purchase decisions based on the traditional drivers: price, quality, and convenience (Ringquist, Phillips, Renner, Sides, & Stuart, 2016). "Only a small set of customers actually made purchase decisions based on other factors" (Ringquist et al., 2016, p. 1), for example corporate social responsibility factors. However, the new generation of customers "have begun to weigh a new set of factors more heavily in their purchase, disrupting the consumer value equation" (Ringquist et al., 2016, p. 1).

The changing expectations of 'generation Y' or 'digital natives' have as a consequence that companies must look at new ways to meet these changing demands (Ingleton & Thomas, 2011). Companies become less effective in influencing the customer preferences through mass marketing (Ringquist et al., 2016). In order to be more competitive and build a deeper relationship with customers, companies need to understand who the customers really are and what they care about. Products and experiences should help people along on their journey to pursue their passions and goals. Based on global insights from over 22,000 respondents, consulting firms BBMG & GlobeScan (2015) have identified the rising generation of Aspirationals. Aspirationals are customers who "combine a love of style, social status and sustainability values to shift cultural norms and rewrite the rules of marketing" (BBMG & GlobeScan, 2015, p. 4). They cover more than one-third of the global public and the generation is not defined by age (Bemporad et al., 2015).

Table 1 presents an overview of aspirations that hold the future for brands.

Table 1 Aspirations of consumers (Bemporad et al., 2015; Bemporad, Hebard, & Bressler, 2012)

Aspiration	Description	Example
Sustainable	Reducing waste by recycling	Pley's toy subscription program
Transparent and honest	Solve challenges together with the consumer	Apple's beta testing program
Consumer collaboration	Transactions within peer networks	Uber's shared car rides
New norms	New roles, opportunities, and adventures	Gap Inc.'s girls supporting clothing line
Meaningful	Positive contribution to community	TOMS's shoe donations
Social and connected	Connect to a community of peers	TripAdvisor's reviews

Ringquist et al. (2016) also defined new consumer values. It described evolving drivers of the customer value equation for food and beverages that are listed in Table 2. These evolving drivers exist next to the traditional drivers: *price, taste, and convenience* (Ringquist et al., 2016). The study by Ringquist et al. (2016, p. 1) offered "an advanced view of current and upcoming market and consumer behavior changes", anticipated as a result of the research.

Table 2 Evolving drivers of consumers (Ringquist et al., 2016)

Driver	Examples
Health and Wellness	Nutritional content, organic production, all-natural ingredients, fewer artificial ingredients.
Safety	Absence of allergens, fewer ingredients, detailed accurate labeling.
Social impact	Local sourcing, sustainability, animal welfare, fair treatment of employees
Experience	Retail store layout and services, channel innovation, brand interaction, personalized engagement spanning
Transparency	Clear labelling, certification by trusted third parties, access, trust

3. Integrate business efforts in business ecosystems

Advances in digital communication made businesses become "more interactive, creating distributed operations and partner relationships to deliver value" (Heald & Ref, 2015, p. 2). "Stand-alone offerings of third parties, sometimes from small companies or even individuals" (Hirt & Willmott, 2014, p. 6), became part of so-called business ecosystems, assembling the entire service. James Moore, introducer of the term business ecosystem in 1993, defines a business ecosystem as a network of organizations and individuals, each of which is master in its own domain, who collaborate to provide more intuitive, real-time, integrated solutions and services (Moore, 2006). Players in the ecosystem that have the ability to bring benefits for all members of the ecosystem, by providing resources based on which others could derive value are defined as keystone players (Iansiti & Levien, 2004).

For example, a whole ecosystem has emerged around the iPod music player from Apple, introduced in 2001 (Darlin, 2006). "Companies that make accessories for the Apple iPod, […] entertainment companies that license music through iTunes, the iPod-connected music downloading site, as well as consumers who purchase and enjoy the music", can be said to be members of "the iPod business ecosystem" (Moore, 2006, p. 33). Another example of an evolving ecosystem is the connected car, requiring cross-industry and competitor cooperation. The connected car needs to work seamlessly with consumers' devices and needs to keep up with the pace or depth of technology necessary, funneled through their ecosystems (Heald & Ref, 2015).

4. Collect and use increasing amount of customer data

In the digital world, the amounts of data generated and stored have expanded within a short period of time. The idea of segmenting and analyzing customers "through combinations of attributes such as demographics, customer purchase metrics, and shopping attitudes and behavior" rapidly evolved (Manyika et al., 2011, p. 99). Companies get to know their customers via online data instead of physical contact. Two decades ago, the grocer knew exactly what the favorite vegetables were of the family three blocks away, who the family members were, and where they went on vacation. Nowadays, companies more and more have to predict customers' situation and preferences based on their enormous trails of data created by communicating, browsing, buying, sharing, and searching (Manyika et al., 2011). Companies collect customer data "with greater granularity and frequency, capturing every transaction, and attaching all possible personal information" (Manyika et al., 2011, p. 21). For instance, Walmart, the largest retailer in the U.S., uses big data in its commercial activities. It collects and analyses a large amount of consumer data, to predict customer's habits and adjust pricing strategies and advertising campaigns (Philip Chen & Zhang, 2014). By using big data, Walmart creates value and outperforms its peers. It manages customer relationships strategically by learning more about its existing customers, who deliver a company more profitability than new customers (Jamiy, Daif, Azouazi, & Marzak, 2014).

Conclusion

With the rise of digital communication, companies have to change strategies to outperform their growing competition. Customers' needs are changing and in order to stay competitive, digital services have to meet the customers' expectations throughout the whole customer journey. Ecosystems are created and customers' data is gathered. New personalized services attract customers and contribute to a loyal customer base. However, in this process of serving the new customer values in the digital environment, customers also became reluctant in sharing information online.

1.2 Problem description

1.2.1 Problem exploration

In the digital environment, customers expect services to meet their values and needs. Companies need to understand customers at a personal level in order to provide personalized services that meet customers' values and needs. Most companies already have access to a certain amount of information about customers. However, they still lack the capability of building deep relationships with their customers (Bemporad et al., 2015). Because of several factors, like privacy concerns, customers seem to be reluctant in sharing their needs, goals, and aspirations with companies. "Many consumers are suspicious about the amount of data that is collected about every aspect of their lives, from what they buy to how healthy they are" (Manyika et al., 2011, p. 15), and see "the data flood as [...] an intrusion of their privacy" (Manyika et al., 2011, p. 1). The consequence is that companies and their business ecosystems can offer less personalized services or services that not fully serve the customer's needs and values. As a result, companies may struggle with loyalty and reputation issues, while customers deal with privacy concerns and services in which they are not interested.

1.2.2 Knowledge gaps

Based on the problem exploration, two main knowledge gaps can be identified.

- From a customer perspective, it is unclear to what extent and under which conditions customers are willing to provide personal information online to organizations.
- From a business perspective, it is unclear what businesses should do to make customers willing to share personal information online and what the implications of this action would be on the business and its ecosystem.

These knowledge gaps make it hard for companies to really get to know the customers, to offer them the right online service, and to start a deeper customer relationship.

1.3 Research design

1.3.1 Research objective and main research question

Based on the identified knowledge gaps, the aim of this research is *to offer businesses an approach to increases customer's willingness to share personal information online.* To develop this approach, the research is centered around the following main question:

> *How can businesses increase the customer's willingness to share personal information online?*

To answer the main question, the research is divided into three subsequent research parts. In the first part, a theoretical conceptualization of customers sharing information online and businesses offering

services online is developed. These services offered by businesses based on and in return for personal customer information are referred to as online personalized services. In the second part, the conditions for customers to share information online are validated in a case study. In the third part, customer conditions that are validated and can be influenced by the company are used as the basis of a business approach, designed to increase customer's willingness to share information online. The research design, introduced in the next paragraph, will guide the research.

1.3.2 Sub-research questions and methods

This paragraph describes the overall research design, including the goal, research questions and research method per chapter, summarized in Table 3. The subsequent answers to the research questions will lead to an answer on the main research question and thus to achieving the research objective.

Table 3 Research design

Ch.	Goal	Sub-question(s)	Method
2	Creation of conceptual model	**1.** What is the theoretical conceptual model of customer's sharing personal information online and businesses offering online? personalized services? **1.1** What personal information and under which conditions are customers sharing for online personalized services? **1.2** Which online personalized services and under which influencers are businesses offering to customers?	Literature review
3	Validation of customer conditions	**2.1** What are valid customer conditions for sharing personal information online?	Survey data analysis
4	Approach to increase online information sharing	**3.1** What is an approach for businesses to increase customers' willingness to share personal information online? **3.2** What is the revised conceptual model for increasing customer's willingness to share personal information online?	Literature review, interviews

In the following, the research design is explained for research chapters 2, 3 and 4.

Chapter 2: Literature review to create a conceptual model

Information and personalization are ambiguous concepts that need clarification before any meaningful answers on research questions can be given. The concepts have no obvious unit in which they can be expressed. Besides, although it is reasonable to assume information and personalization can be exchanged for each other between the customer and company, it is not clear what an exchange would concern and under which conditions an exchange takes place. A solid meaning should be given to the concepts and the relationship between them, before any other steps in the research can be performed.

Therefore, the aim is to develop a conceptual model about the concepts and relationship, which will be the input for the next step in the research.

A literature review is used as the method to find the answers on question 1 (Table 3). The literature study will consist of a meta-analysis of all articles, websites, newspapers and other written materials that can be found about the subjects. A meta-analysis can be defined as a systematic review of a focused topic in the literature, for the purpose of integrating findings (Glass, 1976; Russo, 2007). Scientific articles used for the literature review will be obtained via Scopus, Google Scholar and Web of Science.

Chapter 3: Data analysis of case data to test customer conditions

The conceptual model explains what the relevant customer and business concepts are and how they are expected to relate to each other, according to literature. However, the developed model is not validated and the strength of relations between concepts are unknown. Conclusions and recommendations based on the theoretical conceptual model are therefore less useful in a practice. Since the customer's conditions for sharing information are input for an approach for businesses, which will be proposed at the end of the thesis, these conditions are validated in this chapter. The customer conditions are validated in a case study by means of a customer survey. The survey results are analyzed to get insight in the customers' attitudes on online information sharing and to see to what extent the data analysis can prove or disprove the hypotheses of the conceptual model. These insights will be used to answer research question 2 (Table 3).

A single case study is preferred over multiple studies due to the time limitations of the research. The case for this research is Transavia Airlines. Transavia is a low-cost airline that differentiates itself in the competitive airline market by offering personalized digital services to its customers. Accenture is the commissioning organization in the cooperation with Transavia.

Case: Transavia Airlines

Transavia, part of the AIR FRANCE KLM Group, is a Dutch low-cost airline that provides charter and scheduled flights to over 110 destinations, primarily in Europe and North Africa. Transavia has been in business for nearly 50 years, and it attaches great importance to providing passengers hospitality and digital services. Transavia offers both leisure and business travelers an attractive price with additional (paid) products and services. It transports 11 million passengers annually and operates a young, environmentally friendly fleet. Source: Transavia (2016)

Commissioning organization: Accenture

Accenture is a leading global professional services company providing a range of strategy, consulting, digital, technology, and operations services and solutions.

Chapter 4: Design an approach for businesses to increase customer's willingness to share personal information

The findings from the case data are the starting point for an approach for a business to increase customer's willingness to share personal information. Relevant findings concern the customer conditions that appear to be valid from the data analysis, which are the customer's conditions that the approach should increase. A literature review is the starting point for the design of a tool for businesses and their ecosystem. In exploratory interviews, customers are interviewed to validate the input of the tool and if necessary add input. After the tool is presented, the functionality of the tool is described by several use cases with examples from the case study. The chapter ends with a description of the revision of the initial conceptual model. This will lead to answering the last two research questions 3.1 and 3.2 (Table 3).

A more elaborated overview of the research is provided in the research flow chart in Figure 4.
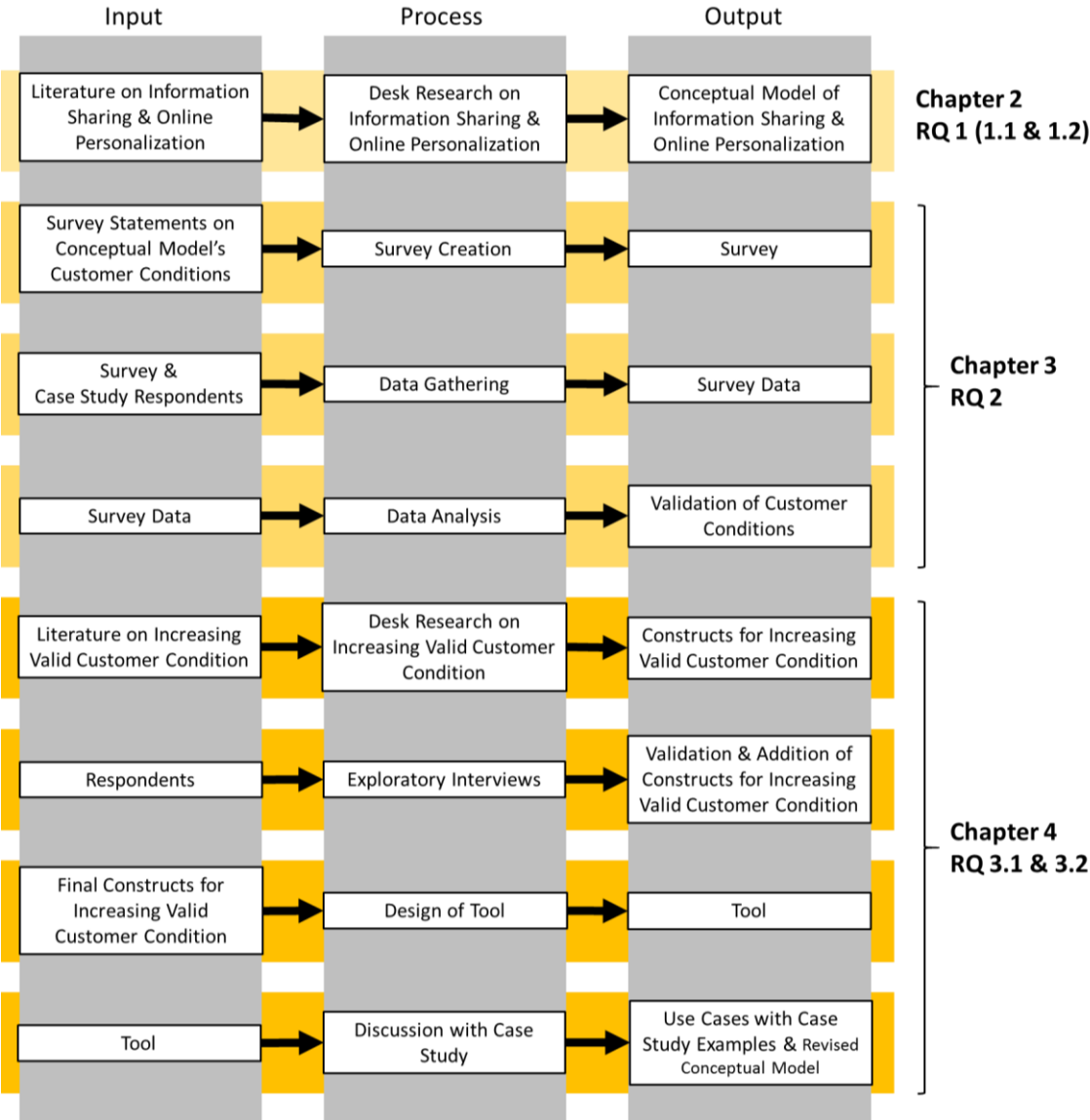
Figure 4 Research flow chart

1.4 Relevance

This paragraph elaborates on the scientific relevance of this research for both the TU Delft masters (SEPAM and SEC), and on the practical relevance of this research in general, and for Accenture and the case study Transavia.

1.4.1 Scientific relevance

Both information and personalization are very complex concepts. The contribution to literature of this study is by providing an overview of how these concepts are defined and what a way could be to structure these concepts. By also validating concepts, not only an overview and structure can be created, but also new insights on these concepts can be provided.

Responsible Innovation is a topic high on the SEC research agenda. The approach that will be created should meet the four dimensions of responsible innovation as presented by Stilgoe, J, Owen, R., Macnaghten (2013): anticipation, reflexivity, inclusion, and responsiveness. This implies that the approach should anticipate on the latest implications. Besides, the approach should enable businesses to reflect on their performance. Moreover, the approach should include relevant stakeholder views. Lastly, the approach should be responsive for different stakeholders and circumstances.

1.4.2 Practical relevance

The research should give insight into which conditions may increase customer's willingness to share information and what businesses can do to anticipate on these conditions. The delivered approach should provide practical guidelines for businesses on how to increase customer's willingness to share personal information online. Accenture should be able to use the approach for different Digital projects in which they are involved. Besides, applying the approach in the case study should lead to useful insights for Transavia Airlines.

1.5 Conclusion

In the first chapter of this research, the topic of digital communication, the research problem, knowledge gaps, and research design are introduced. The identified knowledge gaps resulted in the main research objective and the main research question of this research: *How can businesses increase the customer's willingness to share personal information online?* By dividing the research into three parts that subsequently answer the sub-research questions, the main research question can be answered. The three parts consist of the creation of a conceptual model, validation of customer concepts, and the creation of the approach based on the valid customer concepts. Moreover, the scientific and practical relevance are presented. The following chapters will be dedicated to answering the research questions.

2 Creating a conceptual model of information sharing and online personalization

The concepts of information and personalization, and the relationship between these concepts are ambiguous. This chapter is dedicated to the creation of a scientific conceptual model in which the concepts are structured and explained. The model can be used as input for the next step in this research. The research question that will be answered in this chapter is as follows:

> SQ 1: *What is the theoretical conceptual model of customer's sharing personal information online and businesses offering online personalized services?*

As a start for the conceptual model, the definition of online personalization is provided (paragraph 2.1). Next, a literature review on both information sharing and online personalization are performed, answering the two sub research questions:

> SQ 1.1: *What personal information and under which conditions are customers sharing for online personalized services?*

> SQ 1.2: *What online personalized services and under which influencers are businesses offering to customers?*

To answer SQ 1.1 in paragraph 2.4, a literature review is performed on what personal information customers share online (paragraph 2.2), and under which conditions (paragraph 2.3). To answer SQ 1.2 in paragraph 2.7, a literature review is performed on what online personalized services businesses can offer (paragraph 2.5), and what factors influence offering personalized services (paragraph 2.6). The integration of the answers on SQ 1.1 and 1.2 into a conceptual model, answering research question 1, will be the outcome at the end of this chapter (paragraph 2.8).

2.1 Definition of online personalization

The four identified digital trends (increasing global competition, changing consumer values, rising business ecosystems, and increasing big data) changed the relationship between business and customer and brought a new challenge of how to shape this new relationship. Since businesses became more competitive when services meet the customers' needs, businesses started to improve their digital personalization practices.

Personalization is defined in the literature in online and offline contexts. Some of the differences between these types are the number of actors, the media of exchange, the liability and privacy sensitivity (Chellappa & Sin, 2002). In an offline environment, there are typically two actors, while there

are usually more actors in the complex online exchange (Chellappa & Sin, 2002). Online "personalization takes place between one or several providers of personalized offerings and one or several consumers" of these offerings (Adomavicius & Tuzhilin, 2005, p. 84), such as clients, users, and website visitors. Furthermore, offline personalization is often an economic transaction, while online personalization exchanges customer information (Chellappa & Sin, 2002). Lastly, liability and privacy concerns might be higher in an online context due to technology that is susceptible to hacking and the high amount of actors and information, that later can be linked together (Chellappa & Sin, 2002, 2005).

The focus of this research is on online personalization within the marketing discipline. Synonyms of online personalization are web-based personalization, e-personalization, digital personalization, marketing personalization, and e-commerce personalization. All synonyms were used as search terms in looking for definitions on scientific databases Scopus and ScienceDirect. Articles that conducted a literature review on personalization were chosen for further input of this research. Six articles were found (Adomavicius & Tuzhilin, 2005; Fan & Poole, 2006; Montgomery & Smith, 2009; Vesanen, 2005, 2007; Vesanen & Raulas, 2006) that provided a literature review on personalization, including lists with definitions and corresponding authors. Most definitions date from the early 2000s, which is the time public internet became widely used for emails and e-commerce. The definitions for personalization in the digital service context that frequently appeared in the scientific articles are included in Table 4.

Table 4 Definitions of online personalization

Author(s)	Definition
Allen, Kania, & Yaeckel (2001)	Company-driven individualization of customer Web experience. (p. 32-33)
Cöner (2003)	Personalization is performed by the company and is based on a match of categorized content to profiled users.
Dyche (2002)	"Personalization is the capability to customize communication based on knowledge preferences and behaviors at the time of interaction." (p. 36)
Hagen, Manning, & Souza (1999)	"Personalization is the ability to provide content and services that are tailored to individuals based on knowledge about their preferences and behavior." (p. 8)
Hanson (2000)	"A specialized form of product differentiation, in which a solution is tailored for a specific individual." (p. 450)
Imhoff, Loftis, & Geiger (2001)	"Personalization is the ability of a company to recognize and treat its customers as individuals through personal messaging, targeted banner ads, special offers on bills, or other personal transactions." (p. 467)
Kasanoff (2001)	"Personalization is the capability to provide users, customers, partners, and employees, with the most relevant web experience possible." (p. 15)
Peppers & Rogers (1997)	Customizing some feature of a product or service so that the customer enjoys more convenience, lower cost, or some other benefit.
Personalization Consortium (2003)	Personalization is the combined use of technology and customer information to tailor electronic commerce interactions between a business and each individual customer. Using information either previously obtained or provided in real-time about the customer and other customers, the exchange between the parties is altered to fit that customer's stated needs so that the transaction requires less time and delivers a product best suited to that customer.
Riecken (2000)	"Personalization is about building customer loyalty by building a meaningful one-to-one relationship; by understanding the needs of each individual and helping satisfy a goal that efficiently and knowledgeably addresses each individual's need in a given context." (p. 26)
Roberts (2003)	"The process of preparing an individualized communication for a specific person based on stated or implied preferences." (p. 462)
Suprenant & Solomon (1987)	"Personalization is any behaviors occurring in the interactions intended to contribute to the individuation of the customer" (p. 87)
Wind & Rangaswamy (2001)	Personalization can be initiated by the customer (e.g., customizing the look and contents of a Web page) or by the firm (e.g., individualized offering, greeting customer by name etc.). (p. 15)

The definitions cover various aspects of personalization. Collectively, the definitions state that personalization is the tailoring of certain offerings (e.g., content, service, product, communication, solution, and transactions) by providers (e.g., business, company, firm) to customers of these offerings (e.g., customer, person, individual, users, partners, employees) based on knowledge about these customers (e.g., preferences, behavior, needs) to achieve certain goals (e.g., loyalty, convenience,

lower cost). In addition to these findings, another provider to this list will be added in this reserach, namely a business ecosystem as described in paragraph 1.1. The business ecosystem includes all organizations involved in the personalization of services and products. The definition used in this research is therefore:

> *Online personalization is the tailoring of certain offerings by businesses in business ecosystems to consumers of these offerings based on knowledge about these customers to achieve certain goals.*

A service that meets the customers' needs can be convenient for a customer and can make the service more competitive. However, to enable these services, it requires the customers to share personal information and the companies to employ the right personalization strategies tailored to customers' tastes (Chellappa & Sin, 2007).

2.2 Information categories

Information about the customer is the basis for online personalized services. Customers can share none to all information about themselves on the web. Before looking into conditions influencing the sharing of information, an analysis of the literature on online information categories is conducted. Search terms used in the literature review are 'information', 'data', 'customer', 'consumer', 'sharing', 'online', 'personal', 'type', and 'category'. The four articles presented in Table 5 are chosen to be used in this study, because they all provide categories of information that customers can provide to companies in an online context. The first three articles are scientific and are found in the scientific databases Scopus and ScienceDirect. The last article in the table is published in Harvard Business Review. This article is a relevant contribution to the other three articles since the authors provide their own unique interpretation of swapping value for data, based on different categories.

Table 5 Information categories

Author(s)	Publication and Method	Information categories
Chellappa (2002)	• Springer: Information Technology & Management • Literature study	• Anonymous information • Personally non-identifiable • Personally identifiable
Morey, Forbath, & Schoop (2015)	• Harvard Business Review • Survey	• Self-reported • Digital exhaust • Profiling data
Schubert & Koch (2002)	• Proceedings of Americas Conference on Information Systems • Literature study	• Person-related or explicit profiles: identification profile, preference profile, socio-economic profile, ratings, relationships, reviews/opinions • Context-related or implicit profiles: transaction profile, interaction profile, external data
Wattal, Telang, Mukhopadhyay, & Boatwright (2005)	• CMU Research Showcase • Literature study	• Personal information • Product preferences

All authors listed in Table 5 defined different categories of information, which will be the starting point for developing categories for this research. The categorizations of information are not assumed to be wrong or right, but they differ in usefulness for this study. Therefore, all categorizations are considered when developing the key categories for this study. To define the most accurate categories from the literature overview, first, similar categories are bundled. To structure the bundling, a distinction is made between explicitly and implicitly provided information, and between information that is identifiable (directly linked to a person) and unidentifiable (Table 6). There is no information category mentioned in Table 5 with identifiable information that is implicitly provided. This can be explained since a customer should at least share one bit of personal information to be identified.

Table 6 Bundling of information categories

	Identifiable	Unidentifiable
Implicit		• Anonymous (Chellappa, 2002) • Digital exhaust (Morey et al., 2015) • Context-related or implicit profile: transaction profile, interaction profile, external data (Schubert & Koch, 2002)
Explicit	• Personally identifiable (Chellappa, 2002) • Self-reported (Morey et al., 2015) • Profiling data (Morey et al., 2015) • Person-related or explicit profile: identification profile (Schubert & Koch, 2002) • Personal information (Wattal et al., 2005)	• Personally non-identifiable (Chellappa, 2002) • Self-reported (Morey et al., 2015) • Person-related or explicit profile: preference profile, socio-economic profile, ratings, relationships, reviews/opinions (Schubert & Koch, 2002) • Product preferences (Wattal et al., 2005)

Now the information categories from literature are bundled, categories that will be used for this research can be defined. The categories used for this research are visualized in Figure 5 and described below.
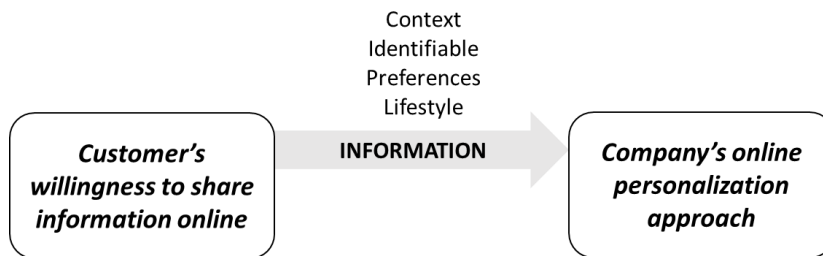
Figure 5 Information categories

Information category 1: Context (implicit & unidentifiable)

The first bundling contains context-related, anonymous, digital exhausted data. This data is obtained without the customer actively providing information and includes technological customer attributes like location, IP address, language, and time.

Information category 2: Personally identifiable (explicit & identifiable)

The second bundling contains self-reported individual customer attributes, which includes personally identifiable characteristics like name, date of birth, and bank account.

Information category 3: Preferences (explicit & unidentifiable)

The third bundling contains product or service preferences, which is explicitly provided personally unidentifiable information. Examples are a preference for the color of a product or the delivery address for receiving goods that are ordered online.

Information category 4: Lifestyle (explicit & unidentifiable)

The fourth and only category left is the lifestyle category. This category includes personally non-identifiable information that does not specifically relate to the product or service but to the person's life, which is explicitly provided by the customer to the retailer. Examples are socio-economic information or the customer's behavior and interests.

The information categories, combined or separate, say to some extent something about the customer. However, the customer only shares this information under certain conditions. Whether or not and when customers are willing to share information will be studied in the following paragraph.

2.3 Conditions for sharing personal information online

A literature review is conducted on factors influencing customer's likelihood of sharing personal information for online personalization. Search terms used to look for relevant articles in scientific

databases Scopus and ScienceDirect are combinations of the terms 'personalization', 'information', 'data', 'privacy', 'online', 'willingness', 'sharing information', 'factors', 'customer', and 'consumer'. The articles are all published in the 2000s, because in these years, online personalization and privacy concerns are concepts that started to play a role in society. Most articles are scientific and derive conclusions based on data analysis of the outcomes of their survey. Chellappa & Sin (2002) did not execute a data analysis, but derived a very clear conceptual model from a literature review, which provides a good first impression of the possible factors and relations for this study. An article which is rather questionable is the article from Vesanen (2007). This is because there is no proof or explanation given for the factors that are included in the conceptual model in the article. The work of Morey et al. (2015) is non-scientific, but provides very well-described and relevant insights for this study based on their data analysis.

Table 7 presents a list of indicators from scientific studies that influence to various extends the information provision by customers in return for personalized services.

Table 7 Sharing information for online personalization factors

Author(s)	Concept	Publication and Method	Factors
Andrade, Kaltcheva, & Weitz (2002)	Approaches for encouraging self-disclosure of personal information on the web	• Advances in Consumer Research • Survey	• Completeness of privacy policy • Company reputation of trustworthiness
Chellappa & Sin (2002)	Consumer's likelihood of revealing information for personalization services	• Springer: Information Technology & Management • Literature study	• Value for online personalization • Concern for privacy • Contextual sensitivity • Vendor reputation
Dantas & Carrillat (2013)	Role of personalized communications in enhancing customer-company relationships	• Wiley: Canadian Journal of Administrative Sciences • Experiment	• Involvement • Perceived effort • Relevance
Dinev et al. (2006)	Intention to conduct e-commerce transactions	• Palgrave Journals: European Journal of Information Systems • Survey	• E-commerce use • Privacy concerns • Propensity to trust • Institutional trust • Perceived risk
Farag Awad & Krishnan (2006)	Relationship between information transparency and consumer willingness to partake in personalization	• MIS Quarterly • Survey	• Information transparency • Privacy policy • Previous privacy invasion • Benefits • Privacy concern

Jai & King (2016)	Consumers' willingness to share personal information	• Elsevier: Journal of Retailing and Consumer Services • Survey	• Privacy concerns • Age • Gender • Consumer loyalty
JungKook & Lehto (2010)	Consumers' perceptions and attitudes towards e-personalization and privacy features	• AABRI: Journal of Management and Marketing Research • Experiment	• Privacy concern • E-personalization features
Kobsa et al. (2014)	Privacy attitudes and behaviors in client-side personalization	• Proceedings of ACM Conference on Human Factors in Computing Systems • Experiment and survey	• Perceived protection • Privacy concerns • Satisfaction
Morey et al. (2015)	Customer data: designing for transparency and trust	• Harvard Business Review • Survey	• Benefits • Trust
Stevenson & Pasek (2015)	Usage of personalization services	• Proceedings of Conference on Communication, Information and Internet Policy • Survey	• Privacy concern • Trust • Internet use
Taylor, Davis, & Jillapalli (2009)	Behavioral intentions in the context of online interactions	• Springer: Electronic Commerce Research • Simulation and survey	• Online trust • Information control • Privacy concern • (Non-)cash compensation
Vesanen (2007)	Conceptual framework of personalization	• Emerald Insight: European Journal of Marketing • Literature study	• Benefits customer: better preference match, better products, better service, better communication, experience of one • Costs customer: privacy risks, spam risks, spent time, extra fees, waiting time

All factors in Table 7 relate to the consumers' behavioral intention of sharing data with organizations. By looking at the list of factors, it can already be concluded that some factors have overlap (e.g. privacy concern), some factors might influence each other, and some might be more or be less influential on the customer's behavioral intention of sharing information. One cause for these complications is that many factors are soft variables and therefore hard to quantify and measure. For those reasons, creating a model with influencing factors that are mutually exclusive and collectively exhaustive is

difficult. The factors that will be used to create a conceptual model, which is based on academic literature and explains a substantial part of information sharing, should meet the following validation criterion: the factor's relation to sharing information is clearly explained and confirmed in scientific research.

The key factors from the literature for sharing personal information are included in Figure 6 and explained below. These are the key conditions for customer's willingness to share information that will be used in this research. Appendix A – Categorization of factors provides an overview of the factors from literature assigned to these key factors. The factors as defined by Vesanen (2007) do not meet the validation criterion, since the factors were not clearly explained and confirmed, and do therefore are not taken into account when developing the key factors.
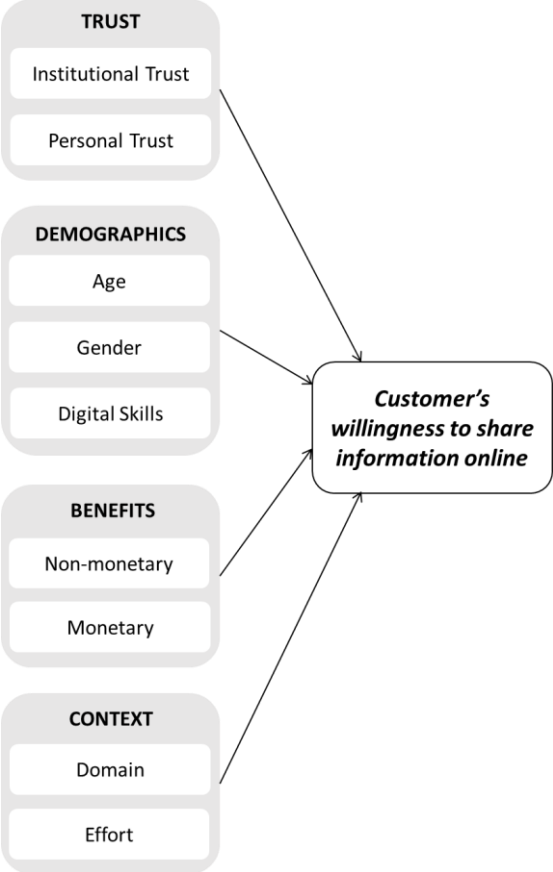
Figure 6 Conditions for sharing information

Condition 1: Trust

In an internet environment that is "characterized by uncertainty and risk" (Dinev et al., 2006, p. 392), factors like privacy concern, trust, transparency, and control are frequently mentioned by the authors. It is clear that the conceptual model should at least include a condition concerning this uncertainty and risk component. Therefore, the relations between these factors and the influence on behavioral intention are reviewed.

Customer's privacy concern has a negative effect on behavioral intentions in the context of online interactions (JungKook & Lehto, 2010; Taylor et al., 2009). Customers may be unwilling to disclose information because they just want to maintain their privacy or are afraid for misuse of their data (Kobsa et al., 2014; Morey et al., 2015). Privacy is defined as "the ability of the individual to control the terms under which personal information is acquired and used" (Westin, 1967, p. 7) and "the ability of the individual to personally control information about one's self" (Stone, Gueutal, Gardner, & McClure, 1983, p. 461). Loss of privacy can occur when people lose control over the collection of data and lose control over information use once data have been collected (Taylor et al., 2009). On the other hand, information privacy creates "a favorable consumer predisposition toward contributing to online firms" (Farag Awad & Krishnan, 2006, p. 14). Lastly, the factor transparency is addressed, meaning insight in the use and protection of customers' data, which could reinforce trust (Morey et al., 2015).

The relation between privacy and online trust is more difficult to describe. Online trust reduces "the level of privacy concern when information about a consumer is used to personalize" on the web, while "privacy concern reduces trust in a specific company" (Taylor et al., 2009, p. 208). The concept of trust refers to the customer's attitude, e.g. being a trusting individual, but also to the situation, e.g. how much a company brand or web can be trusted (Taylor et al., 2009). Dinev et al. (2006) label this division as institutional trust (trustworthiness in the Internet medium and website) and personal trust (individual propensity). Trusting individuals are more favorable toward personalization (Stevenson & Pasek, 2015). Institutional trust is operationalized as "a generalized belief in the benevolence and competence of online firms with regard to the usage and safeguarding of personal information" (Taylor et al., 2009, p. 207). People with high institutional and personal trust expect websites to handle personal information in a competent and honest way, and are safe and reliable places to exchange information (Dinev et al., 2006).

This division in attitude and situational factors of trust is used as a framework to cover all the concepts concerning uncertainty and risk, while not intervening the causal relations between the factors. The **institutional** side of trust could include the transparency and control about data collection, use, and protection. It could also cover company reputation (Andrade et al., 2002), since positive previous transactions with the vendor can make customers more comfortable in divulging their personal information (Chellappa & Sin, 2002). The **personal** side of trust is unrelated to a brand and could include whether one would like to maintain its privacy or is afraid of the misuse of data.

Condition 2: Benefits

In return for sharing personal information, customers expect valuable personalization. Rewards received from a loyalty program can make customers more willing to share personal information

Benefits of personalization for the customer can be **monetary**, meaning currency or currency-equivalent rewards, or a **non-monetary** equivalent value (Taylor et al., 2009). Gifts, coupons or financial benefits like discounts are examples of the cash benefits (Taylor et al., 2009). Personalized products or services, support information, and assistance are examples of non-cash benefits as described in the articles of Chellappa & Sin (2002) and Taylor et al. (2009). Rewards from a customer loyalty program are also a benefit example (Jai & King, 2016). Personalization should be adapted to the customer's needs (Dantas & Carrillat, 2013). Therefore, the personalized services may as well be related to customer's needs as described in chapter 1. When the services include elements in line with customer's values and needs, it is assumed that the service delivers higher benefits to customers.

Condition 3: Demographics

Another factor that is mentioned in the literature about information sharing for online personalization are the demographics **age**, **gender,** and **digital skills**. "Younger internet users are more willing to disclose their personally identifiable information online", and that "in regard to gender differences, […] women are more concerned about the privacy of their personal information than men" (Jai & King, 2016, p. 298). Besides, heavier internet users are more likely to prefer personalization (Stevenson & Pasek, 2015). "Individuals who already widely accept and use the Internet at greater frequency should exhibit less barriers to adoption of personalization" (Stevenson & Pasek, 2015). In this study the factor 'digital skills' will refer to this activity on the internet. In the conducted literature review in this study, no literature is found about the influence of other demographics on the willingness of sharing information. A reason for this could be that barely any demographic patterns can be found in information sharing (Rainie & Duggan, 2016). Therefore, only age, gender and digital skills will be included as main demographic conditions in the conceptual model.

Condition 4: Context of information sharing

The **domain** in which the information exchange occurs may influence customers' willingness to share information (Chellappa & Sin, 2002). For example, a customer may be willing to inform a tobacco company about their smoking habit, while the customer may be sensitive to revealing the same information to an insurer. The domain could represent the context in which the conceptual model can be applied. In this research, the model will be applied in a case within the airline industry. Besides, the extent to which the customer is already committed to the company and the perceived **effort** to share information influence the willingness to share information (Dantas & Carrillat, 2013).

2.4 Summary customer side of the conceptual model

By using the findings of paragraphs 2.2 and 2.3, this paragraph answers SQ 1.1: *What personal information and under which conditions are customers sharing for online personalized services?*

Two key elements were discussed in the previous two paragraphs, namely the categories of information a customer shares for online services and the conditions for sharing information for online personalization. The information a customer shares can be divided into four levels; context, identifiable, preferences, lifestyle information. The information a customer shares for online personalized services is influenced by the conditions related to trust, demographics, benefits, and the context in which information is shared. The findings are summarized in Figure 7.
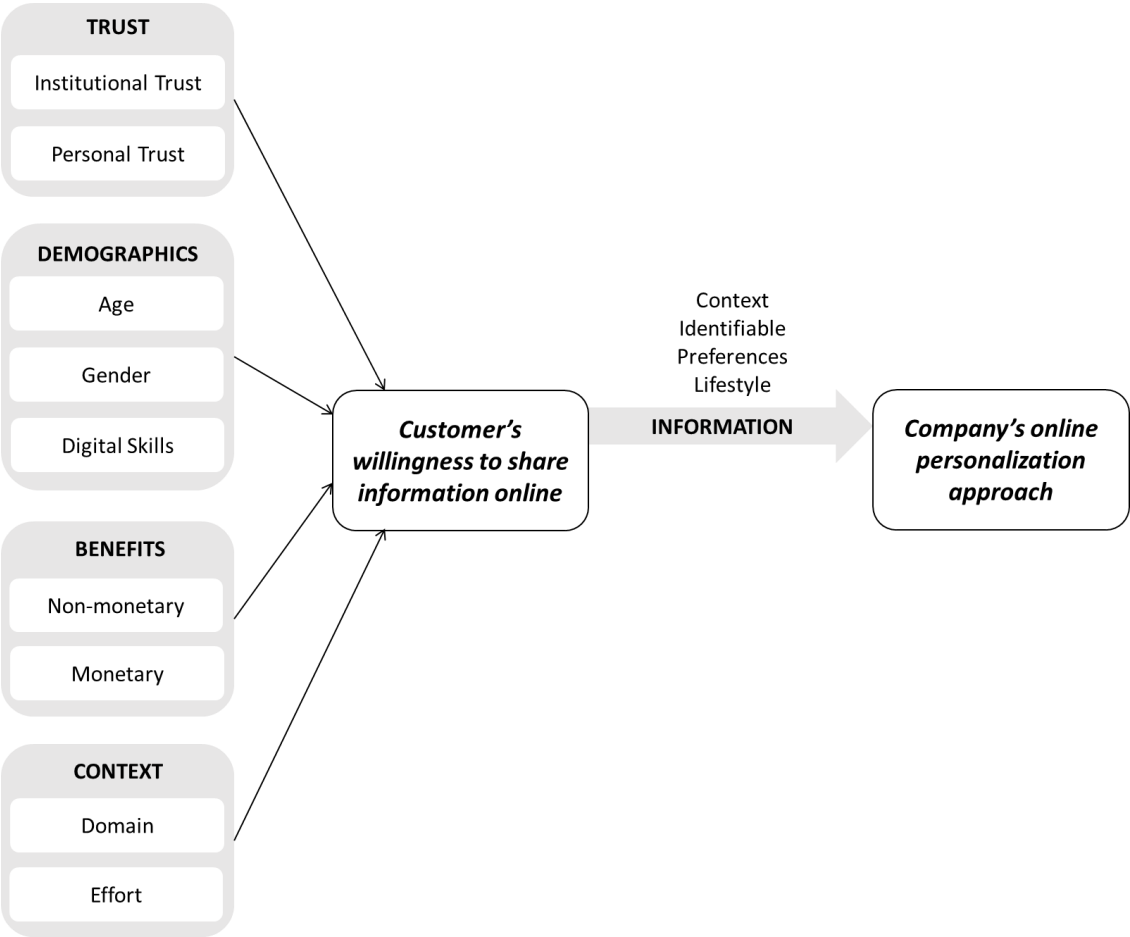
Figure 7 Summary of information categories and factors

2.5 Online personalization categories

Companies can decide not to personalize, choose to offer extreme forms of personalization to its customers, or anything in-between. Before looking into factors influencing these personalization decisions, an analysis of literature on online personalization categories is conducted. In Table 8, both articles already used in previous paragraphs and new articles are included, as long as the articles contain categories of online personalization. In addition to the previous search terms on personalization, new search terms include 'segments', 'experience', and 'compensation'. Again, databases Scopus and ScienceDirect are used to look for new articles. Besides, to gather a wide variety

of input to base the categories used for this study on, some webpages (Eagan, 2016 and Morey et al., 2015) and grey literature (Zoghby, Tieman, & Cimino, 2016) are included as well.

Table 8 Categories of online personalization

Author	Publication and method	Categories of online personalization
Zoghby et al. (2016)	• Accenture Pulse Check • Survey	• Recognize • Remember • Recommend • Relevance
Adomavicius & Tuzhilin (2005)	• Communications of the ACM • Literature study	• Products and services • Communications, including targeted ads, promotions, and personalized email • Online content, including dynamically generated Web pages and links • Information searches • Dynamic prices
Arora et al. (2008)	• Springer: Marketing Letters • Literature study	• One-to-one (extreme) • One-to-n (segment) • One-to-all (non)
Chellappa & Sin (2002)	• Springer: Information Technology & Management • Literature study	• Customer attributes • Product purchasing experience • Products or services themselves
Eagan (2016)	• Webinar	• Alert • Make easier • Cross- sell • Enrich
Fan & Poole (2006)	• Journal of Organizational Computing and Electronic Commerce • Literature study	• Content, interface, functionality, channel • Individuals or categories of individuals • Implicit or explicit
JungKook & Lehto (2010)	• AABRI: Journal of Management and Marketing Research • Experiment	• One-to-one marketing • Taking care of my preference • Highly personalized
Morey, Forbath, & Schoop (2015)	• Harvard Business Review • Survey	• Make life easier and more entertaining • Teach • Save money
Schubert & Koch (2002)	• Proceedings of Americas Conference on Information Systems • Literature study	• Identical presentation to all customers • Personalization by categorization • Individualization
Taylor et al. (2009)	• Springer: Electronic Commerce Research • Simulation and survey	• Cash compensation • Non-cash compensation

Vesanen (2007)	• Emerald Insight: European Journal of Marketing	• Segment marketing
		• Adaptive personalization
	• Literature study	• Cosmetic personalization
		• Transparent personalization
		• Collaborative customization
Wattal et al. (2005)	• CMU Research Showcase	• Intrusive
	• Literature study	• Non-intrusive

The validation for personalization categories, is not as strict as for developing the factors. The categorizations in Table 8 are not assumed to be wrong or right, but they differ in usefulness for this study. Therefore, categorizations from all sources are considered when developing the key categories for this study.

The categories in Table 8 show that personalized services can differ in several dimensions. One dimension is the number of customers are served (Arora et al., 2008; Fan & Poole, 2006; Schubert & Koch, 2002). The more personal, the fewer people are addressed by one service. Besides, customers can perceive different types of personalization differently (Wattal et al., 2005). Customers may or may not be aware that the firm is providing personalization. Furthermore, personalization can take place in different shapes, e.g., during the buying experience, in the product, or on the website (Adomavicius & Tuzhilin, 2005), and with varying levels of customer involvement (Vesanen, 2007). Next, personalization can be in cash, like gifts or discounts, or non-cash, such as information, assistance or modified products (Taylor et al., 2009). In addition, personalization can make customers' life easier and more entertaining, teach customers and/or save them money (Morey et al., 2015). Moreover, personalization can contribute to the customers in a small way by just alerting the customer, up to enriching the person (Eagan, 2016), and vary from one-to-one marketing, taking care of preferences, to highly personalized (JungKook & Lehto, 2010). Lastly, characteristics of personalized experiences are to recognize a customer, remember a customer, provide recommendations and/or to be relevant to a customer (Zoghby et al., 2016).

This research is scoped to one-to-one personalization, which means every single customer is individually targeted by the organization. Besides, the cash and non-cash compensation characteristics of personalization will be reflected in later defined the customer's benefits (paragraph 2.6). The combined categories that are defined for this research vary from personalization based on context or customer attributes, to a highly personalized or enriching experience in which the goal is no longer pushing information but making the customer the central player. Within this scope, the levels vary from online personalization in a limited way to a very extreme way offered by the business in a business ecosystem. These categories are not fixed to a certain channel, like a website, service or product.

The categories are visualized in Figure 8 and described below.
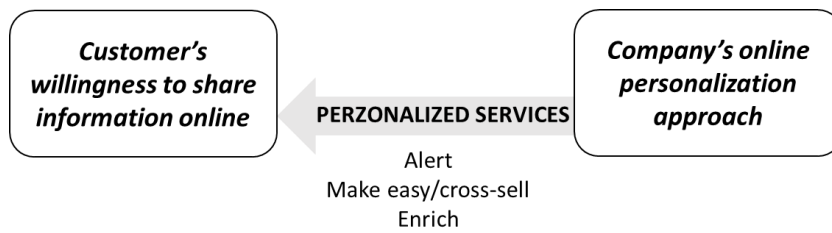
Figure 8 Online personalization categories

Online personalization category 1: Alert

In a limited way, personalization is provided by the company based on customer's context and/or identifiable information. Customer data can be derived from for example technological customer attributes like the IP address or information provided for transactions, or from provided personal information like gender and email address. The information is used to push services to the customer, by alerting or addressing the context and customer's identifiable attributes. An organization can alert directly by using its own channels like websites and email, and the customer's data. Examples of alerting services are the customer's name in an email or prefilled-in information on the website.

Online personalization category 2: Make easy and enable cross-sell

The following level is personalization based on customer's context, personal information, and/or service preferences. In this level, products and services include the preferences of the customer and the organization can connect the customer to other affiliated organizations to enable cross-sell or create comfort for the customer. When a business or organization is connected with other compulsory businesses, offering integrated products or services, personalization takes place in a business ecosystem (paragraph 1.1). Information about the customer can be transferred to companies to enable the service, but on the other hand can also imply privacy issues of the customer. A service example in this category is a cooperation with a postal service for easier and faster delivery services.

Online personalization category 3: Enrich

In the very extreme way of personalization, the service is provided by the business ecosystem serving the customer's values and aspirations. The personalized service is making the customer a central player in the ecosystem in which the organizations can adapt their services to meet the values and lifestyle of the customer. In this way, businesses are designing experiences, which customers desire (Pine II & Gilmore, 1998). "As services […] increasingly become commoditized, […] experiences have emerged as the next step in what is called the progression of economic values" (Pine II & Gilmore, 1998). An example of this category could be coaching the customer in pursuing a climate friendly lifestyle.

38

Table 9 elaborates more on the online personalization categories and the relationship with the information categories (paragraph 2.2) by providing examples. For the different personalized services, certain customer information is needed. In the table, the information that is needed for the service is highlighted in color. For instance, to offer a 'make easy & cross-sell' service, information about the customer's preferences, context and identifiable information are needed. There is no need for sharing information about the customer's lifestyle. Insurance that can come with a service or a special product color are examples of this service category.

Table 9 Information and personalization dependencies

| Online personalization category | Information category | | |
	Context & Identifiable	Preferences	Lifestyle
Alert	• Remember language • Pre-filled in customer data in online forms		
Make easy & cross-sell		• Change product color • Offer insurance with the service	
Enrich			• Bring customer in contact with other customers • Coach customer in life according to its values

The next paragraph will discuss the factors that influence the likelihood for a business to offer, to some extent, online personalization.

2.6 Factors influencing offering of online personalization

Of the literature used in the previous paragraphs, there are two articles (Chellappa & Sin, 2002; Morey et al., 2015; Vesanen, 2007) that contain an overview of factors influencing company's online personalization efforts. By using these factors as search terms on Scopus and ScienceDirect, another relevant article (Adomavicius & Gupta, 2009) is found. Table 10 presents an overview of the literature that addresses the factors.

Table 10 Providing personalized services for information

Author(s)	Concept	Publication and Method	Factors
Adomavicius & Gupta (2009)	Purpose of personalization	• Emerald: Handbooks in Information Systems • Literature study	• Consumer satisfaction and experience • Consumer lifetime value • Retention, loyalty, and churn • Anticipate consumers' needs • Efficient, satisfying and easy interactions • Conversion rates • Cross- and up-sell
Chellappa & Sin (2002)	Vendor's likelihood of employing personalization strategies	• Springer: Information Technology & Management • Literature study	• Vendor's value for customer information • Liability costs • Trust building costs
Morey et al. (2015)	Swapping data for value	• Harvard Business Review • Survey	• Improved product or service • Targeted marketing • Third party sales • Building trust
Vesanen (2007)	Conceptual framework of personalization	• Emerald Insight: European Journal of Marketing • Literature study	• Benefits marketer: higher price, better response rate, customer loyalty, satisfied customers, differentiation • Costs marketer: investments in technology, investments in education, risks of irritating customers, brand conflict

Based on the same validation criterion as for developing the conditions for customer's willingness to share information (paragraph 2.3), factors defined by Vesanen (2007) are excluded in the development of factors for providing online personalized services. Though, all authors describe two main factors that influence the likelihood of employing online personalization strategies. The vendor's decision to employ personalization is a function of the benefits of customer information and the costs. Online personalization will most probably be provided when the company receives benefits that outweigh costs of personalization. Figure 9 presents a summary of the factors that will be used in this study, and are explained below.
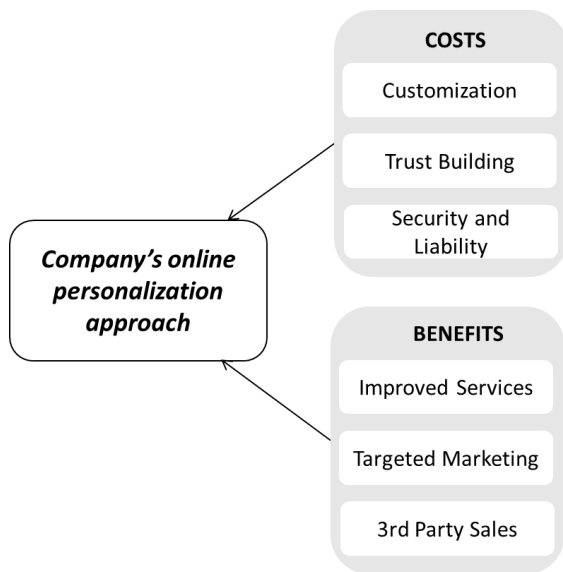
Figure 9 Likelihood of employing online personalization strategies (Adomavicius & Gupta, 2009; Chellappa & Sin, 2002; Morey et al., 2015)

Influencing factor 1: Costs

The direct costs of personalization are any "extra efforts required to **customize** personalized offerings" (Adomavicius & Gupta, 2009, p. 22), like employee costs or costs of other resources. Besides these direct costs, two types of indirect costs can be identified that "are associated with the potential problems pertaining to providing personalized solutions, such as privacy-related and legal costs" (Adomavicius & Gupta, 2009, p. 22 & p. 23). The first indirect costs are the efforts for **building trust** to prevent damage to reputation and customer base (Chellappa & Sin, 2002). Trust building activities include "alliances with trusted third-parties, implementation of security mechanisms, reassurances through disclosure notices, and compliance with fair information practices rules" (Chellappa & Shivendu, 2007, p. 200). Morey et al. (2015) divide trust building costs into teaching the customers about the use of data, giving customers control over their data, and delivering in-kind value. The second indirect costs concern **security and liability costs**. These include the costs of technological protection mechanisms and investments in legal support of the customer information that is collected, processed and stored (Chellappa & Sin, 2002). Depending on the domain of organizations, the sensitivity of information exchange differs (Chellappa & Sin, 2002), which influences the amount of money spent on security and liability measures.

Influencing factor 2: Benefits

Customer information is very important to retailers. Customer information means understanding the demand for services. The more information about a customer the company has, the more the service can be tailored to the customer and the higher the value is that can be provided to the customer (Chellappa & Sin, 2002). Organization's perceived value for information can be divided into benefits

from delivering improved products and services, targeted marketing, and data sales to third parties (Morey et al., 2015). This division is illustrated by the marketing and economic benefits of tailoring offerings to customers as defined by Adomavicius & Gupta (2009). The first benefit is the possibility to **improve products and services**. This can result in high consumer satisfaction and better experience, high lifetime value of the consumer, consumer retention and loyalty, and low churn, and anticipation on consumers' needs. The second benefit is the possibility of **targeted marketing**: This can lead to high conversion of prospective customers into buyers, and more cross- and up-sell. The last benefit is the possibility of **third party sales**. This can result in efficient, satisfying and easy interactions with third parties in the ecosystem.

2.7   Summary business side of conceptual model

By using the findings of paragraphs 2.5 and 2.6, this paragraph answers SQ 1.2: *What personalized services and under which influencers are businesses offering to customers?*

Two key elements were discussed in the previous two paragraphs, namely the different categories of online personalized services that can be offered and the factors that influence the provision of online personalization. The different online personalization levels vary from alerting the customer, making the service easy and cross-selling, and enriching the service based on the customer's values. The online personalized services a business would offer to a customer is influenced by two main factors, these factors are costs of personalization and benefits for customer information. The findings are summarized in Figure 10.
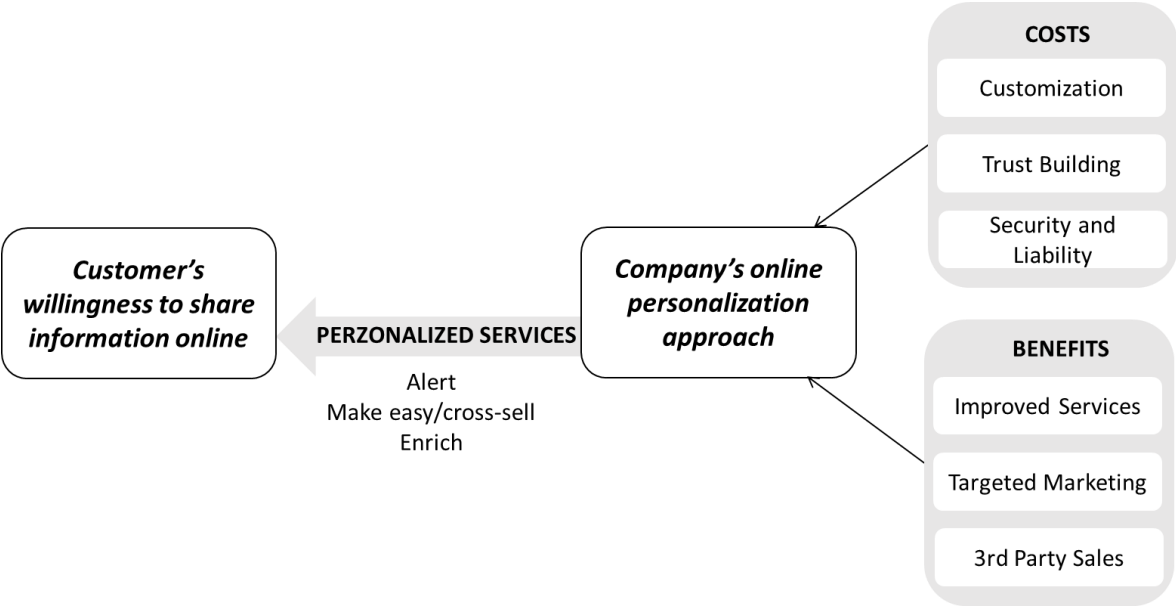
Figure 10 Summary of online personalization levels and factors

2.8 Conclusion: Integration customer and business concepts in a conceptual model

In this last paragraph of the chapter, the answer on the first research question is provided.

SQ 1: *What is the theoretical conceptual model of customer's sharing personal information online and businesses offering online personalized services?*

SQ 1 can be answered by combining the answers on SQ 1.1 (paragraph 2.4) and SQ 1.2 (paragraph 2.7). As a result, the following conceptual model in Figure 11 is created.
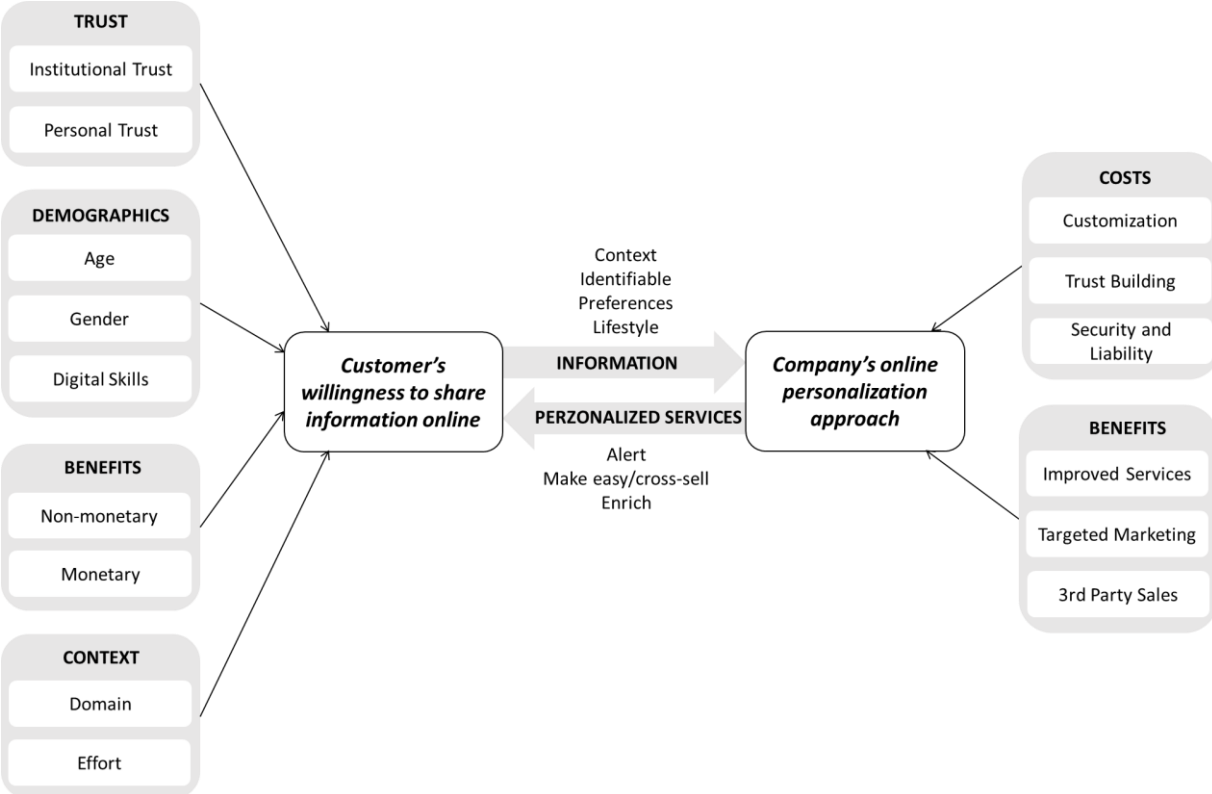
Figure 11 Conceptual model of sharing information and providing online personalization

By combining both conceptual models, an exchange between the two parties becomes visible. The two arrows, representing information and personalized service categories, are assumed to depend on each other. Customer information is needed to provide personalized services, and on the other hand, personalized services should be delivered in order for a customer to share information. Sharing information by the customer is dependent on four main conditions: trust, demographics, benefits, and context. Personalization by the company is dependent on two main factors: costs and benefits.

The provided conceptual model is the basis for designing an approach for a business to increase customer's willingness to share personal information online. In the next chapters, the customer conditions will be validated (chapter 3) and used as input for an approach (chapter 4).

3 Validating customer's conditions for sharing personal information online

The scientific conceptual model in paragraph 2.8 gives insight into the different concepts involved in sharing information and providing online personalization. In this chapter, the conditions in the conceptual model related to the customer sharing personal information online will be validated. The central research question that will be answered at the end of this chapter is:

SQ 2: *What are valid customer conditions for sharing personal information online?*

The case for validating the customer side of the conceptual model is Transavia Airlines, which is introduced in paragraph 3.1. The other conditions are validated by means of a survey, of which the survey design is presented in 3.2. The survey design includes information about the data sample and the survey statements. In paragraph 3.3, the survey results are presented and analyzed. Lastly, the conclusions are drawn in paragraph 3.4. Since only one domain will be used for validating conditions, conclusions of the analyses will only apply to the domain of the case study.

3.1 Case study

In this research, the model is applied within a company in the airline industry: Transavia Airlines. Transavia Airlines is part of KLM AIR FRANCE GROUP and operates in Europe and North Africa. Especially since the change in business strategy in 2015, Transavia has the goal to become the most affordable and accessible airline, leading in hospitality, service, and digital service (Transavia, 2015). The airline places the passenger, who travels either for leisure or business purposes, in a central role in the customer's digital journey. This makes Transavia a low-cost airline giving high priority to providing an optimal digital customer experience.

The change in business strategy can for a big part be devoted to the rise of digital communication. This development has led to direct purchases of airline tickets by customers on the internet instead of buying tickets via physical travel agencies (De Zeeuw, 2016). Customers became able to compare airline fares by themselves. Low-cost airlines initially started to offer modular products with basic fares to remain the cheapest alternatives for customers. This unbundling enabled the customer to combine elements while creating its own flight. However, to meet customers' changing values, the low-cost airlines have gone back to rebundling of the elements in the form of dynamic services packages (De Zeeuw, 2016).

As part of its rebundling strategy, Transavia has launched branded fares with the labels Basic, Plus, and Max. In these packages, cross- and upsell related products and services have a bigger role (e.g., leg

space, hotel booking, travel insurance, etcetera). The new digital services match the diverse profiles of the customers, passengers, destinations, and specific journeys. By making the customer the central player in the adaptive nature of the business ecosystem, Transavia tries to stay ahead of its competitors and to provide the best digital experience to the customer (De Zeeuw, 2016).

Transavia works with an API-based digital infrastructure to speed up their digital transformation. API stands for Application Programming Interface which offers a simplified interface to access valuable business data and functionality through Internet standards that the developers understand (Liongosari, Tung, & Hunold, 2013). The APIs are open and can be securely shared with business partners in the ecosystem to enable innovations. Partners now have the "opportunity to build a variety of mobile apps that incorporate real-time information about seat availability and pricing on Transavia flights" (Apigee, 2015). "It is also encouraging the independent developer community to embrace Transavia's APIs to build more Transavia powered apps" (Apigee, 2015).

Transavia offers its customers more services than just flights. For instance, Transavia works with complementary suppliers, to provide its customers assistance with transportation to and from the airport. As a result, this seamless multi-model transportation service can lead to happier or better served customers. By working together with other companies, Transavia assembles an entire integrated service for the customer, which lies beyond the effective scope and capabilities of the individual actors (Kelly, 2015). The network of companies that contributes to these customer services are in this research considered as Transavia's business ecosystem, with Transavia as keystone player. The concept business ecosystem is earlier introduced in paragraph 1.1.

The ecosystem overview in Figure 12 includes all commercial complementary partners which contribute to Transavia's integrated customer services. The figure shows partnerships with taxi services, car rental service, parking services, Booking.com for accommodation, TripAdvisor for reviews, payment services (iDeal, PayPal, Visa, MasterCard, American Express), travel insurance, climate group, and offers services via social media. Since the focus lies on direct customer service, other possible stakeholders that could also considered to be part of the ecosystem, like investors, research institutes, data profilers, unions, and suppliers' suppliers, are intentionally left out. Travel agencies are left out of the overview because they sell packaged Transavia products. Since partners in the overview could be part of that package, the travel agency is in this case more similar to a customer of Transavia
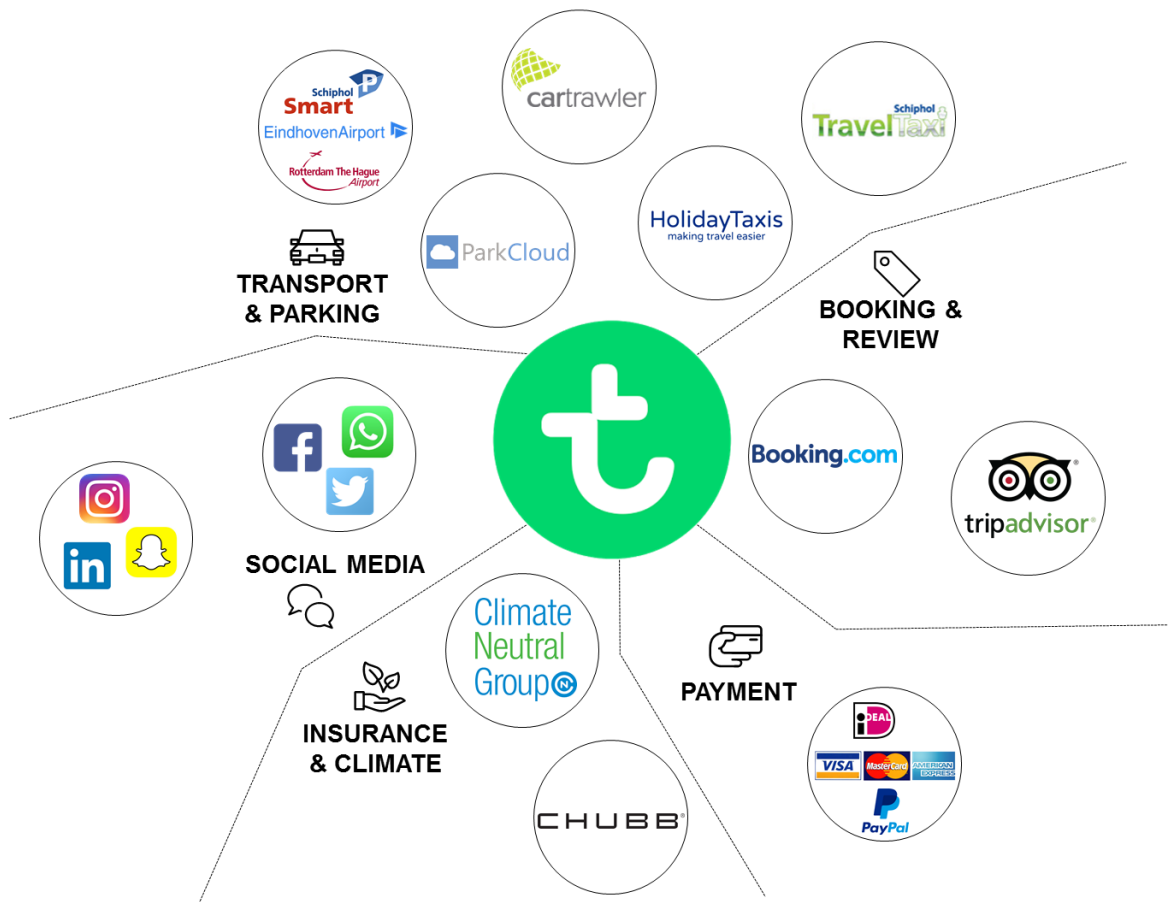
Figure 12 Transavia's Business ecosystem (overview is developed in cooperation with Transavia

3.2 Survey

An online survey is chosen as method to validate the customer conditions. An online survey is a costs and time efficient way to gather a large amount of data. This paragraph contains a description of the survey data sample selection (paragraph 3.2.1), and the survey design (paragraphs 3.2.2 and 3.2.3).

3.2.1 Data sample selection

The online survey is sent out in January and February 2017 to customers of Transavia. The average response rate of Transavia's online questionnaires is expected to be maximum 5%. Therefore, for a representative data set of at least 200 customers, 5,944 customers were approached. Those sampled were invited via an email to fill in the questionnaire, created in the survey system 'Survalyzer' with a Transavia layout. The survey participants got a personal survey link to trace their booking details (like name, gender, date of birth). However, customers could participate voluntarily and it is communicated that the survey data is only used for research purposes.

The filters that were applied to the random respondent sample are:

- Respondent has booked by him or herself;
- Respondent has flown with Transavia in 2016;
- Respondent has booked on the Transavia website;
- Respondent is Dutch speaking.

First, the respondent should have booked by him or herself, since questions will be asked about services and information sharing. When the respondent has never bought, and will never buy a service offered by Transavia, the answers on the survey statements may not be representative. Second, the respondent should have attended a flight from Transavia in the past year (2016). In this way, only recent customers are asked to fill in the survey. Third, the respondent should have booked the service on the Transavia website. Transavia's services can be booked via websites from other parties, but in this study, only services that are directly provided by Transavia are included. Fourth, the respondent should be a Dutch speaking person. This filter prevents cultural differences playing a role in attitudes on the statements. Besides, Jochem Meijer (Marketing Intelligence Specialist at Transavia) says that Transavia is a Dutch company and around 70% of her customers is Dutch (personal communication, April 25, 2017). The questionnaire is therefore developed in Dutch only.

3.2.2   Rating format

An online survey is used to gauge customer attitudes. The rating format for the survey is a Likert scale, which is a widely used scale to measure attitudes (Likert, 1932). In this format, respondents have to rank – least to most - how much they agree or disagree with statements. In this survey, the answer options on all statements are: 'completely disagree', 'disagree', 'neutral', 'agree', 'completely agree'. Although the preferred number of points on a Likert scale is not fixed to a certain amount, a five-point Likert scale is chosen for a precise representation of attitudes. A seven-point Likert scale can be more precise in analyzing data, but adding two more options in this study would lead to unnecessary complex answer options for the respondents. All statements have this non-dichotomous ordinal scale, besides the last open question inserted for comments and remarks. This gives respondents some room for their motivation, which is generally hard to grasp in a survey.

All statements in the survey fulfill the criteria as defined by Likert (1932). The statements are expressions of desired behavior and are clear, concise and straight forward. In this way, it is tried to prevent different interpretations of similar statements by different respondents. Besides, the statements are worded in a way that the modal reaction is approximately in the middle of the possible responses (Maranell, 2009). About half of the reactions corresponds to the left part of the reaction

alternatives and about the other half of the reactions corresponds to the right part of the reaction alternatives (Maranell, 2009).

3.2.3 Measures

Measures are the variables in a research study to which the participants respond. The measures are based on customer conditions and the information and personalization categories in the conceptual model (Figure 13). The factors trust, demographics and benefits are labeled as independent variables, since they influence the information that is shared and the personalized service that is preferred by the customer. Information sharing and personalized services are labeled as dependent variables. Independent variables are not influenced by other factors that are measured in the model and are the presumed cause. Dependent variables are dependent on other factors that are measured in the model and are the presumed effect. The survey is designed to predict the dependent variables using the independent variables.
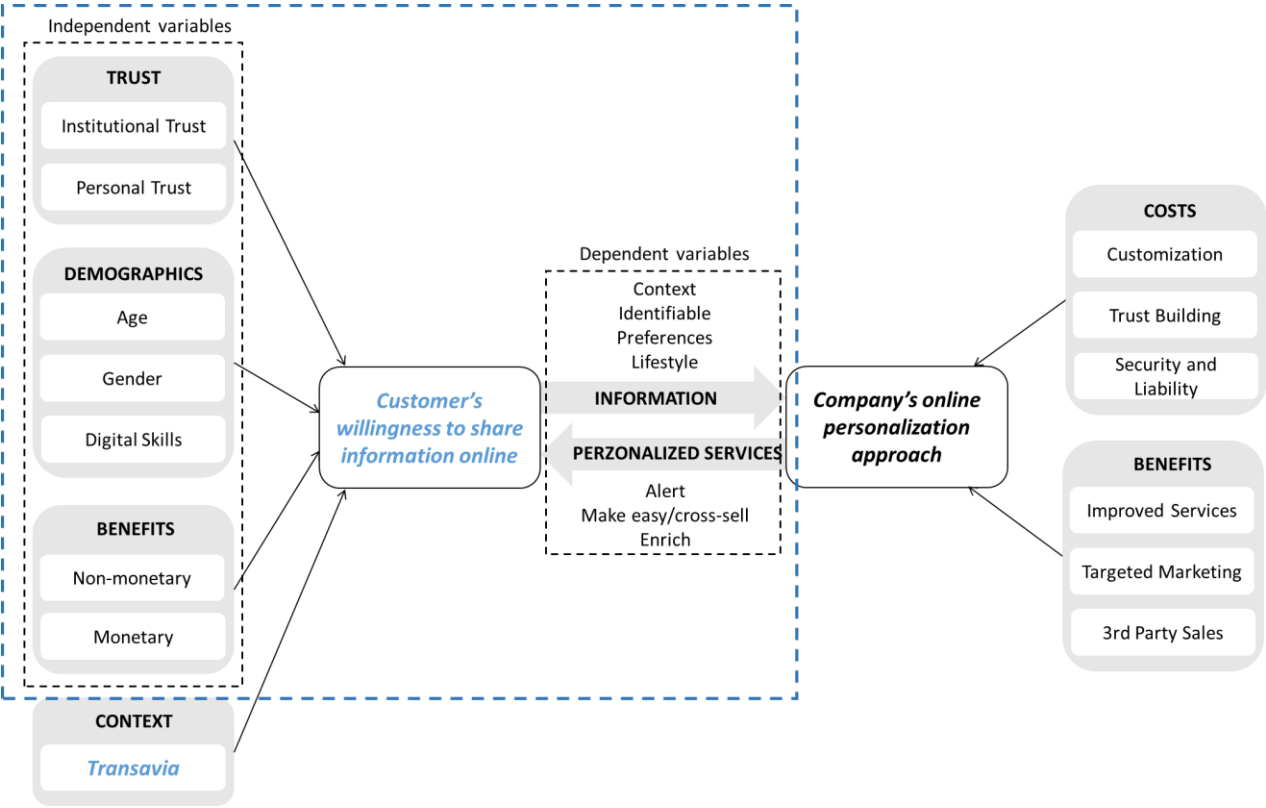
Figure 13 Independent and dependent variables in the conceptual model

To create survey statements based on the measures, the benefits condition (non-monetary and monetary) is included in the personalized services statements. The statements about personalized services are either non-monetary benefits in varying degrees or monetary benefits. Besides, the information and personalization categories are included separately and combined in survey statements (Figure 14). These choices will more elaborately be explained in the next paragraph.
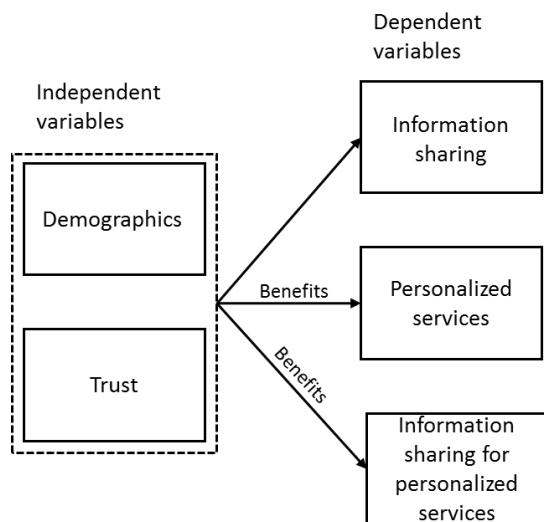
Figure 14 Dependent and independent variable overview for developing survey statements

3.2.3.1 *Independent variables*

Demographics

The survey includes the demographic variables gender, age, and digital skills. Questions about the demographics 'male/female' and 'age' will not be asked in the survey since they can be derived from the customer database via the personal survey link. The factor digital skills can be assessed by asking how often customers perform several online activities. These reported frequencies are used as a proxy for skill (Stevenson & Pasek, 2015). Therefore, besides capturing the variable in the survey with the subjective statement 'My internet skills are good', ranked on a Likert scale, a more objective way of finding out respondents' digital skills is included. Respondents are asked how often they buy products or services online, and how often they use social media. These statements are derived from two statements as used by Stevenson & Pasek (2015), namely 'Post a message on a blog, social media site, or other online forum', 'Make an online purchase using a website or app'. Table 11 includes an overview of the demographic constructs.

Table 11 Demographics construct statements

Construct	Statement
Gender	*Derived from the Transavia customer database*
Age	*Derived from the Transavia customer database*
Digital skills	My internet skills are good
	Frequency of buying products/services online
	Frequency of using social media

Trust

The factor trust is transformed into attitude statements and has to be ranked by respondents on a Likert scale. Statements cover both the personal ('Esteemed online retailers' is used to measure the

customer's personal online trust in sharing information online with companies in general. 'Transavia' is included in the statements to measure the customers institutional trust in the company. For both personal and institutional trust, the trust constructs are measured in three different ways. First, trust is asked directly, by starting the statement with 'I trust …'. Second, trust is asked in an indirect way, by asking how well informed people are about the use of their data. According to (Morey et al., 2015), transparency about the use and protection of customers' data reinforces trust. Third, the need for trust is included, by asking whether customers want more data control. An extra statement is added to the institutional trust attitude statements, that measures Transavia's reputation, another determinant of customer trust (Chellappa & Sin, 2002).

The first statement to measure trust is based on the statements Dinev et al. (2006) used to measure Institutional trust ('*I trust* online businesses that they will not mishandle *my personal information'*, 'Internet websites are in general *honest* in conducting their business' and 'Internet website providers *handle personal information* submitted by users in a *competent* fashion'). Since the statement as defined for this research is related to misuse of data, this statement is labelled 'misuse'.

The second statement is therefore based on the statements Farag Awad & Krishnan (2006) used to measure information transparency ('Importance of the *purpose for which* the site wants to collect info from me' and 'Importance of whether a site is going to *use the information* they collect from me in a way that will identify me'). The statement is labelled 'information transparency'.

The third statement measures the need for trust, by asking the amount to which they want to be in control of their personal data. This statement is to some extent based on one of the statements used by Taylor et al. (2009) to measure information control ('This website gave me a clear choice before *using personal information* about me'). However, the statement in this study starts with 'I want…'.

Table 12) and institutional trust attitude (Table 13), and are similarly constructed. 'Esteemed online retailers' is used to measure the customer's personal online trust in sharing information online with companies in general. 'Transavia' is included in the statements to measure the customers institutional trust in the company. For both personal and institutional trust, the trust constructs are measured in three different ways. First, trust is asked directly, by starting the statement with 'I trust …'. Second, trust is asked in an indirect way, by asking how well informed people are about the use of their data. According to (Morey et al., 2015), transparency about the use and protection of customers' data reinforces trust. Third, the need for trust is included, by asking whether customers want more data control. An extra statement is added to the institutional trust attitude statements, that measures Transavia's reputation, another determinant of customer trust (Chellappa & Sin, 2002).

The first statement to measure trust is based on the statements Dinev et al. (2006) used to measure Institutional trust ('*I trust* online businesses that they will not mis*handle my personal information*', 'Internet websites are in general *honest* in conducting their business' and 'Internet website providers *handle personal information* submitted by users in a *competent* fashion'). Since the statement as defined for this research is related to misuse of data, this statement is labelled 'misuse'.

The second statement is therefore based on the statements Farag Awad & Krishnan (2006) used to measure information transparency ('Importance of the *purpose for which* the site wants to collect info from me' and 'Importance of whether a site is going to *use the information* they collect from me in a way that will identify me'). The statement is labelled 'information transparency'.

The third statement measures the need for trust, by asking the amount to which they want to be in control of their personal data. This statement is to some extent based on one of the statements used by Taylor et al. (2009) to measure information control ('This website gave me a clear choice before *using personal information* about me'). However, the statement in this study starts with 'I want…'.

Table 12 Personal trust construct statements

Construct	Statement
Misuse	I trust esteemed online retailers in handling my personal data in a competent and honest way
Information transparency	I am aware of the purposes for which esteemed online retailers use my personal data
Information control	I want control on how esteemed online retailers use my personal data

Table 13 Institutional trust construct statements

Construct	Statement
Misuse	I trust Transavia in handling personal data in a competent and honest way
Information transparency	I am aware of the purposes for which Transavia uses my personal data
Information control	I want control on how Transavia uses my personal data
Perceived reputation	I have positive experiences with Transavia's services

Customer benefits

The last factor of the conceptual model, customer benefits, is covered by statements providing monetary and non-monetary benefits in return for the customer's information.

The non-monetary benefit is described by several services offered by Transavia based on the customer information provided (Table 14). Different examples are used to represent the different information and online personalization categories. The examples are defined in cooperation with Transavia. Some examples are ideas for services, while other examples already exist. For the first category, statements are defined about customer's identifiable information and offer an alerting service based on this

information. For the second category, statements are defined about the customer's service preferences and offer easy services that match these preferences by cooperating with a third party. For the third and last category, statements are defined about the customer's lifestyle and offer enriching services that match the customer's lifestyle by cooperating with all third parties in the ecosystem.

Table 14 Non-monetary benefits sorted per information and online personalization level

	Customer information	Non-monetary benefit
1	**Context and identifiable information**	**Alert**
	• Personally identifiable information (name, email, bank account)	• Personally identifiable and context information automatically filled in on Transavia's website
	• Context data (location, time)	
2	**Context, identifiable information and preferences**	**Cross-sell/make easy**
	• Pre- and post-transport preferences	• Transport recommendations from and to the (international) airport
	• Accommodation preferences	• Accommodation recommendations
	• In-flight entertainment preferences	• In-flight entertainment recommendations
3	**Context, identifiable information, preferences and lifestyle**	**Enrich**
	• Social media profile	• Travel suggestions based on social life
	• Average yearly travel budget	• Travel suggestions according to what the budget allows
	• Environmental beliefs	• Suggestions to travel according to environmental beliefs

The monetary benefit is defined as a €5 discount on the price of a flight when customer information of any of the levels is provided. €5 is chosen to be the discount in return for personal information in every information level. €5 discount is a monetary benefit that customers may find interesting when they have to provide a relatively small amount information in return, but can be experienced as not interesting when customers need to provide most of their personal information. Other amounts of discount could also have been chosen, but are considered less realistic within the business model of the low-cost carrier (prices start from around €25 and very low profit is made on airline tickets).

The examples representing the non-monetary and monetary benefits are used in the statements about information sharing, receiving personalized services, and information sharing for personalized services (Table 15, Table 16 and Table 17).

3.2.3.2 Dependent variables

The arrows in the conceptual model referring to the information categories and to the personalization categories are transformed into multiple statements about the willingness of information sharing and similarly about preferred online personalized services. These statements measure whether a customer is willing to share certain information with nothing in return and whether a consumer wants certain services at all without providing any information. Lastly, statements measure whether a customer is willing to share information with personalized services in return.

Information sharing

The general statement for this single exchange of information (customer profile) is: "I am willing to share information with Transavia". Other more specific statements per level using the information needed for non-monetary benefits as described in Table 14 are listed in Table 15.

Table 15 Attitudes on information sharing construct statements

Construct	Statement
Attitude on	I am willing to share my personally identifiable information (e.g. name, email)
information	I am willing to share my context data (e.g. location, time)
sharing	I am willing to share my transport preferences (e.g. car, bus) from and to the (international) airport
	I am willing to share my accommodation preferences (e.g. hotel, camping)
	I am willing to share my in-flight entertainment needs (e.g. music, magazine)
	I am willing to share my social media profile (e.g. Facebook, LinkedIn)
	I am willing to share my travel budget
	I am willing to share my environmental beliefs

Receiving personalized services

The general statement for only receiving personalized services is: "I would like to receive personalized services from Transavia". Other more specific statements per level using the non-monetary benefits as described in Table 14 are listed in Table 16.

Table 16 Attitudes on receiving personalized services construct statements

Construct	Statement
Attitude on	I would like to have my personally identifiable and context information automatically filled in on
receiving	Transavia's website
personalized	I would like to get recommendations about transport from and to the (international) airport
services	I would like to get recommendations about accommodation
	I would like to get in-flight entertainment recommendations to my entertainment needs
	I would like to get travel recommendations based on my social life
	I would like to get travel recommendations according to what my budget allows
	I would like to get travel recommendations according to my environmental beliefs

Information sharing for personalized services

The general statement for receiving personalized services in return for sharing information is: "I am willing to share information with Transavia in return for personalized services". Both information and service statements, as listed in Table 15 and Table 16, are combined in statements to get insight into whether the customer is willing to share information for the personalized service in return (Table 17). Next to all the non-monetary benefits that are listed in Table 16, the monetary benefit construct '€5 discount' is added in Table 17. To limit the number of statements, the discount is only linked to one general information statement per information level.

Table 17 Attitudes on information sharing for personalized services construct statements

Construct	Statement
Attitude on information sharing for personalized services	I am willing to share my personally identifiable (e.g. name, email) and context information (e.g. location, time) to get my information automatically filled in on Transavia's website
	I am willing to share my personally identifiable (e.g. name, email) and context information (e.g. location, time) to get a €5 discount on my flight
	I am willing to share my transport from and to the (international) airport to get recommendations about transport
	I am willing to share my accommodation preferences to get recommendations about accommodation on the destination
	I am willing to share my in-flight entertainment preferences to get entertainment recommendations
	I am willing to share my service preferences (e.g. accommodation, transport) to get a €5 discount on my flight
	I am willing to share my social media profile to get recommendations based on my social life
	I am willing to share my travel budget to get recommendations according to what my budget allows
	I am willing to share my environmental beliefs to get recommendations to travel according to my environmental beliefs
	I am willing to share my lifestyle (e.g. work, leisure activities) to get a €5 discount on my flight

The list of all the above statements (Table 11 until Table 17) is the input for the survey. Appendix B – Dutch questionnaire contains the final questionnaire in Dutch.

3.3 Data analysis of survey results

To gain meaningful insights from the survey data, the software package IBM SPSS Statistics is used to analyze the data. Three types of analyses are used to analyze the survey data, of which the application and results are described in the following sub-paragraphs. Before the analyses are described, an overview of the survey's descriptive statistics is provided (paragraph 3.3.1). The first analysis is a principal component analysis to simplify the structure of the set of variables (paragraph 3.3.2). The second analysis is a regression analysis to estimate relationships among the simplified variables

(paragraph 3.3.3). The third analysis is a paired samples t-test to estimate the average differences between the information sharing variable and the personalization variables (paragraph 3.3.4).

3.3.1 Sample composition and analysis overview

The survey has a total of 266 complete responses and a response rate of 4.5%. Missing data is prevented since it was mandatory to answer every statement. The mean sample age of 55 years is higher than the average age of the Transavia customer of 40 years, according to Jochem Meijer (personal communication, April 25, 2017). Yet all age groups were represented in the sample: 9.4% was younger than the age of 30, 24.8% was between the age of 30 and 50, 39.4% was between the age of 50 and 65, and 26.3% was older than 65 years (Figure 15).
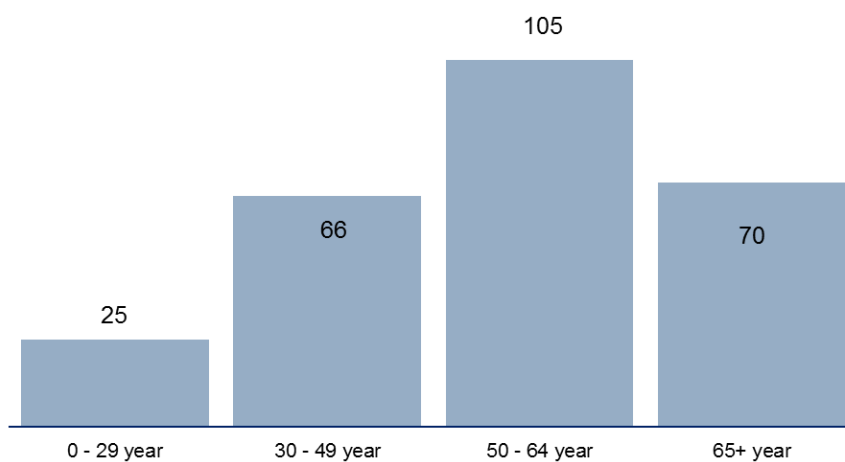
Figure 15 Age of respondents

In the group of respondents, 57.4% is male and 42.6% is female. Jochem Meijer states that the average division of Transavia's customers is 55% male and 45% female (personal communication, April 25, 2017). This means that males are slightly overrepresented but within an acceptable margin. The non-metric variable gender is transformed into a data dummy variable on a scale of 0-1.

3.3.2 Principal component analysis

Most variables of the conceptual model are measured by using multiple statements, because the variables are too complex to measure them directly via one indicator. For example, trust is measured in the survey by multiple statements. It is the customer's underlying trust factor that influences their scores on the statements, resulting in a score on the empirical determined trust factor. A principal component analysis (PCA) is a tool to find out what indicators have in common that can be explained by the same underlying component. PCA reduces "the dimensionality of a data set in which there are a large number of interrelated variables, while retaining as much as possible of the variation present in the data set" (Jolliffe, 2002, p. 1). The new transformed set of variables are called principal components (Jolliffe, 2002).

A principal component analysis is used to reduce the number of variables for trust, digital skills, sharing information, receiving personalized services, and sharing information for personalized services. These variables are included in the survey with multiple indicators.

Trust [INSTITRUST] [PERSTRUST] [CONTROL]

The independent variable trust is divided into institutional and personal trust (paragraph 2.3). Both trust variables are measured with multiple statements (indicators) per variable in the survey. The statements of both trust variables are input for two factor analyses. First, institutional trust is composed by loading the four institutional trust indicators in a factor analysis. The institutional trust indicators load high on one underlying factor except for the indicator about control (Table 18). It is therefore concluded that there is one factor which reflects the customer's institutional trust, and a different factor which reflects the customer's desire of control on the use of information by the institution. The different factor loadings can be partly explained by looking at the statement formulation; the three high loading statements are about customer's opinions related to trust, while the control statement is about the customer's desire. Because of this analysis, the institutional trust variables are combined into two variables: one representing institutional trust (named INSTITRUST) and a separate variable representing the desire of personal data control.

Table 18 Institutional trust component loadings (Extraction Method: Principal Component Analysis)

Institutional trust statements	Component loadings
I want control on how Transavia uses my personal data	0.150
I trust Transavia in handling personal data in a competent and honest way	**0.878**
I am aware of the purposes for which Transavia uses my personal data	**0.754**
I have positive experiences with Transavia's services	**0.816**

Second, the independent variable personal trust is composed by loading the three personal trust indicators in a factor analysis. Just like in the factor analysis for institutional trust, the personal trust indicators load high on one underlying factor except for the indicator about control (Table 19). It is therefore concluded that there is one factor which reflects the customer's personal trust (named PERSTRUST), and a separate variable which reflects the customer's desire of control on the use of information by online retailers. Also in this case, both factors will be used as independent variables.

Table 19 Personal trust component loadings (Extraction Method: Principal Component Analysis)

Personal trust statements	Component loadings
I want control on how esteemed online retailers use my personal data	-0.228
I trust esteemed online retailers in handling personal data in a competent and honest way	**0.822**
I am aware of the purposes for which esteemed online retailers use my personal data	**0.827**

Because the two control variables do not load on both components, but do load on a separate component, a new component (named CONTROL) is created (Table 20).

Table 20 Control component loadings (Extraction Method: Principal Component Analysis)

Control statements	Component loadings
I want control on how Transavia uses my personal data	0.879
I want control on how esteemed online retailers use my personal data	0.879

Digital skills [DIGITALSKILLS]

The independent variable 'digital skills' is composed by loading the digital skills indicators in a factor analysis. But first, the two frequency variables about buying products/services online and using social media are rescaled into variables (respectively named FREQWW_reversed and FREQSM_reversed) that have scores in the same direction as internet skills. The three indicators load on one 'digital skills' factor (named DIGITALSKILLS) (Table 21).

Table 21 Digital skills component loadings (Extraction Method: Principal Component Analysis)

Digital skills statements	Component loadings
My internet skills are good	0.706
Frequency of buying products/services online	0.658
Frequency of using social media	0.680

Information sharing [INFOSHARING]

The dependent variable information sharing is measured in the survey with eight statements representing three different information categories. The variable information sharing is composed by loading the eight information sharing indicators in a factor analysis. The eight indicators load on two different factors (Table 22).

The three original categories developed in the conceptual model (personally identifiable & context, preferences, lifestyle) are not reflected by three clear factors. However, the two indicators in the first information category (personally identifiable & context) have the highest loading scores on a second factor. The difference between these indicators and the other six indicators is that the first two indicators are the only indicators that cover the information Transavia's customers must always share when booking a flight. Therefore, the first information category (personally identifiable & context) is allocated to one factor and indicators representing the other two information categories (preferences and lifestyle) are allocated to the other factor (named INFOSHARING). This last new proposed factor INFOSHARING, combining preferences and lifestyle information, measures what extra information customers are willing to share when booking a flight.

Table 22 Information sharing component loadings (Extraction Method: Principal Component Analysis)

	Information sharing statements	Component 1 loadings	Component 2 loadings
1	I am willing to share my personally identifiable information (e.g. name, email)	0.409	**0.732**
		0.609	**0.475**
	I am willing to share my context data (e.g. location, time)		
2	I am willing to share my pre- and post-transport preferences (e.g. car, bus) from and to the (international) airport	**0.804**	0.221
	I am willing to share my accommodation preferences (e.g. hotel, camping)	**0.815**	-0.089
	I am willing to share my in-flight entertainment needs (e.g. music, magazine)	**0.757**	-0.075
3	I am willing to share my social media profile (e.g. Facebook, LinkedIn)	**0.720**	-0.194
	I am willing to share my travel budget	**0.669**	-0.441
	I am willing to share my environmental beliefs	**0.571**	-0.355

Receiving personalized services [RECEIVPERS]

The dependent variable receiving personalized services is measured in the survey with seven statements representing three different online personalization categories. The variable receiving personalized services is composed by loading the seven personalized services indicators in a factor analysis. The seven indicators load on two different factors Table 23. Thus, the three original categories developed in the conceptual model (alert, make easy/cross sell, and enrich) are not reflected by three separate factors. The first indicator, representing the personalization category alert, which refers to most services Transavia already provides, loads higher on a different factor. Indicators representing the other two personalization categories (make easy/cross sell and enrich) are allocated to another factor (named RECEIVPERS). This last new proposed factor measures additional personalized services customers are willing to receive when booking a flight. This is outcome of two factors is similar to the previous discussed outcome for INFOPERS. To be consistent in the analysis, it is decided that the new created factors related to information sharing and personalization will only cover the second and third categories of information and personalization.

Table 23 Receiving online personalized services component loadings (Extraction Method: Principal Component Analysis)

	Receiving online personalized services statements	Component 1 loadings	Component 2 loadings
1	I would like to have my personally identifiable and context information automatically filled in on Transavia's website	0.368	**0.819**
2	I would like to get recommendations about transport from and to the (international) airport	**0.773**	0.200
	I would like to get recommendations about accommodation	**0.850**	-0.091
	I would like to get in-flight entertainment recommendations to my entertainment needs	**0.754**	0.272
3	I would like to get travel recommendations based on my social life	**0.835**	-0.095
	I would like to get travel recommendations according to what my budget allows	0.788	-0.326
	I would like to get travel recommendations according to my environmental beliefs	**0.652**	-0.380

Information sharing for personalized services [INFOPERS] [INFODISCOUNT]

The information sharing for personalized services (non-monetary benefits) variable shows the same trend as the sharing information and receiving personalized service factors (Table 24). The first statement, representing the first information and personalization category, scores lower in the factor analysis (0.541) than the other six statements representing the second and third information and personalization. Based on these values and to be consistent with the factors (INFOSHARING and RECEIVPERS) earlier defined, indicators of these last two categories are combined into a new variable INFOPERS.

Table 24 Sharing information for online personalized services (non-monetary) component loadings (Extraction Method: Principal Component Analysis)

	Sharing information for personalization statements	Component 1 loadings
1	I am willing to share my personally identifiable (e.g. name, email) and context information (e.g. location, time) to get my information automatically filled in on Transavia's website	0.541
2	I am willing to share my transport from and to the (international) airport to get recommendations about transport	**0.820**
	I am willing to share my accommodation preferences to get recommendations about accommodation on the destination	**0.890**
	I am willing to share my in-flight entertainment preferences to get entertainment recommendations	**0.827**
3	I am willing to share my social media profile to get recommendations based on my social life	**0.800**
	I am willing to share my travel budget to get recommendations according to what my budget allows	**0.840**
	I am willing to share my environmental beliefs to get recommendations to travel according to my environmental beliefs	**0.698**

The first statement of the information sharing for monetary benefits variable scores only slightly lower (0.896) in the factor analysis than the other two statements representing the second and third information for monetary benefits categories (Table 25). However, to be consistent with the previous defined factors on the categories, only the last two indicators are combined into a variable (named INFODISCOUNT). This makes comparison with the information sharing variable possible.

Table 25 Sharing information for online personalized services (monetary) component loadings (Extraction Method: Principal Component Analysis)

	Sharing information for personalization statements	Component 1 loadings
1	I am willing to share my personally identifiable (e.g. name, email) and context information (e.g. location, time) to get a €5 discount on my flight	0.896
2	I am willing to share my service preferences (e.g. accommodation, transport) to get a €5 discount on my flight	**0.942**
3	I am willing to share my lifestyle (e.g. work, leisure activities) to get a €5 discount on my flight	**0.908**

3.3.3 Regression analysis

The statements in the survey relate to independent and dependent variables. Linear regression analyses are used to sort out the impact of the independent on the dependent variables. The outcomes of the regression analysis with all independent variables are presented in Table 26. An independent variable has impact on the dependent variable when a change in this independent variable is significantly related ($p < 0.05$) to changes in the dependent variable. Below, the impact of each independent variable on the willingness of sharing information (INFOSHARING) is described.

Table 26 Regression coefficients (Dependent variable: INFOSHARING)

Model	Unstandardized B	Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
(Constant)	-0.734	0.296		-2.481	0.014
Gender	0.087	0.113	0.043	0.769	0.443
Age	0.004	0.004	0.057	0.924	0.356
DIGITALSKILLS	-0.090	0.081	-0.090	-1.110	0.268
FREQSM_reversed	0.082	0.026	**0.234**	3.141	**0.002**
INSTITRUST	0.278	0.061	**0.278**	4.526	**0.000**
PERSTRUST	0.236	0.064	**0.236**	3.681	**0.000**
CONTROL	-0.126	0.055	**-0.126**	-2.277	**0.024**

The findings from Table 26 can be visualized into Figure 16, with the independent variables on the left and dependent variable on the right.
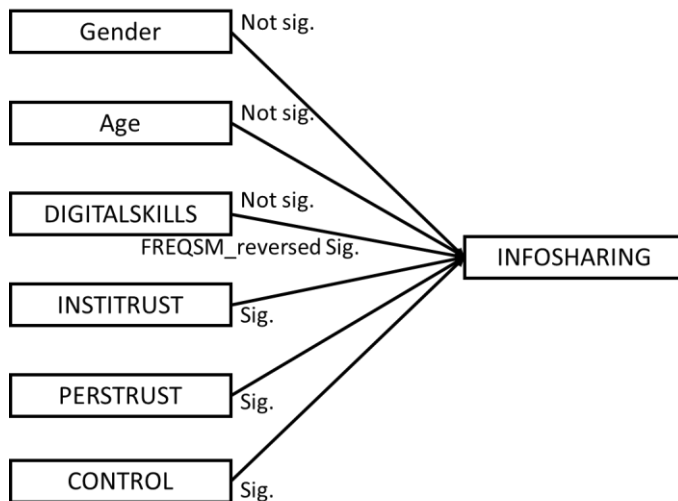
Figure 16 Regression variable overview

Gender

From the regression analysis, it appears that the gender of the respondent has no significant impact on their willingness of sharing information and receiving online personalization (p=0.443). The hypothesis that women are less willing to share information is disproved.

Age

The average sample age of the survey respondents is higher (55 years) than the average age of the Transavia customers (40 years). The hypothesis that older customers are less willing to share information is disproven based on the survey sample; age does not have significant impact on any of the dependent variables in the linear regression analysis (p=0.356). However, when there is a non-linear relation between age and average willingness to share information, it may be possible that the results are different when the average sample age was 40 years. By looking whether the differences in information sharing for different age groups are significant, it is assessed whether the results may be different in case the average sample age was lower. In a One-Way ANOVA analysis, it is tested whether the mean scores of age groups on information sharing are equal or not. The categorical factor age is split up in three age groups (0-30, 31-55, 56-100 years). The dependent variable is average willingness to share information (INFOSHARING). If the significance value (p-value) is less than 0.05, there is a significant difference between the three age groups. The relation is however non-significant (p=0.738) (Appendix C – One-Way ANOVA). Therefore, the hypothesis that older customers are less willing to share information (via a linear or non-linear relationship) is disproved. The age groups do not significantly differ. Therefore, it is expected that the hypothesis would still be disproven with a lower average sample age.

DIGITALSKILLS

From the regression analysis, it appears that the DIGITALSKILLS factor does not significantly impact the willingness of information sharing (INFOSHARING) (p=0.268). However, when looking at the separate DIGITALSKILLS variables, the use of social media (FREQSM_reversed) has a significant impact on the willingness of sharing information (p=0.002). The FREQSM_reversed variable has a standardized beta coefficient of 0.234, which represents the effect of this independent variable on the dependent variable. The other two separate DIGITALSKILLS variables (average internet skills and frequency of online shopping) have no significant relation to information sharing. The hypothesis that customers with high digital skills prefer more online personalization is disproven. But from the separate regression analysis, the conclusion can be drawn that customers that are active on social media are willing to share more information. This is not surprising since a lot of information is shared on social media. Another conclusion is that a frequent online shopper is not necessarily willing to share more information.

INSTITRUST & PERSTRUST

Both institutional trust (INSTITRUST) and personal trust (PERSTRUST) have significant impact on the willingness of sharing information (INFOSHARING) (p=0.000). The factors respectively have standardized beta coefficients of 0.278 and 0.236. To test whether there is a correlation between the two independent variables, they are tested on multicollinearity (Appendix C – One-Way ANOVA & Multicollinearity analyses). From this test, is was concluded that the variables do not correlate. This means institutional and personal trust have a similar but independent effect on the dependent variable INFOSHARING. The hypothesis that customers with higher personal and institutional trust are willing to share more information is proven.

CONTROL

The CONTROL variable has significant impact on the willingness of sharing information (INFOSHARING) (p=0.024). The factor has a standardized beta coefficient of -0.126, which means that the CONTROL variable has a negative effect on the variable INFOSHARING. In other words, when customers want to have more control on their personal information, they are less willing to share information. The hypothesis that customers who want higher control share less information is proven.

Combined explained variation of significant variables

Table 27 Model summary (Predictors: (Constant), FREQSM_reversed, INSTITRUST, PERSTRUST, CONTROL)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	0.495	**0.245**	0.234	0.875

R-squared shows the strength of the relationship between the model and the dependent variable. In

general, the higher the R-squared (maximum is 1), the better the model fits the data. The significant variables INSTITRUST, PERSTRUST, FREQSM_reversed, and CONTROL combined explain 24.5% (R squared = 0.245) of the INFOSHARING factor variation. It could however be expected that the R-squared value in this study is low, since the variables predict human behavior, which is difficult to predict.

3.3.4 Paired Samples T-test

Benefits (non-monetary and monetary)

With a Paired Samples T-test, it is measured whether the difference in average value for information sharing and information sharing with benefits in return are significantly higher or lower. The input for the test are the average values of the INFOSHARING, INFOPERS and INFODISCOUNT factors (Average_infosharing, Average_infopers, Average_infodiscount), which will be values between 1 (very unwilling) and 5 (very willing). The average value for willingness of sharing information with nothing in return is 2.844, the average value for willingness of sharing information with services in return is 2.601, and the average value for willingness of sharing information for discount is 2.451 (Table 28). From Table 29 it can be concluded that both getting a discount (monetary benefit) or a service (non-monetary benefit) for information have a significant negative impact on the attitude on information sharing (p=0.000). The average value for receiving personalized services when people do not have to share information in return (2.787) (Table 28) is not significantly lower than the average value for information sharing with nothing in return (p=0.055) (Table 29).

Table 28 Paired Samples Statistics of benefit variables

	Average_infosharing	Average_pers	Averge_infopers	Average_infodiscount
Mean	**2.844**	**2.787**	**2.601**	**2.451**
Std. Deviation	0.835	0.877	0.935	1.186

Table 29 Paired Samples T-test (variable 1: Average_infosharing, variable 2: benefit variables)

					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	**Average_infosharing – Average_pers**	0.05702	0.48347	0.02964	-0.00135	0.11538	1.923	265	0.055
Pair 2	**Average_infosharing – Average_infopers**	0.24311	0.52785	0.03236	0.17938	0.30683	7.512	265	**0.000**
Pair 3	**Average_infosharing – Average_infodiscount**	0.39286	0.90010	0.05519	0.28419	0.50152	7.118	265	**0.000**

The hypothesis that customers would be willing to share more information when they receive (non-) monetary benefits is disproved. The respondents are willing to share the most information when they are asked to provide the information without receiving any benefits in return. The difference between average value of sharing information when getting monetary benefits in return and the average value of sharing information for non-monetary benefits is negative. This means that customers are less willing to share information when they get a discount in return than when they get no or some service in return.

3.4   Conclusion

This chapter answers the research question:

SQ 2: *What are valid customer conditions for sharing personal information online?*

To answer this question, customer data is gathered by means of a survey in the Transavia case to validate the customer concepts of the scientific conceptual model. Based on the data analysis results, the following conclusions can be drawn about which conditions for sharing information are valid:

- Of all tested independent variables is the factor trust the biggest influencer on the willingness of sharing information. Both institutional and personal trust have significant impact on whether people share information. When customers have a high personal trust and/or a high institutional trust, they are more willing to share information.

- The factor control on the use of personal information is as well an influencer on the willingness to share information, but is a weaker influencer than institutional and personal trust. When customers want to have more control over their personal information, they tend to share less personal information.

- The factor social media use is also an influencer on the willingness to share information. Social media use is the only digital skills indicator that has a significant impact. When customers use social media frequently, they are willing to share more personal information.

- Other independent variables like gender, age and digital skills (besides social media use), have not proven to be significant influencers on the willingness of sharing information. Frequent online shoppers are not necessarily willing to share more personal information.

- Both monetary and non-monetary benefits do not lead to more information sharing. Benefits even lead to a negative effect on sharing information.

The presented outcomes do not fully agree with the defined conceptual model in chapter 2. Customers (irrelevant of age, gender, and most digital skills) are willing to share a certain degree of personal information when a company is trusted and/or when the customers generally trust companies.

Besides, people that are more active on social media tend to share more, and customers that want to be in control of their data share less. Any monetary and non-monetary benefits only reduce the willingness to share information. The partly revised conceptual model in Figure 17 shows a shift in factors on the customer side towards the trust factor. This implies that building online customer trust could be an important competitive differentiator for a company. The domain for this validation was Transavia, and therefore these results only apply to this domain.
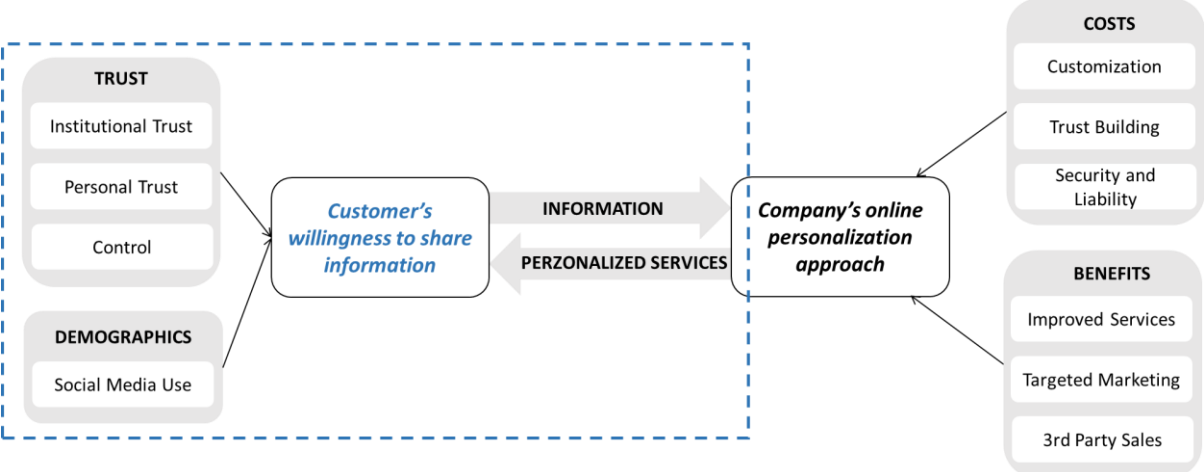
Figure 17 Conceptual model with only validated conditions for information sharing

Chapter 4 will use these findings as input for an approach for businesses to increase customer's willingness to share personal information online.

4 Designing an approach for businesses to increase customer's willingness to share personal information online

When looking at the valid conditions in chapter 3 that positively influence customers' willingness of sharing information, there is one condition that can be influenced by businesses, namely institutional trust. Different from the conditions personal trust and social media use, institutional trust is not just dependent on the customer. If a company wants customers to share personal information, it can perform online trust building activities to make customers gain trust in the institution. Thus, when a firm selects online strategies, it should include strategies which increase online customers' trust in the institution.

The proposed approach in this study will, therefore, focus on online trust building activities by businesses. The aim is to deliver a trust building tool that guides companies towards being trustworthy towards their customer. Moreover, the impact of the tool on the business side of the conceptual model will be described. The research questions that will be answered at the end of this chapter are:

> SQ 3.1: *What is an approach for businesses to increase customers' willingness to share personal information online?*

> S Q 3.2: *What is the revised conceptual model for increasing customer's willingness to share personal information online?*

The structure of this chapter is as follows. In paragraph 4.1, online trust building principles and constructs are constructed based on a literature review. In paragraph 4.2, exploratory interviews with Dutch customers are performed to validate the list of constructs and if necessary constructs mentioned by customers are added. In paragraph 4.3, the design of the trust building tool for companies is presented. The functionality of the tool is described by use cases and illustrated by examples in the context of Transavia in paragraph 4.4. Paragraph 4.6 discusses the impact of the design on the business side of the conceptual model. Conclusions are drawn in paragraph 4.6.

4.1 Online trust building principles and constructs

There are different ways for companies to build online customer trust. To structure the concept of trust building, a literature study is conducted. Table 30 contains an overview of main factors influencing customer's online trust described in scientific articles. Search terms used for this literature study to find articles about online customer trust building are 'trust', 'online', 'customer', 'consumer', 'transparency', 'build(ing)', and 'factors'. Databases used for the study are Scopus and ScienceDirect. Based on references in some of the articles, other relevant articles about the topic are found and are

included in the table as well. All the authors in Table 30 have in common that they present their own theoretical framework or list of factors influencing online trust

Table 30 Factors influencing online brand trust

Author(s)	Publication and Method	Factors that form the online trust frameworks
Alam & Yasin (2010)	• Journal of Theoretical and Applied Electronic Commerce Research • Survey	Good online experience, quality of information, word-of-mouth, security, brand reputation
Banarjee & Banerjee (2012)	• International Journal of Business and Social Research • Survey	Integrity, security and privacy, useful information, convenience in use, web design, word-of-mouth
Ha (2004)	• Journal of Product & Brand Management • Survey	Security, privacy, brand name, word-of-mouth, good online experience, quality of information
Hsu (2008)	• International Conference on Cyberworlds 2008 • Survey	Reputation, third-party assurance, customer service, propensity to trust, website quality, system assurance, brand
Hsu, Chuang, & Hsu (2014)	• Internet Research • Survey	Security and privacy, IT quality, reputation, feedback, interaction, identification, shared vision
Kang & Hustvedt (2014)	• Journal of Business Ethics • Survey	Transparency, social responsibility
Kim & Park (2013)	• International Journal of Information Management • Survey	Reputation, size, information quality, transaction safety, communication, word-of-mouth referrals
Srinivasan (2004)	• Information Management & Computer Security • Literature review	Security, past experience, third party recommendations

Some of the online trust building frameworks in literature are very similar, which results in an overlap of factors, that are listed in Table 30. Therefore, groups of similar factors will be created in Table 31. By grouping the factors, four trust building principles are constructed.

Table 31 Online trustbuilding principles

Online trust building principle	Factors influencing online trust from literature
Experience	Good online experience, quality of information, past experience, information quality, website quality, useful information, convenience in use, web design, IT quality, interaction, identification, shared vision
Security	Security, privacy, security and privacy, transaction safety, third-party assurance, system assurance
Transparency	Integrity, transparency, social responsibility
Trusted sources	Word-of-mouth, third party recommendations, word-of-mouth referrals, feedback

Factors from Table 30 that are not included in Table 31 are factors related to brand, reputation, and size ('brand name', 'brand reputation', 'reputation', and 'size, brand'). These factors are not included because the tool should be useable for every company, independent from the size or brand reputation. Thus, the four constructed online trust building principles are elements that every company could work on. The four principles are however complex and subjective terms, and should be clearly defined before they can be of use for the tool. Therefore, the four principles are described by listing more in detail what they entail.

Experience

Several authors in Table 30 described in their framework that a good online experience and a high website quality have a positive effect on customer's brand trust (Alam & Yasin, 2010; Ha, 2004; Srinivasan, 2004). A more in depth literature study is conducted by reviewing the sources on which the trust frameworks are based, to give a more tangible meaning to this principle. It is, however, difficult to provide an absolute definition for website design quality because professional design's meaning is broad and vague and can be interpreted differently by different people (Loh, 2014). Nine different constructs are identified in literature related to online experience and website quality, and are listed in Table 32. Appendix D – Trust building constructs from literature provides further details on how the constructs are built up.

Experience and quality are combined in the experience principle since "websites that provide positive shopping experiences by focusing on utilitarian and hedonic aspects of web design" (Bilgihan, 2016, p. 111). Loh (2014) relates online experience to website quality and states that the more ease to use and the better quality of the website are, the more likely to build high level of customer's trust. For a good experience, advertisements are limited. Kaur & Madan (2013) define advertisements as third party content which is mixed and rendered with website content and rendered in the browser.

Table 32 Experience trust building constructs

	Constructs	Author(s)
1.	Information quality	Abareshi (2016); Aghdaie, Piraman, & Fathi (2011); Aladwani & Palvia (2002); Banarjee & Banerjee (2012); Essawy (2006); Filieri (2015); Fung & Lee (1999); C. J. Hsu (2008); Kaur & Madan (2013); Kim & Park (2013); Y. D. Wang & Emurian (2005)
2.	Website appearance	Aghdaie et al. (2011); Aladwani & Palvia (2002); Banarjee & Banerjee (2012); C. J. Hsu (2008); Kaur & Madan (2013); Y. D. Wang & Emurian (2005)
3.	Ease to navigate	Aladwani & Palvia (2002); Banarjee & Banerjee (2012); Fung & Lee (1999); C. J. Hsu (2008); Kaur & Madan (2013); Paliszkiewicz & Klepacki (2013); Y. D. Wang & Emurian (2005); Yoon (2002)
4.	Social media presence	Abareshi (2016); Paliszkiewicz & Klepacki (2013)
5.	Customer support	Banarjee & Banerjee (2012); Kaur & Madan (2013); Paliszkiewicz & Klepacki (2013); Y. D. Wang & Emurian (2005)
6.	Contact options	Kaur & Madan (2013); Paliszkiewicz & Klepacki (2013)
7.	Website download time	Aladwani & Palvia (2002); Filieri (2015); Fung & Lee (1999); Kaur & Madan (2013)
8.	Domain name	Kaur & Madan (2013); Y. D. Wang & Emurian (2005)
9.	Advertisements	Kaur & Madan (2013)

Security

Factors like security, safety or system assurance are mentioned by almost all authors in Table 30 as influencing factors for trust. Customers "tend to associate higher security feelings with a higher level of brand trust" (Ha, 2004, p. 335). Perceived security can be defined as to what degree the customer perceives he or she is protected against threats that create "destruction, disclosure, modification of data, denial of service, and/or fraud, waste, and abuse" (C. J. Hsu, 2008, p. 168). To create more insight into this principle, literature is reviewed that describes security in relation to trust. The search term 'security' and 'safety' are added to the search terms.

In the context of e-commerce, transaction safety plays a role in increasing the customer's trust in a website (Yoon, 2002). "To increase trust, websites must convince their potential customers that their information will be protected. Websites should apply methods and mechanisms that increase the perceived reliability" (S. F. A. Aghdaie, Piraman, & Fathi, 2011, p. 150). For instance, with trust seals contain "information about other companies that specialize in assuring the safety of websites" Fung & Lee (1999). Four different trust building constructs are defined in Table 33**Error! Reference source not found.**. The constructs are addressed and elaborated on by the authors. Appendix D – Trust building constructs from literature provides further details on how the constructs are built up.

Table 33 Security trust building constructs

	Constructs	Author(s)
1.	Trust seal	C. J. Hsu (2008); Kaur & Madan (2013); Peterson, Meinert, Criswell, & Crossland (2007); Y. D. Wang & Emurian (2005)
2.	Transactions	Aghdaie et al. (2011); Banarjee & Banerjee (2012); Kaur & Madan (2013); Paliszkiewicz & Klepacki (2013); Yoon (2002)
3.	Privacy policy	Banarjee & Banerjee (2012); Kaur & Madan (2013); Peterson et al. (2007)
4.	Refund policy	Aghdaie et al. (2011); Banarjee & Banerjee (2012); Kaur & Madan (2013)

Transparency

Transparency is a factor mentioned by Kang & Hustvedt (2014) in Table 30 Kang & Hustvedt (2014) state that the customer's perception of a company's transparency and honesty positively influences trust. A more in-depth literature review, by adding the search term 'transparency' to the search, is conducted to give a clearer meaning to the transparency principle.

A transparent company leads to well informed customers about relevant characteristics and actors of the exchange process (Eggert & Helm, 2003). Transparency allows customers to compare for example "costs, as well as prices to more accurately assess a product's value" (Lowe, 2015, p. 1993), which helps to build trust (Lowe, 2015). Given that transparency could expose failures, it will not always be in the interest of companies (Reynolds & Yuthas, 2008). Being transparent could also be one of the motives for corporate social responsibility (Reynolds & Yuthas, 2008), which is as well a predictor of trust (Kang & Hustvedt, 2014).

Four main constructs from literature to increase transparency are listed in Table 34. The constructs are addressed and elaborated on by the authors. Appendix D – Trust building constructs from literature provides further details on how the constructs are built up.

Table 34 Transparency trust building constructs

	Constructs	Author(s)
1.	Company information	Aladwani & Palvia (2002); Kaur & Madan (2013); Paliszkiewicz & Klepacki (2013)
2.	Pricing	Banarjee & Banerjee (2012); Kaur & Madan (2013); Lowe (2015)
3.	Corporate behavior	Egels-Zandén & Hansson (2015); C. J. Hsu (2008); Kang & Hustvedt (2014)
4.	Order tracking	Aghdaie et al. (2011); Banarjee & Banerjee (2012); Egels-Zandén & Hansson (2015); Kaur & Madan (2013); Yoon (2002)

Trusted sources

Almost all authors in Table 30 mention that assurance from either independent third parties, positive word-of-mouth (WOM) or feedback about a company, creates trust between the company and customer. "Positive WOM about a particular brand, helps consumers to cultivate brand trust" (Alam & Yasin, 2010, p. 81). When a company shares the values of the customer, customers are "more likely to engage in positive WOM" (Kang & Hustvedt, 2014, p. 256). Here, the link to social responsibility can as well be made; "positive WOM is more likely to be received by companies who are not violating industry norms related to social responsibility" (Kang & Hustvedt, 2014, p. 256). On the other hand, "violations of trust, especially when consumers felt that the violation was likely to be repeated, lead to increased negative WOM" (Kang & Hustvedt, 2014, p. 256).

The three types of recommendations and reviews from independent parties, like customers, friends and family or third parties, that serve as trusted sources are listed in Table 35. The constructs are addressed and elaborated on by the authors. Appendix D – Trust building constructs from literature provides further details on how the constructs are built up.

Table 35 Trusted sources trust building constructs

Constructs	Author(s)
1. Reviews on own site	Banarjee & Banerjee (2012); Fung & Lee (1999); Kaur & Madan (2013)
2. Reviews on external/partner sites	Abareshi (2016); Filieri (2015); Ha (2004); Kim & Park (2013); Paliszkiewicz & Klepac (2013)
3. Offline worth of mouth	Alam & Yasin (2010)

4.2 Customer testing of online trust building principles and constructs

The constructs defined in paragraph 4.1 were validated by customers. The constructs are validated because of the following three reasons that may cause discontinuity between literature and customer insights. First, new constructs can play a role because of new digital or regulatory developments on the internet, that have not yet been included in literature. Second, most literature only tests a certain list of trust building constructs and does not do any exploratory research. When writing about online trust, authors use this existing research as input for their own list of constructs. This could lead to a mismatch in people's assessment in online institutional trust. Third, due to the big amount of literature on online trust building, it is possible that not all relevant literature was found.

4.2.1 Exploratory customer interviews

By means of the exploratory interviews, customer's current view on trustworthiness is included. The advantage of exploratory interviews is the explorative nature and ease of the method. The disadvantages are the relatively small sample and the possibility that customers forget to mention

constructs or have a different attitude when visiting a website in real. Interviewees were selected based on the criterion that they speak Dutch. Demographics gender and age do not have a significant influence on willingness to share information, as concluded in Chapter 3, and were therefore no criteria.

Five customers are interviewed to gain an impression of customer insights on trust building. Since the main purpose of the customer interviews are to validate the trust building constructs, five different interviewees may already give a good impression of the validity of the constructs in the eyes of the customers. Three interviewees are Dutch students at Delft University of Technology. Two male and one female with ages of 24 and 25. Their average level of digital skills is relatively high. The fourth interviewee was a Dutch male real estate agent with the age of 58. His digital skills are medium. The fifth and last interviewee was a Dutch female homemaker of 56, with relatively low digital skills.

The interviewees were asked the following: *Please provide anything of which you think make online companies trustworthy.* Each of the interviews took around 15 minutes. The complete list of insights from the interviews can be found in Appendix E – Customer interviews on trust building.

4.2.2 Validation with interview results

The insights of the interviews are coded with the constructs from paragraph 4.1 (Appendix E – Customer interviews on trust building). By coding the interviews, it becomes clear that the various constructs that play a role for customers in assessing trustworthiness are very similar to the constructs from paragraph 4.1. The constructs are therefore considered to be validated in the interviews. Besides, two new constructs are identified, namely 'login options' (*fifth construct of the security principle in Table 37) and 'referral links' (*fourth construct of the trusted sources principle in **Error! Reference source not found.**). 'Login options' refers to different login options that customers want to choose from when they must use an online account on a company's website (e.g. Facebook, guest account). 'Referral links' refers to when a company website is accessed via a link on a trusted party website, the website is likely to be trusted. Table 36 to Table 39 show the validation of the constructs per trust building principle and addition of the two new constructs.

Table 36 Experience trust building constructs

	Constructs	Customer interview validation
1.	Information quality	*Content up to date, clear content (no grammar mistakes, structured)*
2.	Website appearance	*Attractive website appearance (color, font, clean)*
3.	Ease to navigate	*Easy to navigate*
4.	Social media presence	*Social media presence (number of followers)*
5.	Customer support	*Fast communication*
6.	Contact options	*Multiple contact options*
7.	Website download time	*Quick loading time*
8.	Domain name	*Clear domain name*
9.	Advertisements	*Not too many pop-ups and advertisements*

Table 37 Security trust building constructs

	Constructs	Customer interview validation
1.	Trust seal	*Certificates, HTTPS, secure connection*
2.	Transactions	*Secured online transactions (e.g. iDeal, Paypal)*
3.	Privacy policy	*Clear privacy policy*
4.	Refund policy	*Clear refund policy*
5.	Login options*	*Multiple login options*

Table 38 Transparency trust building constructs

	Constructs	Customer interview validation
1.	Company information	*People behind the company*
2.	Pricing	*Clear about price/quality and preferably no transaction, order, refund costs*
3.	Corporate behavior	*Materials and production process*
4.	Order tracking	*Quick confirmation, insight in order process steps*

Table 39 Trusted sources trust building constructs

	Constructs	Customer interview validation
1.	Reviews on own site	*Reviews on own site, recent and clear reviews*
2.	Reviews on external/partner sites	*Reviews in the news, via Google, via chat groups, on social media (and followers)*
3.	Offline worth of mouth	*Reviews by familiar people (offline or social media connections)*
4.	Referral links*	*Linked to other trusted party*

Although size, brand, and price are not one of the trust building principles since they cannot always be changed, interviewees did mention them. Customers trust a well-known brand more than an unknown one. Besides, customers trust bigger companies more. Smaller companies can be trusted as well when there is good contact by for instance e-mail. It is more accepted that smaller companies' websites and payment systems are more simple and use bank transfer. Lastly, when the product or service ordered has a low price (under 50 euros), it is less important whether the website can be trusted.

4.3   Online trust building tool

The validated trust building constructs are input for the design of an online trust building tool presented in Figure 18. Constructs are divided into constructs that apply to the online media owned by a company, and constructs that apply to the ecosystem, covering paid and earned media. Owned media is "anything under companies' direct control such as websites, newsletters, catalogs, and blogs" (Bonchek, 2014). Paid media refers to content delivery to an audience through for example advertising or other paid services, while earned media refers to "coverage and exposure from reporters and influencers" (Bonchek, 2014). Furthermore, trust building categories are highlighted with different colors. To use the tool effectively, some practical guidelines are provided per construct, which are presented in Appendix F – User guidelines for online trust building tool. These guidelines are based on the literature insights in Appendix D – Trust building constructs from literature. It should be noted that these practical guidelines are not an exhaustive representation of the literature.
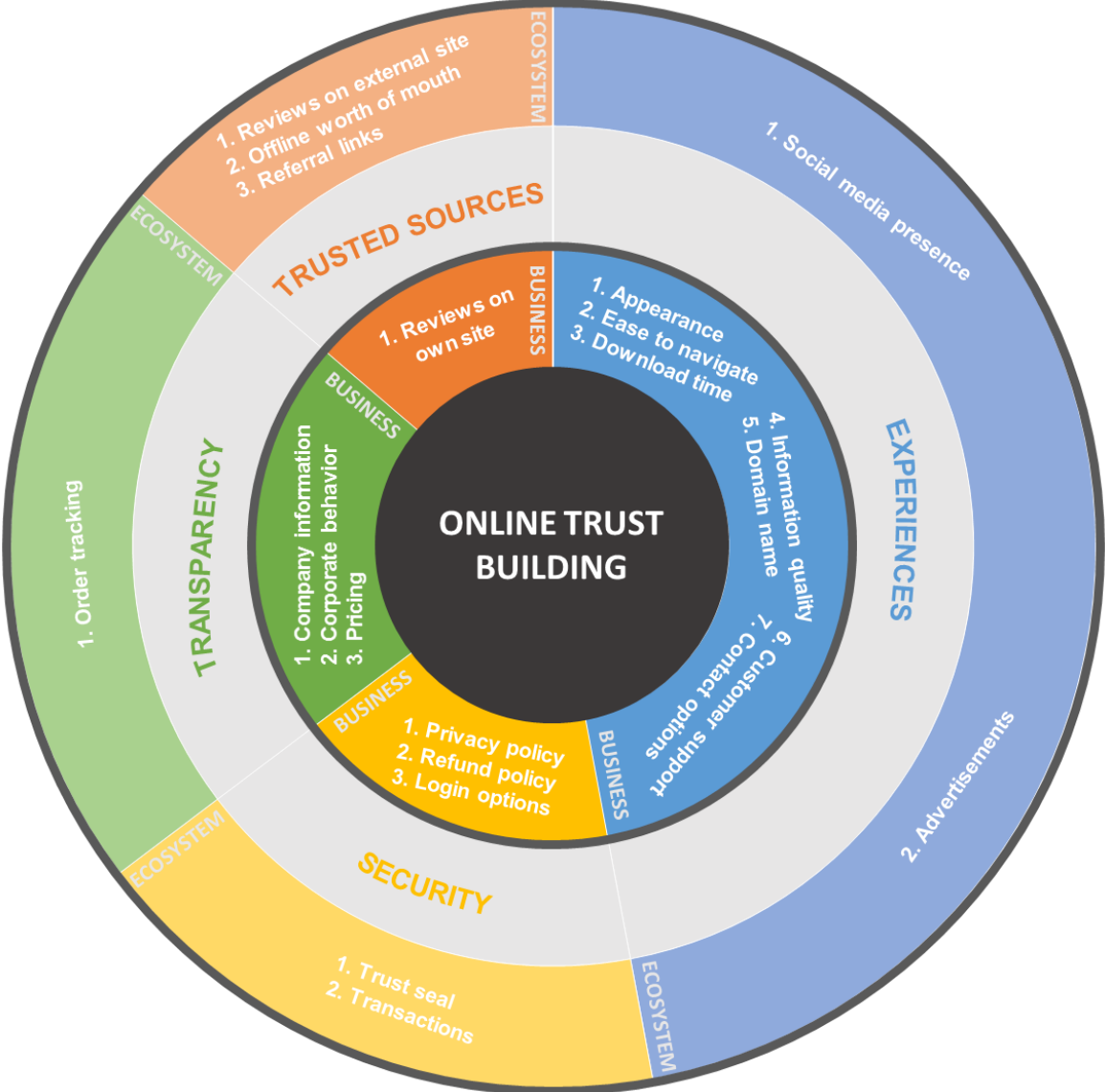

Figure 18 Online trust building tool

In general, the tool is a basis for assessing and redefining strategy and actions to increase the online customer trust in the company. It is advised to walk through the constructs and their guidelines with someone representing the company. Preferably this is someone on a higher level, for instance a manager, who has a good overview of the organization and knowledge of the organization's strategies. This enables a better use of the tool since the person can give background information on certain online choices and can delegate tasks to the different departments to improve an online trust construct. The size of each of the categories in the tool is linked to the number of guidelines that the category includes, which may be representative for the expected discussion time spent per category.

To test the tool on its effectiveness, A/B testing can be used. An A/B test is a randomized controlled experiment to make data-driven decisions for causal interference (Deng, Lu, & Litz, 2017). It has become the standard for testing out new online approaches by customer facing web technology companies (Gui, Xu, Bhasin, & Han, 2015). In the A/B test, two or more versions of a web page are compared against each other to determine which one performs better. The pages are shown to customers at random, and statistical analysis is used to determine which variation performs better for a given conversion goal (Optimizely, n.d.). If there is a significant increase in information sharing (for buying products or services, stating preferences, etcetera), the impact construct is proven.

4.4 Use cases of trust building tool

The online trust building tool has multiple functions for which it can be used by a manager. Therefore, different use cases are described to give an overview of the functionality of the tool. The use cases are illustrated by examples in the Transavia case. The examples are generated after walking through the tool with Nick Brandts, the Direct Sales manager of Transavia on April 25, 2017.

Use case 1: Check presence

By walking through the constructs in the tool, it can be checked which trust building constructs are covered by the company and which constructs are not covered. The tool can provide a start for a discussion about what the reasons are for not including the constructs in the business or ecosystem.

Example: In the case of Transavia, trust seals were not present on the website. In the discussion, there was no clear reason for not having these trust seals. The manager therefore wanted to consider adding these seals. A/B testing of the website with and without trust seals, especially on login pages, was considered.

Use case 2: Improve

Another functionality of the tool is to assess which constructs that are already present on the website could be improved. Constructs that are already met by the company can be input for a discussion by looking at how well they function or how complete the constructs are.

Example: In the case of Transavia, there were several elements that were not in an optimally functioning. One of these was the search engine. This function did not work properly, since only very limited keywords could be used to search on the website. In the discussion, it appeared that the engine only searches in the FAQs and that covering the whole website with the search engine would be costly. Though, making the manager conscious of what is not working properly and why it should be improved, may lead to reconsideration of an investment to improve that specific feature.

Use case 3: Identify tensions

The tool can also be used to identify tensions between customer trust and the aim to make the business more profitable. For some of the constructs, it seems like the company has choose between more profit or more trust. Often, a commercial party chooses making a profit above creating customer trust. By discussing the identified tensions, the manager may look for options on how to create both trust and profit.

Example: An example in the Transavia case are the advertisement during the booking process. Advertisements of Transavia's partners on the website are a source of income for Transavia. When customers buy a service via the advertisement, Transavia gets a share of the price. In the discussion, Transavia argues that the CarTrawler advertisement in the booking process increases the revenues. This is found in an A/B test performed by Transavia with and without the advertisement. Although, the manager mentioned that only 1 or 2% of the customers makes use of the advertisement, which could mean that most customers found the advertisements untrustworthy.

During the discussion, an option for reducing these tensions by using customer profiles and their service preferences was addressed. The manager addressed that Transavia would like to differentiate advertisements for different customer profiles. For example, it might be that people who book flights of 25 euros never rent a car. Using these profiles may lead to a better fit of the advertisements, higher customer trust, and profit for the company.

Use case 4: Propose strategy

A fourth functionality of the tool is that it can provide suggestions for the company's strategy on a higher level. Some constructs may not (yet) be in line with the company's strategy at all. Meeting the constructs may not be an option or may lead to a big change in strategy. Though, it can be input for strategy on the long term.

Example: Transavia does not provoke social responsible and sustainable practices online. In the discussion, it became clear that Transavia's social responsibility organization 'Peter Pan Stichting' is not visible on the website because there are not enough resources available to serve people with the organization, in this case offering vacations for long-term ill children. Besides, Transavia has only limited intentions when looking at sustainability, since it lets the customer pay for CO_2 compensation. Within the strategy to improve the brand, which the manager would like to follow, these two constructs may find a more prominent place.

Use case 5: Utilize ecosystem

The last functionality of the tool is insight in how the business uses the ecosystem in building trust. The tool helps to identify which partnerships a company could build or which partnerships are not fully used.

Example: In the Transavia case, it was found that Transavia did not make use of its partner TripAdvisor to provide reviews on Transavia's own site. TripAdvisor is a review website where customers can share their experience about a specific Transavia flight. In the discussion, it appeared that Transavia was running an A/B test in which TripAdvisor reviews of the specific flight the customer is planning to book, were shown on Transavia's website. The first results from the A/B test showed that the TripAdvisor reviews on the website of Transavia lead to a significant increase in number of bookings. Therefore, it is assumed that adding reviews on Transavia's own website will contribute to a higher trustworthiness towards their customers.

4.5 Revised conceptual model

At the end of chapter 3, the customer side of the conceptual model is adjusted. This however did not yet happen for the company side. The benefits of trust building for a company remain to be improved products and services, targeted marketing, and third party sales, as a result of more customer information. The costs are however no longer related to online personalization but to online trust building. Examples of costs related to trust building for a company, based on the various trust building constructs, are listed in Table 40.

Table 40 Online trust building costs

Online trust building category	Cost examples
Experience	Website interface design, customer service, and costs due to less advertisements.
Security	Covering transaction and refund costs. Technological protection mechanisms and investments in legal support.
Transparency	*Direct*: Covering shipment costs. Spending money on socially responsible or sustainable activities.
	Indirect: Damage to brand reputation due to openness about failures.
Trusted sources	Alliances with trusted third-parties.

A full overview of both the customer and company side in the practice of trust building is presented in Figure 19.
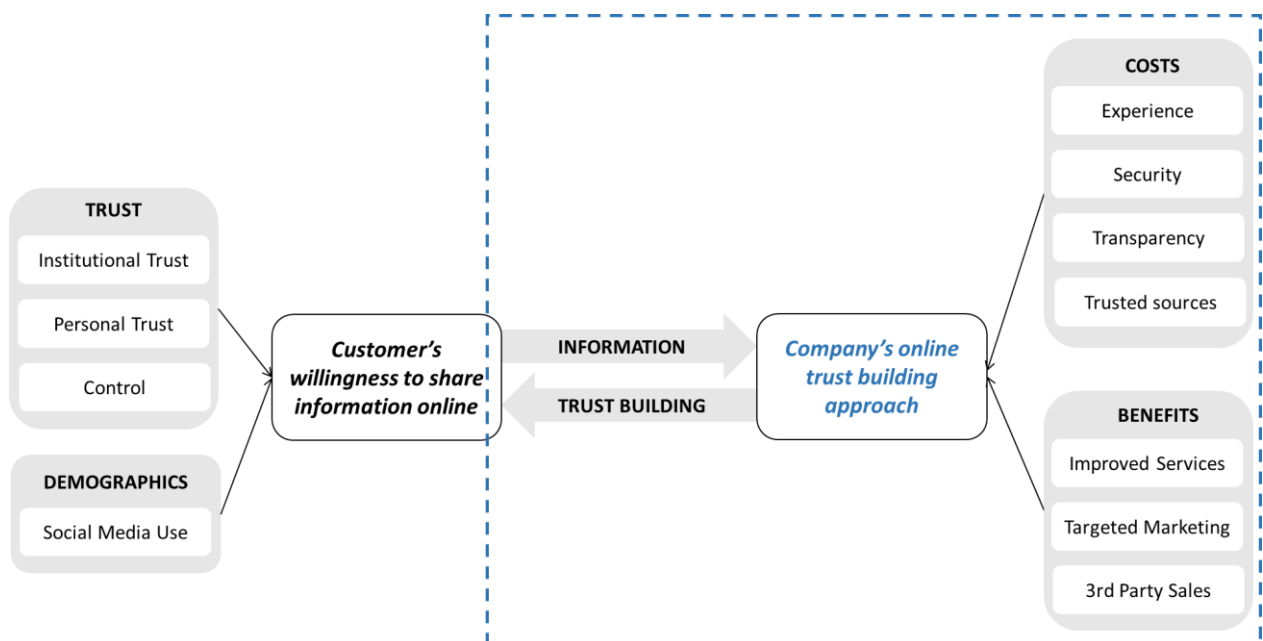
Figure 19 Conceptual modal of online trust building

4.6 Conclusion

This chapter answers the research questions:

SQ 3.1: *What is an approach for businesses to increase customers' willingness to share personal information online?*

S Q 3.2: *What is the revised conceptual model for increasing customer's willingness to share personal information online?*

The valid customer variable institutional trust is the basis for designing an online trust building tool for businesses to improve its online trustworthiness. The tool has four online trust building principles: experience, security, transparency, and trusted sources. Several constructs per principle are defined after conducting a literature study on constructs and validation of the constructs by customers. The tool is a visual presenting the trust building constructs within the business and within the ecosystem, divided per trust building category (Figure 20). The functionality of the tool can be described by five use cases, namely: check presence, improve, identify tensions, propose strategy, and utilize ecosystem.
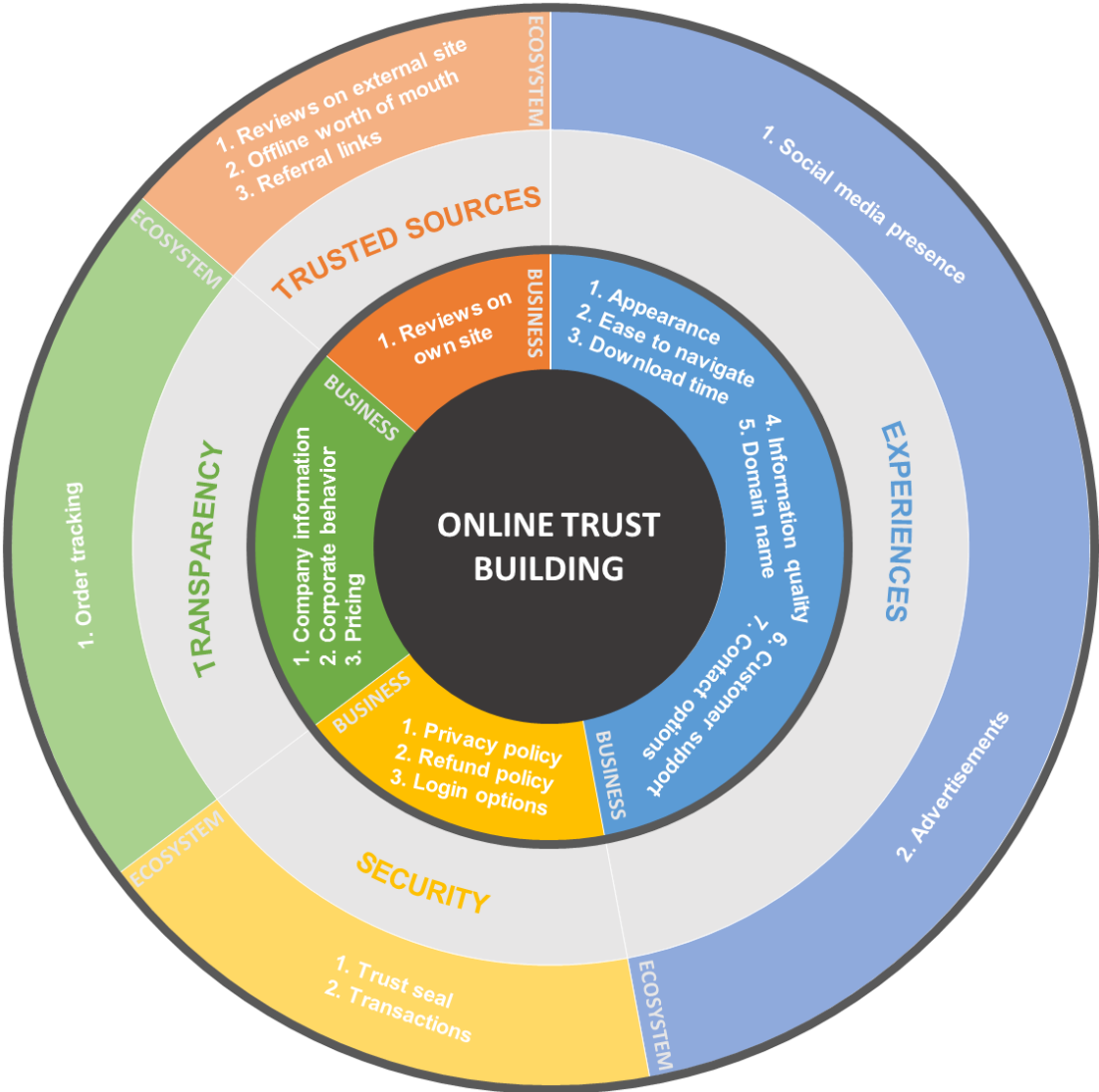
Figure 20 Online trust building tool (paragraph 4.3)

The revised conceptual model is presented in Figure 21. Since a company still get the benefits from the information shared by customers, the benefit concepts remain unchanged. The costs are revised into costs related to online trust building.

Figure 21 Conceptual model of online trust building (paragraph 0)

5 Conclusions & Discussion

This last chapter concludes this research by presenting the answers to the research questions, to answer the main research question in paragraph 5.1. In paragraph 5.2, the scientific and practical research contributions are described. Next, paragraph 5.3 includes the discussion on the research. Last, areas for further research are described in paragraph 5.4.
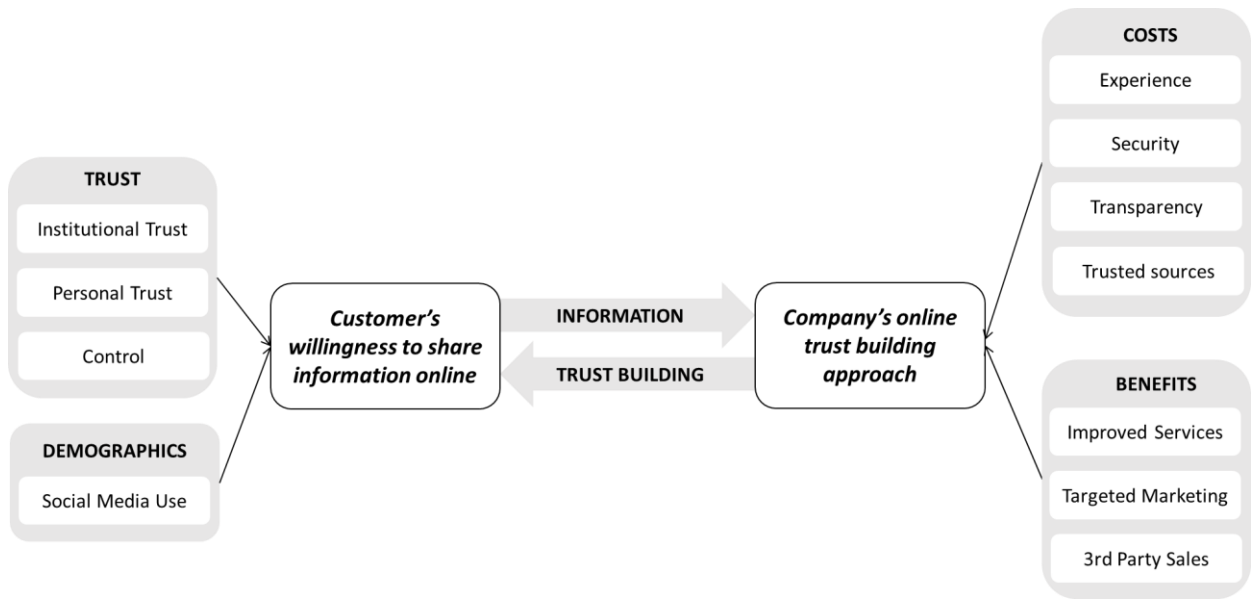
5.1 Main findings

The main research question of this study was formulated as follows:

> *How can businesses increase the customer's willingness to share personal information online?*

By answering the research questions, the answer to the main research question can be formulated. The research questions were developed as such that an approach to increase customer's willingness to share information could be developed based on a validated customer condition to share information. The first question focused on the creation of the scientific conceptual model on information sharing and online personalization. The second question focused on customer validation of the customer conditions to share information. The third question used the validated condition institutional trust as a basis for designing a tool for businesses to build online customer trust in the company.

5.1.1 Answer research question 1

To get insight in process of online personalization by companies and information sharing by customers as described in literature, the first research question was formulated as:

> SQ 1: *What is the theoretical conceptual model of customer's sharing personal information online and businesses offering online personalized services?*

Two sub questions were defined on both the customer concepts of sharing information and the business concepts of personalization:

> SQ 1.1: *What personal information and under what conditions are customers sharing for online personalized services?*

> SQ 1.2: *What online personalized services and under what conditions are businesses offering to customers*

For SQ 1, categories of personal information that customers may share are identified in literature. These categories are defined as follows: context, identifiable, preferences, lifestyle information. Moreover, the conditions for sharing information that are addressed in literature are collected. The

main conditions that are found are trust (personal and institutional), demographics (age, gender, and digital skills), benefits (non-monetary and monetary), and the context (domain and effort).

For SQ 1.2, the following categories of personalization that businesses may offer are defined based on the findings in literature: alert, make easy and cross-sell, and enrich. Besides, there are two factors found that influence the online personalization by businesses: costs (customization, trust building, and security and liability) and benefits (improved services, targeted marketing, and third party sales).

By combining the answers on SQ 1.1 and SQ 1.2, the scientific conceptual model of online information sharing and online personalization in Figure 22 is created.
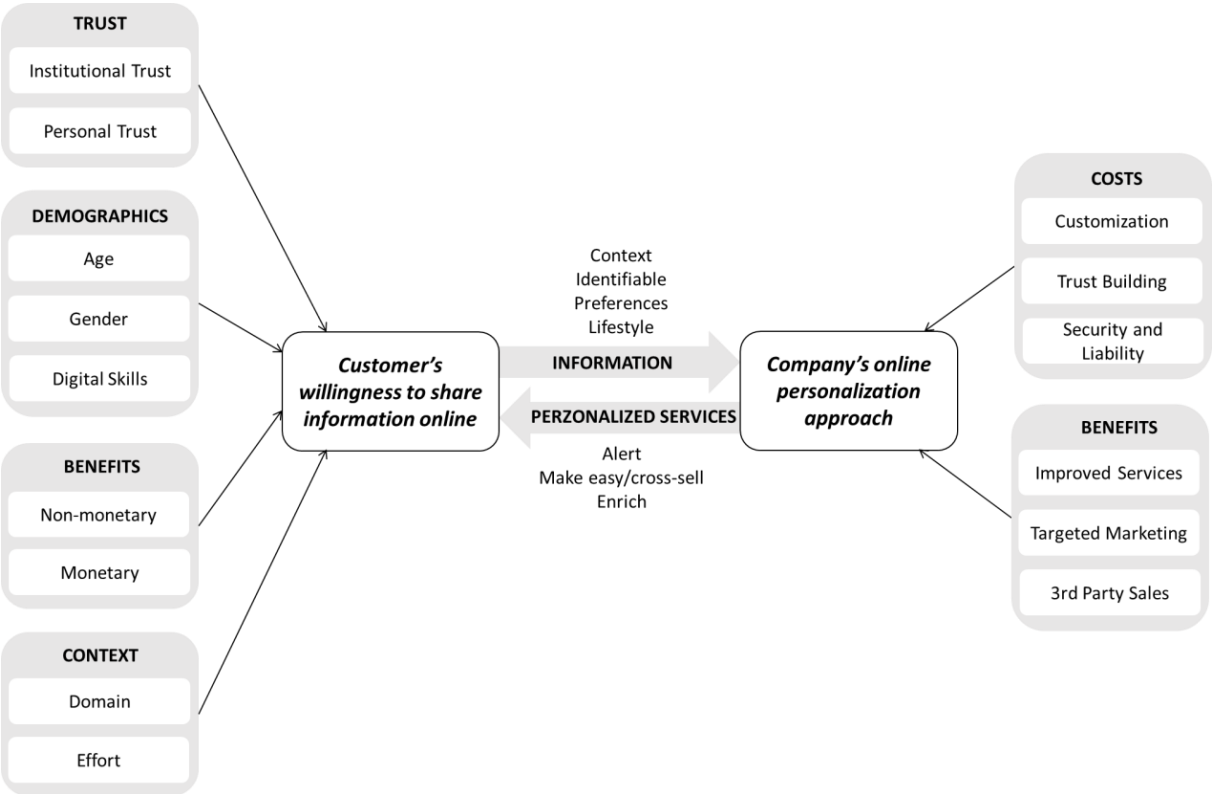
Figure 22 Conceptual model of sharing information and providing online personalization (paragraph 2.8)

5.1.2 Answer research question 2

To validate the customer conditions of the scientific conceptual model, the second research question is defined as follows:

SQ 2: *What are valid customer conditions for sharing personal information online?*

Customer conditions are validated in a case study (Transavia Airlines) by means of a survey. From the analysis of the data, part of the customer conditions is validated. Customers with a high institutional trust and/or a high personal trust are more willing to share personal information online. Besides, customers that are frequently active on social media are willing to share more. Customers that want

control on their data are less willing to share. The conditions age and gender did not appear to have a relationship with information sharing. Moreover, frequent online shoppers are not necessarily willing to share more. Lastly, monetary and non-monetary benefits appear to have a negative effect on the willingness to share information.

5.1.3   Answer research question 3

Question 3.1 uses the valid condition 'institutional trust' as a basis for an approach for businesses to increase the customer's willingness to share personal information online. Question 3.1 is as follows:

SQ 3.1: *What is an approach for businesses to increase customers' willingness to share personal information online?*

By using trust building concepts from literature, four online trust building categories are developed: experience, security, transparency, and trusted sources. The categories contain constructs from literature, which are validated by means of exploratory customer interviews. The tool is presented in Figure 23.
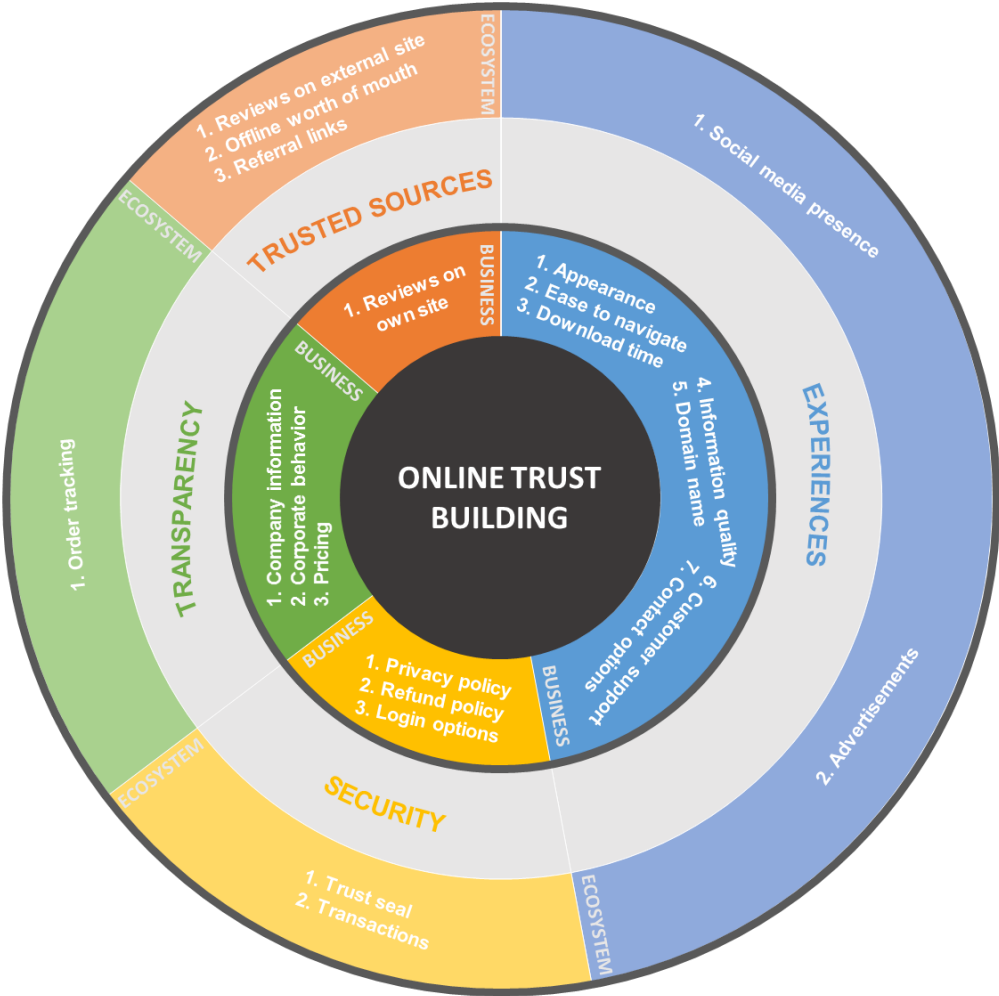
Figure 23 Online trust building tool (paragraph 4.3)

The functionality of the tool is illustrated by five use cases. Different ways of using the tool are: a check whether the constructs are present, identification for improvement possibilities of one or more constructs, identification of tensions between the trust constructs and the business goals, input for a business strategy to include constructs, and input on how the business ecosystem can be utilized to build trust. All cases are illustrated by examples within the Transavia case.

Based on the insights about trust building, a revised conceptual model is presented in Figure 24, which also answers the last research question:

SQ 3.2: *What is the revised conceptual model for increasing customer's willingness to share personal information online?*
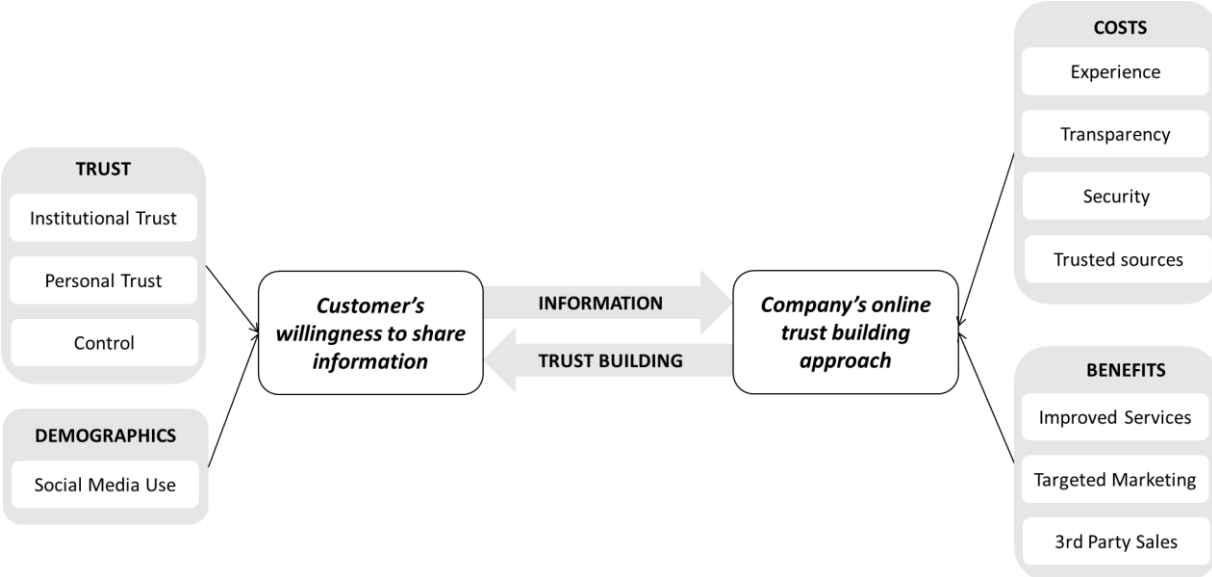
Figure 24 Conceptual model of online trust building (paragraph 0)

To answer the main question, it appears in the research that customers who trust a company are willing to share more personal information online. Thus, to increase customer's willingness to share personal information online, companies can improve their online trustworthiness. The trust building tool provided in the research can be used by businesses as a starting point to discuss and possibly improve their online trust performance.

5.2   Contribution of the research

This paragraph describes the academic contribution for both master degrees and practical relevance of the research.

5.2.1   Contribution to science

In this research, an extensive overview is given on the categorization of both information and online personalization. Due to the complexity of these concepts (various dimensions and definitions), there

is not one clear categorization in literature. By presenting and structuring the variety of categorizations, a categorization is proposed that could be used in this but also in other studies.

The same approach also accounts for the conditions for information sharing and factors influencing personalization. The various conditions and factors mentioned in literature are as well presented in an extensive overview. Again, these factors are structured to create one final list of conditions and factors from the literature available. The identification of all possible conditions and factors was not earlier this inclusive in current literature.

The consequence of being all-inclusive is that in the data analysis many different factors are validated, instead of focusing on only a few, like current studies do. As a result of this all-inclusiveness, the validation of the conditions provides directions on which conditions this research but also other studies can focus. The number of conditions which were addressed in current literature is in this research reduced.

The created approach in this research translates the earlier scientific findings into practice. Since customers are subject to the approach, customers are included in the validation steps. The final list of identified constructs from literature, validated by customers, is a good basis for the design of the tool and the extensive and validated overview also contributes to science. Besides presenting an overview, a translation of concepts related to trust building into a tool for businesses has not been presented yet in literature and did not exists within Accenture.

The tool is a contribution to the SEC research agenda on Responsible Innovation. By focusing on trust building, insight from the tool are expected to be ethical ways to increase customer's willingness to share information. Besides, the four dimensions of responsible innovation (anticipation, reflexivity, inclusion, and responsiveness) (Stilgoe, J, Owen, R., Macnaghten, 2013) are met by the tool. The tool *anticipates* on one of the valid conditions ('institutional trust') for customers to share information, which was found in the empirical research part of this study. By using the tool as a starting point for a discussion, it enables companies to *reflect* on their current online activities related to trust. For example, a company can ask itself which constructs are not met and why, how constructs can be improved, and if the company wants to meet constructs (paragraph 4.4). The tool does not only *include* trust building constructs from literature, but does also validate and expands the list of identified constructs with building constructs that are mentioned by customers. The tool is *responsive* since it can be applied in various businesses and in any stage of trustworthiness.

5.2.2   Contribution to practice

The main contribution of this research to practice is the translation of the validated customer condition 'institutional trust' into a tool that can be used by businesses to improve their online trustworthiness.

The tool stimulates a discussion with businesses on their current choice for their online activities. It provides a way to involve stakeholders, instead of imposing recommendations, which might also lead to more acceptance of the new situation. The tool can be used to assess and improve a company's online activities on trust building. It can also be used to identify elements where trust clashes with other goals of a company. Besides, the tool can show a business new input for a business its strategy. Lastly, ideas on how a business can make better use of its ecosystem could be proposed.

Accenture, and consultancy firms in general could use the tool to improve the online trustworthiness of their clients. The tool will be the starting point of a discussion with a client manager involved in the company's online activities. This discussion might lead to new small work packages in projects that for example Accenture Digital is currently involved. In the case of Transavia, the tool was a starting point for a discussion about various online choices and has led to several insights into its current online activities. Examples of these insights are given in paragraph 4.4.

The other valid customer conditions personal trust, control, and social media use became no longer subject in the last and more practical part of this study. However, besides the tool which is developed, these other findings could also be relevant in practice.

The insight that frequent online shoppers are not necessarily willing to share more information online may prevent businesses from asking these frequent shoppers for more personal information. The opposite can apply for frequent social media users. The company may consider asking more information from customers if for instance customers login with their Facebook account or contact a business via social media.

The finding that customers that want control over their data are less willing to share information may become a relevant issue when the new law on General Data Protection Regulation (GDPR) is introduced within the European Union in May 2018. This law will include that 1) organizations need permission of people to process their data, that 2) people may ask organizations to remove their data (within the organization and the organizations to which the organization provided the information), and that 3) people can ask a data file in standard format for better data portability (Authoriteit Persoonsgegevens, n.d.). If people that want control also legally get the control, companies may need, according to the findings of this research, to be concerned that they will receive less customer information. In this situation, trust building can positively contribute to receiving customer information.

5.3   Discussion

This paragraph presents several points of discussion on this reserach.

Major discrepancy between the conceptual model and data results

There is a big discrepancy between the hypotheses in the conceptual model and the validity of these hypotheses after the data analysis. Only about half of the hypotheses from the conceptual model are confirmed. Although in this research, these findings accepted and build upon, it should be stressed that this discrepancy raised questions. The findings basically imply that either the conceptual model and/or the validation do merely represent reality. Several choices made in the research process may be the reason for the discrepancy.

When looking at the conceptual model, two debatable choices are made. First, because of the abstract level of the topic and human behavior involved, creating an accurate conceptual model is hard. Some assumptions are made in categorizing information and personalization, and in merging factors that are mentioned in literature. Other ways could have been chosen in these conceptualizations. Second, some of the factors are included in the conceptual model that are only proven by one author, for example gender and age are only addressed by Jai & King (2016), or are even disproven in some studies, for instance, Andrade et al. (2002) addressed the negative effect of compensation for information.

When looking at the survey, there are also some debatable choices made. Although the survey statements are based on the conceptual model and examples of similar survey statements from literature, the definition and structure of the survey statements could have influenced the data and outcomes of the data analysis. Another way of questioning or a different order of the statements could have resulted in (slightly) different outcomes. For example, the amount in euros offered in return for information may have been too low. Moreover, the non-monetary benefits that were offered in return for information may have been not in the interest of the customer at all. Both result in a lower average value on these statements than when a higher discount or more relevant services were offered. Lastly, by including all customer conditions, the statements and analysis may be not as in depth as when focusing on the impact of only one condition, like other current literature does. Thus, there could be a discrepancy between the data results and customer's attitude because of methodological artifacts.

The disproven hypotheses related to the monetary and non-monetary benefit was an unforeseen effect in the research. It was expected that customers would share more information in return for (non-)monetary benefits. Especially since the factors were frequently mentioned in literature and were from common sense also expected to be true. Although it is not sure whether the data analysis conclusions are completely true, some possible explanations for this discrepancy are found.

Some respondents of the survey made the remark that they are not willing to sell their data, and therefore did not like the monetary benefit. These remarks about the discount are listed below (in Dutch):

- *"Privacy is een van de belangrijkste rechten die aan een persoon toekomen. Korting aanbieden om persoonsgegevens te ontfutselen vind ik dan ook bezwaarlijke manier om klanten aan een organisatie te binden."*
- *"Wat een belachelijk idee om mensen te gaan betalen om meer informatie los te krijgen. Ik hoop dat deze vraag niet serieus is."*
- *"Ik geef de voorkeur aan algemene 'aanbiedingen' waarbij ik weinig persoonlijke gegevens deel. Betaald worden voor het leveren van persoonlijke informatie heeft voor mij een nare bijsmaak. Alsof je iemand 'koopt'."*
- *"Hoe zou je 5 euro dúrven bieden! Schande. Het véélvoudige hieraan verdienen door doorverkopen.."*
- *"Als men korting ten waarde van 5euro ontvangt door persoonlijk gegevens in te vullen, vind ik het belangrijk om te weten wat er met mijn persoonlijk info gebeurt. Als ik daarvoor een reden zal krijgen dan zou ik eerder gebruik van een korting willen maken. Aan de andere kant, het gebruik van informatie is zo wie zo onbekenbaar want tegenwoordig is het heel makkelijk om gegevens van een persoon uit te halen. In die zin, maak ik dan ook gebruik van die 5euro korting."*
- *"in de laatste stelling gaat het dus over het kopen van gegevens. iets wat we juist van de grotere internet bedrijven niet willen. hier dus een verkapte versie. Dit valt me zeer tegen van juist Transavia"*

This is in line with some remarks in the articles from Andrade et al. (2002) and Morey et al. (2015). Customers may find "the offer of a reward as an inadequate compensation for disclosure" (Andrade et al., 2002, p. 352). Besides, customers may consider offers of a reward with suspicion. They might think that companies use the offers of a reward as "decoys" to let customers reveal sensitive personal information (Andrade et al., 2002). The earlier finding about the positive effect of trust may also play a role in this effect. Morey et al. (2015) states the following about the relation between trust and value offered: "A firm that is considered untrustworthy will find it difficult or impossible to collect certain types of data, regardless of the value offered in exchange. Highly trusted firms, on the other hand, may be able to collect it simply by asking, because customers are satisfied with past benefits received and confident the company will guard their data. In practical terms, this means that if two firms offer the same value in exchange for certain data, the firm with the higher trust will find customers more willing to share."

Results are not generalizable to non-Dutch customers or other domains

The conclusions from the survey do only to the airline industry and apply to customers from The Netherlands and cannot be generalized. From the data analysis, it appeared that Dutch customers value institutional trust a lot. This does not say that the whole world population values institutional trust in that way. Compared to for example Italy, people from Northern European countries have a high familiarity with English, many big companies suited for e-commerce, high computer penetration

at homes, and high credit card usage (Dinev et al., 2006). Besides, "cultures of India and China are considered more hierarchical and collectivist, while Germany, the United States, and the United Kingdom are more individualistic, which may account for their citizens' stronger feelings about personal information" (Morey et al., 2015). The trust building tool is also only validated by Dutch customers and therefore most effective for increasing the institutional trust of Dutch customers.

Perceived effort for and domain of information sharing may lead to sample bias

Dantas & Carrillat (2013) described that the perceived effort that is necessary to disclose information, leads to lower disclosure by customers. Firstly, this condition is not measured by the survey. Therefore, the data could not confirm that if customers are asked to fill in a lot of information, they are less willing to. Next to that this element has not been researched in the survey, it might even have occurred in the survey itself. By the amount of questions, people might have become more reluctant in answering statements in the survey. This could be one of the reasons that only 4.5% of the respondents filled in the survey. The sample probably contains a bias to people that, despite the effort, are more willing to share information. Due to the use of scales that must be filled in and limiting the amount of statements, this effect is tried to be limited in the survey. However, the sample group's average willingness might be a bit higher than the average Transavia customer. Another condition that could not be validated in the survey is the domain. Since the concepts are validated in a case in the airline industry, conclusions on information sharing may only apply to this domain.

Limited validation of trust building constructs for the tool

Organization wise, a less time consuming and relatively easy to perform way of customer validation of the trust building constructs is chosen: the exploratory interviews, with a limited number of customers interviewed. The disadvantage of interviewing students and relatives may be that they use the internet in the same context (influenced by the same worth of mouth) or for the same use (like doing research, work, social media, and booking vacations). The interviewed customers are from the same environment and thus only represent a part of the Dutch population. Besides, the number of interviewed people is very limited to validate the tool. Both remarks lead to the conclusion that it cannot be confirmed that the tool lead to a trustworthy company in the eyes of the whole Dutch society.

Lack of prioritization of trust building constructs in the tool

The constructs in the proposed online trust building tool are not prioritized. From a practical point of view, the lack of priority of the constructs makes the tool less effective. Especially in the consultancy practice, advice is given to improve factors that have the highest impact and that cost the least money and time to improve.

Limitations of A/B testing to measure effectiveness of the tool

A/B testing is proposed to test the tool on its effectiveness. However, the effect measured in the A/B testing may not completely be the result of an increase in trust. For example, the increased number of bookings may not be fully explained by the increased trustworthiness of the website in the A/B testing with TripAdvisor reviews. The increase of bookings could also be caused by other factors; maybe customers got more excited when they read the TripAdvisor reviews and decided to book.

Limitations of the discussion of the tool in the case study

The tool is applied in the Transavia case in an informal setting which had multiple purposes, which also include looking at options to improve the design of the tool. For a better application of the tool, another meeting with the Direct Sales manager should be set up. Three topics were discussed in the meeting on April 25, 2017. First, it was tested whether the tool was clear enough. From the discussion, it appeared that the constructs in the tool needed further explanation and, therefore, the tool guidelines were developed (Appendix F – User guidelines for online trust building tool). Second, it was tested what the right user for the tool was. In a first attempt with the Marketing Intelligence Specialist of Transavia, the employee could not tell what the reason was for missing constructs or who was responsible for improvement of constructs. By talking with the Direct Sales manager, more background information could be given per construct, although not all information was directly available. Third, it was tested what the best order was to walk through the tool. It appeared that it did not make a difference with which construct the discussion started. After using these insights for improving the tool and describing use cases, another discussion should have been set up with the Direct Sales manager, in which the tool is applied and in which the manager has direct access to current data of for example A/B tests to back up the discussion. This discussion could then also be the starting point for improvements within Transavia, which the initial discussion did not lead to.

5.4 Areas for future research

This paragraph includes areas for future research.

Validate conditions in various contexts

The consequence of using only one case study in the airline industry to validate the customer conditions is that the domain condition could not be validated. Validation by more case studies in various domains should be performed to draw conclusions about the influence of the domain of information sharing. Besides, it is not tested in the survey whether the condition of the effort needed to share information has a significant impact on the willingness to share information. A way to measure this is by using scenarios, like Dantas & Carrillat (2013) propose. The authors created a questionnaire in which respondents had to choose from scenarios with different forms (varying length and complexity) to fill in information.

Vary monetary benefits in customer survey

On average, customers in the case study are less willing to share information when they get a €5 discount in return. However, it is not tested what the impact is of a higher discount. There may be a turning point where customers decide to share information, despite the feeling of their data being bought. Various discounts can be offered in return for information to test this turning point of customers.

Validate trust building constructs for the tool

Different methods and bigger sample sizes could be used to better validate the trust building constructs. An interactive method could be used to track customers' behavior (by for instance measuring the eye activity) and ask for opinions when visiting different company websites. This could give insight into what customer's criteria are when assessing the website's trustworthiness. Setting up this workshop will require pre-research into which websites should be included in the workshop. Besides, the workshops will cost a significant amount of time to complete. Customers could also state their attitudes on institutional trust in a survey, similar to what is done in the reviewed literature. The survey could include several statements or a choice model, in which customers give preferences to various website examples. Two disadvantages of this method are that the statements in the survey will be exhaustive and that a big group of customers needs to participate.

Validation with people from other nationalities can lead to an addition of other constructs. This may result in adjustments of a website for different nationalities. It is however not expected to result in a very different list of constructs, since the constructs of the tool are based on various international literature.

Prioritize trust building constructs in the tool

Impact, costs and time could be input for prioritization of constructs. Concerning the impact, weights could be given to the constructs by customers, by ranking how important they find each construct. In this ranking, cultural differences may also become visible. Concerning the costs and time, the manager and/or consultant could examine the cost and time needed to improve a construct. This prioritization may differ from case to case and per domain (brand and size). In the Transavia case, customers could be questioned to give priorities, and the Direct Sales manager or an experienced Accenture consultant could be asked to provide the costs and time necessary to add or improve constructs. The constructs with the highest impact, lowest cost and shortest time to improve will then be advised for consideration.

Identify more use cases of the tool

There might be more use cases for which the tool can be used which are not identified in the Transavia case. By applying the tool in other case studies, it is likely that more use cases of the tool will be identified. This can lead to the creation of a complete overview of the functionality of the tool.

Measure effectiveness of the tool

It is not clear to what extent A/B testing can measure the effectiveness of the trust building tool. In the example of Transavia, attitudes of customers in the A/B test should be further researched, in for example a survey or interviews, to be more sure about which amount of booking increase can be explained by an increase in trustworthiness. Besides, to measure the effectiveness of A/B testing, it should be performed in more cases than just the Transavia case.

Prevent a filter bubble

There is one important ethical concern, which is a secondary effect of better personalized services, that has not been covered in this and most other studies that aim to make services more and more personalized. This is the issue about the individual and social consequences of possible self-reinforcing 'filter bubbles' (Koene et al., 2015). A filter bubble arises when online personalized services lead towards a more finely tuned interaction with the customers, focusing on things people have previously shown an interest for (Koene et al., 2015). People are surrounded by information that confirms what they already believe or information that is most entertaining, while people are less likely to be confronted with information that challenges their view (Koene et al., 2015). Companies can use this filtering to drive up their page views and get visitors back. However, filtering can lead to profiling of people and make it harder to connect with people from different backgrounds, with different beliefs and across different locations. It is therefore advised that future research not only focuses on services

that serve the customers extremely well, but should also look for options to surprise customers with new insights and connect to totally different views.

References

Adomavicius, G., & Gupta, A. (2009). *Business Computing*. Bingley, UK: Emerald Group Publishing Limited.

Adomavicius, G., & Tuzhilin, A. (2005). Personalization Technologies: A Process-Oriented Perspective. *Communications of the ACM*, *48*(10), 83–90.

Aghdaie, S. F. A., Piraman, A., & Fathi, S. (2011). An Analysis of Factors Affecting the Consumer's Attitude of Trust and their Impact on Internet Purchasing Behavior. *International Journal of Business and Social Science*, *2*(23), 147–158.

Aladwani, A. M., & Palvia, P. C. (2002). Developing and validating an instrument for measuring user-perceived web quality. *Information and Management*, *39*(6), 467–476.

Alam, S. S., & Yasin, N. M. (2010). What factors influence online brand trust: evidence from online tickets buyers in Malaysia. *Journal of Theoretical and Applied Electronic Commerce Research*, *5*(3), 78–89.

Allen, C., Kania, D., & Yaeckel, B. (2001). *One-to-One Web Marketing: Build a Relationship Marketing Strategy One Customer at a Time*. New York, NY: John Wiley & Sons.

Andrade, E. B., Kaltcheva, V., & Weitz, B. (2002). Self-Disclosure on the Web: the Impact of Privacy Policy, Reward, and Company Reputation. *Advances in Consumer Research*, *29*, 350–353.

Apigee. (2015). Transavia chooses Apigee to help it become a more digital airline. Retrieved December 2, 2016, from https://apigee.com/about/press-release/transavia-chooses-apigee-help-it-become-more-digital-airline

Armstrong, M., Bruun-Jensen, J., Chew, B., Derobsy, D., Eggers, W. D., Engelbrecht, W., … Muoio, A. (2015). *Business ecosystems come of age*. *Deloitte Business Trends Series*.

Arora, N., Dreze, X., Ghose, A., Hess, J. D., Iyengar, R., Jing, B., … Zhang, Z. J. (2008). Putting one-to-one marketing to work: Personalization, customization, and choice. *Marketing Letters*, *19*(3–4), 305–321.

Authoriteit Persoonsgegevens. (n.d.). Algemene verordening gegevensbescherming. Retrieved from https://autoriteitpersoonsgegevens.nl/nl/onderwerpen/europese-privacywetgeving/algemene-verordening-gegevensbescherming#wat-merken-mensen-van-wie-persoonsgegevens-worden-verwerkt-van-de-avg-5577

Banarjee, M., & Banerjee, N. (2012). An empirical study on factors influencing consumers' trust in E-tailers - evidence from India. *The Journal of Business and Social Research*, *2*(7), 47–61.

Bemporad, R., Baranowski, M., Griglak, G., Yogendran, A., Karaian, D., Whan, E., … Bouhana, P. (2015). *Five Human Aspirations & the Future of Brands*.

Bemporad, R., Hebard, A., & Bressler, D. (2012). *RE:THINKING CONSUMPTION Consumers and the Future of Sustainability*. Retrieved from http://theregenerationroadmap.com/files/reports/TRR_Rethinking_Consumption.pdf

Beyari, H., & Abareshi, A. (2016). The Conceptual Framework of the Factors Influencing Consumer Satisfaction in Social Commerce. In *Proceedings of the Australia-Middle East Conference on Business and Social Science* (pp. 505–514). Dubai.

Bilgihan, A. (2016). Gen Y customer loyalty in online shopping: An integrated model of trust, user experience and branding. *Computers in Human Behavior*, *61*, 103–113.

Bonchek, M. (2014). Making Sense of Owned Media. Retrieved May 11, 2017, from https://hbr.org/2014/10/making-sense-of-owned-media

Chellappa, R. K. (2002). *Consumers' Trust in Electronic Commerce Transactions: The Role of Perceived Privacy and Perceived Security*. *Thesis*. Emory University Atlanta.

Chellappa, R. K., & Shivendu, S. (2007). An Economic Model of Privacy: A Property Rights Approach to Regulatory Choices for Online Personalization. *Journal of Management Information Systems*, *24*(3), 193–225.

Chellappa, R. K., & Sin, R. G. (2002). Personalization versus Privacy: New Exchange Relationships on the Web. Retrieved August 3, 2016, from http://www.zibs.com/techreports/Personalization versus Privacy.pdf

Chellappa, R. K., & Sin, R. G. (2005). Personalization versus Privacy: An Empirical Examination of the Online Consumer's Dilemma. *Information Technology and Management*, *6*(2), 181–202.

Chellappa, R. K., & Sin, R. G. (2007). Competition for Information under Privacy Concerns. Retrieved August 3, 2016, from http://www.econinfosec.org/archive/weis2008/papers/Chellappa.pdf

Cöner, A. (2003). Personalization and customization in financial portals. *Journal of the American Academy of Business*, *2*(2), 489–504.

Dantas, D. C., & Carrillat, F. (2013). The relational benefits of personalized communications in an online environment. *Canadian Journal of Administrative Sciences*, *30*(3), 189–202.

Darlin, D. (2006). The iPod Ecosystem. Retrieved April 26, 2017, from http://www.nytimes.com/2006/02/03/technology/the-ipod-ecosystem.html

De Zeeuw, E. (2016). *Digitale transformatie in E-Commerce*. Amsterdam.

Deng, A., Lu, J., & Litz, J. (2017). Trustworthy analysis of online A/B tests: Pitfalls, challenges and solutions. In *WSDM 2017 - Proceedings of the 10th ACM International Conference on Web Search and Data Mining* (pp. 641–649).

Dinev, T., Bellotto, M., Hart, P., Russo, V., Serra, I., & Colautti, C. (2006). Privacy calculus model in e-commerce - A study of Italy and the United States. *European Journal of Information Systems*, *15*(4), 389–402.

Dyche, J. (2002). *The CRM Handbook: A business guide to customer relationship management*. Boston, MA: Addison-Wesley.

Eagan, C. (2016). Information Architecture for Personalization. Retrieved February 16, 2017, from http://www.slideshare.net/coeagan/colin-eagan-ia-for-personalization-ia-summit-2016

Egels-Zandén, N., & Hansson, N. (2015). Supply Chain Transparency as a Consumer or Corporate Tool: The Case of Nudie Jeans Co. *Journal of Consumer Policy*, *39*, 377–395.

Eggert, A., & Helm, S. (2003). Exploring the impact of relationship transparency on business relationships - A cross-sectional study among purchasing managers in Germany. *Industrial Marketing Management*, *32*(2), 101–108.

Essawy, M. (2006). Testing the usability of hotel websites: the springboard for customer relationship building. *Information Technology & Tourism*, *8*(1), 47–70.

Fan, H., & Poole, M. S. (2006). What Is Personalization? Perspectives on the Design and Implementation of Personalization in Information Systems. *Journal of Organizational Computing and Electronic Commerce*, *16*(3), 179–202.

Farag Awad, N., & Krishnan, M. S. (2006). The Personalization Privacy Paradox: an Empirical Evaluation of Information Transparency and the Willingness to be Profiled Online for Personalization. *Personalization Privacy Paradox MIS Quarterly*, *30*(1), 13–28.

Filieri, R., Alguezaui, S., & McLeay, F. (2015). Why do travelers trust TripAdvisor? Antecedents of trust towards consumer-generated media and its influence on recommendation adoption and word of mouth. *Tourism Management*, *51*, 174–185.

Fung, R., & Lee, M. (1999). EC-Trust (Trust in Electronic Commerce): Exploring the Antecedent Factors. *Americas Conference on Information Systems*, 517–519.

Glass, G. V. (1976). Primary, Secondary, and Meta-Analysis of Research. *American Educational Research Association*, *5*(10), 3–8.

Good, M., Pagel, L., & Gibbons, P. (2015). *Customers 2020*.

Gui, H., Xu, Y., Bhasin, A., & Han, J. (2015). Network A/B Testing: From Sampling to Estimation. In *Proceedings of the 24th International Conference on World Wide Web Pages* (pp. 399–409).

Ha, H.-Y. (2004). Factors influencing consumer perceptions of brand trust online. *The Journal of Product and Brand Management*, *13*(5), 329–342.

Hagen, P., Manning, H., & Souza, R. (1999). *Smart Personalization*. Cambridge, MA: Forrester Research.

Hanson, W. (2000). *Principles of Internet Marketing*. Cincinnati, OH: South-Western.

Heald, M., & Ref, R. (2015). *The new battleground for communication & technology: Business ecosystem vs. business ecosystem. Will yours win?* Retrieved from https://www.accenture.com/_acnmedia/PDF-3/Accenture-Business-Ecosystem-vs-Business-Ecosystem.pdf

Hirt, M., & Willmott, P. (2014). *Strategic Principles for Competing in the Digital Age*. *McKinsey Quarterly*. Retrieved from http://www.mckinsey.com/insights/strategy/strategic_principles_for_competing_in_the_digital_age

Hoong, V. (2013). *The digital transformation of customer services - Our point of view*. Retrieved from https://www2.deloitte.com/content/dam/Deloitte/nl/Documents/technology/deloitte-nl-paper-digital-

transformation-of-customer-services.pdf

Hsu, C. J. (2008). Dominant Factors for Online Trust. In *Proceedings of the 2008 International Conference on Cyberworlds, CW 2008* (pp. 165–172).

Hsu, M.-H., Chuang, L.-W., & Hsu, C.-S. (2014). Understanding online shopping intention: the roles of four types of trust and their antecedents. *Internet Research*, *24*(3), 332–352.

Iansiti, M., & Levien, R. (2004). Strategy as Ecology. Retrieved February 16, 2017, from https://hbr.org/2004/03/strategy-as-ecology

Imhoff, C., Loftis, L., & Geiger, J. (2001). *Building the customer-centric enterprise: Data warehousing techniques for supporting customer relationship management*. New York, NY: John Wiley & Sons.

Ingleton, R., & Thomas, P. (2011). *The digitisation of everything - How organisations must adapt to changing consumer behaviour*. *Ernst & Young LLP*. Retrieved from http://www.ey.com/Publication/vwLUAssets/The_digitisation_of_everything_-_How_organisations_must_adapt_to_changing_consumer_behaviour/$FILE/EY_Digitisation_of_everything.pdf

Jai, T.-M., & King, N. J. (2016). Privacy versus reward: Do loyalty programs increase consumers' willingness to share personal information with third-party advertisers and data brokers? *Journal of Retailing and Consumer Services*, *28*, 296–303.

Jamiy, F. E. L., Daif, A., Azouazi, M., & Marzak, A. (2014). The potential and challenges of Big data - Recommendation systems next level application. *IJCSI International Journal of Computer Science Issues*, *11*(5), 21–26.

Jolliffe, I. T. (2002). Principal Component Analysis, Second Edition. *Encyclopedia of Statistics in Behavioral Science*, *30*(3), 487.

JungKook, L., & Lehto, X. (2010). E-personalization and online privacy features: the case with travel websites. *Journal of Management and Marketing Research*, *4*, 122–131.

Kang, J., & Hustvedt, G. (2014). Building Trust Between Consumers and Corporations: The Role of Consumer Perceptions of Transparency and Social Responsibility. *Journal of Business Ethics*, *125*(2), 253–265.

Kasanoff, B. (2001). *Making it personal*. Cambridge, MA: Perseus Publishing.

Kaur, B., & Madan, S. (2013). Factors Influencing Trust in Online Shopping: An Indian Consumer's Perspective. *European Journal of Business and Management*, *5*(29), 132–139.

Killian, G., & McManus, K. (2016). A Managerial Perspective of Social Media: Managing the Tension Between the Need for an Integrated Communications Approach and Consumers' Need for Personalization. In *In: Groza, M., Ragland, C. (eds) Marketing Challenges in a Turbulent Business Environment. Developments in Marketing Science: Proceedings of the Academy of Marketing Science*. Cham: Springer.

Kim, S., & Park, H. (2013). Effects of various characteristics of social commerce (s-commerce) on consumers' trust and trust performance. *International Journal of Information Management*, *33*(2), 318–332.

Kobsa, A., Knijnenburg, B. P., & Livshits, B. (2014). Let's Do It at My Place Instead? Attitudinal and Behavioral Study of Privacy in Client-Side Personalization. In *CHI '14 Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 81–90). New York, NY: ACM.

Koene, A., Vallejos, E. P., Carter, C. J., Statache, R., Malley, C. O., Rodden, T., & Mcauley, D. (2015). Ethics of personalized information filtering. In *In: Tiropanis, T., Vakali, A., Sartori, L., Burnap, P. (eds) Internet Science. INSCI 2015. Lecture Notes in Computer Science, vol 9089.* Cham: Springer.

Likert, R. (1932). *A technique for the measurement of attitudes*. New York, NY: Archives of Psychology, New York University.

Liongosari, E., Tung, T., & Hunold, J.-M. (2013). *Driving innovation and agility through an API strategy*. Retrieved from http://www.accenture.com/SiteCollectionDocuments/PDF/Accenture-Driving-Innovation-Agility-through-an-API-Strategy.pdf

Loh, X. R. (2014). *Investigation of the determinants of trust in internet shopping and its relationship with online purchases intention*. University Tunku Abdul Rahman.

Lowe, B. (2015). Commentary: "Should consumers request cost transparency?" Cost transparency in consumer markets. *European Journal of Marketing*, *49*(11/12), 1992–1998.

Manyika, J., Chui, M., Brown, B., Bughin, J., Dobbs, R., Roxburgh, C., & Byers, A. H. (2011). *Big data: The next frontier for innovation, competition, and productivity*.

Maranell, G. M. (2009). *Scaling: A Sourcebook for Behavioral Scientists*. New Brunswick, New Jersey: Transaction Publishers.

Montgomery, A. L., & Smith, M. D. (2009). Prospects for Personalization on the Internet. *Journal of Interactive Marketing*, *23*(2), 130–137.

Moore, J. F. (2006). Business ecosystems and the view from the firm. *The Antitrust Bulletin*, *51*(1), 31–75.

Morey, T., Forbath, T., & Schoop, A. (2015). Designing for Transparency and Trust. Retrieved December 2, 2016, from https://hbr.org/2015/05/customer-data-designing-for-transparency-and-trust

Mylavarapu, V. K. (2014). *Retail Banking: Delivering a Meaningful Digital Customer Experience*. Retrieved from https://www.cognizant.com/InsightsWhitepapers/Retail-Banking-Delivering-a-Meaningful-Digital-Customer-Experience-codex1036.pdf

Optimizely. (n.d.). A/B Testing. Retrieved May 11, 2017, from https://www.optimizely.com/ab-testing/

Paliszkiewicz, J., & Klepacki, B. (2013). Tools of building customer trust. In *Management, Knowledge And Learning International Conference* (pp. 1287–1294). Zadar.

Peppers, D., & Rogers, M. (1997). *Enterprise one-to-one: Tools for competing in the interactive age*. New York, NY: Doubleday.

Personalization Consortium. (2003). What is personalization. Retrieved December 2, 2016, from www.personalization.org/personalization.html

Peterson, D., Meinert, D., Criswell, J., & Crossland, M. (2007). Consumer trust: privacy policies and third-party seals. *Journal of Small Business and Enterprise Development*, *14*(4), 654–669.

Philip Chen, C. L., & Zhang, C.-Y. (2014). Data-intensive applications, challenges, techniques and technologies: A survey on Big Data. *Information Sciences*, *275*, 314–347.

Pine II, J. B., & Gilmore, J. H. (1998). Welcome to the Experience Economy. Retrieved April 26, 2016, from https://hbr.org/1998/07/welcome-to-the-experience-economy

Rainie, L., & Duggan, M. (2016). Privacy and Information Sharing. Retrieved March 13, 2016, from http://www.pewinternet.org/2016/01/14/privacy-and-information-sharing/

Reynolds, M., & Yuthas, K. (2008). Moral Discourse and Corporate Social Responsibility Reporting. *Journal of Business Ethics*, *78*, 47–64.

Riecken, D. (2000). Personalized views of personalization. *Communications of the ACM*, *43*(8), 26–28.

Ringquist, J., Phillips, T., Renner, B., Sides, R., & Stuart, K. (2016). *Capitalizing on the shifting consumer food value equation*. Retrieved from https://www2.deloitte.com/content/dam/Deloitte/us/Documents/consumer-business/us-fmi-gma-report.pdf

Roberts, M. L. (2003). *Internet marketing: Integrating online and offline strategies*. Boston, MA: McGraw-Hill/Irwin.

Russo, M. W. (2007). How to Review a Meta-analysis. *Gastroenterology & Hepatology*, *3*(8), 637–42.

Schubert, P., & Koch, M. (2002). The Power of Personalization: Customer Collaboration and Virtual Communities. In *Proceedings of the 8th Americas Conference on Information Systems (AMCIS)* (pp. 1953–1965).

Srinivasan, S. (2004). Role of trust in e-business success. *Information Management & Computer Security*, *12*(1), 66–72.

Stevenson, D., & Pasek, J. (2015). Privacy Concern, Trust, and Desire for Content Personalization. In *TPRC 43: The 43rd Research Conference on Communication, Information and Internet Policy*.

Stilgoe, J, Owen, R., Macnaghten, P. (2013). Developing a framework for responsible innovation. *Research Policy*, *42*(9), 1568–1580. http://doi.org/http://dx.doi.org/10.1016/j.respol.2013.05.008

Stone, E. F., Gueutal, G. H., Gardner, D. G., & McClure, S. (1983). A Field Experiment Comparing Information Privacy Values, Beliefs, and Attitudes Across Several Types of Organizations. *Journal of Applied Psychology*, *68*(3), 459–468.

Suprenant, C. F., & Solomon, M. R. (1987). Predictability and personalization in the service encounter. *Journal of Marketing*, *51*(2), 87–96.

Taylor, D. G., Davis, D. F., & Jillapalli, R. (2009). Privacy concern and online personalization: The moderating effects of information control and compensation. *Electronic Commerce Research*, *9*, 203–223.

Transavia. (2015). Transavia markeert nieuw hoofdstuk. Retrieved December 2, 2016, from

https://corporate.transavia.com/nl-NL/nieuws/transavia-markeert-nieuw-hoofdstuk/

Transavia. (2016). Transavia starts operating regular flights from Amsterdam to Munich and Zurich. Retrieved December 2, 2016, from https://corporate.transavia.com/en-NL/news/transavia-starts-operating-from-amsterdam-to-munich-and-zurich/

Vesanen, J. (2005). *What is Personalization? A Literature Review and Framework. Helsinki School of Economics Working Papers, No. 391*.

Vesanen, J. (2007). What is personalization? A conceptual framework. *European Journal of Marketing*, *41*(5/6), 409–418.

Vesanen, J., & Raulas, M. (2006). Building bridges for personalization: A process model for marketing. *Journal of Interactive Marketing*, *20*(1), 5–20.

Wang, Y. D., & Emurian, H. H. (2005). An overview of online trust: Concepts, elements, and implications. *Computers in Human Behavior*, *21*, 105–125.

Wattal, S., Telang, R., Mukhopadhyay, T., & Boatwright, P. (2005). *Examining the Personalization-Privacy Tradeoff – an Empirical Investigation with Email Advertisements*. *CMU Research Showcase*.

Westin, A. (1967). *Privacy and freedom*. New York, NY: Atheneum Publishers.

Wind, J., & Rangaswamy, A. (2001). Customerization: The next revolution in mass customization. *Journal of Interactive Marketing*, *15*(1), 13–32.

Yoon, S.-J. (2002). The antecedents and consequences of trust in online-purchase decisions. *Journal of Interactive Marketing*, *16*(2), 47–63.

Zoghby, J., Tieman, S., & Cimino, X. (2016). *Personalization Pulse Check 2016*. Retrieved from https://www.accenture.com/t00010101T000000__w__/gb-en/_acnmedia/Accenture/Conversion-Assets/DotCom/Documents/Global/PDF/Strategy_7/Accenture-Driving-Innovation-Agility-API-Strategy.pdf

Appendix A – Categorization of factors influencing customer's willingness to share information

This appendix contains an overview of factors, identified in literature, that influence customer's willingness to share information (Table 41). The factors are categorized into four conditions for further use in this study.

Table 41 Categorization of factors influencing customer's willingness to share information

Factor to be used in this study	Factors from literature
Trust (institutional and personal)	Completeness of privacy policy (Andrade et al., 2002), Company reputation of trustworthiness (Andrade et al., 2002), Concern for privacy (Chellappa & Sin, 2002), Vendor reputation (Chellappa & Sin, 2002), Privacy concerns (Dinev et al., 2006), Propensity to trust (Dinev et al., 2006), Institutional trust (Dinev et al., 2006), Perceived risk (Dinev et al., 2006), Information transparency (Farag Awad & Krishnan, 2006), Privacy policy (Farag Awad & Krishnan, 2006), Previous privacy invasion (Farag Awad & Krishnan, 2006), Privacy concern (Farag Awad & Krishnan, 2006), Privacy concerns (Jai & King, 2016), Privacy concern (JungKook & Lehto, 2010), Perceived protection (Kobsa et al., 2014), Privacy concerns (Kobsa et al., 2014), Satisfaction (Kobsa et al., 2014), Trust (Morey et al., 2015), Privacy concern (Stevenson & Pasek, 2015), Trust (Stevenson & Pasek, 2015), Online trust (Taylor et al., 2009), Information control (Taylor et al., 2009), Privacy concern (Taylor et al., 2009), Costs: privacy risks, spam risks (Vesanen, 2007)

Factor to be used in this study	Factors from literature
Benefits (monetary and non-monetary)	Value for online personalization (Chellappa & Sin, 2002), Relevance (Dantas & Carrillat, 2013), Consumer loyalty: rewards (Jai & King, 2016), E-personalization features (JungKook & Lehto, 2010), Benefits (Morey et al., 2015), (Non-)cash compensation (Taylor et al., 2009), Benefits (Vesanen, 2007)

Factor to be used in this study	Factors from literature
Demographics (age, gender and digital skills)	Age (Jai & King, 2016), Gender (Jai & King, 2016), Internet use (Stevenson & Pasek, 2015)

Factor to be used in this study	Factors from literature
Context (domain and effort)	Contextual sensitivity (Chellappa & Sin, 2002), Involvement (Dantas & Carrillat, 2013), Perceived effort (Dantas & Carrillat, 2013), Costs: spent time, extra fees, waiting time (Vesanen, 2007)

Appendix B – Dutch questionnaire

This appendix includes the survey which is sent to a selection of Transavia's customers. The survey is only in Dutch.

Introductie

Welkom bij de vragenlijst!

De volgende pagina's bevatten stellingen over het delen van informatie en het ontvangen van gepersonaliseerde services.

Het invullen van de vragenlijst neemt ongeveer 10 minuten in beslag.

Op welke webwinkels doe je wel eens aankopen?   q1

- □ Bol.com
- □ Albert Heijn
- □ Coolblue
- □ Wehkamp
- □ Amazon
- □ CheapTickets
- □ Media Markt
- □ H&M
- □ TUI
- □ HEMA
- □ Blokker
- □ KLM
- □ Geen van bovenstaande

Hoe vaak doe je gemiddeld aankopen op webwinkels? Aankopen op webwinkels kunnen variëren van vakanties, booschappen, kleding, apparatuur, etc.   q2

- o Iedere dag
- o Een paar keer per week
- o 1 keer per week
- o 2-3 keer per maand
- o 1 keer per maand
- o Een paar keer per jaar
- o 1 keer per jaar
- o Nooit

Hoe vaak maak je gemiddeld gebruik van een of meerdere Social Media kanalen (Facebook, LinkedIn, Twitter, Instagram, etc.)? q3

- o Iedere dag
- o Een paar keer per week
- o 1 keer per week
- o 2-3 keer per maand
- o 1 keer per maand
- o Een paar keer per jaar
- o 1 keer per jaar
- o Nooit

Voor het ontvangen van gepersonaliseerde services vragen webwinkels persoonlijke informatie over je. De volgende stellingen gaan over je vertrouwen in de grotere bekende webwinkels (zoals H&M of bol.com). q4

	Helemaal niet mee eens	Niet mee eens	Neutraal	Mee eens	Helemaal mee eens
Ik vertrouw bekende webwinkels in het bekwaam en eerlijk omgaan met mijn informatie	○	○	○	○	○
Ik weet waarvoor bekende webwinkels mijn informatie gebruiken	○	○	○	○	○
Ik wil controle hebben over wat bekende webwinkels met mijn informatie doen	○	○	○	○	○
Ik heb grote vaardigheid op het internet	○	○	○	○	○

Ook Transavia heeft informatie van je nodig om een deel van haar services aan je aan te bieden. De volgende stellingen gaan over je vertrouwen in Transavia. q5

	Helemaal niet mee eens	Niet mee eens	Neutraal	Mee eens	Helemaal mee eens
Ik heb positieve ervaringen met de services van Transavia	○	○	○	○	○
Ik vertrouw Transavia in het bekwaam en eerlijk omgaan met mijn informatie	○	○	○	○	○
Ik weet waarvoor mijn informatie die ik met Transavia deel wordt gebruikt	○	○	○	○	○
Ik wil controle hebben over wat Transavia met mijn informatie doet	○	○	○	○	○

Transavia weet maar beperkte informatie over je. In hoeverre ben je bereid de volgende informatie met Transavia te delen? q6

	Helemaal niet mee eens	Niet mee eens	Neutraal	Mee eens	Helemaal mee eens
Persoonlijke informatie (zoals naam en e-mailadres)	○	○	○	○	○
Context-informatie (zoals locatie en tijd)	○	○	○	○	○
Transportvoorkeuren van en naar het (internationale) vliegveld (zoals auto en bus)	○	○	○	○	○
Accommodatievoorkeuren op bestemming (zoals hotel en camping)	○	○	○	○	○
Entertainmentvoorkeuren tijdens de vlucht (zoals muziek en tijdschrift)	○	○	○	○	○
Social media profiel (zoals Facebook en LinkedIn)	○	○	○	○	○
Reisbudget	○	○	○	○	○
Hoe belangrijk ik CO_2 vermindering vind	○	○	○	○	○

In hoeverre ontvang je graag de volgende services van Transavia? q7

	Helemaal niet mee eens	Niet mee eens	Neutraal	Mee eens	Helemaal mee eens
Automatisch gegevens over mij op de website ingevuld	○	○	○	○	○
Transportaanbevelingen van en naar het (internationale) vliegveld	○	○	○	○	○
Accommodatieaanbevelingen op de bestemming	○	○	○	○	○
Entertainmentaanbevelingen voor tijdens de vlucht	○	○	○	○	○
Diverse reisaanbevelingen die aansluiten op mijn sociale leven en interesses (zoals vrijetijdsbestedingen, vrienden, werk)	○	○	○	○	○

	Helemaal niet mee eens	Niet mee eens	Neutraal	Mee eens	Helemaal mee eens
Diverse reisaanbevelingen binnen mijn budget	○	○	○	○	○
Diverse reisaanbevelingen die in lijn zijn met hoeveel waarde ik hecht aan CO2 vermindering	○	○	○	○	○

In hoeverre ben je bereid informatie te delen voor de volgende gepersonaliseerde services van Transavia? q8

	Helemaal niet mee eens	Niet mee eens	Neutraal	Mee eens	Helemaal mee eens
Persoonlijke (zoals naam en e-mail) en context-informatie (zoals locatie en tijd) voor automatisch ingevulde gegevens op de website	○	○	○	○	○
Transportvoorkeuren van en naar het (internationale) vliegveld voor matchende aanbevelingen over dit transport	○	○	○	○	○
Accommodatievoorkeuren voor matchende aanbevelingen over accommodatie op bestemming	○	○	○	○	○
Entertainmentvoorkeuren voor matchend entertainment tijdens de vlucht	○	○	○	○	○
Social media profiel voor matchende reisaanbevelingen die aansluiten op mijn sociale leven en interesses	○	○	○	○	○
Reisbudget voor matchende reisaanbevelingen binnen mijn budget	○	○	○	○	○
De waarde die ik hecht aan CO2 vermindering voor matchende reisaanbevelingen in lijn met die waarde	○	○	○	○	○

	Helemaal niet mee eens	Niet mee eens	Neutraal	Mee eens	Helemaal mee eens
Ik ben bereid informatie over mijzelf te delen met bekende webwinkels	○	○	○	○	○
Ik ben bereid informatie over mijzelf te delen met Transavia	○	○	○	○	○
Ik ontvang graag gepersonaliseerde services van Transavia	○	○	○	○	○
Ik ben bereid persoonlijke informatie te delen met Transavia in ruil voor gepersonaliseerde services	○	○	○	○	○

Naast persoonlijke services zou Transavia je ook korting kunnen geven voor het delen van jouw informatie. Deze laatste stellingen gaan hierover. In hoeverre ben je bereid informatie te delen met Transavia om daarvoor korting te ontvangen op je reis? q10

	Helemaal niet mee eens	Niet mee eens	Neutraal	Mee eens	Helemaal mee eens
Mijn persoonlijke (zoals naam en e-mail) en context-informatie (zoals locatie en tijd) voor €5 korting	○	○	○	○	○
Mijn servicevoorkeuren (zoals accommodatie en transport) voor €5 korting	○	○	○	○	○
Mijn dagelijkse levensstijl (zoals werk en vrijetijdsbesteding) voor €5 korting	○	○	○	○	○

Je bent aan het einde van het onderzoek. Hieronder vind je ruimte voor eventuele opmerkingen.

Hartelijk dank, je antwoorden zijn succesvol opgeslagen.

Appendix C – One-Way ANOVA & Multicollinearity analyses

First, this appendix presents the data results of the One-Way ANOVA analysis, in which the non-linear relationship between age and average willingness to share information is tested. For this test, age is recoded into three age groups: 1 to 30 years, 31 to 55 years, and 56 to 100 years. This led to the following age group variables (Table 42):

Table 42 Recode into different variables (Age)

Age group	Name	Value 1	Value 2
1	Age_under31	Range: 1 thru 30	Range: ELSE
2	Age_between30and55	Range: 31 thru 55	Range: ELSE
3	Age_over55	Range: 56 thru 100	Range: ELSE

A new independent variable 'agegroups' is created with values 1, 2 and 3 representing the three recoded age groups from Table 42. In Table 43, the One-Way ANOVA analysis results are presented. The result is not significant (0.738).

Table 43 One-Way ANOVA (dependent variable: Average_Infosharing, Factor: agegroups)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0.427	2	0.214	0.305	**0.738**
Within Groups	184.348	263	0.701		
Total	184.775	265			

Second, this appendix provides the results of the test on multicollinearity of the two independent variables PERSTRUST and INSTITRUST. From the multicollinearity test, it can be concluded that PERSTRUST and INSTITRUST are not correlated. The Value Inflation Factor (VIF) is 1 (Table 44). A VIF greater than 5 is considered evidence of multicollinearity. Similar values result from a collinearity analysis with INSTITRUST as dependent variable and PERSTRUST as independent variable.

Table 44 Collinearity coefficients (dependent variable: PERSTRUST)

	Unstandardized B	Coefficients Std. Error	Standardized Coefficients Beta	T	Sig.	Collinearity statistics Tolerance	VIF
(Constant)	1.290E-16	0.055		0.000	1.000		
INSTITRUST	0.441	0.055	0.441	7.976	0.000	1.000	**1.000**

Appendix D – Trust building constructs from literature

This appendix contains all trust building constructs that are identified in literature. These are categorized per trust building principle (experience, security, transparency, and trusted sources).

Experience constructs

Experience – 1. Information quality

Author(s)	Constructs
Abareshi (2016)	Absolute
	Correct
	Most recent
	Accurate
	Updated
Aghdaie, Piraman, & Fathi (2011)	Good information timely and fully
	Clear and complete information
Aladwani & Palvia (2002)	Usefulness of content; completeness of content; clarity of content; uniqueness of content; broadness of content; originality of content; currency of content; conciseness of content; accuracy of content
	Multi-language support
Banarjee & Banerjee (2012)	Detail information about the product features, quality and price
	Website can provide information tailored to customers' needs
	Web content easy to read and understand
Essawy (2006)	No jargon
	Enhance utilitarian features
Filieri (2015)	Timely, relevant to my needs, complete for my needs, valuable, useful, credible
Fung & Lee (1999)	Accurate: accurate and compatible to user knowledge, not misleading
	Correctness: proper spelling and grammar, no typos
	Timeliness: up-to-date and timely to the user request
	Usefulness: company name, logo, mission statement, headlines of products and/or services, notice of special events, hot buys of the week, what's new, fun stuff and date of last update
Hsu (2008)	Engaging, relevant, and appropriate
	Informative, useful, or funny but it always leaves consumers wanting more
Kaur & Madan (2013)	Clear content
	Grammatically correct
	Detailed
	Meaningful
Kim & Park (2013)	Latest
	Accurate
	Complete
	Timely or real-time
	Understandable

Wang & Emurian (2005)	Display of brand-promoting information (e.g., prominent company logo or slogan, main selling point)
	Use of comprehensive, correct, and current product information
	Up-front disclosure of all aspects of the customer relationship (e.g., company competence, security, privacy, financial, or legal concerns)

Experience – 2. Website appearance

Author(s)	Constructs
Aghdaie, Piraman, & Fathi (2011)	Aesthetic design through colors, shapes, language, songs and animations
Aladwani & Palvia (2002)	Attractiveness; distinctive hot buttons; changing look; organization; proper use of fonts; proper use of colors; proper use of graphics; graphics-text balance; proper use of multimedia; style consistency; proper choice of page length; good labeling; text-only option; proper use of language/style; color consistency
	Browser sniffing
Banarjee & Banerjee (2012)	Website content visually appealing
	Website has a professional look
Hsu (2008)	Cross-platform and be browser independent.
Kaur & Madan (2013)	Professional look
	Not cluttered on home page
	Neatly organized
	Clear categories
	Matching colors
	Matching images
Wang & Emurian (2005)	Use of three-dimensional, dynamic, and half-screen size clipart
	Symmetric use of moderate pastel color of low brightness and cool tone
	Use of well-chosen, good-shot photographs
	Application of page design techniques (e.g., white space and margin, strict grouping, visual density)
	Inclusion of representative photograph or video clip

Experience – 3. Ease to navigate

Author(s)	Constructs
Aladwani & Palvia (2002)	Search facilities
	Valid links
Banarjee & Banerjee (2012)	Site map available
	Pages easily found on website
	Link to other useful sites
Fung & Lee (1999)	Instruction pages
	Internal search engine
Hsu (2008)	Live links
Kaur & Madan (2013)	No broken or dead links

	Find product with minimum possible clicks
Paliszkiewicz & Klepacki (2013)	Search functions
	Site maps
	Product indices
Wang & Emurian (2005)	Implementation of easy-to-use navigation (simplicity, consistency)
	Use of accessible information (e.g., no broken links and missing pictures)
	Use of navigation reinforcement (e.g., guides, tutorials, instructions)
Yoon (2002)	Provides convenience in finding what a visitor is looking for

Experience – 4. Social media presence

Author(s)	Constructs
Abareshi (2016)	Social interaction between users such as on Facebook
	Correct information from the surrounding people or from the people with whom he/she interacts on the social network sites
Paliszkiewicz & Klepacki (2013)	Being in the same social media places as the customer

Experience – 5. Customer support

Author(s)	Constructs
Banarjee & Banerjee (2012)	Responds to queries and requests promptly
	Website has chat room to interact with other customers
	Grievance can be lodged online
	Feedback can be given online
Kaur & Madan (2013)	24x7 customer care
	FAQ page
Paliszkiewicz & Klepacki (2013)	The longer it takes to resolve a problem the more potential customers will hear about this particular customer's dissatisfaction with the company
	Personal correspondence, express gratitude
	Give right advice to clients
Wang & Emurian (2005)	Use of synchronous communication media (e.g., instant messaging, chat lines, video telephony)

Experience – 6. Contact options

Author(s)	Constructs
Kaur & Madan (2013)	Contact us page
	Address and phone number of head office or corporate office
Paliszkiewicz & Klepacki (2013)	Contact page
	Phone number, email address, contact form
	Branded email

Experience – 7. Website download time

Author(s)	Constructs
Aladwani & Palvia (2002)	Speedy page loading
Filieri (2015)	High speed of page loading
Fung & Lee (1999)	Quick to download
Kaur & Madan (2013)	Minimal website download time (preferably less than 8 seconds)

Experience – 8. Domain name

Author(s)	Constructs
Kaur & Madan (2013)	Meaningful domain name
	Fit purpose of website
	Decent name
Wang & Emurian (2005)	Use of a relevant domain name

Experience – 9. Advertisements

Author(s)	Constructs
Kaur & Madan (2013)	Not too many advertisements, either in the form of pop-ups or placed within the text
	No unnecessary advertisements
	Necessary advertisements at the right places

Kaur & Madan (2013) define advertisements as third party content which is mixed and rendered with website content and rendered in the browser. Advertisements can be an economic necessity for businesses.

Security constructs

Security – 1. Trust seal

Author(s)	Constructs
Hsu (2008)	Certification third parties or intermediary mechanisms such as TRUSTe, BBBOnLin, CPA WebTrust, Verisign, insurance
Kaur & Madan (2013)	3rd party trust seals
	Meta branding and certification
	Valid certificate
	Green browser address bar
	Hypertext transfer protocol secure
	SSL certificate
Peterson, Meinert, Criswell, & Crossland (2007)	Seal programs such as TRUSTe, Better Business Bureau OnLine (BBBOnLine), MutiCheck and WebTrust
Wang & Emurian (2005)	Display of seals of approval or third-party certificate

Trust seals contain "information about other companies that specialize in assuring the safety of websites" Fung & Lee (1999)

Security – 2. Transactions

Author(s)	Constructs
Aghdaie, Piraman, & Fathi (2011)	Receipt for goods purchased
Banarjee & Banerjee (2012)	Multiple payment options
	Secured online payment process
	Security seal of trusted third party
	Error free bill
Kaur & Madan (2013)	Cash on delivery
	Multiple modes of making payments
	Reliable payment gateways
Paliszkiewicz & Klepacki (2013)	Secured communication
Yoon (2002)	Performs the role of installing assurance of transaction security, such as VeriSign or Visa logos

Security – 3. Privacy policy

Author(s)	Constructs
Banarjee & Banerjee (2012)	Privacy policy clearly stated
Kaur & Madan (2013)	Terms and conditions page
	Indicate privacy and security standards
Peterson, Meinert, Criswell, & Crossland (2007)	Privacy policy statement

Security – 4. Refund policies

Author(s)	Constructs
Aghdaie, Piraman, & Fathi (2011)	Possibility of returning goods
Banarjee & Banerjee (2012)	Return policy clearly stated
Kaur & Madan (2013)	Good and clearly mentioned return and exchange policies
	Money Back Guarantee

Transparency constructs

Transparency – 1. Company information

Author(s)	Constructs
Aladwani & Palvia (2002)	Firm's general info
Kaur & Madan (2013)	About us link on homepage
	Reputed names
Paliszkiewicz & Klepacki (2013)	Honest and straightforward
	Company profile
	Traditional information: history, why the company was founded, employee profiles (people behind the company)

Transparency – 2. Pricing

Author(s)	Constructs
Banarjee & Banerjee (2012)	Shipment cost details given
Kaur & Madan (2013)	No extraordinary good discounts
	Free shipping
Lowe (2015)	Different formats of costs cause confusion (with or without taxes, further costs for credit card payments)

Transparency – 3. Corporate behavior

Author(s)	Constructs
Egels-Zandén & Hansson (2015)	Sustainability conditions
	Disclose names of all suppliers
Hsu (2008)	Responding to service failures in a fair manner
Kang & Hustvedt (2014)	Corporate social responsibility
	Reveal CSR failures
	Addressing labor conditions, sweatshop issues, and related activities in manufacturing, producing, and/or sourcing processes
	Being honest about something important but difficult, like improving conditions in the factory

Transparency – 4. Order tracking

Author(s)	Constructs
Aghdaie, Piraman, & Fathi (2011)	Tracking order system
Banarjee & Banerjee (2012)	Shipment can be tracked online
	Few and easy steps involved in placing orders
	Product delivered undamaged
	Product delivered on time
	Product delivered as per order specifications
Egels-Zandén & Hansson (2015)	Traceability
Kaur & Madan (2013)	Order tracking
	Notify through emails and SMS's regarding the order status
	Fast and safe delivery
	Reputed logistics companies
Yoon (2002)	Provides accurate information on order processing and problem resolution when a problem occurs

Trusted sources constructs

Trusted sources – 1 t/m 3. Customer reviews (own site, external/partner site, offline)

Author(s)	Constructs
Abareshi (2016)	WOM on Facebook, Twitter and blogs *[external]*

Alam & Yasin (2010)	WOM by friends and family *[offline]*
Banarjee & Banerjee (2012)	Users' testimonials posted on the website *[own site]*
Filieri (2015)	Credible, experienced, trustworthy, reliable reviewers *[external]* Monitor customer generated media
Fung & Lee (1999)	Message from the president, testimonials, employment notices *[own site]*
Ha (2004)	Monitor, manage and build up links with sites to host a community of people willing to share opinions with others *[external]* WOM cyberbuzz
Kaur & Madan (2013)	Placed on homepage *[own site]* Both positive and negative reviews
Kim & Park (2013)	Shopping experiences and product information through WOM *[external]* Maximize WOM advertising WOM on social networks sites
Paliszkiewicz & Klepacki (2013)	Customer review sites *[external]*

Appendix E – Customer interviews on trust building

This appendix contains the coded interviews that were performed to validate the trust building constructs.

Interview 1

Interviewee: Student Dutch Technical university, male, 25
Date: April 3, 2017
Location: Delft, The Netherlands

Interview 1	Code [principle – construct]
Nederlands bekend zijn, Nederlands bedrijf	Brand
Mensen praten er positief over	Trusted sources – Offline WOM
Vooral geen negatieve verhalen erover in het commerciële nieuws	Trusted sources – Reviews on external/partner sites
Keurmerken (thuiswinkel waarborg, digital keurmerk)	Trusted sources – Trust seal
Niet gelikt	Experience – Website appearance
Slecht in elkaar	Experience – Ease to navigate
Geen focus op design	Experience – Website appearance
Geen schreeuwende teksten	Experience – Website appearance
Pop-ups	Experience – Advertisements
Privacy voorwaarden	Security – Privacy policy
Optie voor emailadres ipv inloggen met FB. Optie heel accout versus gast account	Security – Login options
Content niet meer up to date	Experience – Information quality
Missende refund policies	Security – Refund policy
Informatie logisch en makkelijk te vinden	Experience – Ease to navigate
Meerdere contactgegevens; postadres, emailadres, telefoonnr, chat, bezoekadres	Experience – Contact options
Social media is toegevoegde waarde zodat andere mensen het bedrijf kennen en die vervolgens kunnen aanbevelen	Trusted sources – Social media presence, reviews on external/partner sites
Digitale kanalen moeten op orde zijn. Afvragen of winkel nog wel werkt als ze niet snel zijn op Facebook	Experience – Social media presence, customer support
Moet geinvesteerd zijn in interface, dus ook snel laden	Experience – Website download time
Hoe meer transparantie hoe beter, waarvan gemaakt, hoe gemaakt	Transparency – Corporate behavior
Je moet wel met iDeal kunnen betalen	Security – Transactions
Verzend- en transactiekosten, waarom aan mij doorberekend? Blijkbaar verkoop je dermate weinig dat je niet in de prijs kan doorberekenen	Transparency – Pricing

Interview 2

Interviewee: Student Dutch Technical university, male, 24
Date: April 3, 2017
Location: Delft, The Netherlands

Interview 2	Code [principle – construct]
Algemene bekendheid (Bol.com vs nieuweschoenen.nl)	Brand
Too good to be true; lage prijs voor hoge kwaliteit	Transparency – Pricing
Vage naam	Experience – Domain name
Zustersites ook vaag	Trusted sources – Referral link
Goede reputie die algemeen bekend is	Brand
Niet per se op zoek naar keurmerken, er bestaat voor alles een keurmerk en plaatje kan op de site gezet worden	*Disproven:* Security – Trust seal
Google op betrouwbaarheid van de site	Trusted sources – Referral links
Er kunnen dingen fout gaan, dus negatieve reviews kunnen voorkomen. Ze zijn een teken van leven, dus de site bestaat echt. Als ik geen reviews vind dan vind ik dat beangister	Trusted sources – Reviews on own site, reviews on external/partner sites
Uitstraling van een site	Experience – Website appearance
Vage domein naam	Experience – Domain name
Geen reviews van te vinden	Trusted sources – Reviews on own site, reviews on external/partner sites
Kijk niet naar privacy voorwaarden	*Disproven:* Security – Privacy policy
Als er redenen zijn dat refund niet nodig is of prijs van product laag is dan maakt refund policy niet uit	*Disproven:* Security – Refund policy
Contact page minder belangrijk	*Disproven:* Eperience – Contact options
Er moeten tekenen van leven zijn op social media	Experience – Social media presence
Snelste en makkelijkste om reviews en social media te bekijken en daarop te beoordelen	Trusted sources – Reviews on external/partner sites
Standaard websites waar ik naar toe ga, wel nog even Googlen of er ergens een aanbieding is	Brand
Naar een site verwezen via een betrouwbare site, referral	Trusted sources – Referral links
Snel een bevestiging	Experience – Customer support
Niet gebeund, heel belangrijk voor eerste indruk	Experience – Website appearance
Bij elkaar geraapt zooitje, onsamenhangend	Experience – Website appearance
Pop-ups voor korting zijn oke, pop-ups met zoveelste bezoeker niet	Experience – Advertisemenets
Reviews over product op de site is teken van leven. Versterkt vertrouwen in product zelf en versterkt vertouwen in de website	Trusted sources – Reviews on own site
100 reviews die lovend zijn dan ook bedenkelijk, maar niet helemaal natrekken	Trusted sources – Reviews on own site, reviews on external/partner sites

Alleen sterren en anonieme reviews hebben geen toegevoegde waarde	Trusted sources – Reviews on own site, reviews on external/partner sites
Geld overboeken soms logisch, bij kleine bedrijven	*Disproven:* Security – Transactions
Bijna elk verkoopbedrijf moet eigenlijk een iDeal link hebben, het is niet dat iDeal een positief effect heeft, het ontbreken heeft een negatief effect	Security – Transactions
Paypal fijner. Paypal makkelijker geld terugvragen	Security – Transactions
Credit card voorzichtig mee doen	Security – Transactions
Link naar iets betrouwbaars	Trusted sources – Referral links
Als een keten wereldwijd te vinden is	Size
Kijk niet naar loadingspeed	*Disproven:* Experience – Website download time
Er moet een trigger zijn om het niet te vetrouwen; lelijk design, vreemde naam	Experience – Website appearance, domain name
Als ik er nog nooit van gehoord heb misschien wel even onderzoek doen	Brand
Hoogte van bedrag maakt uit	Price

Interview 3

Interviewee: Student Dutch Technical university, female, 25
Date: April 3, 2017
Location: Delft, The Netherlands

Interview 3	Code [principle – construct]
Er staan geen taalfouten, logische opbouw in verhaal en berichten	Experience – Information quality
Kleurgebruik	Experience – Website appearance
Logisch opgebouwd, juist doorverwezen	Experience – Ease to navigate
Foto's van mensen die achter het bedrijf zitten en kort verhaal, fysiek beeld	Transparency – Company information
Als er niet zo veel van af hangt hoeft het minder betrouwbaar te zijn	Price
Naamsbekendheid	Brand
Bekende heeft het gebruikt en er goede ervaringen mee (offline signaal)	Trusted sources – Offline WOM
Bij twijfel Googlen en dan je vraag in chatgroepen teruglezen	Trusted sources – Reviews on external/partner sites
Als er geen ophef over gemaakt is, geen bericht is goed bericht Geen bericht kan ook verdacht zijn, maar niet gaan zoeken via FB. Als ik het zou meemaken, dan niet als positief ervaren	Trusted sources – Reviews on external/partner sites
Vreemd als je op social media kanalen zit maar er niks mee doet	Experience – Social media presence

Hoe veel volgers heb je, zijn er bekenden die een link ermee hebben	Trusted sources – Reviews on external/partner sites
Afhankelijk van product wat betreft transparantie over productie	Transparency – Corporate behavior
Sommige bedrijven zijn veel meer met privacy bezig, hoeft niet alles in te vullen en duidelijk wat ze ermee gaan doen	Security – Privacy policy
Aversie tegen inloggen via FB, uitklikken. Kleine vinkjes zijn vervelend als je toch dingen moet delen Profiel hebben ze niet nodig voor wat ze doen, heeft te maken met privacy, overall beeld wordt negatief beinvloed	Security – Login options
Reacties die er geplaatst zijn, overall cijfer, persoon heeft ook hiernaar gekeken, levertijd	Trusted sources – Reviews on own site
Kijk niet naar refund policy, kleine aankopen (0-50 euro)	*Disproven:* Security – Refund policy
Alleen via iDeal	Security – Transactions
Als je persoonlijk contact met iemand hebt, via mail, dan wel overboeken	*Disproven*: Security – Transactions
Snel communiceren	Experience – Customer support
Niet hoeven zoeken naar contactdetails, hoe kan ik ze bereiken, meer is beter	Experience – Contact options
Overzichtelijke website, menu's, kopjes	Experience – Ease to navigate
Lay-out; gevoel van kleurgebruik	Experience – Website appearance
Extreem veel pop-ups en advertenties is niet goed	Experience – Advertisements
HTTPS kijk ik niet echt naar, wel of ze beveiligd zijn met een sleuteltje	Security – Trust seal

Interview 4

Interviewee: Homemaker, female, 56
Date: April 3, 2017
Location: Amstelveen, The Netherlands

Interview 4	Code [principle – construct]
Top list op Google	Trusted sources – Referral links
Bedrijf dat ik al ken, niet waarvan ik nog nooit heb gehoord	Brand
Hangt af van bedrag. Als het een klein bedrag is van 50 euro en je wil het graag hebben, probeer ik het nog wel	Price
Je ziet verschil in website tussen een klein bedrijf en groot	Size
Gewoon heel eenvoudig zijn	Experience – Website appearance
Kijk naar hoeveel ze in het assortiment hebben	Size
Kijk wel naar reviews om te vergelijken	Trusted sources – Reviews on own site, reviews on external/partner sites

Kijk nooit naar privacy voorwaarden	*Disproven:* Security – Privacy policy
Kijk wel naar retour beleid	Security – Refund policy
Vreemd als ik moet betalen voor retour of betalen voor transactie of bestel kosten	Transparency – Pricing
Transparency would be nice	Transparency
Snel reageren is wel fijn	Experience – Customer support
Advertenties doen me wel afvragen is dit allemaal wel oke	Experience – Advertisements
Makkelijk te overzien hoe ik het moet doen, logische indeling, snel vindt wat je wil	Experience – Ease to navigate
Kijk niet naar keurmerken, zegt me niet zo veel	*Disproven:* Security – Trust seal

Interview 5

Interviewee: Real estate agent, male, 58
Date: April 3, 2017
Location: Amstelveen, The Netherlands

Interview 5	Code [principle – construct]
Rustige website	Experience
Reviews, op eigen website of andere website	Trusted sources – online, other media
Professionele uitstraling	Experience
Ongevraagde pop-ups	Experience – pop-ups
Ik wil weten waar ik ben in het bestel proces	Experience – navigation
Fijn als je weet dat je je geld terug kan krijgen	Security -refund
Website met contactgegevens, vestiging	Experience – contact
Iets wat je kent is makkelijker, onbekend maakt onbemind	Brand
Het hoeft niet zielig te worden, met veel transparante informatie	**Disproven:** Transparency
Prettig als de website ook een winkel heeft, als ik het niet ken	Brand – location
Vertrouwd en groot	Size
Keurmerken voor betaalsystemen	Security – transaction certificates
Garantie op aankoop met creditcard	Security – transaction
Je moet er een goed gevoel bij hebben	Experience
Het moet een mensen bedrijf zijn	Transparency - people
Snel bevestigingen krijgen van alles	Experience - quick

Appendix F – User guidelines for online trust building tool

This appendix presents an overview of the online trust building construct guidelines per trust building principle.

Experience construct guidelines

Website appearance
- Are the colors consistent and matching?
- Are images representative and in balance with text?
- Is the website cross platform and browser independent?
- Are there proper white space and fonts?

Ease to navigate
- Is there a functioning search facility?
- Are all links valid (images and text)?
- Can all pages be accessed with a minimum number of clicks?

Website Download time
- Does the website download within an optimal time?

Information quality
- Is the information up to date?
- Is the information complete?
- Is the information understandable (in different languages)?
- Is the information grammatically correct?

Domain name
- Is the domain name decent and useful?

Customer support
- Is there a Frequently Asked Questions (FAQ) page?
- Is the company accessible via synchronous media?
- Are responses quick and do they contain the right advice?
- Is the correspondence personal

Contact options
- Is there a contact us page?
- Are there a telephone number, physical address, and branded email address provided?
- Is there a contact form?

Social media presence
- Is the company present on the same social media channels as most customers are?
- Is there interaction on the social media channels?

Advertisements
- Are the advertisements relevant?
- Are the advertisements in the right place?

Security construct guidelines

Privacy policy
- Is there a clear privacy policy?

Refund policy
- Is there a refund policy?
- Is there a return policy?

Login options
- Are there multiple login options?

Trust seal
- Is the website HTTPS?
- Are there seals of 3rd parties displayed?

Transactions
- Are error free receipts provided for purchases?
- Are there multiple payment options?
- Is the online payment secured and are seals displayed?

Transparency construct guidelines

Pricing
- Are the shipment, transaction, refund and tax costs clear upfront?
- Are the shipment, transaction and refund free?

Company information
- Is there an about us page?
- Is their information about the company's history and employee profiles?

Corporate behavior
- Is the company socially responsible?
- Is the company sustainable?
- Is the company responding to failures?
- Is the company open about supply, production, labor, and sourcing?

Order tracking
- Is there an online traceability system?
- Is the delivery on time?
- Is the delivery undamaged?

Trusted sources construct guidelines

Reviews on own site
- Are there user testimonials or reviews on the website?
- Are the reviewers credible?

Reviews on external/3rd party site
- Are there reviews on social media?
- Are there reviews on customer review sites?
- Are the reviewers credible?

Offline worth of mouth
- Is there worth of mouth by friends/family?

Referral links
- Are there trusted referral sites?