



Rational Override; Influencing behaviour beyond nudging

A SERVICE DESIGN APPROACH TOWARDS
CREATING BEHAVIOURAL INTERVENTIONS



Rational Override; Influencing behaviour beyond nudging

A service design approach towards creating behavioural interventions

Master thesis
Delft, November 2017

Author

Anne van Lieren
Strategic Product Design (Msc.)
annevanlieren@live.nl

Supervisory Team

Chair

Prof. dr. Schoormans, J.P.L.
Professor of Consumer Research and Behavior
J.P.L.Schoormans@tudelft.nl

Mentor

Dr. Calabretta, G.
Assistant professor Strategic Value of Design
G.Calabretta@tudelft.nl

Company Mentor

Lavrans Løvlie
Founding partner of Livework studio
Lavrans@liveworkstudio.com

Company

Livework studio
Hofplein 20
3032 AC Rotterdam
www.liveworkstudio.com

Delft University of Technology

Faculty of Industrial Design Engineering
Landbergstraat 15
2628 CE Delft
The Netherlands
www.tudelft.nl

Preface

In front of you is the final deliverable of my graduation project of the Strategic Product Design master at Delft University of Technology. This eight month project was done in collaboration with service design consultancy Livework studio. This project enabled me to meet so many interesting and inspiring people, travel to Oslo (twice!), visit multiple conferences and learn so much about human behaviour and myself.

Thank you Giulia for your continued support, positive feedback and enthusiasm about everything I was doing. Thank you for coming along with me to Oslo and support me during the validation.

Thank you Jan for our conversations and your challenging questions about nudging, human behaviour and our role and responsibilities as designers. Your (sometimes) critical feedback and perspective on the project pushed me to make the most out of it.

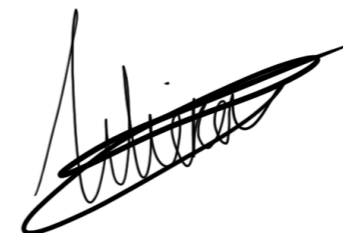
Thanks to Lavrans, for the trust and encouraging feedback throughout this whole project. It was great to visit the Oslo studio and meet so many designers and clients. Thanks, to all the other people at Livework for giving me the opportunity to explore, learn about service design and have an amazing time at the Christmas party!

A special thanks to all the people that participated in the interviews, workshops and evaluation of this project. I could not have done this project without my fellow design students, Livework designers, Livework clients and experts. Thanks Leroy, Steven and Jan for all the highly necessary coffee breaks and pep talks along the way.

And last but not least: thanks to my friends and family that had to listen to me going on and on about this project for almost 8 months. You provided me with endless support and motivational speeches when I needed them most!

Enjoy the read (it's a long one!)

Anne van Lieren

A handwritten signature in black ink, appearing to read 'Anne van Lieren', written in a cursive style with a large, sweeping flourish at the end.

Executive summary

The importance of behaviour in service organizations

Service organizations are struggling to understand and change behaviour since it is complex, dynamic, multidimensional and very often not considered to be rational. Human behaviour is a key component in services, as the interaction between a user and touchpoints determines the overall performance and value. Increasingly, service organizations aim to influence or change behaviours; banks that want people to save for sustainable future incomes, utility providers want people to reduce consumption and switch to green energy and healthcare organizations want people to live healthier lives.

The assignment

Livework Studio, one of the leading service design agencies in the world, wants to incorporate the knowledge of behavioural economics into their practice to fundamentally understand and guide customer behaviour. While different behavioural design approaches and tools have shown significant opportunities, there is yet not an approach focused on the design of services that includes the organizational, business and customer experience perspectives. Therefore, the main objective of this project was to develop a structured design approach that supports Livework designers to incorporate behavioural economics theory into their process.

The research

An extensive research was conducted to generate insights on how Livework can use the behavioural

economics theory in the design process of services. Sixteen interviews with Livework designers, Livework clients, behavioural experts and practitioners from different domains were conducted. See chapter 3. The insights gained throughout the project were integrated into a design approach and toolkit. It is argued that nudging in services can be very effective but there are certain limitations. See chapter 4. Therefore, the research extended beyond nudging and an additional type of interventions was put forth; the rational override.

Behavioural Economics and nudging

If we want to influence behaviour it is important to first understand it. Behaviour can be explained by the underlying decision-making processes that determine if, and how, people will act (or not). People have two ways of thinking when making decisions: automatic, fast thinking and reflective, slow thinking. People utilize their instinctive subconscious mindset 95% of the time. Only when it is really necessary, people will switch to more deliberate and conscious thinking.

Behavioural economics is a discipline that explains individual, cognitive-driven decision-making processes in the automatic and subconscious mindset. This subfield combines knowledge from psychology and economics to explain why people behave the way they do and how their behaviour can be influenced by the environment. Behavioural economics is increasingly applied by public and private sector organizations to reduce (cognitive)

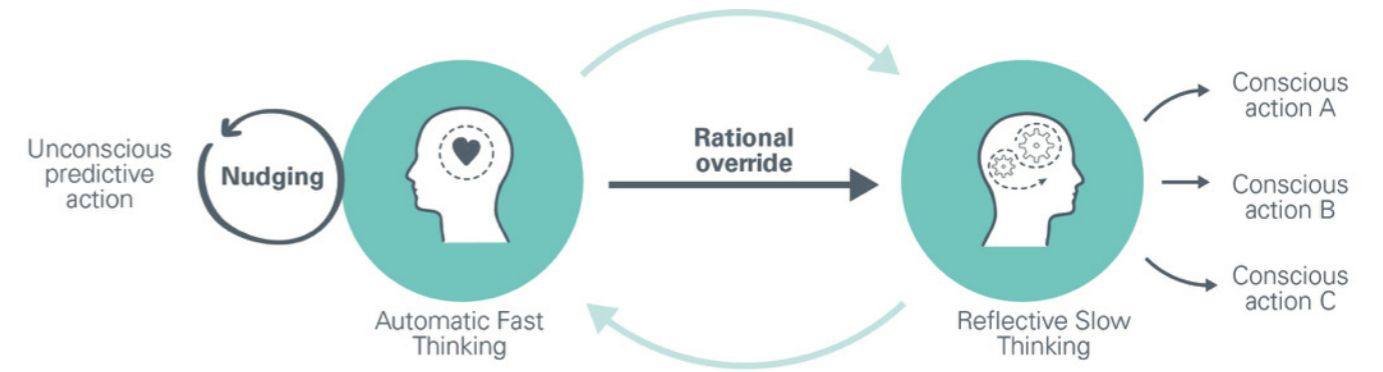


Image 1. Behaviour can be influenced by either facilitating the automatic and fast thinking (nudging) or switching people to the conscious state (rational override)

friction and create choice environments that facilitate subconscious thinking. Simple and low-cost interventions, a.k.a. nudges, make information or a particular behaviour really easy, attractive or social.

The rational override

This research generated an alternative design approach towards creating effective behavioural interventions in services: Behavioural Intervention Design. See chapter 5. This approach is focused on influencing behaviour by getting the customer in the right mindset at the right time. In this approach two types of behavioural interventions are combined across a customer journey to either speed up or slow down the user's momentum. These interventions do not only facilitate automatic and fast thinking (such as nudging) but can, when necessary, switch customers to the conscious state.

People can be prompted by rational override interventions to switch to the conscious state. Rational overrides are micro moments of friction that can be used to disrupt mindless automatic interactions, prompt moments of reflection and

increase conscious decision making. Not all service interactions require the speed and usability of a frictionless experience. Some situations require users to slow down, focus on the decision at hand and understand the options that they have. In these situations, friction is not bad, it is necessary. This research identified nine strategies that can switch people to reflective and conscious thinking.

Behavioural Intervention Design Toolkit

This project resulted into a toolkit consisting of 5 templates, 2 card sets and 2 databases to support service designers, clients and stakeholders to understand and design behavioural interventions. See chapter 6. The toolkit enables designers to create tailor-made solutions that fit both the customer, business and organization.

Validation

Finally, the design approach and toolkit have (partly) been evaluated with designers, clients and experts. See chapter 7. However, to fully validate the effect of the toolkit and rational override, they should be evaluated in real life design projects.

Table of contents

Preface	5		
Executive summary	6		
1. Project introduction	11		
1.1 Project Introduction	12		
1.2 Project Aim and Approach	14		
2. Theoretical background	19		
2.1 Service Design principles and process	20		
2.2 Behavioural Economics	24		
2.3 Opportunities to apply behavioural economics in Service Design	42		
2.4 Problem statement	46		
2.5 Key take-aways chapter 2	48		
3. Exploratory research	51		
3.1 Research setup	52		
3.2 Livework studio analysis	54		
3.3 Design strategies for behaviour	61		
3.4 Internal multi case study analysis	64		
3.3 External analysis into applied behavioural economics	76		
3.4 Key take-aways chapter 3	82		
4. Synthesis	85		
4.1 From insights to design guidelines	86		
4.2 Insights into Liveworks' added value	87		
4.3 Framework	100		
4.3 Design guidelines	104		
4.5 Key take-aways chapter 4	110		
		5. Behavioural Intervention Design	113
		5.1 A new value proposition	114
		5.2 Rational overrides	118
		5.3 Rational overrides & nudge situations	126
		5.4 Key take-aways chapter 5	130
		6. Behavioural Intervention Design Toolkit	133
		6.1 Tool development process	134
		6.2 Behavioural Intervention Design Process	136
		6.3 The toolkit step by step	140
		6.4 Key take-aways chapter 2	152
		7. Validation	155
		7.1 Validation & Recommendations	156
		8. Conclusion & discussion	163
		8.1 Conclusion	164
		8.2 Limitations, Implications and Recommendations	165
		8.3 Personal Reflection	168
		References	170



1 PROJECT INTRODUCTION

In this chapter

- 1.1 Project Introduction
- 1.2 Project Aim & Approach

This chapter describes the project objectives, scope, research questions and approach. It provides a structured overview of the project layout and offers guidelines on how to read this report.

1.1 PROJECT INTRODUCTION

Service design is a holistic, multidisciplinary and integrated design approach in which new services are created or existing ones are improved. The core value of service design is using customer insights - their needs, expectations, beliefs and behaviours - to design useful and desirable services that are effective as well as efficient for organizations (Sleeswijk Visser, 2013; Moritz, 2005).

In essence, the effectiveness and quality of a service relies, to a large extent, on the people using it (Fullerton, 2009). When a user interacts with the different touchpoints in a service they make decisions and exhibit certain behaviour. Ultimately all these different interactions create the overall customer experience (Poline et al, 2013). The customer experience can be very different for different people since it is influenced by personality, internal state and prior experiences. While service designers cannot design the actual customer experience, they can design the environment around it.

In order to create the best possible conditions for a positive customer experience it is key to understand customer needs and behaviours. Service design methods and tools, such as customer journey mapping, customer shadowing and service safaris, are currently used to generate insights about what people do and want. However, these methods do not offer a fundamental explanation on why people behave the way they do. Knowledge about behaviour

sciences can provide service designers with the ability to more fundamentally understand, predict and guide customer behaviour (Galbraith, 2013; Naumof, 2014).

Behavioural economics, a discipline that bridges economics and psychology, is focussed such on individual, cognitive driven behaviours and decision-making processes. Behavioural economics can explain (observable) human behaviour on a social, cognitive and emotional level. Making good decisions requires large amounts of brain capacity since we need to weigh the pro's en con's, possible alternative and our own motivations and needs. Therefore, people tend to be driven by mental shortcuts when making decisions. These mental shortcuts are based on core capacities of the brain and strongly influenced by the structure and context in which a decision is made (Gigerenzer & Gaissmaier, 2011). The environments in which we make decisions are currently designed to fit our bodies, but little to no attention is paid to design brain friendly environments.

“ There is so much work to be done to make the world less cognitively overloading. It seems that we created a body friendly world, but a really badly designed world for our brains. Why not make a brain friendly world too? ”

- Expert applied behavioural economics

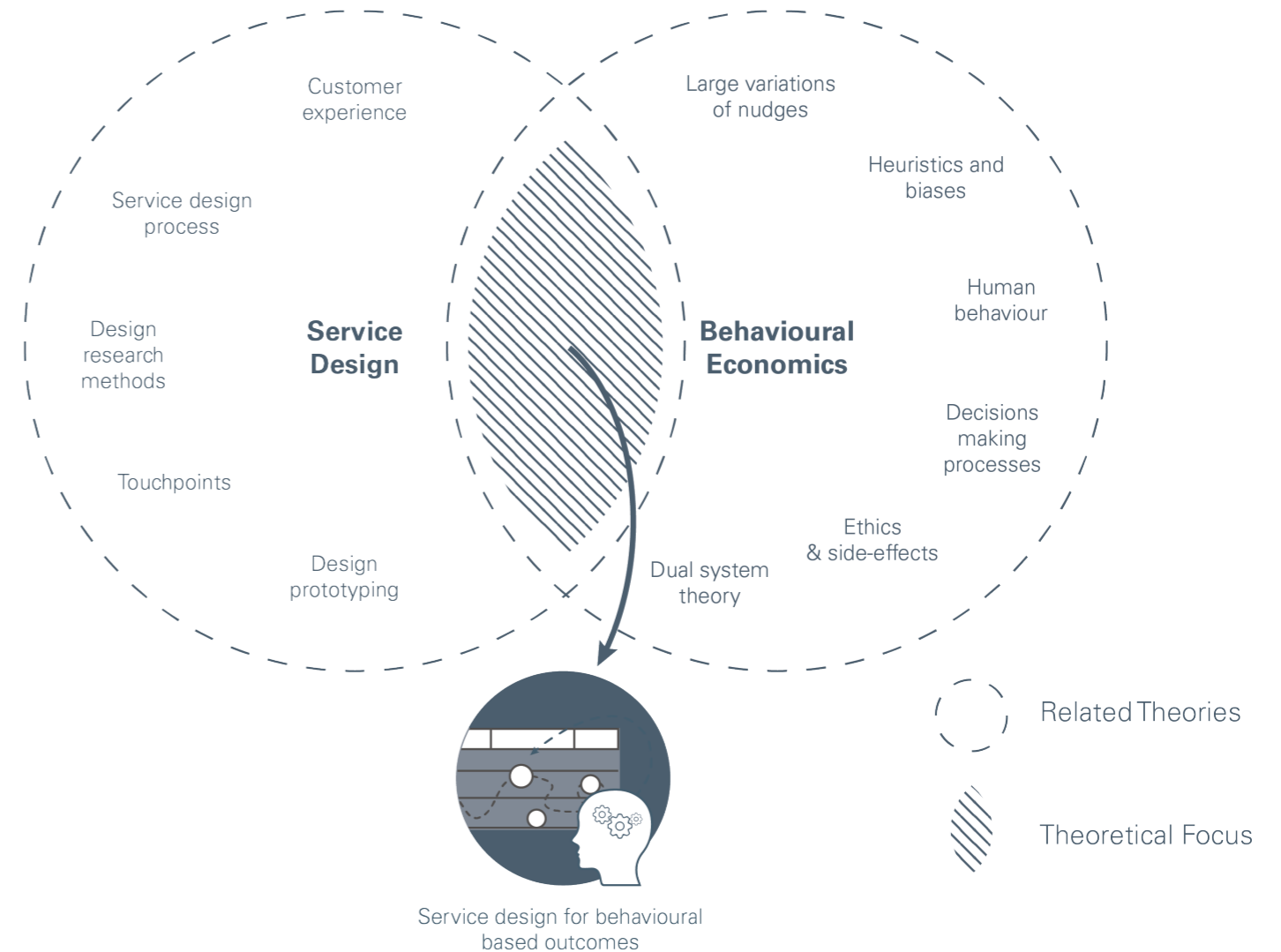


Image 1. Theoretical background of Service Design and Behavioural Economics

By understanding the mental shortcuts that take place in a particular service environment, service designers have the ability to create interventions that help and guide customers in predictable ways to make 'more optimal' decisions and create better experiences.

Livework Studio, one of the leading service design agencies in the world, wants to incorporate the

knowledge of behavioural economics into their practice. By creating a systematic design approach that helps service designers to intentionally apply knowledge from behavioural economics, Livework can create significant value for their clients.

1.2 PROJECT AIM AND APPROACH

Project scope

A couple of factors determine the scope of this project.

- Livework

This graduation project is focused on Livework Studio and their way of working. The yet to be developed approach and tools will be created for the use of Livework designers.

- Behavioural Economics

There are over 60 different models and theories for understanding and changing behaviour. This study is mainly focused on the theory of behavioural economics since this field is focussed on individual, cognitive driven behaviour in relation to a decisions making environment. The design of these decisions making environments, or more commonly known as touchpoints, is the main activity of service designers. Currently Livework is already exploring the possibilities of applying theory behavioural economics.

- Service Design

This project is concentrated on the service design process. Other design strategies, concerning the design of products and policies, are used solely for inspiration and insights.

Project Aim

The aim of this graduation project is to develop a systematic design approach that supports Livework

designers (and clients) to intentionally apply behavioural economics to fundamentally understand and guide customer behaviour. The design approach, and supporting workshop formats and or tools, should help designers to:

- select relevant behavioural principles within a specific context to understand the mental mechanisms behind existing customer behaviour
- translate the behavioural economics principles to an intervention that can support customers to make 'more optimal' decisions and perform desired behaviour.
- design a behavioural intervention within the given context so that it supports and enhances the customer experience.

Research Questions

In this graduation project the following two main research questions will be answered. ►

Project Layout

The project is structured in five subsequent parts, each building on the outcomes of the previous one. Within the phases it is aimed to explore and combine, both in theory and practice, how behavioural economic principles can be applied in the design of services. See image 2 on the next page.

1 How and to what extent can behavioural economic principles be used to create services in which customer behaviour is guided towards desired outcomes without compromising on the experience?

- a. How are current design strategies and tools used to create behavioural interventions or influence customer behaviour?
- b. What are the different applications of behavioural economics in practice and how are behavioural interventions developed and validated?

2 In what way and form should behavioural economic principles be presented to Livework designers so they can apply them systematically and intentionally during their current service design process?

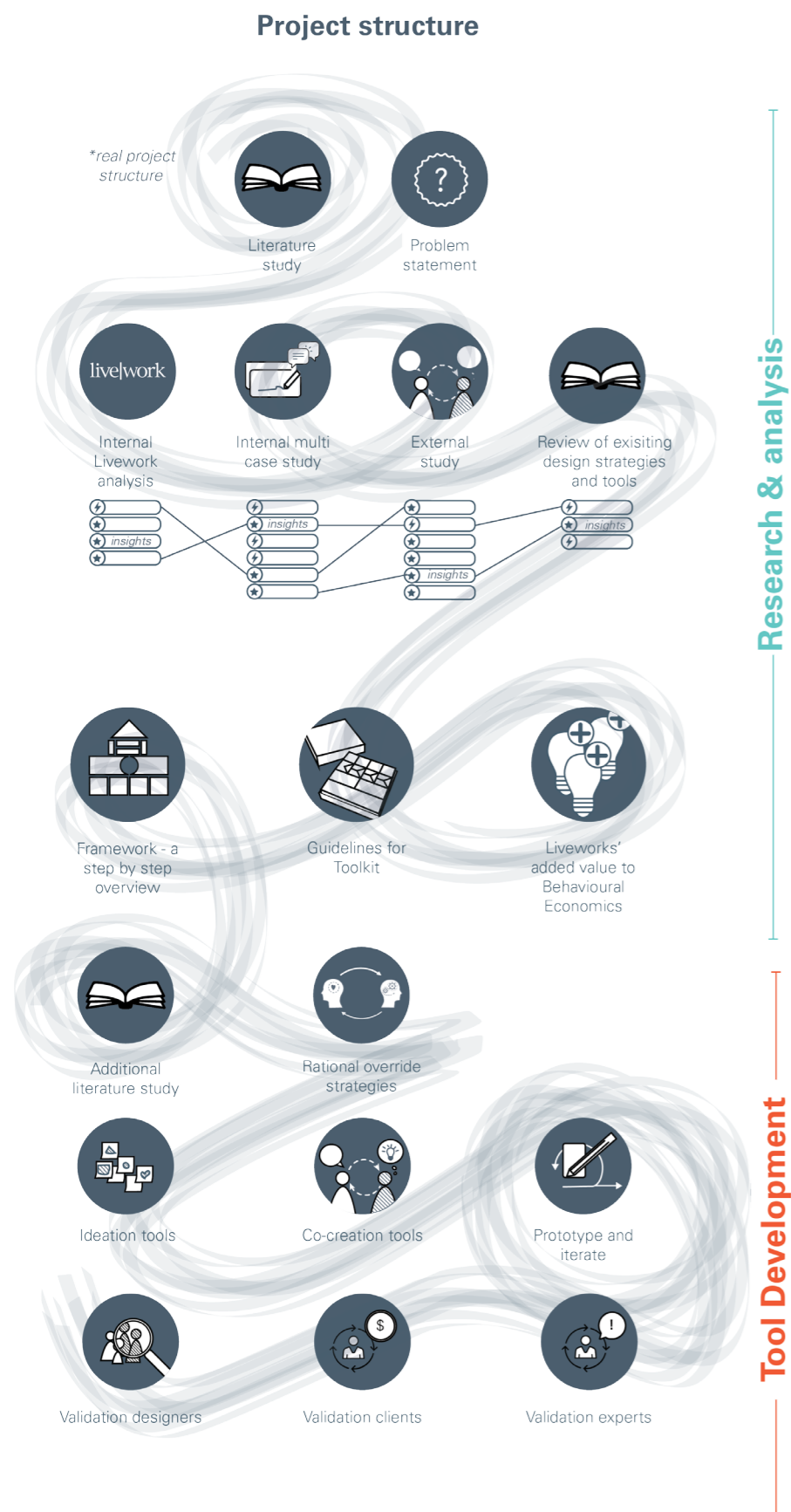
- a. What characterizes the Livework mindset and service design process?
- b. How are behavioural economics principles currently used by Livework designers (and clients) to create behavioural interventions in services?

In the **initial phase, an exploration** into the field of behavioural economics and service design is carried out. Academic literature is used to define the gap in knowledge and subsequently create a problem statement.

The **second phase, Understand**, is the research phase. To get a better understanding of the design process at Livework a short analysis is done into the current approaches and ways of working. To understand the current role and applications of behavioural theory in design a selection of various

behavioural design strategies is analysed. A case study on multiple client cases at Livework is conducted to review and describe the current design process, methods and tools used to include behavioural theory in the design of services. Finally, expert interviews are used to review existing applications of behavioural economics in different domains and sectors.

The **third phase, Imagine**, will be used to synthesize the insights of the understand phase into a list of guidelines that can help in the



Report structure

- 1. Introduction
- 2. Theoretical background

- 3. Exploratory research

- 4. Synthesis

- 5. Behavioural intervention Design

- 6. Behavioural intervention Design toolkit

- 7. Validation

- 8. Conclusion & discussion

development of the systematic design approach.

In the **fourth phase, Create**, a design approach will be co-created in iterative sessions together with Livework designers. Additionally, new (or existing) supporting techniques are developed, altered or expanded to support the design process.

The **final phase, Validate**, will be used to test the tools with Livework designers and students from the TU Delft, possibly in an existing client case. Experts and knowledge partners will be consulted on the developed design strategy and tools. Iterations and suggestions for implementation are made in order to provide Livework with an approach and set of tools that can be put to action.

Involved Parties

Next to the supervisory team of the TU Delft and company mentors at Livework additional parties are involved in the project. Since this topic is closely linked to economics Prof. Dr. Kirsten Rohde from the Erasmus School of Economics is consulted to provide guidance. Experts in the field of applied behavioural economics will be approached for interviews. Validation of the insights and developed tools will be supported by experts and knowledge partners of Livework, including the Center of Service Innovation (Norwegian) and the Norwegian School of Economics.

How to read this report

This report is divided into eight main chapters. **Important aspects in the text are highlighted in colour** and every chapter ends with a concluding page in which the key take-aways are summarized. Additional information and examples are presented in coloured boxes and are referred to with an ►

No time to read?

Just look at the images and key take-aways pages after each chapter. **Chapters 4.2, 5 and 6.2** are of particular importance.

Image 2. Project layout vs. the report structure.

An aerial photograph of a city square. In the foreground, there is a large, ornate fountain with multiple water jets. The fountain is surrounded by a green lawn and several orange banners. In the background, there are several modern buildings, including a prominent one with a glass facade and a sign that says 'HILTON'. The sky is blue with some clouds.

2 THEORETICAL BACKGROUND

In this chapter

- 2.1 Service Design
- 2.2 Behavioural Economics
- 2.3 Applied Behavioural Economics
- 2.4 Opportunities of Behavioural economics in Service Design
- 2.5 Knowledge gap
- 2.5 Problem statement

To understand how behavioural economics could be applied in the design of services it is important to first create a theoretical background of the two fields. In this section an overview of the service design discipline is given and a theoretical background in behavioural economics is provided to find possibility opportunities of application. This literature review is used to indicate the knowledge gap which has led to the formulation of the problem statement.

2.1 SERVICE DESIGN PRINCIPLES AND PROCESS

Services are everywhere around us. We go to the gym to workout, pay with our debit cards and plan a train journey on our smartphone. Services are becoming increasingly important since they do not only take an additional supportive role, but take over entire customer needs that were otherwise fulfilled with products (Enninga, et. al, 2013).

Services are becoming more complex due to the growth of digital technologies. These technologies multiply the ways people, machines and service providers can interact and therefore the number of touch points (the points where a customer comes into contact with the service) increase. Touchpoints are present across channels and on different levels in, or even outside, an organization. In the growing service sector, organisations are struggling to deliver their service across these complex value networks. At the same time services are becoming commodities and customers grow more critical. It is a challenge for service providers to provide value to their customers and differentiate from competitors.

► **An example of this increasing competition** is seen in the airline industry. All airlines deliver in the same service and it is difficult for customers to choose between the different providers. Therefore, airlines are more and more focussing on delivering a great customer experience instead of just fulfilling the need to travel from a to b. With the use of apps, self-service counters and in-flight entertainment systems airlines try to manage a smooth and easy travel experience across channels and touchpoints.

Products vs. Services

To understand the service design discipline and approach it is important to first consider what a service is. A service is basically 'everything that can be sold but that cannot fall on your feet'. For example; you can drop your phone on the ground but you cannot drop the connectivity of your mobile carrier. The main differences between services and products include:

1. Ownership: While products are owned service can only be used.

2. Physical form: Products are tangible and can be stored for later use. A service does not have one physical form, but can be shaped around a product or multiple tangible interfaces.

3. Produced and consumed: products are first produced and then consumed. They are manufactured in one uniform way and have a fixed quality. Services are consumed and produced at the same time. A service can only be delivered if a customer is present. The perceived value varies on when, who and where the service is provided.

Service Design

Due to the commoditization of services and the increasing expectations of customers, organizations are looking for ways to deliver more useful, relevant and desirable service experiences to their customers. At the same time organizations try to develop those service experiences in an efficient and effective way. Service design is a design approach

that helps organizations with exactly that. According to Moritz (2005) the definition of service design is:

“Service design helps to innovate (create new) or improve existing services to make them more useful, usable, desirable for users and efficient as well as effective for organisations. It is a new holistic, multidisciplinary and integrated field.”

With a holistic and multidisciplinary approach service design helps to improve existing services or create entirely new services that deliver value to both the customer and organisation. Service design achieves this by working on different levels; from the design of small details in touchpoints to aligning the customer needs to business strategy and organizational processes (Moritz, 2005). A more detailed overview of a service design process can be seen in [image 3](#).

The different puzzle pieces that create the Customer Experience

Service design can support organizations to create differentiation from competitors (Moritz, 2005; Zomerdijk, 2010). As customers are increasingly interested in the experience (and not only the benefits of a service) it is key to create interactions that fit the individual needs and expectations of users. Every interaction between a user and a service is part of the overall customer experience (Poline, et. al, 2013). The different touchpoints in a service can be seen as puzzle pieces, that complement the total experience. No two customers will have the same customer experience since it is emotionally influenced, dependent on internal states and affected by prior experiences. Depending on the situation and context, customers can have very different needs but be in the same service (Moritz, 2005). It is the challenge for organizations to meet all those different needs within the same service.

In every service, customer take an inherent part in the value creation process (Payne et. al, 2008). They are active stakeholders that together with the service provider create the service experience. Jaakola et al. (2015) define a customer experience as:

“An actor's subjective response to or interpretation of the elements of the service, emerging during the process of purchase and/or use, or through imagination or memory.”

Customer experiences rely on interpretations, emotions and memories and are developed via co-creation, over longer periods of time and typically include multiple touchpoints. Service design creates the environment and opportunities for service providers and users to jointly create value.

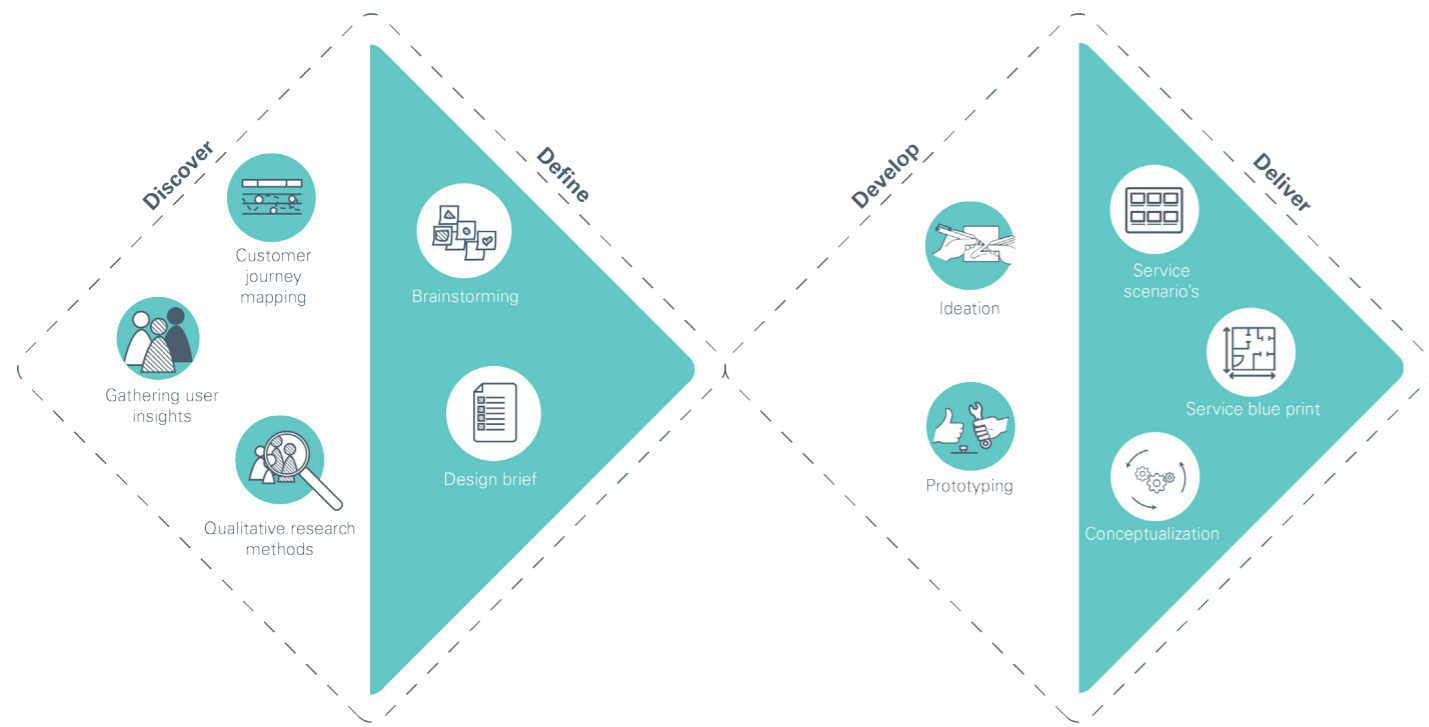


Image 3. Overview of the service design process based on the double diamond model of the Design Council.

► **Service design process:** There are many different models of the service design process. Organizations and design agencies create their own variations or leave it open since they prefer not to be limited to a single process. Almost all methods agree that the service design process is not linear but it is a fluid that changes according to the problem or context that needs to be solved (Evenson, 2010). Phases or steps are sometimes named differently, or divided up into smaller steps, but in general all models have the four main segments of the Double Diamond model created by the Design Council (Moritz, 2005), see image 3. Note that this model is a simplified structure of the design process and is not specially for the design of services.

Divergent and convergent thinking is a key element. During each phase designers switch from divergent thinking to convergent thinking. In the discover stage, designer research the context, user and problem and combine those findings into useful and actionable insights in the define stage. The same applies for the develop and deliver stages; first all possible solutions are explored and ideas are generated. Then options are narrowed down, ranked and the best ideas are selected to develop further.

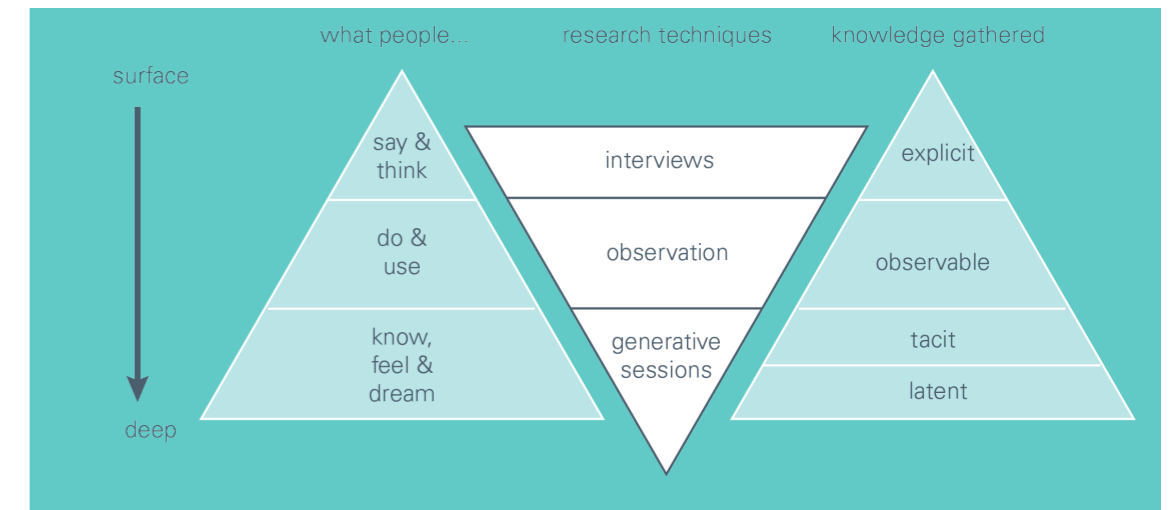


Image 4. Overview of qualitative design research methods to generate different levels of knowledge.

A customers' point of view

In order to deliver an great experience it is crucial to understand customers needs, beliefs and behaviours. Generally, service designers will conduct contextual and user research in the first stages of a project. They invest time and effort to listen to the customers point of view. The 'outside in' perspective, enables designers to generate key insights into what customers find truly important. With the use of participatory research methods service designers are able to identify the emotional and aspirational information about a customer (Sanders & Stappers, 2008). See image 4.

Service designers are able to generate qualitative insights into what people know, feel and dream (tacit and latent knowledge) but they remain are unaware of the underlying mental models that explain why customers have certain needs or show specific behaviour. Although design research methods are very valuable they do rely heavily on self-reporting; we ask people to explain their own decisions and actions. Nisbett and Wilson (1977) showed that people are often not able to accurately explain their own behaviour because they do not have direct

introspective access to their underlying mental processes. Using self-reporting techniques let's people think about things they do unconsciously and that makes them link behaviour to causes that might have been unrelated (Gardiner, 2013). This makes it difficult for designers to find the underlying causes of behaviour and design for it accordingly.

► Example of self-reporting limitations

People could explain in an interview or generative session that saving for their pension is something they do not think about or find difficult to do. They might opt that the system is too complex, information is not easily accessible or that they are just too busy to take care of these things. But what they probably cannot express is that we as humans are biased to think about the present instead of the future. Saving for a pension is something that is a future goal somewhere over the horizon and more specific short term financial goals will take priority in our minds. Moreover, planning for retirement is a cognitive intensive process (it is hard to figure out how much you would need to save) and it requires high levels of self-control to actually start and stick to the savings plan.

2.1 BEHAVIOURAL ECONOMICS

Understanding human behaviour and decision-making is the main focus in behavioural science. Behavioral science shares considerable overlap with many other disciplines such as psychology, anthropology, sociology, neuroscience and cognitive science. Human behaviour is very complex and therefore it is no surprise that there are over 60 different models and theories of behaviour, distinguishing between models of behaviour and theories of behaviour change.

Some of these models are focussed on external factors of behaviours, such as incentives, triggers, social norms and contextual variables. Other models pay attention to the internal antecedents of behaviour like attitudes, values, intentions and cognitive aspects of individual decision-making. To understand and explain human behaviour it is essential to consider both the internal (cognitive) and external (situational) factors (Lewin, 1935; Simon, 1956; Jackson 2005; Clark, 2009;). Lewin (1935) highlighted this aspect already in the early days of behavioural psychology by explaining that a person's behaviour is a function of his or her own personality (cognitive factors, knowledge, expectations, attitudes) and the physical and social environment. See image 5.

Decision-making behaviour

A large part of human behaviour is connected to judgement and decision making processes. Most behaviours follow from how people decide to act (or not). People are inundated with decisions everyday; small decisions like choosing what to have

for breakfast or picking a movie to watch, but also large choices like buying a house or deciding on the right medical treatment. Behavioural economics is a discipline that explains these individual, cognitive-driven decision-making processes. This subfield combines knowledge from psychology and economics to explain why people behave the way they do and how their behaviour can be influenced by the environment.

The way people make decisions in the marketplace has been studied for years in the economical field. The 'rational choice theory', outlined by Gary S. Becker (1976), assumes that people have stable preferences and always make rational decisions - We act as econs. It is expected that humans make carefully weighted choices based on costs, benefits and exiting preferences (McDonald, 2008). It assumes that humans are able to use all available information, process it accordingly and know objectively what is best and what makes them happy.

However, the models from conventional economics often fail to predict how individuals behave in the real world and how numerous of factors in the marketplace can influence decisions (Camerer, 2004). According to behavioural economics, humans do not always make carefully weighted and informed decisions. In fact, most of the time people will make decisions that are unconsciously influenced by emotions, the structure of the environment, readily available information in memory and cognitive capacities.

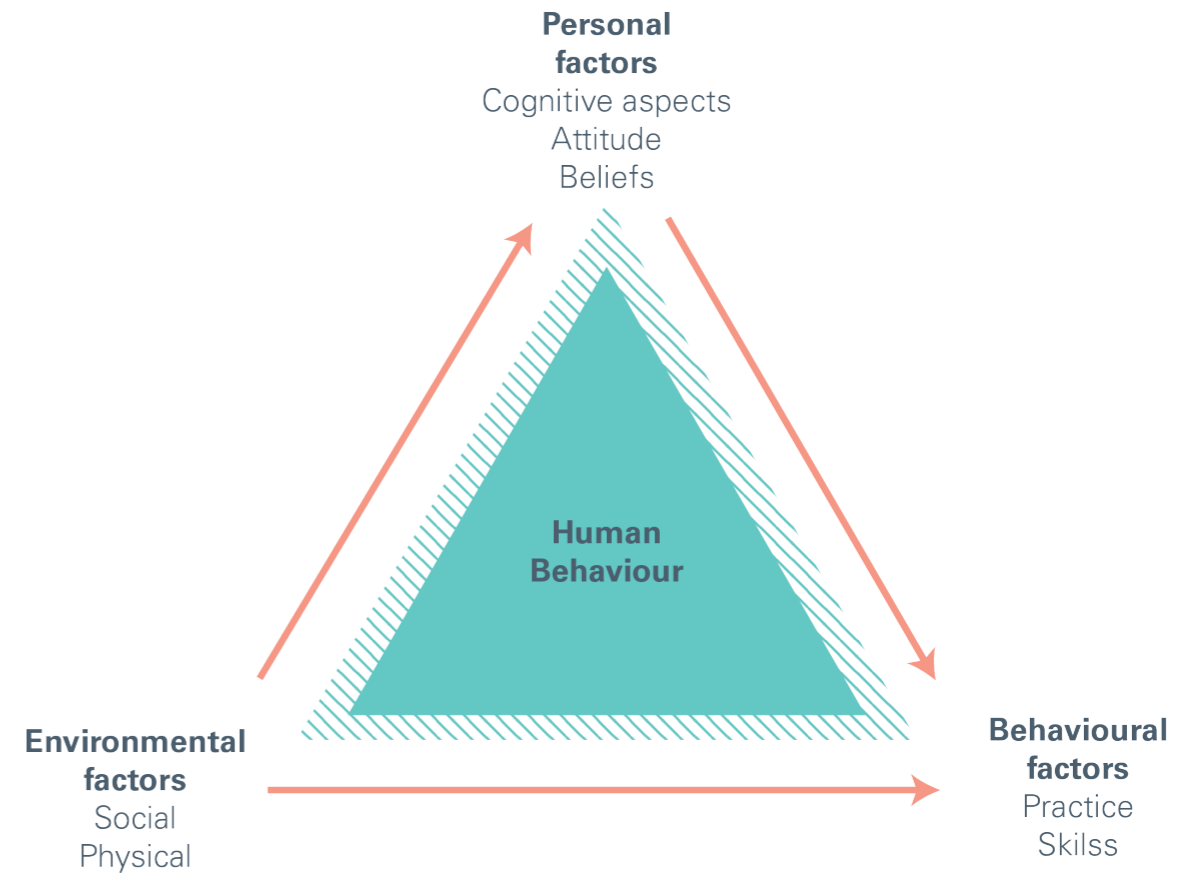


Image 5. Influences on human behaviour according to Lewin (1935)

Behavioural economics assumes that people:

- 1. are 'rationally bounded'** - humans are limited to the cognitive capacities of the brain and the availability of information and time (Simon, 1956).
- 2. have bounded willpower:** humans sometimes make choices that are not in their long-term interest. (e.g. eating a piece of apple pie while having a desire to loose weight)
- 3. have bounded self-interest:** humans are often willing to sacrifice their own interests to help others. (e.g. invite somebody to go before you in a queue)

Behavioural economics explains that the deviations

in predictions about human behaviour from traditional economic models are not random; people behave differently than expected, they might even be irrational, but they do it in a predictable manner (Ariely, 2008).

Dual system theory

The 'irrationality' of human behaviour can be partly explained by the dual-system theory (Kahneman, 2011). This theory and has been studied in the many different fields such as psychology, learning, social cognition and reasoning. The theory is based on the view that the human brain can work on two levels when making decisions.

1. Automatic and fast system 1: this thinking process is intuitive, automatic, experience-based and unconscious. This system, also referred to as 'people's inner Homer Simpson' is fast, automatic and strongly influenced by emotions. It requires minimal cognitive effort and takes place in the limbic system in the brain. The actions stimulated by system 1 thinking are heavily influenced by mental shortcuts.

2. Reflective and slow system 2: is used when we make more conscious, reflective, controlled and analytical decisions and judgements. This process is slow and effort-full and can be compared to Star Trek's Mr. Spock. System 2 thinking is concerned with generating new beliefs, desires and intentions. It requires high mental effort and is therefore only used when circumstances require. If is not necessary, or people lack motivation or ability, System 2 does not engage. This type of thinking takes place in the frontal lobe of the brain and it makes us different from animals. [See image 6.](#) ►

System 1 and System 2 can work together and people can switch between the two systems when making decisions. System 1 and 2 can complement, override or contradict each other and subtle changes in the environment can facilitate the switch between the systems (Alter, 2007). When system 2 is overworked (like when and you are tired at the end of a working day) we loose self-control and willpower. We depart from the our intention to eat healthy (rational system 2) and quickly take a cookie out of the jar (system 1).

► *To illustrate these systems we look at the processes involved in driving a car. A novice driver will need to rely on system 2 processes (controlled and rule-based) to learn how to drive and interact*

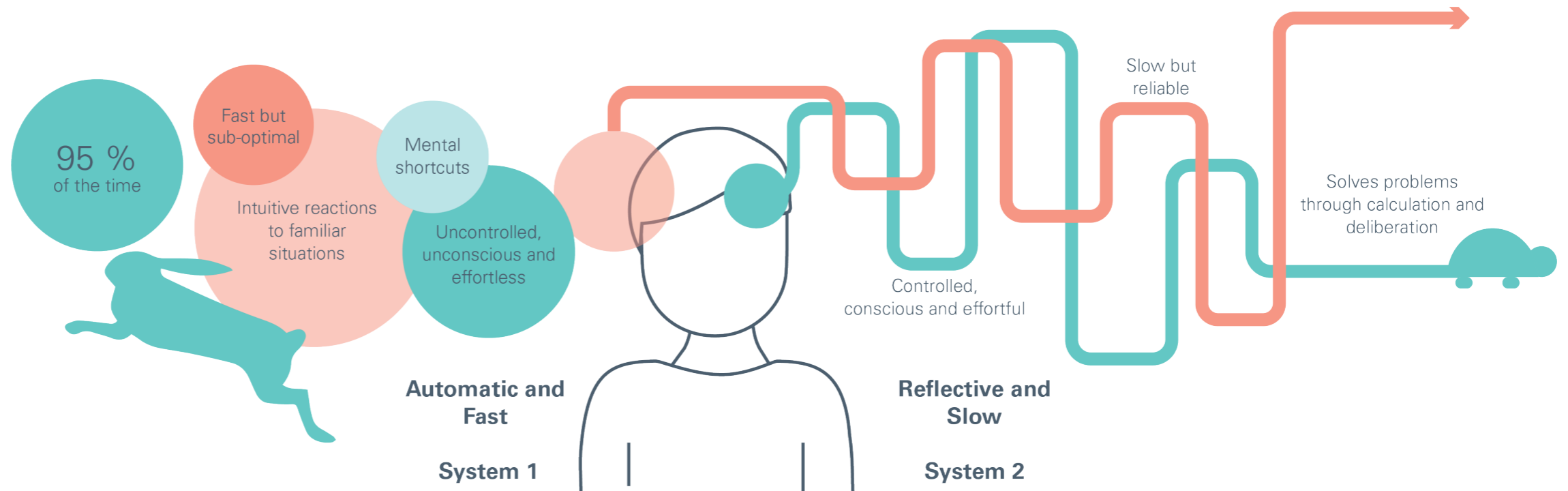


Image 6. Differences between system 1 and system 2 thinking processes

in traffic. It requires high concentration and mental effort. Experienced drivers however can rely on the automatic processes in system 1 and at the same time chat with passengers or listening to the radio while driving. When conditions in the environment change (extreme weather, a road closure or accident) he or she can switch systems and act accordingly.

Circumstance and situations

Different situations require different types of mindsets. [See image 7.](#) ▼ for an overview. This explains why different people can be in different mindsets in the same situation. Their mindset depends on previous experiences, internal states, personal relevance and the perception of the environment. If people are overall more likely to think rational or intuitive can be measured with the 40-

item Rational Experiential Inventory scale (Stanovich and West, 2000)

Automatic fast thinking is addressed when familiar information and routine like situations appear. Moreover, when the context includes many distractions and time constraints people rely on their intuitive though. Internal states, like emotions or fatigue, prompts people to use minimal cognitive effort and rely on system 1 thinking.

Conscious thinking is generally stimulated when unfamiliar situations are presented. High risk and personal relevant decisions can create the motivation people need to use the more effort-full system 2 thinking.

Heuristics and Cognitive Biases

Research shows that 80-95% of the times our decisions are made within System 1, simply because we do not have the mental capacity to think through all our decisions and actions (Zaltman, 2003). When we are processing information in System 1 we use limited cognitive capacity and make decisions that are influenced by heuristics. **Heuristics are mental short-cuts that can quickly and intuitively generate an approximate answer or solution to a problem. Heuristics are programmed in the brain and their success depends on the structure of the context in which a decision is made** (Gigerenzer, 2011). When a heuristic fails to produce a 'correct' answer it can cause a cognitive bias; an incorrect conclusion in a certain context based on cognitive factors.

There are many types of heuristics and cognitive biases that explain how we make hundreds of unconscious decisions every day. Kahneman and Tversky started studying human decision making under uncertainty in the early 1970's and since then a large body of research has been conducted on heuristics. They can explain why humans tend to be more affected by losses than gains, are generally risk averse, prefer simplicity over complexity, remember past experiences differently than it happened and how emotional and visceral states influence them.

There are over 200 different cognitive biases defined and they range from very context specific to more general constructs that apply in various situations. There are several larger bodies of research or theories to explain most of the cognitive biases. These theories include among others; cognitive dissonance, prospect theory and fundamental attribution theory.



Image 7. Typical system 1 and System 2 circumstances and situations.

► An example of a very specific heuristic is the denomination effect: people are less likely to spend larger bills (let's say 20 Euro) than the equivalent value in smaller bills or coins simply because it is more painful to give up one whole bill (which feels like all your money) than giving up some of the coins.

► A more general construct which is at work in many different situations is the availability heuristics: people make choices based on the knowledge that is readily available in their minds (this could be a unusual, emotionally charged or recent memory) rather than examining the alternatives. After 9/11 Americans preferred to travel long distances by car instead of flying because in their memory flying had become a very dangerous thing. The memory of the attack was so vivid and emotionally charged that people opted for the, statistically speaking, more dangerous option of driving. Sadly, the substantial growth in road deaths that followed this trend has been greater than the original death toll from 9/11 itself.

The widely accepted 'rationally-bounded' perspective in behavioural economics assumes that heuristics are seen as the evidence that humans are 'flawed'. We make less-than-rational decisions and our cognitive biases are seen as a defect. A different perspective on this is provided by Gigerenzer (2011) who considers biases not as defects but as effective and optimised strategies given the time and processing constraints.

In real world situations humans do not have access to all the necessary information, let alone the time and mental capacity to process it all. Gigerenzer

(2011) showed that decisions by individuals based on heuristics in business, medical and legal domains can be more accurate than complex rational models. Heuristics and cognitive biases are thus not all essentially 'flawed' and the effectiveness should be judged in consideration of the limitations and structure of the environment.

Heuristics are universal and stable

Many of the cognitive biases were very value strategies at some point in our evolution. They helped to process information quickly (e.g. availability heuristic) and connect with others to survive (e.g. social biases). The human brain has not adapted to make us into perfect rational decision makers simply because the world is too complex and these heuristics still let us (on average) make the best decision in specific circumstances. As professor Nigel Nicholson of the London Business School said:

“Cognitive biases are hardwired. You can take the person out of the Stone Age, but you can't take the Stone Age out of the person.”

Heuristics can be seen as universal, relatively stable and durable cognitive processes that everybody unconsciously uses to make decisions (Thaler, 1991 ;Trout, 2005). It is recognized that there are small differences between how and when individuals rely on heuristics (Campo, 2016) for instance:

- **Gender and risk taking:** females are less risk seeking than males (Powell, 1997).
- **Age:** the hindsight bias, in which people tend to believe that they knew that something was going

to happen all along, is more present with older people (Bernstein, 2011).

- **Cultural difference in the Dunning-Kruger effect:** American people overestimate their ability to do something far more than people from Asian cultures (Heine, 2001).

Cognitive biases can be slightly mediated in their effect by creating awareness and educating people about them. However, cognitive biases cannot be eradicated and learning about them will not let people overcome them (West, 2012).

“Cognitive biases are quite sticky, even experts are susceptible to them. Experience and knowledge will not take the biases away.” - Prof. Dr. Kirsten Rode

Since everybody relies on the same mental shortcuts, there are small individual differences in the operation of automatic fast thinking processes. However, in reflective and slow thinking, large individual differences occur that depend on people's intelligence, cognitive capacity (differences in perceptual speed, discrimination accuracy, working memory capacity, and the efficiency of the retrieval of information stored in long-term memory).

When are which heuristics involved

There is limited knowledge on which factors determine the use of a particular heuristic in a situation. There has been an abundance of literature on *how* heuristics work in specific contexts but not *when* they are utilized. For some heuristics it is assumed that the findings in one specific situation can carry over to different contexts. For example

the loss aversion bias, which has been studied in many different occasions, is seen as a more general applicable principle. Research on influencing factors that triggers a specific heuristic shows that is dependent on situational factors like time and choice architecture and personal factors like intelligence (Campo, 2016).

In order to know if, and so, which heuristics are at work in a specific context it is needed to conduct a controlled experiment. Beside empirical evidence of cognitive biases another way to validate heuristics is by looking at the actual processes that are happening in the brain. In the emerging field of neuroeconomics, neuroscientific methods (MRI, PET scans, eyetracking software and neurotransmitter level tests) are used to add another layer on top of the empirical evidence. The field is still in its infancy but is growing rapidly.

▶ *As example: The Erasmus Centre of Neuroeconomics showed by means of fMRI that deviations from the social norm triggers a neuronal response in dopaminergic areas in the brain. The amplitude of the signal shows that an individual has the tendency to conform to the opinion of a group. Which is known, and empirically proven, in behavioural economics as the social norm.*

Applied Behavioural Economics

We cannot (and shouldn't) force people to always make rational choices, but by recognizing and anticipating heuristics we can design behavioural interventions that help people to make better decisions. Insights into behavioural mechanisms will enable us to work with human nature and make decisions processes more easy and simple. Since

2008, when Thaler and Sunstein published their book 'Nudge', there has been an increase in practical applications of behavioural economics (Naumof, 2014; Hollingworth, 2015).

▶ *The example of loft insulation in the UK is a successful practical application that integrated insights of user with behavioural principles. The Behavioural Insights Team worked together with insulation firms and found out that people do not insulate their houses because it is costly or they do not care but since it is a huge hassle. By interviewing users, including context factors and consider the whole customer journey they were able to increase the uptake threefold by encouraging businesses to add a free loft clearance to their insulation services (Halpern, 2016).*

Theoretically speaking, there are roughly two ways to influence behaviour and decisions making based on heuristics: we can create behavioural interventions to counteract the source of the bias by activating more reflective thinking (debiasing) or by working with existing biases to eliminate other biases (counter-biasing). The latter is also referred to as nudging and is the main way in which behavioural economics theory is applied in practice (Brest, 2013; Milkman et al., 2009).

Both options could be used to influence human behaviour towards a desired direction. The choice between the two depends on the situation. Sometimes it is necessary to stimulate everybody towards the same specific outcome; e.g. using nudges to stimulate people to automatically (and unconsciously) recycle trash. Other times, a more

reflective approach is needed that helps people to make better choices for their own unique situation; e.g. deciding on the type of mortgage that fits best.

To influence the decision making process it is necessary to look at the context and more specifically the structure of the choice architecture. The choice architecture is the way in which information, or decision options, are presented and structured. The presentation of information can trigger specific heuristics and therefore influence decision making. An example of this is framing; telling people they have a 10% chance of mortality (loss frame) triggers a different reaction than highlighting that there is a 90% chance at survival (gain frame). While this is exactly the same information it is processed differently by the brain leading people to respond differently.

Nudging

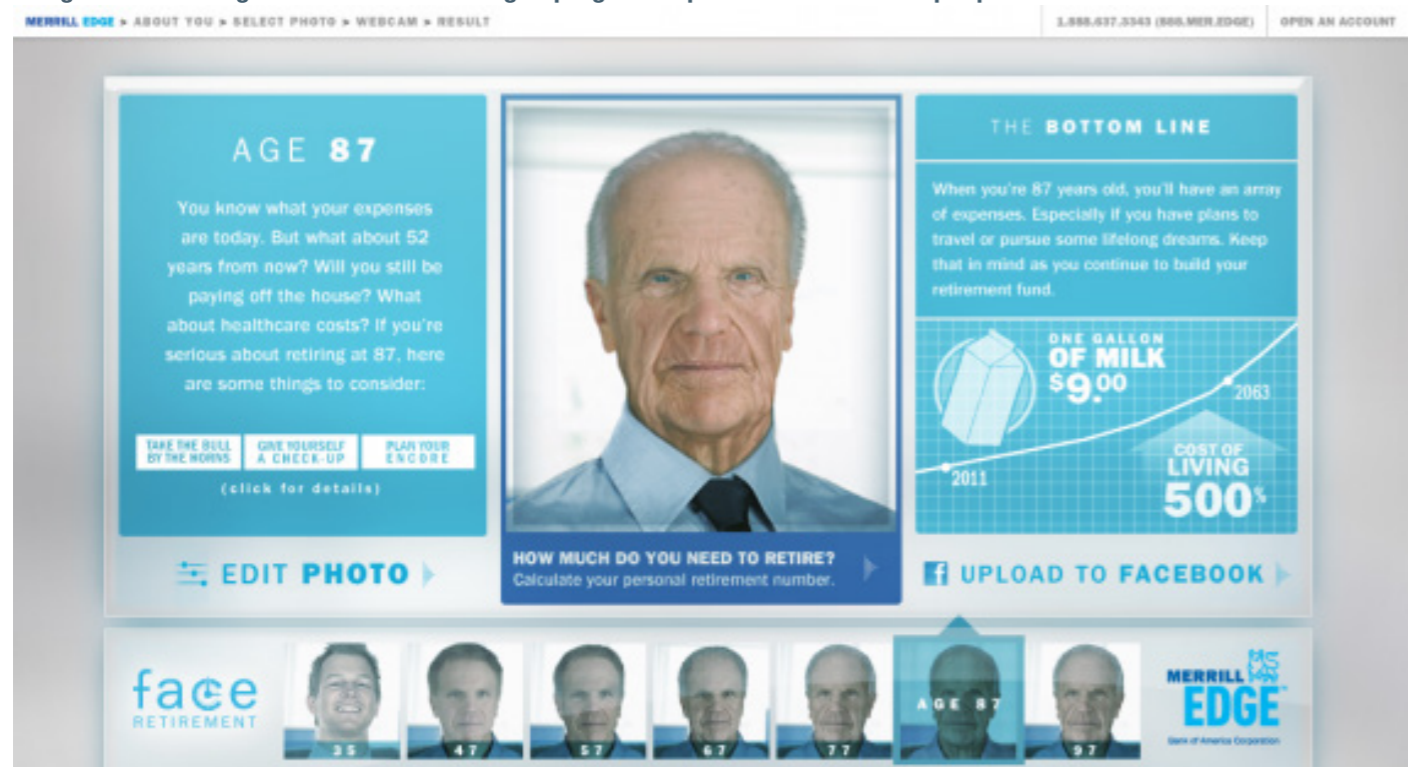
Nudge interventions exploit the automatic thinking processes to increase the chances of people to automatically make better choices. Nudges are interventions that stimulate specific biases to influence behaviour for the good of the individual or society. There are many different interpretations and definitions of nudging. In this project the definition of Hansen (2016) is used:

“A nudge is a function of (condition I) any attempt at influencing people's judgment, choice or behaviour in a predictable way (condition a) that is motivated because of cognitive boundaries, biases, routines, and habits in individual and social decision-making posing barriers for people to perform rationally.”

► *Example of nudging:*
 A nudge could be to set the default option so that employees move into a retirement saving program and savings will gradually increase in percentage points with each pay raise they get. People can opt-out of this default nudge anytime but the use of the default will increase the probability of people continuing with the program (Sunstein, & Thaler, 2008).

► *Example of debiasing:*
 When considering retirement savings options, people can be supported with (interactive) graphs and visuals that show how their decisions now influences the financial future. By making thinking about future benefits easier and more transparent we can counteract heuristics such as present bias and hyperbolic discounting and reinforce rationality (Hershfield, et. al, 2011).

Image 8. Merrill Edge is a bank that uses aged-progressed photo software to let people think about their retirement.



Applications in different domains

The knowledge from behavioural economics has been applied in various domains and to different extents. Advertisers and marketers have been using these insights (deliberately or not) for decades to encourage consumers to buy more. Unfortunately, most of the known applications do not stretch beyond applying a trick or creating behaviourally informed cheats (Naumof, 2014). For example; the use of scarcity in online bookings to let customers know 'there is only one seat left at this price'. These (sometimes controversial) applications, in mostly retail and marketing, have given applied behavioural economics a short sided and negative image. Fortunately, **more and more focus is currently being paid to create nudges that increase social innovation, service quality and customer experiences. By combining behavioural principles with user insights solutions can be created that solve problems in a desired way for both the individual (or the society as a whole) and the company.**

Different domains have been adopting behavioural economics. On the next page a short overview of the applications in different sectors is presented.

Public sector and policy design

In the public sector nudging strategies are increasingly used to improve public services and make predictions about the effects of existing (and new) policies (Halpern, 2016). In many countries, public organizations (like the Behavioural Insights Team in the UK government) are creating ways to implement these principles to stimulate desired behaviour that contributes to the solution of societal challenges like for example obesity, excessive

energy consumption, debts and unemployment. Nudges have gotten increased attention, especially from public sector, since they are low-cost solutions, that can be quickly developed, do not need major technological or organizational changes, can be quantitatively tested and stimulate citizens towards a prediction single direction.

Private sector

Not only public services and governments are interested in applying behavioural insights. Almost all large organizations use the behavioural strategies to influence customer. At just a quick glance some marketing strategies and behavioural interventions look like the same thing - and sometimes they might even be the same thing. Both use behavioural knowledge to influence customer behaviour by adjusting the context and information that is presented. However, the biggest difference is that **nudging should be concerned with creating interventions that foremost support and influence customers in a certain direction that they themselves would have taken, if they had the time and ability to think things through.** Marketing aims predominantly to influence customers to increase profits and not to support them to make the best decision. There are more and more companies that are using behavioural theory to create win-win strategies that benefit both the company and customer. See the Amazone example on the next page.

Besides the behavioural strategies in marketing and advertising there are companies that also start to see the value of nudges in other parts of their business. Businesses are hiring large strategic consultancy firms (like McKinsey, Deloitte and PWC) to attract

► A good public sector example is this social norm nudge from the UK behavioural insights team: to increase 'on time tax payments' a redesigned the letter was made encourage citizens to pay their taxes on time. By including a social norm ("Nine out of ten people in the UK pay their taxes on time") taxpayers' moral responsibility was addressed and therefore it increased the willingness to pay on time. This example has been applied in many other governments as well.

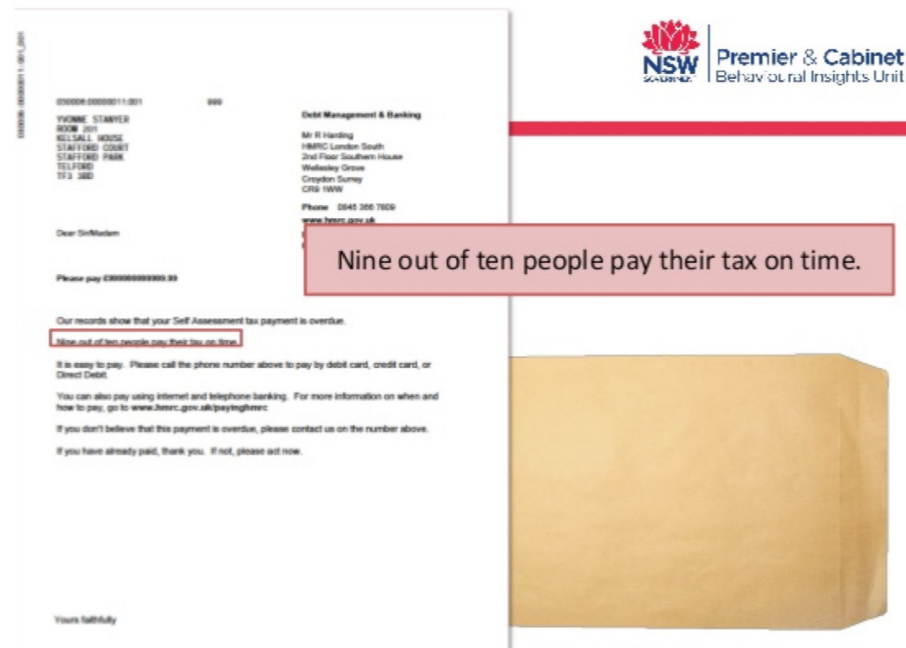


Image 9. By including a social norm the BIT UK increased the on time tax payments by 15%.

► While Amazon makes use of dozen of nudges to persuade customers to buy (more) products they also use it to streamline their process and increase customer experience. When customer have questions Amazon selects by default the quickest option to answer. Instead of having customers email about a particular issue the default options encourages customers to call the customer service directly. Good for the company (efficient use of channels and employees) and the customer (quick answer or solution).

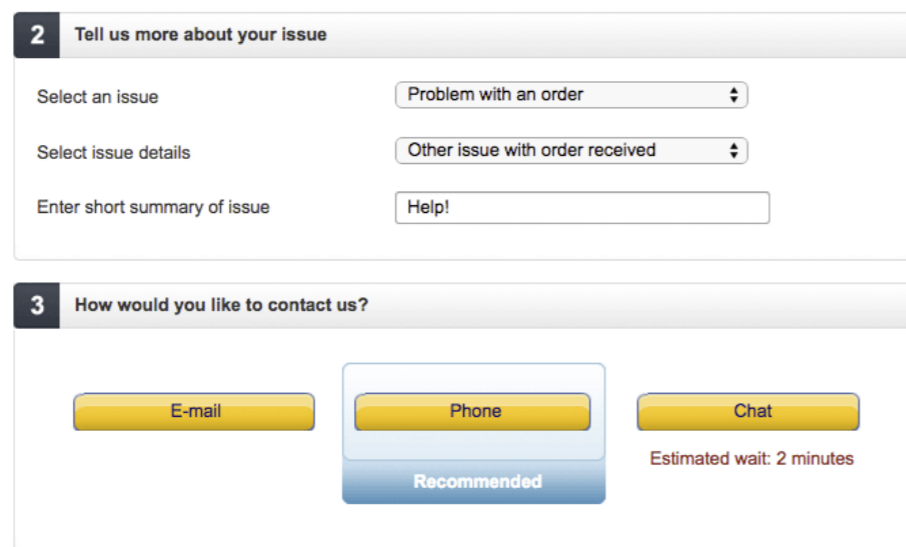


Image 10. The default option of Amazons' customer service nudges customers towards the quickest channel.

and keep their customers or save costs based on behavioural insights. For larger corporates (like Google, Amazon, Microsoft) it is becoming far more common to have an in-house behavioural specialist, Chief Behavioural Officer (Hollingworth, 2014).

Internal in organizations

Heuristics and biases extend beyond individual and personal decisions and also influence how employees behave. More and more are business looking into possibilities to not only use behavioural economics to support and positively influence their customers but also their employees. After all, at all core business operations there are people that carry them out. Nudges can be implemented in organizations in a variety of ways but some examples are: nudging employees to be more productive, make better investment or management decisions, be more healthy or in general make their work easier.

Different types of nudges

There are many different types of behavioural interventions. Aside from the aforementioned difference between debiasing and nudging (otherwise referred to as 'mindful' and 'mindless' (Ly et. al., 2013) interventions vary in their transparency, scalability, sustainability and form. Moreover, behavioural interventions are diverse in the way they are implemented: they range from small behavioural tricks to combined solutions in which multiple nudges are integrated in one intervention across a service process. Nudges can be presented in the physical world, like posters, letters or objects but they are increasingly applied in the digital world as well.

Nudges in the physical world

Physical nudges include products, floor-plans, artefacts or any other adaptation to the physical environment to stimulating people to behave in the direction of a desired outcome. Examples include trash cans that stimulate recycling, footsteps on the ground that guide people towards the stairs in stead of the elevator and smaller plates so people eat less. See image 11 and 12.

Digital nudges

Many people now spend a large proportion of their day online on their laptop or phone. More and more decisions are taken on screens, ranging from selecting a travel destination, purchasing new shoes to findings the love of your life. However, there is still limited knowledge about how we interact and behave in a digital world (Benartzi, 2015; Misch, 2017). Increasingly research into this area is done to understand how we can create digital nudges that assist users in decision making on screens.

Current studies highlight the difference between offline and online decision making. Due to the overload of information and the ease of use (sometimes it only takes a single click) people tend to rely more on heuristics and make automated decisions (Iyengar & Lepper, 2000). Some very effective nudges in the offline



Image 11. Salient neon green footprints guide people in Denmark to trash cans so the streets stay clean.

environment are less effective online. The default option is for instance a powerful tool offline since it requires a little effort from the user to opt-out. Opt-in out of a default online is usually already done by simple unclicking a box (Benartzi, 2015). However, digital nudges also provides new possibilities. As example: user tracking makes it possible to personalize nudges to users making them potentially more effective (Weinmann, 2015)

► *Let's consider two shoppers, both intended to buy a new coffee machine. The offline shopper selects a model in store and has the chance to think about the purchase while waiting in line at the cash register. The online shoppers goes to Amazon and with one simple clicks he has already made the payment. Leaving him with no time to think about the purchase. The ease of use in the digital world is a good thing, it makes our lives easier, but also magnifies the use of automatic and fast thinking.*



Image 12. Defaulting people into eating from smaller plates decrease the calorie intake and reduces food waste (Wansink, 2013).

Validation of nudges

Applications of behavioural economics in the real world are still relatively limited and the research that is done is very much theoretical in nature. Therefore it is really important to test the effectiveness of the nudges in the real world. Academical experiments are very different from applied behavioural economics since they measure the effect in an isolated environment and the sole purpose is to proof specific hypothesis. Whereas in real world applications it is important to test in the field and not only measure the outcome (did the nudge produce the desired behaviour) but also the process. By evaluating how the underlying behavioural mechanism influenced people's' perceptions and experiences a better, and more complete, evaluation can be made.

Different methods are used to test the effectiveness of nudges:

- **Randomized Control Trials (RTC's)**
- **Before and After measurements**
- **A/B testing**

The most applied method is a RTC: people are randomly assigned to a group with the test condition or the control group. The test condition represent the independent variables in the experiment whereas the control group usually represents the current situation. RCT can accurately predict the real world effectiveness but the experiments are time consuming and costly.

Testing on a small scale, before putting it into the market, reduces risks for businesses and public organizations. It also includes the ability to test multiple nudges and combinations to see which interventions are most effective.

Ethical ramifications of nudging

Behavioural interventions are very powerful tools to create positive behavioural changes. However, the knowledge can be used to steer customers in any desired directions, including negative ones. When an airline for examples uses defaults in the purchase process to nudge customers to add extra services like insurances or paid seat selection this is most likely not in the best interest of the customer but purely for the profit of the company. **Since nudging can be used for the good and 'bad' it is important to consider the ethical ramifications.**

When designers create services or products they make choices on the how, what and when of information. By making these choices, designers affect the person using it one way or the other. In

that line of thought, the design of product, services and policies are never neutral and inevitably have an impact on human behaviour, whether the designer intended to or not (Niedderer, 2014 ; Sunstein& Thaler 2008).

The ability to use behavioural knowledge intentionally provides designers with great opportunities to design effective services but also comes with an ethical responsibility. Thaler (2015) indicated that there are three general guidelines:

- 1. Nudges should be transparent and not misleading.**
- 2. It should be as easy as possible, preferable a single click, to opt out of a nudge.**
- 3. The behaviour being encouraged is in line with the welfare and best interest of the person being nudged:**

Nudges should be created to support people in their own informed decision making and help them to arrive at outcomes that usable, useful and desirable to them. Thaler (2015) suggests that in order to test this assumption you have to ask yourself if you would use this nudge on a loved one with the same profile.

Ethics in private and public sector

Ethics are important for private as well as public organizations. Generally public organizations and departments of governments have developed guidelines in order to ensure that organizations create nudges that are transparent, not misleading, provide complete freedom of choice and be in the best interest of the individual or society as a whole

► **Is it a nudge?** Behavioural economics is a multi-disciplinary field that includes elements of cognitive psychology, human factors design, social psychology and so forth. Moreover, the applications vary greatly and there is no prevailing definition of what a nudge is. Nudges are regularly confused with marketing, rules, regulations and financial incentives.

Take for example the traffic lights below. Some might argue that a regular traffic light could be classified as a nudge. However, since not obeying a traffic light is against the regulations, and could result in a financial penalty not everybody agrees. Moreover, regular traffic lights have been around for decades and are sometimes not effective anymore. New types of traffic lights, such as the count-down and in the pavement ones below, are added to regular lights to accommodate the changing behaviours of people.

The concept of nudging is fluid. To provide some reference in this project on what types of interventions are regarded as nudge a simple decisions tree was made. According to the decisions tree the additional cues for traffic lights are nudges but regular traffic light is not (It's considered to be a regulation).



Image 13 & 14. From right to left: 1. Countdown traffic light to provide feedback while waiting, 2. Additional traffic lights in the pavement create awareness for people who are already looking down at their phones.

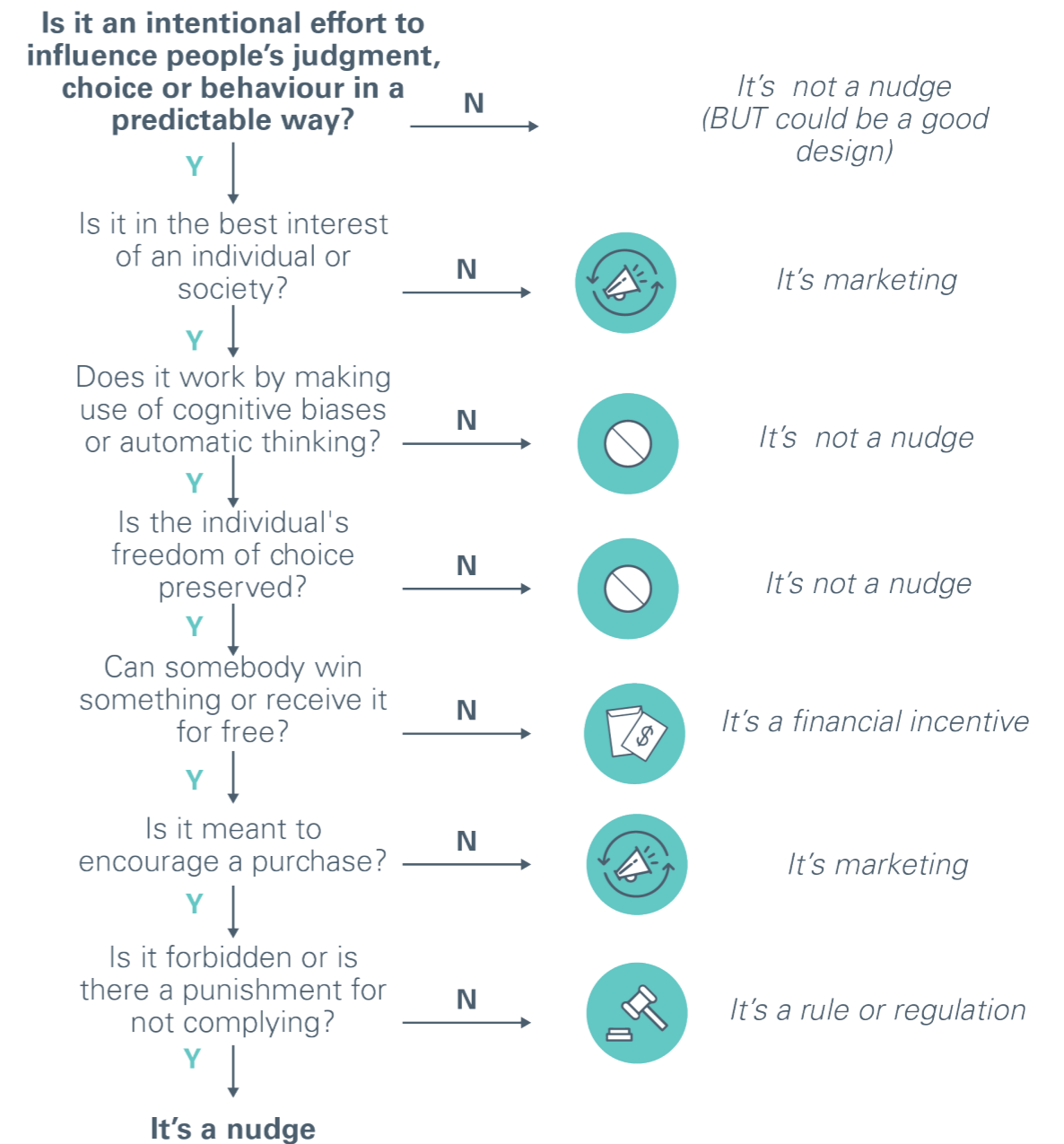


Image 15. A decision tree to provide a simple reference for classifying an intervention as a nudge or not. Based on nudge checklists of the Gravert (2017) and De Ridder & Gillebaart (2015, p. 34).

(Thaler, 2015). However some people object that behavioural interventions are a form of paternalism that is undesirable and nudges restrict people in their freedom of choice. Moreover, it is questioned whether policy makers are able to identify what is 'best' for people and if there is a single best option for everybody (Selinger, 2012). Many academic scholars and practitioners show that is inevitable to nudge citizens and governments should take responsibility to improve choice architectures when the current environment undermines the health and financial well-being of citizens.

The difference with ethical ramifications in the private sector is that companies have no direct obligations to the public and generally this means that the level of ethical standards are different. However, private companies still need to be aware of the ethical considerations of behavioural interventions since it in the long run it can affect their business if they don't. Since customers in the private sector have free choice they can swift service providers or decide to buy another product if they belief they are manipulated to something that is not in their own best interest.

Unintended Consequences and long term effects

Looking back at some of the initial applications of behavioural interventions in services it is now possible to consider the impact on the wider reaching side- and long term effects. Recently studies show that many applications did not account for unintended (adverse) consequences or counteracting market equilibrium responses (Wang, & Keys, 2014; Spiegler, R., 2015; Hollingworth, 2015).

In the development of these nudges limited attention is paid to consider the wider context in which an intervention is placed. Therefore side effects generally get not recognized, let alone included in the validation. There are five main holistic consequences of nudging to consider (Hollingworth, 2015):

1. Displacement effects

A nudge can be effective in on specific context but can displace (unwanted) behaviour to other contexts.

▶ *As example, in Newcastle watching-eye posters were placed at university bike racks to reduce bike thefts. Although bike thefts at that specific location decreased with 62% the bike theft in other places in the city increased. Applying nudges without considering the whole problem and context can create such displacement effects (Hollingworth, 2015).*

2. Spillover effects

An intervention that is targeted on specific behaviours can create changes in related behaviours as well.

3. Sustainable, long-term effects

Currently it is rather unusual to examine how the effects of nudges persist over time; that is, whether people continue to behave differently particularly once an intervention is removed or ceases. (Frey & Rogers, 2014).

4. Backfiring effects

There is a growing body of literature that suggests that nudges can stimulate people to compensate or license themselves in a series of connected behaviours. People generate a feeling of permission

to then do something 'bad' when they have done some good already.

▶ *For example: People who had bought an environmentally friendly product were less inclined to act altruistically in a task and were more likely to lie and cheat (Mazar and Zhong, 2010).*

5. Effects on the Customer experience

A nudge can be effective in changing behaviour but this does not mean that customers will have a positive experience. Nudging people towards a specific direction can create negative experiences since customers are not in control.

Opportunities and future possibilities of applied behavioural economics

The IoT revolution create opportunities to exponentially increase the collection of observational (and personal) data about people's decisions and behaviour. This makes it easier to identify which interventions are more effective to influence behaviour. Moreover, behavioural economics can benefit from the IoT devices and the data that is collected through these devices since more personalized interventions can be created that go beyond 'the one-size-fits-all' approach.

▶ *The new HSBC app is a good examples in which personal data is used to create personalized nudges. The app monitors a user's spending and then sends encouraging notifications designed to improve willpower and help achieve long-term financial goals, and alerts users when they spend more than usual*

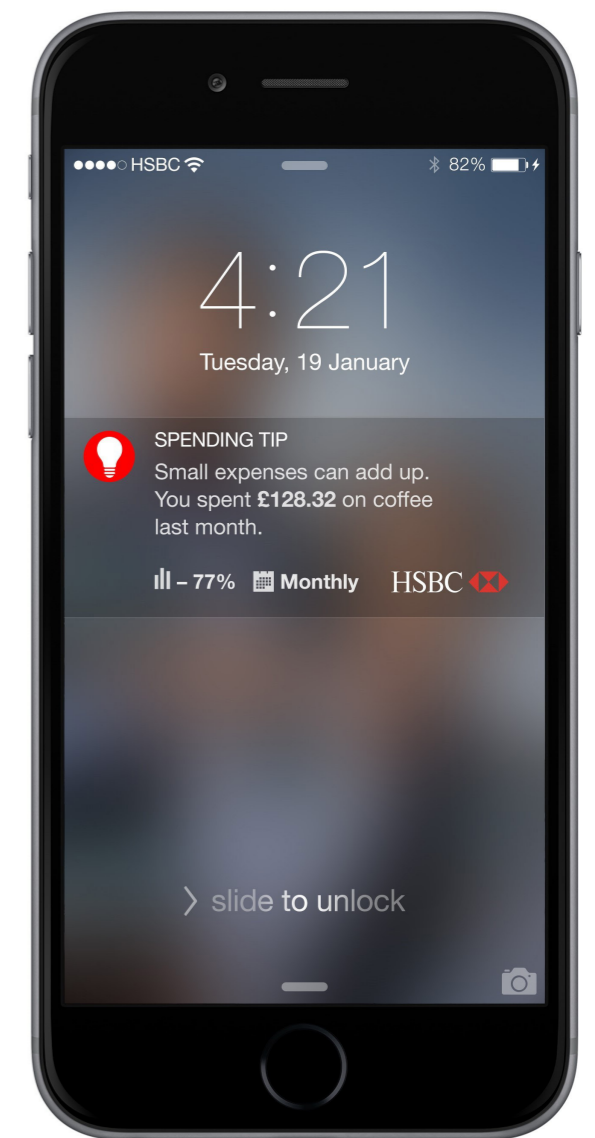


Image 16. A screenshot from the HSBC application that shows users they have made an unusual spending to stimulate responsible financial behaviour.

2.3 OPPORTUNITIES TO APPLY BEHAVIOURAL ECONOMICS IN SERVICE DESIGN

The examples in this chapter have already highlighted some of the possibilities of applying behavioural principles in public as well as private services. Insights into the theory behind human behaviour are highly relevant for service designers since the understanding of users and their behaviours lies in the core of service design (Han, 2009 ; Sleeswijk Visser, 2013). Moreover it's becoming increasingly apparent that every decisions designers make, whether it is the design of an interface, application form or floorplan, have the potential to influence people - whether they intend to or not (Pfarr, n.d.; Lockton, 2010).

Mental shortcuts determine for a large part how people behave and interact with a service (Bisset & Lockton, 2010). So by combining service design with the knowledge of behaviour and decisions making, service designers have the ability to affect behaviour and help users navigate choices in a mutually beneficial way (Galbraith, 2013; Naumof, 2014). Service design, by its multidisciplinary and people-focused nature, is ought to be a very suitable discipline to create effective behavioural interventions that can establish both customer and business value.

“**Designing services relates in many ways to the designing for behaviour and behavioural change within service systems.**” - Brigit mager (2014)

Current use of behavioural economics in services

The use of behavioural insights in the design of services is currently largely done based on intuition

and guesswork (Fogg, 2009; Hollingworth, 2015). Many service providers are simply copying nudges from successful examples but that is not a guarantee for success (Hollingworth, 2015). Experiments and sometimes RCT's are needed to see if the intended effect is obtained. The mixed results of tests of current nudges have shown that academically tested behavioural principles are not always effective and it is difficult to predict the effect in real world contexts (Naumof, 2014; Wang, & Keys, 2014).

Moreover, most existing behavioural interventions in services provide only a thin layer of usefulness or friendliness over pre-existing services (Naumof, 2014). These, mostly singular, behavioural interventions are not grounded in a user-centred design process and do not build on more holistic customer needs. Moreover, these nudges generally exhibit a 'one size fits all' approach. However, in reality there is no single, best choice, that fits with all users, making nudging in service design more complicated than initially implied by some of the literature (Johnson, et al 2014; Mullane & Sheffrin, 2012).

Possible applications

Despite the increased attention for behavioural theory it is not yet common practice for service designers to apply it in their practice.

“**Everything we design inevitably changes people's behaviour, but as designers we don't always consciously consider the power this gives us to help people.**” - Dan Lockton (2010)

Based on the literature on behavioural economics and service design three assumptions have been formulated about how behavioural principles can be of use for service designers. ▼ See image 18.

1. Make user research more effective, efficient and theoretically grounded

The service design process generally starts with a broad exploration of the context and users. With the use of design research methods (like context mapping, interviews, shadowing and service safaris) service designers try to get an in-depth understanding of the customer needs.

Based on a relatively limited number of users and initial subjective assumptions about the problem, qualitative insights are generated that provide a possible explanation for people's actions, needs and behaviours. However these qualitative research methods rely heavily on self-reporting and prompts people to wrongly rationalize their behaviour (Gardiner, 2013).

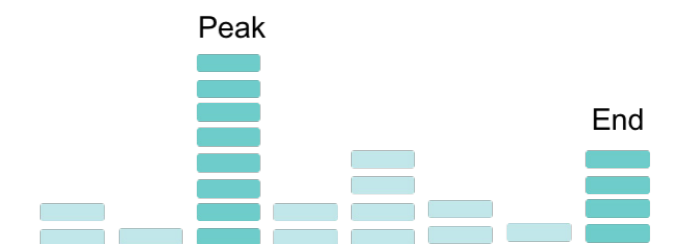
Including knowledge from behavioural economics could be a very suitable to understand customer behaviour, and more specifically decisions making processes, in services (Galbraith, 2013; Naumof, 2014). The theory is empirically proven and generally universal across people and stable over time (West, 2012; Thaler, 1991; Trout, 2005 Kirsten Rohde, 2017). **By integrating behavioural knowledge with user insights more grounded and pronounced explanations about behaviour can be used as a basis in the design process** (Bisset & Lockton, 2010)

2. Increase the efficacy of service design concepts

Some of the heuristics in behavioural economics seem very straightforward in their construct and application. For instance the concept of the Peak-

End Rule which states that people tend to remember and evaluate an experience based on the 'Peak' (the most intense moment either positive or negative) and the 'End'. People that have positive peak and end memories are more likely to repeat this action. This psychological principle has been already been widely applied in the service design practice. By analyzing the final moments and emotional peaks of each touchpoint across the customer journey designers try to create positive customer experiences (Catalanotto, n.d.; Chase, 2001).

► *IKEA is a good example of the peak-end rule in service design. Customer irritations generated by finding and getting products from the stockroom (negative PEAK) at the end of the shopping experience are probably already forgotten when customers exit the store with a nice and cheap ice cream or hotdog (positive END).*



We only remember the peak and end moment of our experiences

Image 17. The Peak-End bias is applied at IKEA. Providing customer with a cheap icecream creates a 'high end'.

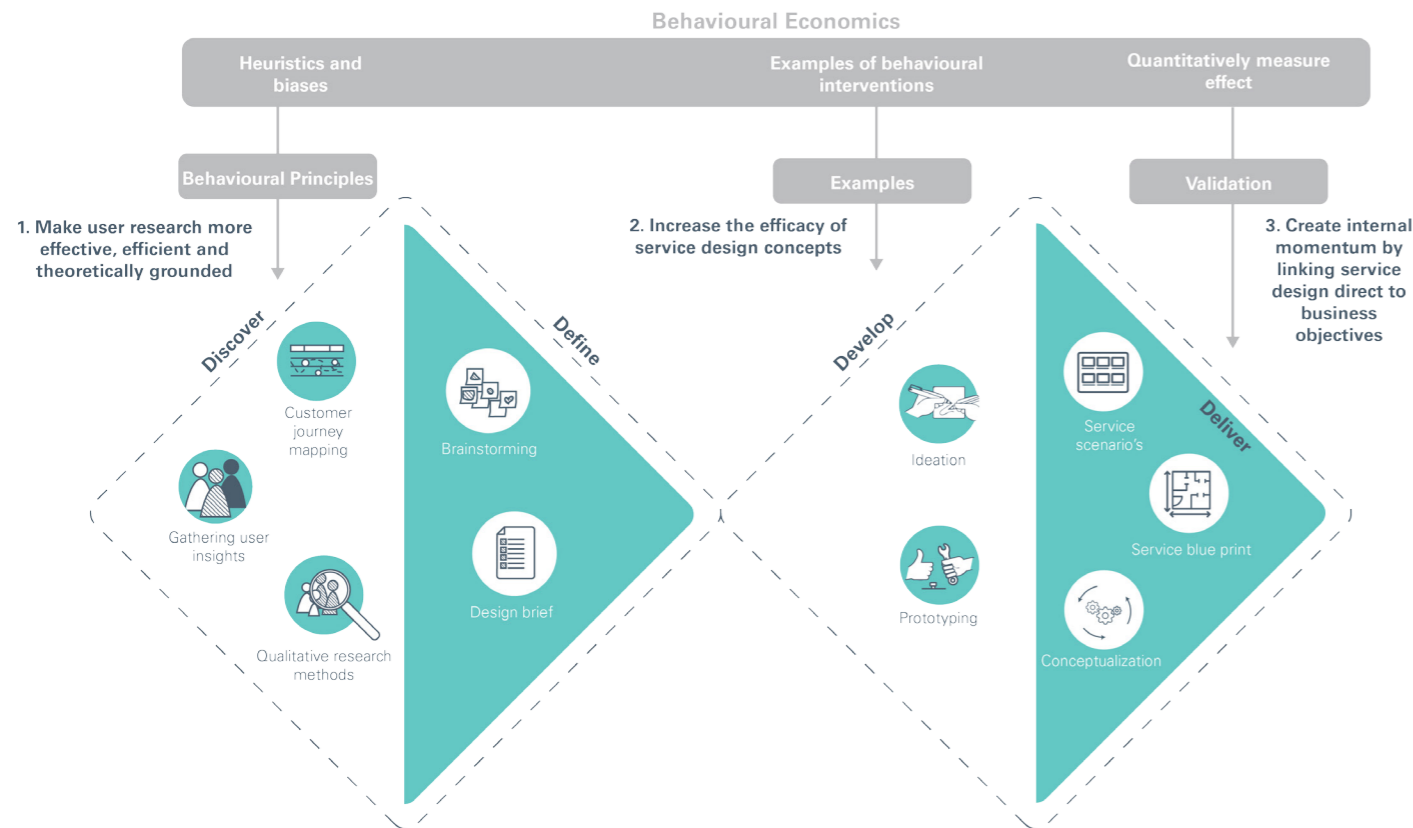


Image 18. Three assumptions on how behavioural economics can be applied in the service design process.

This example shows that service designers might already intuitively apply behavioural insights in the development of touchpoints to help customers with decisions making processes and behaviour changes. Next to the peak-end rule service designers also try to create clear steps in the process, ask minimal effort of the customer, bundle the bad experience in the beginning and make customers feel in control (Chase, 2001). All these examples can be explained and traced back to behavioural economics principles.

However service designers choose to design a certain touchpoint it will inevitably influence how people will

experience and use it (Pfarr, n.d.; Niedderer, 2014). Therefore it would not be a large step to consider that service designers could apply behavioural insights intentionally in their practice.

“We’re becoming increasingly aware of the fact that regardless of the type of design challenge we work on, all of the decisions we make on a given project have the potential to influence human behaviour – whether we intended them to or not,”

- Nikki Pfarr, Artefact researcher.

By applying the principles explicitly, more ‘evidenced-based’ concepts can be created that have shown to be more effective in changing behaviour (DeVine, et. al, 2012; Hermsen, 2014; Niederre, 2016; Galbraith, 2013; Naumof, 2014; Renes & Hermsen 2016; Otani, 2015). Moreover, by looking at effective examples of behavioural interventions designers are able to integrate these proven concepts as inspiration in the development process. However, examples should not simply copied from one context to another. The specific context, user and problem always needs to be taking into account and the results need to be tested in an experiment.

3. Create internal momentum by linking service design more concretely to business objectives

Although service design has gotten increased attention some of the fundamental concepts, like customer experience, remain a bit fuzzy. Businesses prefer concepts that are measurable, like the Net Promoter Score, to evaluate their performance (Vaajakallio et al., 2013). Although they do value the outcomes of a good customer experience it is difficult to quantify it in economic outcomes or business results (Maynes, 2016). Since investments into improving customer experiences do not provided early quantified value it remains difficult for service designers to create internal momentum among the higher levels of the organization and prevent projects from elimination (Mager, 2013).

As Mark Jones from IDEO highlights:

“Most service companies are great at calculating the costs of introducing a new service, but have a harder time modelling the potential upside from

the introduction of a new service.... All of the uncertainty around how to evaluate success can often stop a new service from being introduced at all... ”

In order to increase and clarify the link between service design and business value behavioural economics could be part of the solution. By clearly formulating what type of customer behaviour will create value for a business and subsequently quantitatively measure the (economic) outcomes of different experiences an explicit link to value can be build (Maynes, 2016; Welch, 2010).

2.4 PROBLEM STATEMENT

Behavioural economics has been a well-established field in the academic world and increasingly practical applications of these behavioural insights are created in various domains. Methods, models and card-sets have been created for designers to use behavioural theory, but no systematic and holistic approach is yet developed to use behavioural insights as a driver in the design process of services.

Is it a nudge or just good design?

It has been discussed in this chapter that not every design that changes behaviour is a nudge. Some effective products and services that change behaviour towards a desired direction are created without the knowledge of behavioural economics. Designers have gathered the skills to create these effective designs by experience and intuition. For them it is just practicing good design.

“Not all good design, even good design that influences behaviour, is a nudge. A well-designed prison cell is more likely to deter prisoners from trying to escape than a poorly designed one. But that does not make it a nudge.” - Peter Ubel, Forbes

The difference between good design and a nudge lies in the intentional effort to influence specific mental mechanisms to create a predetermined behaviour change. Moreover, the effect of a nudge is measured with for example a RCT or before-after measurements. These experiments can show how a

change in the environment affects behaviour, by how much and for how many of the affected people.

A good design and nudge can both have the same positive outcome, in some situations good design can even be better. However, the design process to get to a 'good' design and nudge is different and that will be the main focus in this project. It is assumed that intentionally applying behavioural knowledge in combination with design experience and intuition can benefit designers to create effective solutions in a more efficient way (DeVine, et. al, 2012; Hermsen, 2014; Niederre, et al. 2016; Galbraith, 2013; Naumof, 2014; Renes & Hermsen 2016; Otani, 2015).

Limitations of existing tools and design methods

With the rise of an user-centered perspective in the product design practice, there has been an increased focus on human behaviour. Designers are more and more into the "business of behaviour" - they try to understand and model for specific human behavior based on different behavioral models (Fabricant, 2009). Consequently, several design strategies have been introduced to model behaviour, often for social or environmental benefit. Directions include "design for emotion" (Hekkert & Desmet, 2002; Walter, 2011), "design for persuasion" (Fogg, 2009) and "design for sustainable behaviour" (Lilly, 2009; Lockton, 2008; Wever, 2008), among others.

However, the majority of these strategies have a strong focus on particular type of behaviours or

specific field of expertise and do not accommodate for the different challenges, sectors and type of behaviours that need to be addressed in service design.

Dozens of models, short-lists and card sets have been emerging concerning behavioural economic principles that intend to translate the theory into practices of various domains. These behavioural economics based methods and card sets are generally used as a tool for inspiration to generate ideas during brainstorming and sometimes lack the required profoundness. Since the principles and their examples seem simple and straightforward they are intuitively (and sometimes randomly) picked up and copied in various contexts. Designers forget that these nudges are tested in isolation in a lab context and not in the real world where there are more factors to account for (Hollingworth, 2015). Applying nudges at 'random' can work, but it does not account for potentially unintended adverse consequences (Wang, & Keys, 2014; Spiegler, R., 2015).

The current design strategies and tools that incorporate behavioural economics are either focussed on:

- **theory:** like the behavioural model from B.J Fogg or habit loop of Nir Eyal
- **process:** like the Design for behavioural change from Stephen Wendel.
- **or execution:** like the EAST cards.

While these different behavioural strategies have shown significant opportunities there is yet not an

approach focused on the design of services that includes the organizational, business and customer experience perspectives.

This project does not objectify to make an academic contribution to service design rather it focusses on providing Livework with the practical tools they need. Up till now the existing theories, models, processes and tools haven't been presented in a form that is useful and suitable for service designers of Livework.

Problem statement

Livework wants its service designers to intentionally apply behavioural economics in their practice to fundamentally understand and change customer behaviour as to improve business performance and the customer experience.

Therefore, **this project serves to investigate ways to support Livework designers to incorporate behavioural economics theory into their design process.**

3 EXPLORATORY RESEARCH

In this chapter

- 3.1 Research setup
- 3.2 Livework Studio Analysis
- 3.3 Design strategies for behaviour
- 3.4 Internal Multi Case Study Analysis
- 3.5 External Analysis
- 3.6 Conclusion and key take-aways

This chapter provides an overview of the exploratory research that has been done in order to get a better understand of the possible applications of behavioural economics in service design. Two internal case studies were conducted at Livework alongside two external studies. For each analysis the research method, goal and procedure is described followed by an overview of the insights.

3.1 RESEARCH SETUP

The literature study provided insights into how behavioural economics can be applied in service design. In order to refine the theoretical assumptions and include a practical viewpoint an exploratory research was conducted.

In this project a focus is given to the service design practice as performed by Livework. Therefore two internal case studies were performed. The first case

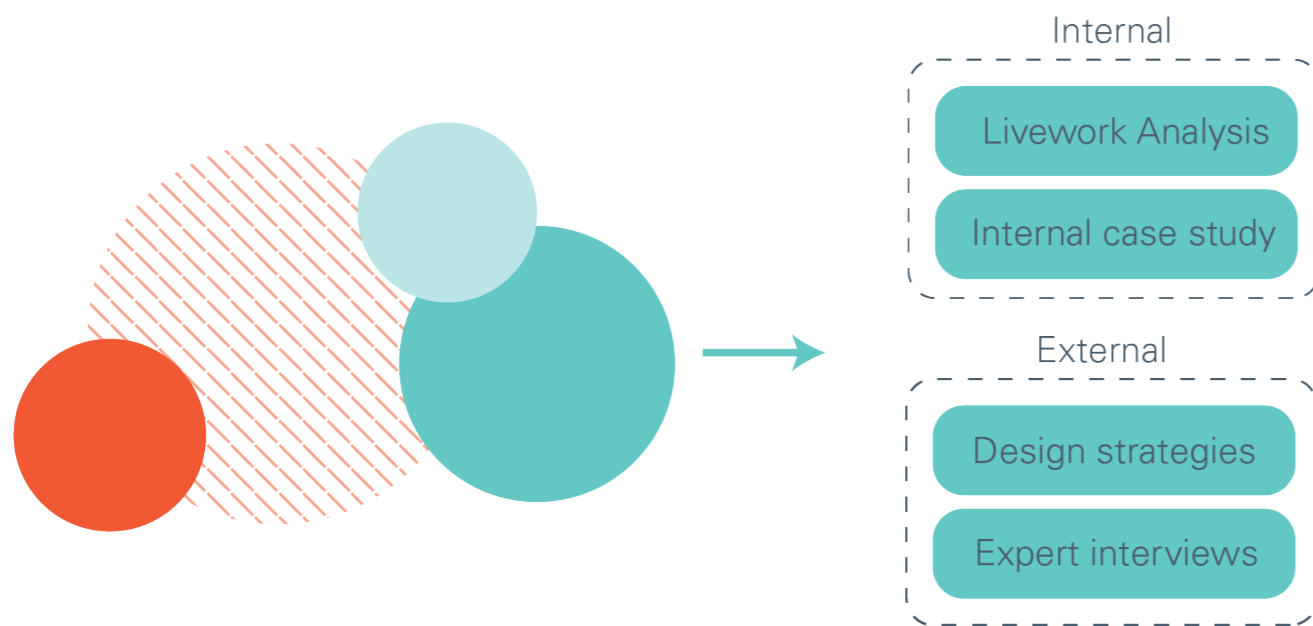
study was conducted to acquire an understanding of the Livework way of working. The second case study involved seven projects in which behavioural economics has been applied.

In order to gain a broader understanding of behavioural design and applied behavioural economics two external analysis were integrated. A short literature review was done to find existing

behavioural design strategies and behavioural economic design tools. Three interviews with practitioners from different domains were carried out to better understand the applications of behavioural economics.

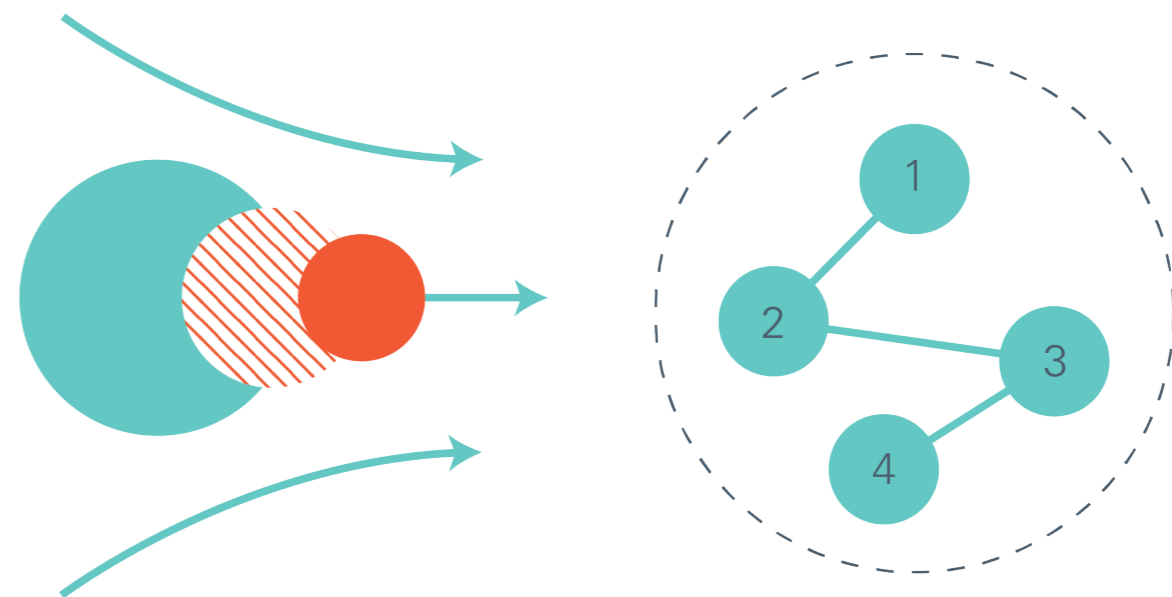
The key insights from the four studies will be presented below. Insights were categorised as either a success factor or hotspot.

- ★ A success factor is an activity that has been experienced as useful or effective.
- ⚡ A hotspot is an area in the design process where the designer or client experienced a problem or struggle which has a high potential for solution



Theoretical background
(literature review)

Case study Analysis
(exploratory research)



Insights
(synthesis)

Design guidelines for systematical process
(proposal)

Image 19. Overview of the different research elements in the project.

3.2 LIVEWORK STUDIO ANALYSIS

Livework Studio was founded in 2001 and is one of the first global service design agencies. They recognized that organizations were struggling to innovate and realize their potential in the digital age since they were too product focused. By merging creativity, research, design and consultancy Livework can help organizations both in the public and private sector to improve, transform and innovate services we use today. By aligning organizations with customer needs Livework creates services that are more useful, relevant and desirable for both the organization and user.

Livework is a global company with three main offices in London, Oslo and Rotterdam. Through the years Livework has created partnerships with (design) universities to support and develop the service design discipline. By combining the knowledge from practice with academic frameworks they are able to shape the service design discipline. By now, service design is a well-defined field with standard tools and methods. More and more design agencies are supporting organizations to improve existing services to make them more effective and more customer centric.

Livework wants to stay at the forefront of the service design practice and moved beyond the standard practices. By not only focussing on the customer but also including organizational challenges and business performance, they are able to create bigger impact, both for the customers and for the business.

Livework wants to maintain their leading role and is therefore investing in thought leadership through Livework Insight. Experiences from over 15 years of design consultancy are codified to create internal and external understanding of human, business and organizational behaviours. By analysing their own practice and experimenting with new strategies, concepts or tools Livework tries to find new and innovative ways to resolve business challenges.

Relevance of this assignment

Incorporating knowledge from behavioural economics in the service design practice is a new and relatively unexplored domain. Livework wants to explore the possibilities and ways to fundamentally explain customer behaviour and create interventions that guide customers in a desired direction. Informal conversations with the founding partners and creative directors of Livework highlighted the four main reasons to gain knowledge and experience with behavioural economics. See the next page.

Research Objective and Approach

It is important to get an understanding of the mindset and design process within Livework in order to create a systematic design process that will fit with their current practice. Therefore a short analysis was done to find insights into the Livework way of working. This analysis was done in collaboration with Jan Koenders, a fellow graduate intern at the Livework studio. Together we did six interviews with designers across the different studio's. The thematic guide was partly based on findings from research

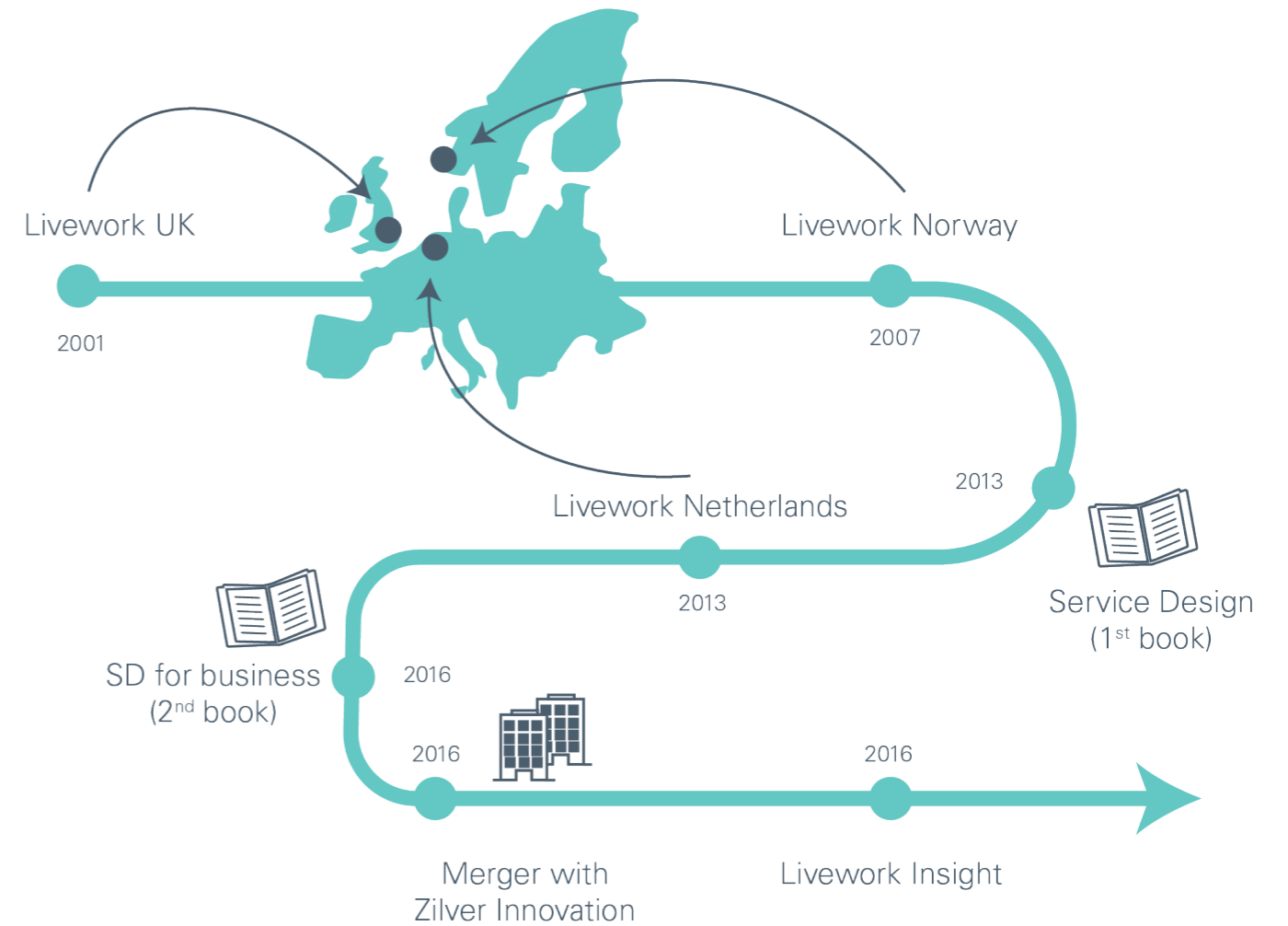


Image 20. Time-line with important moments in Livework Studio.

performed by a former graduate (van der Togt, 2017) earlier this year and the Service design for business book that is written by the three partners. The semi-structured interviews touched upon the current design processes, mindsets within the company and teams, applied tools, delivered outcome and the competitive advantage of Livework. The interviews were voice recorded and interpretations were captured on statement cards. Together we analysed the data and created clusters and themes. The final step, translating the clusters to findings, was done separately and is reported below.

Findings

The findings that are relevant to this project have been structured according to three Livework beliefs and four important factors in the design process. A visual overview is created that show the different stages of the Livework design process. See image 21. Common activities and methods and tools that are used often are plotted along the eight phases. The importance of the three Livework pillars (business, organization and customer) in the different phases is shown as well.

Four main reasons to gain knowledge and experience with behavioural economics

1. Offer the 'Managers Dream'

The current offerings of Livework are focussed on delivering a great customer experience. Service design terms like customer experience are gaining acknowledgement but still remain 'fuzzy'. Investments into customer experience do not show direct links to specific business objective like revenue growth or cost savings. Livework wants to create a less fuzzy offering and use behavioural economics as a way to offer a 'manager's dream': nudges are quick and low-cost solutions that show direct business value and do not require investments in technology or structural adaptations of the organization.

2. Scientifically back a designers' gut feeling

Designers use qualitative research methods such as interviewing to get customer insights. Assumptions are made based on limited numbers of user, experiences and intuition. These methods provide in depth insights which are usually more informing than traditional research methods. However, designers generally do not understand the underlying reasons for certain insights and clients sometimes question the validity or generalization of the claims. Behavioural economics can provide designers and clients with a scientific backing of the insights.

3. Combine scientific character with agile way of working

Behavioural economics can also help to create more confidence in developed design concepts. While prototyping solutions is quick and provides some insights into the effectiveness it is not a guarantee for success. Behavioural interventions that have already been found successful in experiments can form a more solid foundation to set up new concepts.

4. Maintain thought leader position

Behavioural economics is gaining a lot of attention and more and more organizations are looking at ways to apply it. However, the field is still very theoretical and current interventions are concentrated on just a couple of domains; ranging from behavioural informed cheats in marketing to one-size fits all nudges in public services. In service design this application is still very new and could provide Livework with a differentiating proposition.

Three Livework Beliefs

1. Focus on customer, business and organization



Livework projects work at the cross-section of three pillars; customer insights, business drivers and organizational capabilities. There is a focus on gathering deep and actionable customer insights to improve the customer experience and anticipate on customers' needs. By integrating business drivers and organizational capabilities it is possible to understand how an organization should deliver this improved customer experience and what it will mean for the business in the long run.

“ In our work we try to align the customer experience with the business priorities... and to get it across the hurdles of the organization.” - Designer

2. Taking an outside in perspective



Designers mention that most of the time clients do not know what their problem is or what their customers actually want. The outside in perspective enables designers to show the client what customers evolving needs and motivations are. This human-centered approach helps clients to become aware of problems and create solutions.

“ It is most important to get the client away from their internal thinking and show them the end users' perspective. ”

- Livework designer

3. User, Customer, Consumer and Human perspectives



To get a full understanding of the customer different abstraction levels are explored: understand the actors and factors that influence a service for the user, customer, consumer and human level. Which could all be the same person, just in different moments in time. Combining and switching between these different abstraction levels enables designers to understand how people behave in different roles in relation to a business.

► Image 22 on page 60 shows the different abstraction levels in the travel industry.

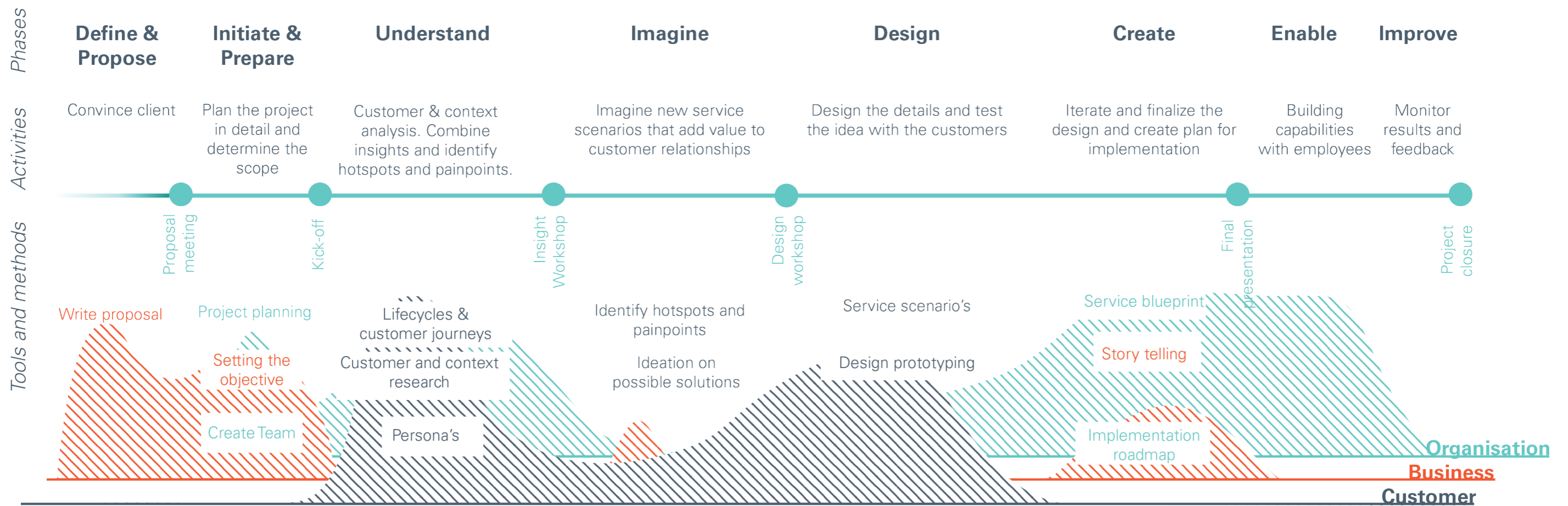


Image 21. Visual overview of the Livework process in the eight phases

1. Type of projects

Livework has many different clients from different sectors. The majority of the clients are private but cases for public or third sector are also done frequently. Most projects focus on service improvement and the typical outcomes range from discovering unidentified customer needs to verified and detailed design concepts that can be implemented. Additionally, Livework offers training workshops to build internal capabilities.

“A big part of our delivered value is running a good project. It is a combination of engagement and the expert content (blueprints and customer journey's.” - Designer

2. Project structure

Projects are structured in eight phases, as seen in image 21. These phases are not strictly followed but do offer structure internally as well as externally to the client. The process is very flexible and is often tailored to the specific client and project needs. Although large difference appear, generally the understand and imagine phase have the focus. The context and user are analysed, a customer journey is created in which problems are identified and solution directions are set. Limited time is available for the create and design stage and concepts are only created on an abstract level.

“Normally we have a heavy insights phase. In bigger projects we also create concepts and pilot them.” - Designer

3. Methods and tools used

Designers use service design tools, qualitative research methods and lean approaches. Interviews, service safaris and context mapping are used to gather deep user insights. Customer journeys serve as a guidance throughout the whole project while service blueprints incorporate more detail and implementation elements of the project. Concept creation is an iterative process and prototyping is used to quickly create a minimal viable concept and test it in context. Qualitative insights are used to make iterations and validate ideas with real customers.

“Customer journeys are always very useful to support the project, to get focus or to identify hotspots.” - Designer

4. Client engagement

Almost all stages incorporate co-creation with the client in the form of workshops. By pulling the client and relevant stakeholders in, Livework creates engagement and ownership. This is necessary to increase the chances of successful implementation of the ideas. Service design is still relatively new for businesses and so they need to be 'taken by the hand'.

“We include the client a lot.. after every phase we have a co-creation workshop.. to include them in the development of solutions.. so they can see the value of the project” - Designer

Conclusion

From this internal analysis it can be concluded that the developed design approach and supporting tools need to take into account the following success factors:

★ **Incorporate the three pillars:** the integration of customer insights, organizational capabilities and business drivers needs to be facilitated. Behavioural economics is very suitable to do this since it combines insights into customer behaviour with the structure and process of the environment and can be directly linked to business objectives.

★ **Incorporate the possibility to switch between abstraction levels:** it should be possible to work on different abstraction levels of users, customer, consumer and human. Behavioural economics suggests to be suitable to work on all levels since it is concerned with human behaviour.

★ **Process and tool flexibility:** Since design processes and tools are used flexible it should be possible to tailor the approach and design tools to specific project and client needs.

★ **Integrate possibilities for co-creation:** Insights and concepts are generated and shared in workshops with the client to build engagement and ownership. The new design approach needs to enable designers to share insights in an effective manner.

★ **Match tools to customer journey:** Customer journeys are used throughout Livework projects to create structure, integrate insights and generate service solutions. In order to increase the chances of application of the new tools it would be beneficial to link the tools, or build upon, the customer journey.

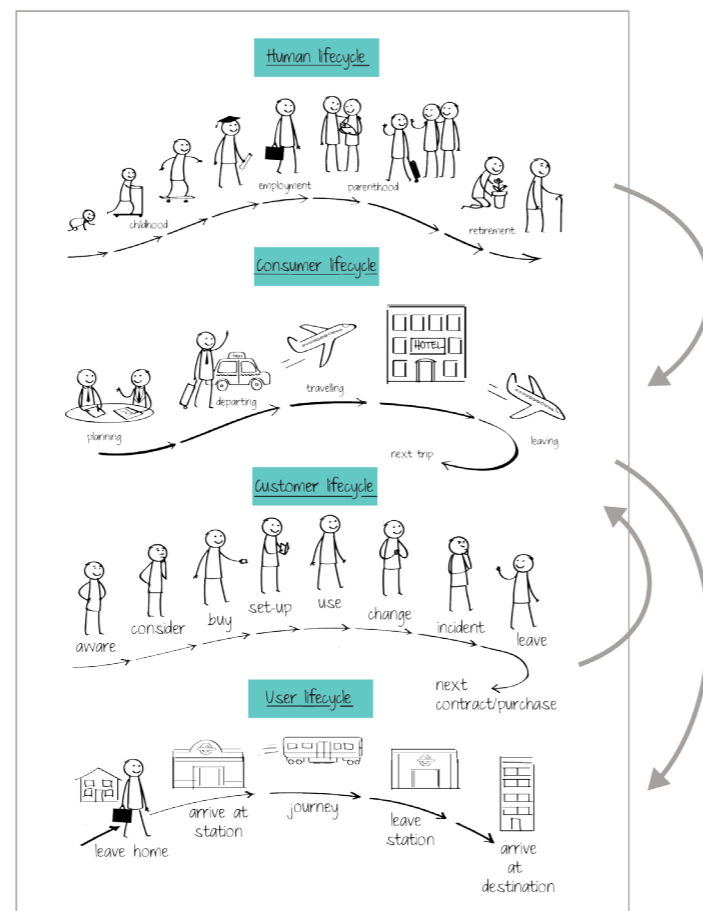


Image 22. The different abstraction levels that are used in a Livework Project. Image is adapted from Reason, Løvlie & Brand Flu, 2015

3.3 DESIGN STRATEGIES FOR BEHAVIOUR

This chapter will include a short research into the existing behaviour change models, processes and tools. These existing approaches are briefly discussed concerning their applicability in the domain of service design and subsequently plotted in a matrix. The exploration of the current design strategies highlighted two success factors and four hotspots. These factors will be taken into account in the development of the design guidelines and requirements in chapter 4.

Research goal

This short research aims to identify gaps in the range of existing behaviour change methods and tools, by exploring current behavioural design literature. The applicability of these tools in service design are identified by exploring the strengths and weaknesses. The following research question was set up to explore the strengths and weaknesses of existing tools:

How are current design strategies and tools used to create behavioural interventions and which elements are useful in the design of services?

Existing support for behavioural design

There are many different supporting tools for designers to design for behaviour change. The support varies; there are behaviour design processes and methods that offer an overall guidance and framework for the phases in behavioural design projects. There are also design tools that either mainly serve to understand behaviour or create ideas for interventions in the ideation.

Five processes and four tools were taken into account in this research. They were selected on the criteria that they included behavioural economics principles and had additional literature on the development and intended use. The literature related to these nine strategies was studied.

The review of these nine supporting processes and tools quickly highlighted that there is a difference between very specific (to a specific type of behaviour or discipline) or generic applications of the tools. Moreover, they are either really practical or more theoretical orientated. All nine processes and tools were plotted on a matrix to get an overview. See image 23. Most processes are very theoretical in nature and provide an abstract overview on design for behaviour change. The tools are more solution orientated and are created to support the practical development of ideas and interventions. Design for Habit, Design for persuasion and MINDSPACE are specifically developed for a discipline or type of behaviour. All the others are developed to serve a more generic purpose.

Findings

Comparisons between the nine strategies were made. Strength and weaknesses of the strategies and the applicability in the service design process was identified and summarized in the following success factors and hotspots.

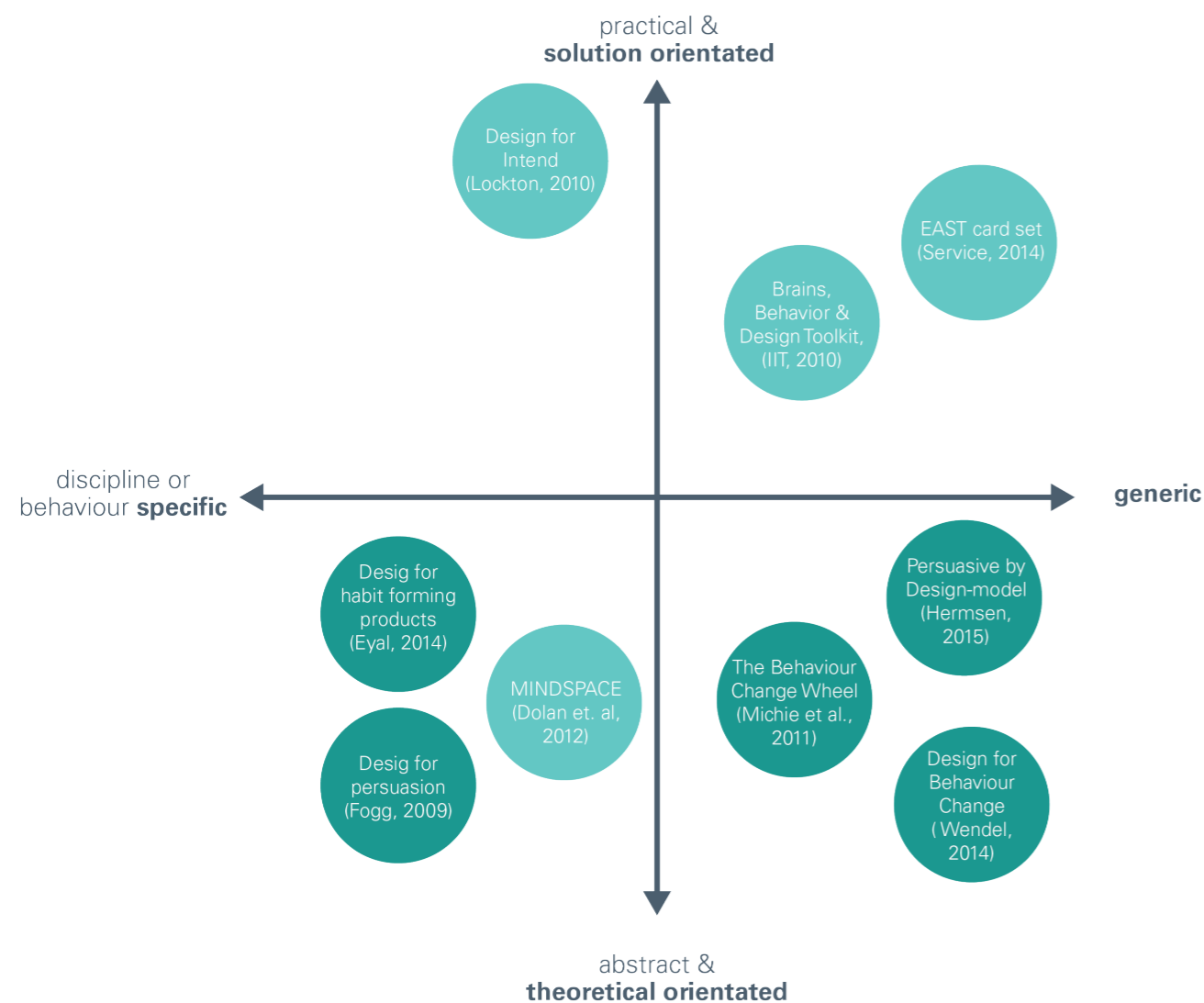


Image 23. The processes (dark blue) and tools (light blue) are plotted on their orientation and applicability.

Success factors

★ **Dual system theory is an important element to understand and influence behaviour.**

The majority of the tools included the distinction between System 1 and System 2 thinking. Some models even use this distinction as the foundation of the model and design process. It is stressed that to create an effective change designers need to understand which elements of the current and desired behaviour are automatic or reflective.

“ *The foundation of the persuasive by design model reflects the notion that most of our behaviours are executed in one of two modes: either automatically (purple layer) or with reflection (black layer).* - Hermsen, 2015

★ **Formulate a clear and specific target behaviour prior to the design process**

All process tools include the formulation of a target behaviour in the first step. To design for behaviour change it really important to select a narrow focus and be very specific and concrete in the desired

outcome. Target behavioural statements generally include the action, actor and the overall outcome. Some even include the metrics on who to measure the success of the intervention.

“ *Designing for Behavior Change builds upon a clear understanding of the target outcome, action, and actor* - Wendel (2014).

Hotspots

⚡ **Existing methods and tools support specific field of expertise or particular type of behaviours**

The design tools and methods are often focussed on specific disciplines (product design, policy design or UX design) or target to create interventions for specific behaviour; for example social good or environmental friendly behaviours. In service design many different types of behaviours (and sometimes even design disciplines) are included. The approach for Livework therefore needs to be of a generic nature.

“ *The Design with Intend Method has been developed primarily in response to the need of influencing user behaviour to reduce the environmental impact of products* - Lockton, 2010

⚡ **Tools and models are either very theoretical or practical.**

Some tools and processes are remain very abstract and or theory focussed. These tools only include a rough process and overall structure but lack the practical applicability. There is limited guidance on which activities can be done and that can be used by designers with no prior knowledge or expertise.

On the other hand there are tools that only focus on the practical applications and examples. These tools lack the required profoundness to really understand the behaviour and implement the activities in a systematic design process.

Livework designers will need to be able to use the tools without prior knowledge or expertise. The tool to be developed will need to be very practical in nature and will need limited guidance on how to use them.

⚡ **There is no integrated approach that includes all stages of the design process.**

The existing tools focus on using behavioural insights either as a research tool (to explain observed behaviour), assessment tool (to evaluate current service experiences) or ideation tool (to generate ideas during brainstorm). In general, insufficient attention appears to be given to understand the existing unwanted behaviour. Moving to ideation without this analysis will generate ungrounded ideas and interventions.

“ *The method is a ‘suggestion tool’, inspiring design solutions by suggesting techniques, with examples applicable to particular target behaviours.* -Lockton, 2010

Livework designers needs to right balance between the complexity of behavioural models, guidance of a process and the practical applicably of some of the ideation tools. It must be clear how the different practical actives relate and combine in the overall design process.

3.4 INTERNAL MULTI CASE STUDY ANALYSIS

Recently, Livework has been applying knowledge from the field of behavioural economics to get a better understanding of customer behaviour. Multiple projects were done for different companies and across sectors. Some projects explicitly applied behavioural principles to create interventions while other projects only used it as a source of information and inspiration. Different designers worked on these projects and different approaches were followed. The design processes in these projects are still being improved, developed and build on learnings from each other.

Research goals and question

To get an understanding about the current application of behavioural economics a multiple case study analysis is done to review and describe seven Livework projects in which behavioural theory has been applied. By analysing the process and activities, the success factors and challenges of the different approaches can be identified. An additional goal of this research is to identify how Livework designers can be best supported to design interventions based on knowledge from behavioural economics. In order to achieve these research goals the following research question was formulated:

In what way and form are behavioural economics principles used by Livework designers (and clients) to create behavioural interventions in services?

Research Approach

This exploratory research consisted of an internal desk research and 11 generative interviews with Livework designers and client. The initial desk analysis on the project materials was done to create a better understanding of the projects. The findings from the literature review and desk research were used as a thematic guide for the interviews in order to make sure important topics were included (Patton, 2002).

Rich and anecdotal information is required in order to provide a throughout understanding of the current projects (Eisenhardt, 1989). Therefore a generative research approach, called context mapping, was selected. ▶ See the next page for more information about context mapping.

Case selection

With the use of a purposeful sampling technique, seven cases were selected on the condition that these were (almost) completed, varied across sectors, performed by different designers from the three main Livework studios and have both explicitly and in-explicitly used behavioural economic principles.

Research Procedure

Designers received a sensitizing booklet prior to the interview to prepare and trigger them to already start thinking about the project in question.

Six Livework designers were interviewed either face-to-face or via Skype. The interviews were semi-

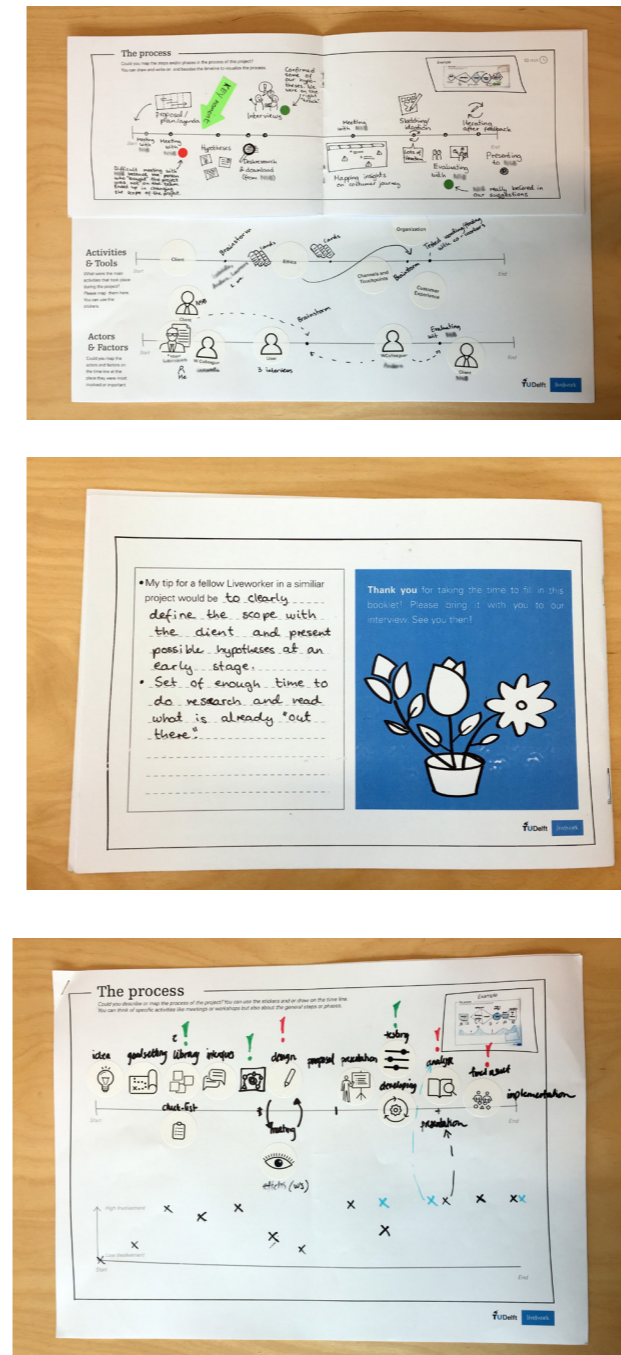


Image 24. Example of sensitizing and generative assignments in this research

Context mapping

This generative research method is used to acquire a deep understanding of user needs. Context mapping can help to capture emotional responses from participants by letting them create designerly artifacts such as collages and drawings (Sleeswijk Visser, 2005).

In this research context mapping is used to let designers and clients reflect on the project and express their experiences. By using sensitizing and generative assignments participants were helped to voice deeper layers of knowledge (Sanders & Stappers, 2008).

Designers received a sensitizing booklet with 4 small assignments; they were asked to complete a timeline and indicate positive and negative moments in the project. A knowledge web was completed with information that was gathered and used during the project.

By asking about present, past and future experiences it was possible to engage in a dialogue with participants that provided information on the experiences of several projects and created inspiration for future design process steps and tools.

structured and involved two generative assignments that build upon the assignment in the sensitizing booklet. The questions covered five subtopics including: Activities and tools, Actors and Factors, Success-factors and challenges, Knowledge and resources and Future needs.

Five clients were involved in generative interviews either face-to-face or via Skype. The questions covered five subtopics including: Process, Client involvement, Success-factors and Challenges, Expectations, Outcomes and Perspective on behavioural interventions. Two generative assignments (a project time-line and reflection collage) were used during the interviews.

All interviews were voice recorded and notes were taken during the interviews. From two of the seven

cases it was not possible to interview the clients. These two cases (case C&E) were thus only used as additional verification of findings in the cross-case analysis. A elaborate explanation of the research procedure, assignments and the outline of the different interviews are shown in Appendix A.

Data analysis

Statement cards were created from the audio recordings and 'an analysis on the wall' was performed (Sanders & Stappers, 2013). A with-in case study was done to find patterns and themes. Additionally a cross-case comparison was performed to allow for general patterns to emerge. The themes were based on (dis)similarities and quantity of insights that were gathered. All themes were compared to more general and typical factors in the Livework design process. This filter enabled to select the insights that

are specific to behavioural projects. The data analysis procedure is visualized in image 25.

► For a more elaborate explanation of the data analysis procedure and detailed findings, see appendix A.

Findings

Case descriptions

The different cases that were included in this study are summarized on the next page. Elaborate case descriptions can be found in Appendix A.

Journey map

The insights from the cross-case analysis were visualized in a journey map in which the phases, activities, supporting resources and needs were plotted. See image 26. This journey map forms a representation of the seven processes that have been studied. Although none of the processes were exactly the same, the approaches and steps showed large similarities.

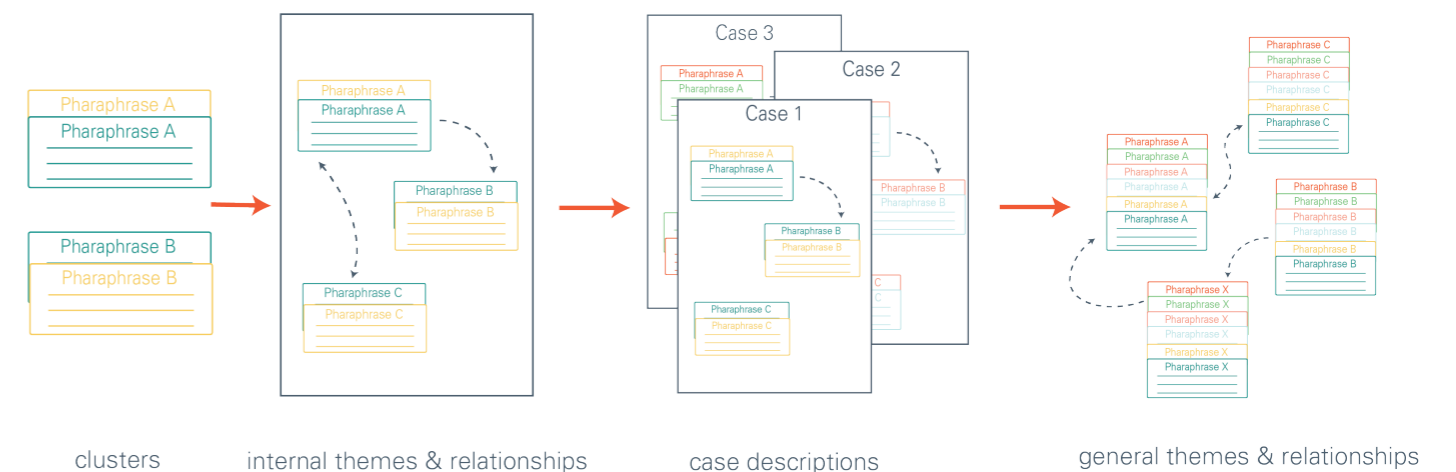
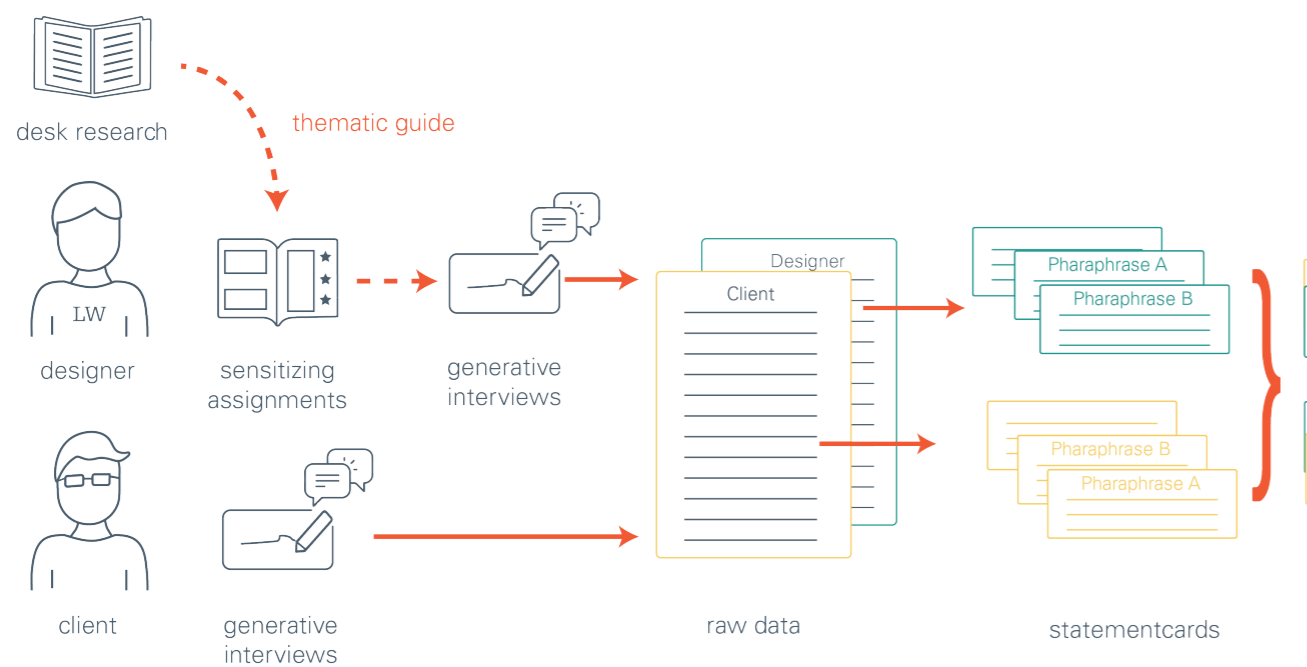
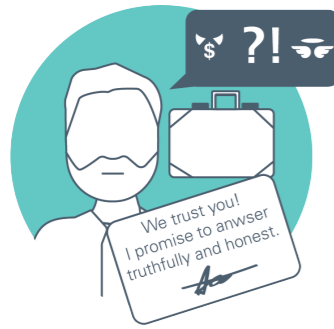
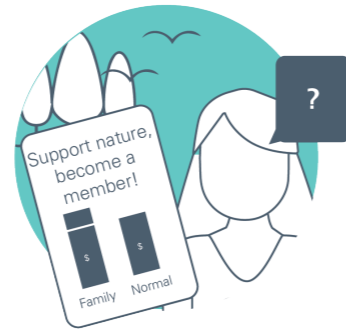


Image 25. Research approach and data analysis steps.



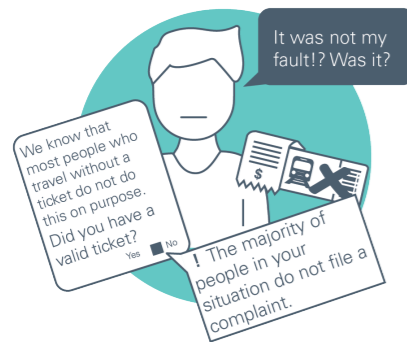
Case A: Decrease dishonest behaviour in the self-reporting of claims in travel insurance

Sector: Insurance Country: Norway
Use of theory: Explicit



Case B: Increase membership acquisition at visiting centres

Sector: Third sector Country: Netherlands
Use of theory: Inexplicit



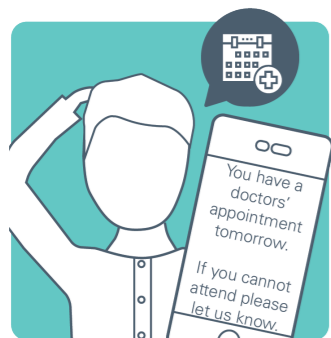
Case C: Decrease unsubstantiated complaints for penalty fares

Sector: Transport, Public sector Country: Norway
Use of theory: Explicit



Case D: Increase conversion and faster completion for car insurance in online channel

Sector: Insurance Country: Finland
Use of theory: Explicit



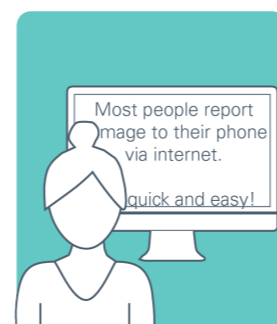
Case E: Decrease Did-not-attends at the doctor

Sector: Health, Public sector
Country: UK
Use of theory: Inexplicit



Case F: Decrease sick leave in daycare centres

Sector: Public Sector
Country: Norway
Use of theory: Explicit



Case G: Up-scaling BE in Insurance organization

Sector: Insurance
Country: Norway
Use of theory: Explicit

Success factors and hotspots

The four main ways in which behavioural economics is applied by livework designers are described below and highlighted in dark-blue boxes on the journey. Six success factors and eight hotspots were identified and were plotted at the final row in the journey map. The success factors and hotspots that are not linked to one specific application are described below.

- ⚡ Designers need a more systematic approach to apply behavioural theory. Current projects are of an experimental nature. Some projects use the theory on a project level whereas other only use the theory to generate ideas for nudges.
- ★ Team diversity helps to remain open-minded and stimulates the creative process. To remain open to ideas and not constraint by theory it is good to have designers on the team with different levels of behavioural theory.
- ⚡ Making many iteration of nudges (especially wording, visuals and timing) create better fitting interventions. In the design stage it is beneficial to create many variations of nudges and take into account the brand, company values and overall customer experience.
- ⚡ Clients prefer qualitative results whereas designers value qualitative insights into the effect of the intervention. Quantitative results should be combined with qualitative insights in order to get insight into effectiveness of the nudge and the effect on the customer experience.
- ⚡ Alignment with client and stakeholders generates 'soft' nudges. The ethical boundaries are not clear. Soft nudges are easily aligned upon, are not seen as manipulating, but are not necessarily most effective. Ethical guidelines should be co-created with the client upfront.
- ★ Behavioural card-sets are very useful but lack good examples. Cards are helpful in the analysis and ideation phase to find out which principles might apply.

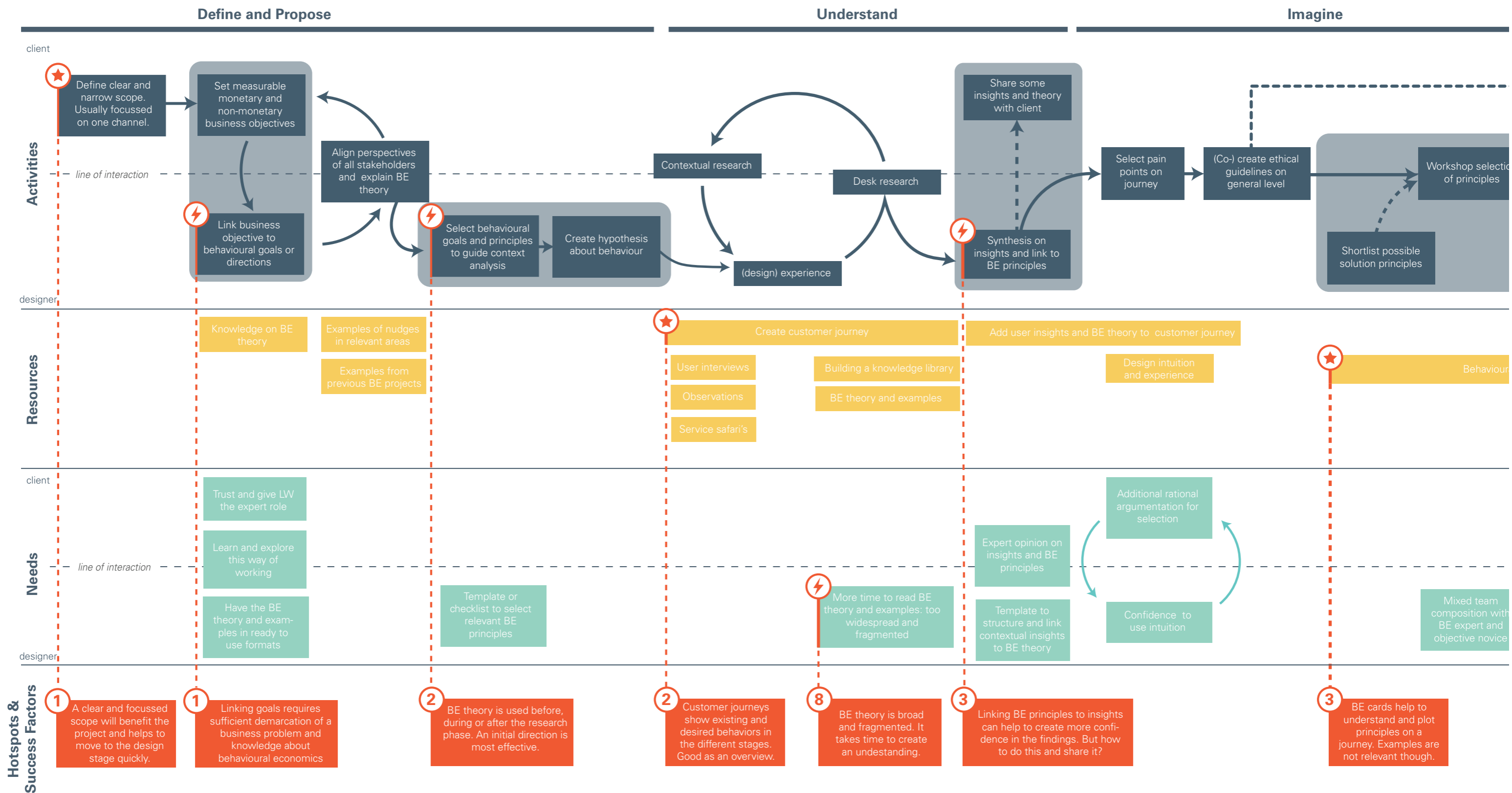
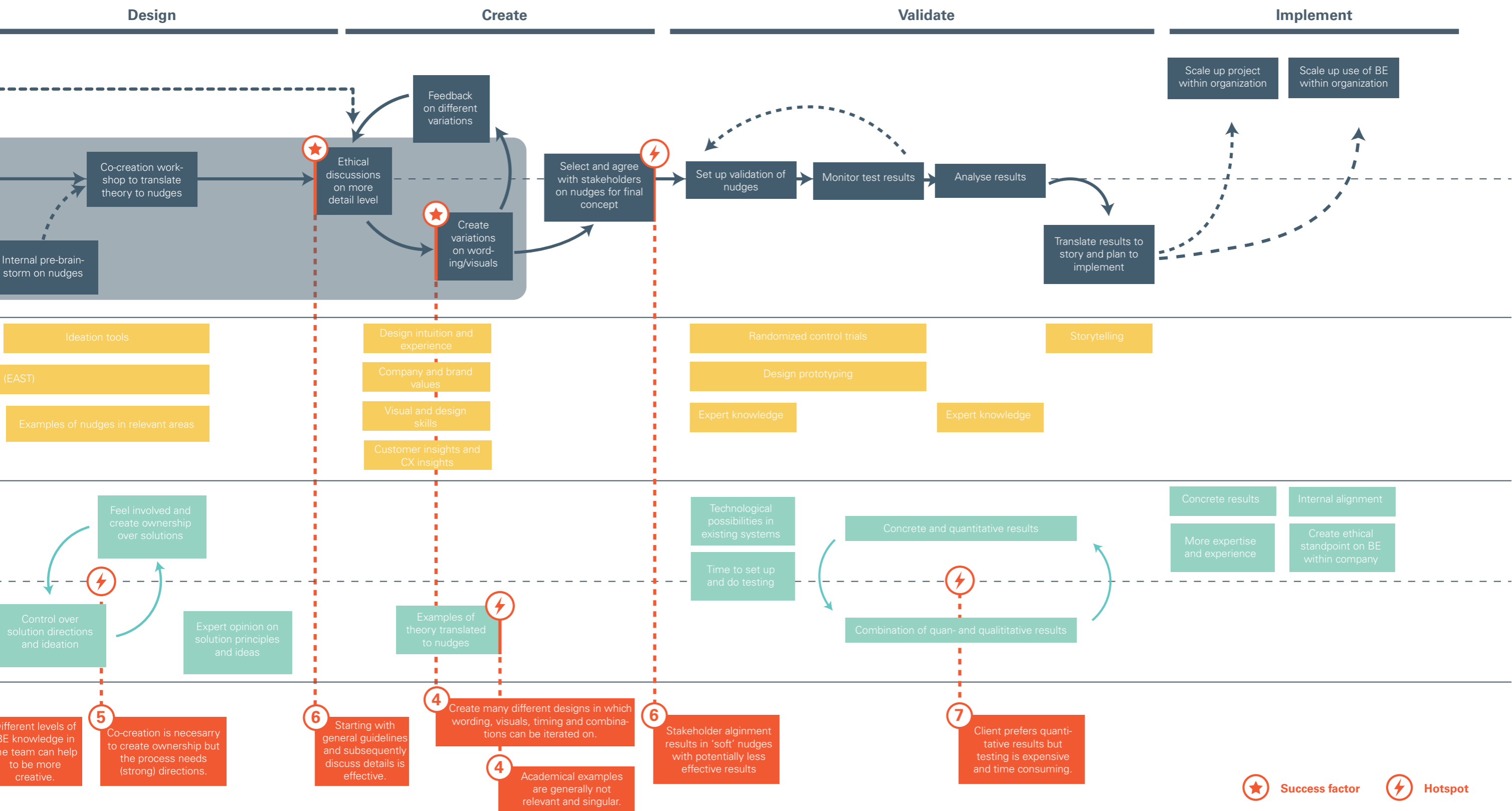


Image 26. Process overview with insights from cross-case analysis.



Four main applications of BE in the LW process



1. Link business objectives to specific and concrete behavioural goals.

- ★ Setting a clear scope and specific target behaviour at the start of a project.
- ⚡ There is a need for templates or guidelines to link business objectives to behavioural challenges

Explanation:

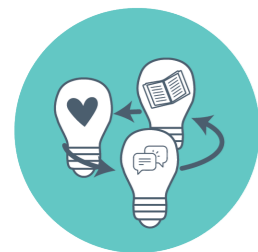
At the start of a project behavioural goals are formulated that contribute to specific business objectives. This is challenging since it requires sufficient demarcation of a business problem and knowledge about what behavioural economics can and can't do. **There is a need for a scoping template that helps to link business objectives to a specific target behaviour and selects the relevant channels of the service.** Behavioural projects focus on creating small adjusted in existing services it is most effective with service that already have an



2. Create an initial direction or focus in the research phase to understand existing behaviours.

- ⚡ It is considered to be challenging to use theory is either before, during or after the context research to create a better

Behavioural principles can help designers to make assumptions about why users show existing behaviour. Theoretical hypothesis about the current situation can guide the analysis phase of the project. Currently, user research is mostly based on experience and intuition. Determining an initial direction based on behavioural theory can help to make the analysis more effective and insights more in-depth and specified. **A template or checklist with possible research directions could help designers.**



3. Combine BE theory with user insights, experience and intuition to create confidence and increase decisional accountability

- ★ Customer journeys are very useful to plot and integrate insights on current and future behaviour.
- ⚡ Clients require additional (theoretical or empirical proven) argumentation for intuitive decisions and assumptions.

Behavioural principles and biases can support qualitative results from contextual and user research. Linking user and context insights to scientifically proven behavioural theories can help to create more internal and external confidence but also provides Liveworkers with a more expert role. **Customer journeys are very useful basis to plot these behavioural principles to explain existing behaviour, select pain points, plot solution spaces and determine the timing of nudges.**



4. Create directions for solutions and inspiration from behavioural examples for idea generation.

- ⚡ Existing nudges are either very academical, situation specific or focussed on UX.
- ⚡ It is difficult to find the right balance between a neutral facilitator and expert in co-creation with the client

BE is also applied to create solutions. Principles are short-listed in co-creation with the client. The theory and especially examples of nudges are used in idea generation. However, most examples are not easy to work with and do not provide the underlying behavioural construct or details that determine if a nudge is suitable. Moreover, the majority of the examples consist of a single nudge. **In practice it is almost never a single trick, but multiple combined nudges that change the behaviour.** Co-creation sessions with the client are effective to create ownership and engagement. However, since designers have more knowledge, it is sometimes preferred to create ideas internally.

3.3 EXTERNAL ANALYSIS INTO APPLIED BEHAVIOURAL ECONOMICS

Research goal and questions

An external study into the application of behavioural economics in different domains was carried out in order to get a broader understanding. Interviews with practitioners from different domains generated insights into the development, implementation and validation of nudges. The research question underlying this analysis was:

What are the different applications of behavioural economics in practice and how are behavioural interventions developed and validated?

Research approach

Behavioural economics is being applied in many different domains. From marketing, retail, public organizations, consultancies to large private companies. In order to find insights closely related to Livework, practitioners in the public service sector and consultancies were approached for an interview. See [image 27](#). Two consultancies specialized in behavioural interventions from the UK and Netherlands were interviewed via Skype. Additionally, a face-to-face interview with the head of the behavioural insights team at the Dutch ministry of Economics Affairs was done.

Next to the interviews, three conferences on behavioural economics were visited to talk to practitioners and gather insights into the latest developments.

The findings from the literature study were used to create a thematic guide for the semi-structured interviews. The interviews were exploratory and the following subjects were covered: different applications of behavioural economics, development and validation of interventions, ethical considerations and opportunities and challenges in the field. Statement cards were created from audio recordings and clustered in themes and patterns were captured. The insights were translated to design guidelines.

Findings

Seven topics emerged from the data during the analysis on the wall. Large similarities with the findings from the internal analysis were found. These seven main topics are a selection of the findings. Success factors and hotspots are related with these main topics.

▶ See appendix B for the interview materials and a detailed overview of all findings.



Background in:
Experimental economics

Public sector:
Ministry of
Economic affairs



Background in:
Marketing &
advertisement

Private sector:
Consultancy for
private companies



Background in:
Social
psychology

Private sector:
Consultancy for social
behaviour changes

Image 27. Overview of the three practitioners that were interviewed

1. Formulate concrete and specific behavioural goal

All practitioners start projects with the formulation of the target behaviour. Since a problem can be resolved in multiple ways it is important to agree on the target behaviour at the start.

★ Create a specific and clear target behavioural statement at the start of a project.

“The most important thing is to keep it small. It is difficult to select the main goals but be as specific as possible. You should be able to make a picture of the desired behaviour.” - Practitioner private sector

2. Perform a behavioural analysis to understand existing behaviour

Theoretical models are used to create focus and directions in the behavioural research. Qualitative user insights are considered to be very important and are combined with available quantitative data.

★ Use behavioural models to guide context and user research.

★ A multidisciplinary team is very useful

⚡ Behavioural literature is extensive and relevant examples are hard to find.

Three types of nudges mentioned by practitioners



1. Screen based work and letters: is applied most. The presentation of information can strongly influence how people will respond. By making information clear, chunked in smaller parts and salient it can be better processed by people and it enables them to act accordingly.



2. Physical interventions: Physical interventions like products or changes in the environment are less applied. It is considered to be more difficult and especially the design and prototyping it is harder since it requires design skills.



3. Conversational interventions: Information that is shared between customers and companies in conversations can be cognitively overloading. By chunking and framing information it can be more clear and actionable for customers.

Example: To encourage people with debts to make a choice that will benefit them on the long term the letters were redesigned. The amount of information was reduced, made visually attractive and a progress bar was added. By showing that the first step in the process has already been taken people are automatically more inclined to continue and complete all the steps.

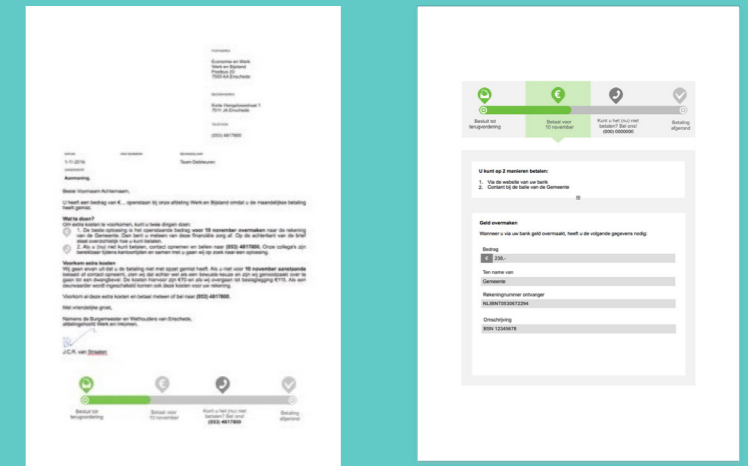


Image 28. Simplification of messages to reduce procrastination.

Photo by: www.dutje.com

Example: To reduce littering large portraits of citizens were put up to stimulate socially acceptable behaviour. Portraits resemble the same effect as people who are watching you and this stimulates socially desirable behaviour; putting your waste in the trash can.



Image 29. Portrait of citizens to reduce littering.

Photo by: www.dutje.com

Example: To increase customer satisfaction the conversations with customers at call centres of an insurance company were redesigned in the order, language and amount of information they presented to customers.

3. Identify points of behavioural friction

The insights from the behavioural analysis are usually part of a story board and provide insights into why people behave the way they do.

- ★ Integrate insights on a customer journey enables you to find point of behavioural friction.

“*To change behaviour you really have to look and do something in the process from the start to the end. And that is where it links to design thinking. Taking into account the target group, creating a storyboard and look into the friction points. So you can do something in every stage..*” - Practitioner private sector

4. Idea generation based on behavioural principles, examples and intuition

Behavioural cards and academical examples are used to find possible solutions for the points of friction. From the list of potential nudges a selection is made based on intuition or plotted on a matrix (with axes like impact & effort).

- ★ Use intuition and experience to translate theory to actual interventions
- ★ Behavioural cards-sets and models are useful in co-creation workshops.
- ⚡ Academic examples are singular, used to test a hypothesis and done in isolation

5. Create behavioural interventions of multiple combined nudges

The majority of the interventions are based on making information more understandable and reduce the cognitive overload. Effective interventions consist of multiple smaller nudges across the customer journey.

- ★ Effective interventions are not a single trick but a combinations of multiple smaller nudges

“*Nudging is more of a trend and it makes people think that you can change behaviour with a flick of a switch. Like talking bins.. But what we do is create an intervention which combines multiple nudges..*” - Practitioner private sector

6. Prototyping Interventions

The design phase is really important since the effect of the intervention lies in the details. Practitioners mention that the creation of prototypes is sometimes outsourced and little time and attention are paid on iterations.

- ⚡ Prototyping interventions is considered to be difficult, especially for physical and conversational nudges.

“*It is in the small details, those provide the biggest effects. Like in letters or emails it is in the wording and phrasing*” - Practitioner private sector

7. Validate interventions on effectiveness and ethics

Validation is very important in both private and public sector. But is very time consuming and expensive. Screen-based work and letters are easy but physical prototypes are more difficult. Methods range from randomized control trials, before-after measurements, observations to customer surveys.

- ★ Use general (regulated) ethical checklists and have discussion about it throughout the project.
- ⚡ There is no time or money available to test for unintended consequences and long-term effects.

“*We got to do the experiments to work out what works and what didn't. Intuitively you know there are some nudges that are sustainable and scalable that are very effective with the system 1 brain.*” - Practitioner private sector



4 SYNTHESIS INSIGHTS

In this chapter

- 4.1 From insights to design guidelines
- 4.2 Insights into Liveworks' added value
- 4.2 Framework
- 4.3 Design guidelines
- 4.2 Key take-aways

This chapter describes the synthesis of the insights from the Livework analysis, review of design strategies, the internal case study and external interviews. The combined insights from the analysis are used to define the added value Livework can offer to applying Behavioural Economics. Additionally a framework is presented which describes the steps to be taking in a behavioural project. Finally, design guideline and requirements for three tools are presented.

4.1 FROM INSIGHTS TO DESIGN GUIDELINES

A wide range of insights were gathered through the theoretical exploration and the four research studies. During the synthesis these insights were combined and set side by side to elicit differences and similarities. From these combined insights a framework is created that enables Livework to incorporate behavioural economics in the service design process. The proposed process was supplemented by possible directions for practical toolkits for service designers. The possible

directions for toolkits were presented to designers as well as managers of Livework and a selection was made. The proposed tools in the strategic, analysis and ideation direction were selected to develop further.

Finally, an overview of the design guidelines for the three directions is presented. The guidelines formed the starting point for the next phase, the tool development process.

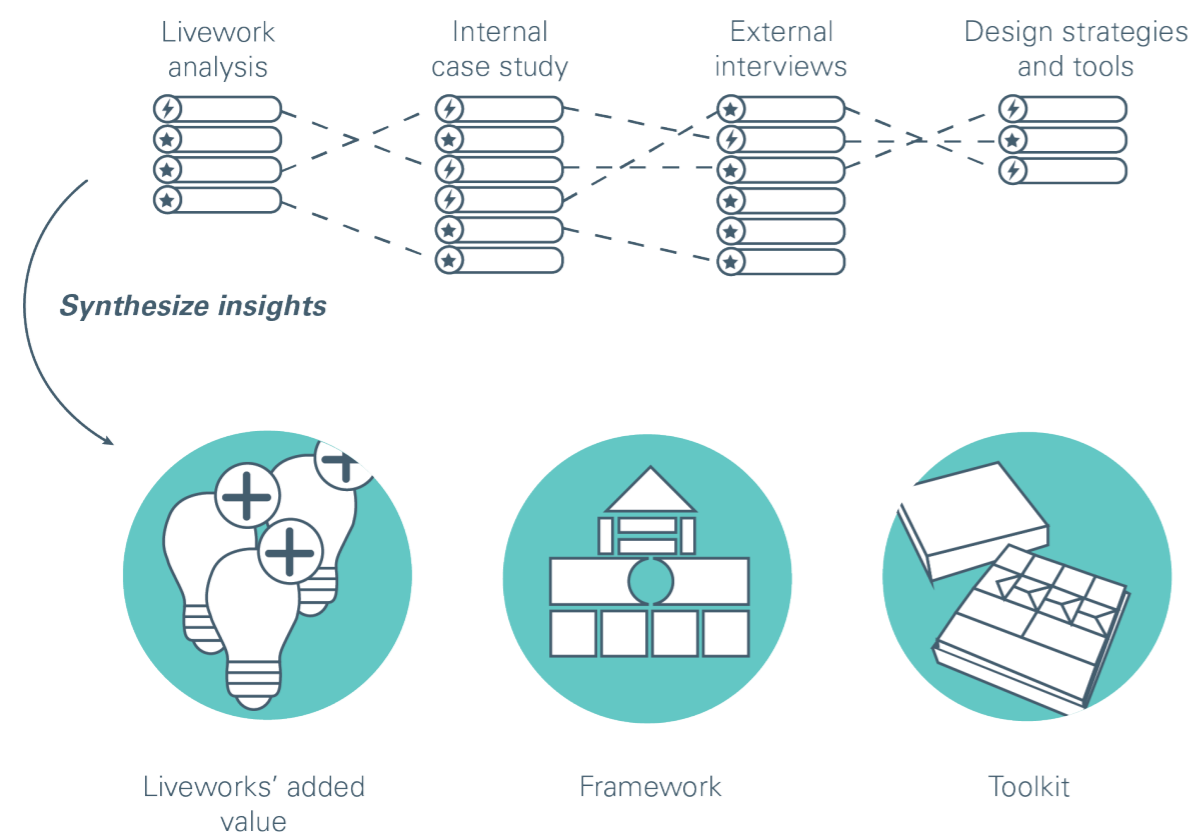


Image 30. Synthesis process to combine insights from exploratory research into a design framework and supporting toolkit

4.2 INSIGHTS INTO LIVEWORKS' ADDED VALUE

Liveworks wants to apply behavioural economics to differentiate from other service design consultancies. Three assumptions were created that explain how behavioural knowledge could be useful in the service design practice based on the theoretical explorations in chapter 2. Although the exploratory research was not performed to validate these assumptions it has generated insights that enrich and complement some of these assumptions. Both the expert practitioners and Livework designers mentioned multiple of the assumptions as a useful way of applying behavioural economics in the design process. Moreover, the insights from the exploratory research revealed four ways in which Livework can offer additional value in comparison to conventional behavioural economics practitioners.

The added value of Behavioural Economics to Livework

1. Understand customer behaviour

Not only is it useful to apply the behavioural theory to create more profound explanations for behaviour that increase generalizability and validity, but it is also useful to:

- ▶ **Formulate initial assumptions about existing behaviour and create research directions based on behavioural economics principles.** Expert practitioners use models of behaviour to formulate informal hypothesis on existing

behaviours. Livework designers mentioned that is was most effective to create directions before the research based on behavioural theory.

- ▶ **Increase decisional accountability;** meaning that designers are able to explain why they made particular decisions in the design process. Behavioural theory provides an additional, more rational and reliable, argumentation for certain decisions in the project.

- ▶ **Decrease the time of the understand phase:** Since the insights are empirically proven designers felt quickly confident in their understanding of the situation and that enabled them to move to the next stages in the process.

2. Increase the efficacy of service design concepts

Designers recognize that the decisions they make will influence the end-user in some sort of way and that knowledge into these processes benefits them in the design process.

- ▶ Nudge examples provide inspiration and help to make the translation from theory to practical applications.

- ▶ Validation of nudges is done via design prototyping and more scientific methods like RCT's. Qualitative insights alone do not provide adequate insights since much of the behaviour is unconscious and people are not able to articulate

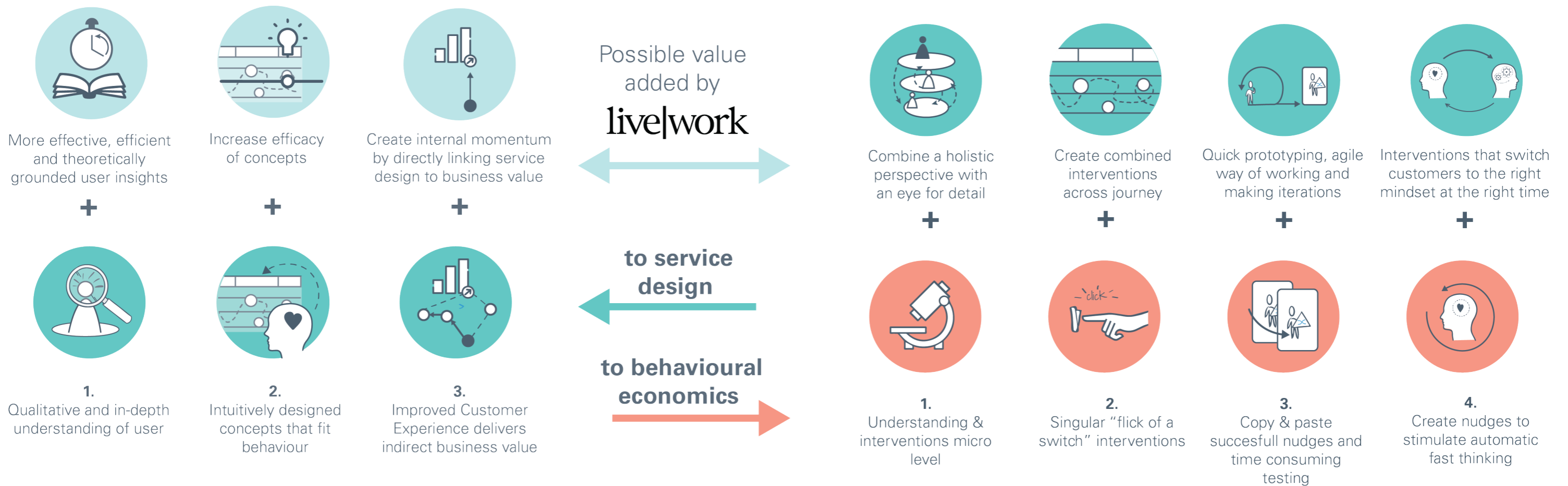


Image 31. Overview of potential added value Livework can offer in comparison to service design and (applied) behavioural economics.

certain effects. Therefore a combination of qualitative and quantitative insights into the effects of the designs is preferred.

3. Create internal momentum by linking service design more concretely to business objectives

Designers mention that from the start of a project continuous reflections on the business goals are present.

► Organizations can be best convinced with quantified results, like NPS. Quantitative insights are thus preferred. Not only because organizations want to evaluate the intervention but also to see if

this approach is one they want to implement in their organization.

The added value of Livework to applied Behavioural Economics

The exploratory research revealed four ways in which Livework can offer additional value in comparison to traditional applications of behavioural economics. This contributes to the differentiation of Livework in comparison to other (design) agencies that offer behavioural interventions. The potential added value of Livework is explained on the following pages, including quotes from the research and illustrative examples.

1. Combine a holistic perspective with an eye for detail

Most applications of behavioural economics are focussed on a micro levels of behaviour. A specific touchpoint in the customer journey is selected, analysed and an intervention is created. This level of scoping is necessary since behavioural principles explain behaviour at a micro level. Moreover, in order to create effective nudges it is key to focus and select one behaviour at a time. Details of an interventions, like wordings and timing, determine for a large part the effectiveness and therefore a profound understanding of the situation is needed.

However, aside from the details it is key to consider the wider reaching holistic effects from nudging in order to effectively determine the overall outcome. Since it is difficult, time consuming and costly to test for (unintended) consequences and long term effects this is never really done (Frey & Rogers, 2014). For example, the effects of nudges on the customer experience are hardly ever taking into account by traditional practitioners.

Liveworkers have a holistic perspective on the customer (and context) and are able to zoom in and out of a problem. They can design for, and take into account, the overall customer experience on an abstract level but work down to the smallest details that make up a touchpoint. **The ability to zoom in and out of a problem combined with principles from behavioural economics can help to create detailed interventions that are effective on both the micro scale and take into account consequences on a macro level.**

“ To change behaviour you have look at the process from the start to the end. That is the link to design thinking. Take the whole storyboard and understand the wider context...”

- Practitioner private sector

“ Long term and side effects... who knows? We got to do the experiments to see what works and what didn't. Intuitively you know there are some nudges that are sustainable and scalable that are very effective with the system 1 brain.” - Practitioner private sector



Image 32. These eye-watching posters stimulate social acceptable behaviour at specific locations because only there thieves literally felt like they were being watched.

► The Newcastle watching-eye posters example from chapter 2 shows the downside of a micro level perspective. By only focussing on the university locations, the larger effects on the city were ignored. The intervention only changed the behaviour of thieves at the specific locations but had no effect outside of this context.

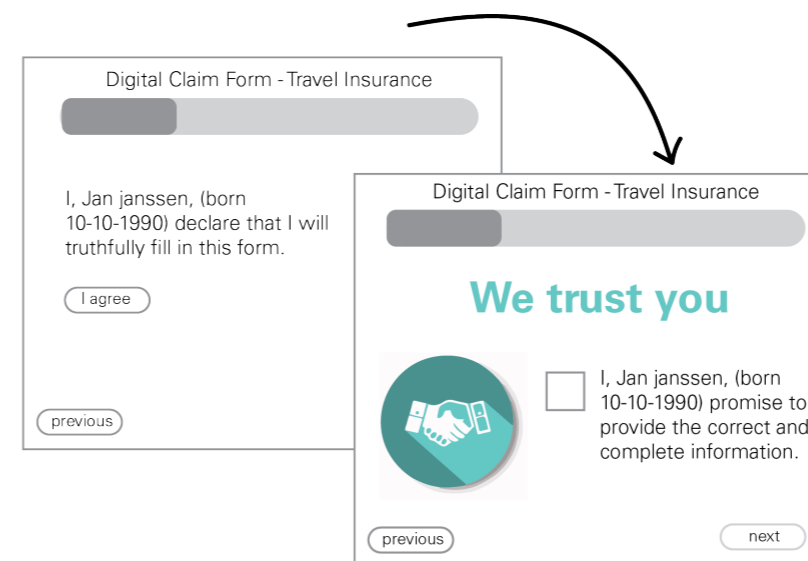


Image 33. An simplification of the honor code intervention. Iterations were made to adjust the visuals and word-use in order to increase customer experience. The actual intervention is not showed due to confidentially reasons.

► For an insurance company Livework reduced fraud in the self-service claims by integrating an intervention that asked users to sign a honour code upfront. A holistic perspective on the problem enabled the designers to, among other things, identify that customers need to feel trusted and cared for when they file a claim. During the project the whole customer journey was taking into account as well as the larger effects on the customer experience. Iterations on the nudges were made to create both to make sure that the effects on micro and macro level were in line with the objectives.

2. Create combined interventions across a customer journey

Most of the nudges are singular interventions that aim to change behaviour in one touchpoint and at one specific moment in time. Due to the large popularity of nudging, it is currently applied by a large variety of organizations for a diverse set of behaviour changes. However, individual nudges will not create an endured change in behaviour. Nudges are designed to alter immediate behaviour in a specific moment and particular environment (Stutzer, 2011; Strassheim, 2016; Dholakia, 2016). Nudging customers in the supermarket to buy more healthy food can be effective. However, it will not change the behaviour that follows (will it be eaten or just left in the refrigerator?) in (or outside) subsequent stages of the customer journey.

“Nudging is a trend and it makes people think that you can change behaviour with a flick of a switch...But you need to create combinations of multiple nudges.”

- Practitioner private sector

Livework designers include all the steps customer go through from the start to the end. As service designers they are skilled to work across different channels, touchpoints and interactions and can thus make small changes across different elements of a service. By including interventions across various touchpoints that reinforce each other, Livework can increase the likelihood of endured behaviour change (Evenson, 2010; Papeschi, 2010). At Livework, the designers also look at the moments before and after the sale or purchase. In all the seven cases from the internal study, Livework created multiple interventions across different touchpoints in the customer journey. Moreover, organizational factors were taken into account to assure the feasibility of the concepts. **Multiple small nudge across a customer journey create both a psychologically sound and logistically feasible concepts that improve the customer experience and business value.**

“We do not have a specific strategy to apply existing nudges to new contexts. We just test it and then we see what is possible in the context. We are not consciously thinking about this.” - Practitioner from private sector

► Nudging hotel guest to reuse their towel by using descriptive norms only changed behaviour in that specific context and situation. The guests are only prompted once to reuse towels and therefore future behaviour will not be effected (reusing towels at home or in other hotel rooms).

Image 34. This descriptive norm nudge is placed on the bathroom-door or towel rack to stimulate guests to reuse towels.



► Combining different nudges across a customer journey enabled the Dutch Behavioural Insights Team to reduce food waste in holiday resorts by stimulating better food planning, appropriate grocery shopping and making it really easy to take leftovers home.



Image 35. Two combined interventions of the Dutch behavioural insights team to reduce food waste. The left image is an information folder which guests received before their holiday. It prompts to plan meals and it is a grocery shopping checklist. On the right: at the end of their stay guests were presented with a “Delicious for at home” cooling bag at make it really easy to take leftovers with them. Photos from the Dutch Ministry of Economic Affairs.

3. Use design prototyping and agile way of working

Many businesses have been applying behavioural economics by simply following successful examples. Nudging strategies have been copied numerous of times to different situations and contexts. However, simply copying successful nudges is not a guarantee for success (Hollingworth, 2015). Context and user specific factors need to be taken into account to ensure an effective solution.

Applications of behavioural economics are usually validated with expensive and time-consuming Randomized Control Trials, A/B testing and before-after measurements. Generally one prototype is created and quantified results are gathered. No iteration on the design are made nor are qualitative user responses gathered.

Livework designers bring the skills to quickly make ideas tangible and conduct small experiments with actual users that provided qualitative insights to make effective iterations on the intervention. Many variations of the intervention can be created in a short time and in low-cost manner. This enables Livework to go beyond copying successful nudges and create tailor-made solution that fit the context, user and organization best.

“Validation usually consists of observations, before-after measurements and sometimes a short survey. However, we do not look at the effect of the specific design and we did not make any iterations on the nudge.” - Practitioner from private sector

“I found example of Denmark and UK it was cool but also a bit boring. Trash example with arrows... but then we got Livework in and I got really excited about it.” - Livework Designer



Image 36. Voting ashtray prompts smokers to vote with their cigarette . However this copy and paste nudge might not work as well since it is not adapted to the specific context and users.

► This voting ashtray is a copy of an successful nudge that was tested in the USA. The bin taps prompts people out of their normal littering routine by asking fun and competitive questions. Smokers are persuaded to vote with their cigarette, reducing littering up to 46%. However, this ashtray was placed at a Dutch High School with the question: Hillary or Trump. This question might have been relevant in the USA. In this particular context; not so much.

“How can I remember my appointment?”

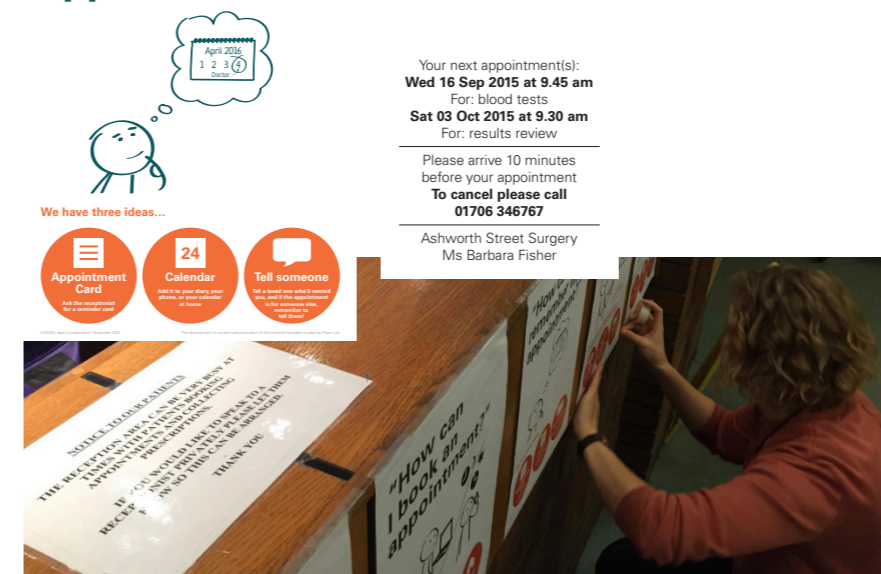


Image 37. Different interventions, such as the posters and appointment cards, were tested in surgeries to reduce Do-Not-Attends at the doctor. Photo by Livework.

► Livework has created several interventions to reduce Do-Not-Attends at doctor surgery. The different interventions were tested with multiple surgeries and iterations were made. Posters were placed in the surgeries to remind people of the urgency to attend an appointment, appointment-cards were given at the reception and phone scripts were tested that asked patients to actively confirm their appointment.

4. Interventions that switch customers to right mindset at the right time

The exploratory research showed that behavioural economics is being applied in the design of service by many different organization in the form of nudging. The majority of the touchpoints, interfaces and information messages of service organizations are designed for a conscious reflective mindset (a.k.a. system 2 thinking). It requires a good amount of cognitive capacity to process this information and make a good choice. However, these messages often do not even come across to our conscious mindset, since 95% of the time people are utilizing their instinctive subconscious mindset. This is the reason why people make suboptimal decisions, sometimes no decisions at all or show undesired behaviour.

Nudges have been very popular with different organizations since it helps them to reduce (cognitive) friction and create choice environments that facilitate automatic, subconscious thinking. These simple and low costs interventions make information or a particular behaviour really easy, attractive and or social. Nudges can be very effective in supporting organizations to quickly change behaviour of people and create better services. As shown in the example below.

However, the research also revealed multiple downsides of using nudging in services to change people's behaviour. The downsides are described below and are supported with additional literature.

“The world is so badly designed for our brains and we can change already so much by just reducing the cognitive overload...”
- Practitioner private sector

“We actually only create interventions that work on the level of people's unconscious processes.” - Practitioner from private sector

► In many countries a default nudge is used to increase the number of organ donors. This nudge makes the desired behaviour (becoming an organ donor) the default and therefore removes the friction of filling in a form and actively choosing to be a donor.

The image shows two forms side-by-side. The top form is titled 'Default Opt-out' and has a checkbox that is unchecked. The text next to the checkbox says 'Tick the box if you want to participate in the organ donor program'. To the right of this form is a teal circle containing the text '15% is donor'. The bottom form is titled 'Default Opt-in' and has a checkbox that is checked. The text next to the checkbox says 'Tick the box if you do not want to participate in the organ donor program'. To the right of this form is a teal circle containing the text '90% is donor'.

Image 38. The default nudges removes friction and makes it really easy for people to become an organ donor.

Three limitations of nudging

1. Nudges only work in the present moment and in a specific context

Nudging customers to a desired direction will only be effective within a specific moment and touchpoint of a service and will not likely stretch beyond it. Since nudges facilitate automatic and subconscious thinking it can only change behaviour in the environment in which the nudge is present (Bisset & Lockton, 2010; Stutzer, 2011; Hansen & Jespersen, 2013; Strassheim, 2016; Dholakia, 2016). Services are inherently dynamic; customer move from one touchpoint to another. It is therefore questionable how effective a nudge in a single touchpoint is to change customer behaviour within a service environment.

► For example; nudging students in the canteen to reduce food intake and waste by presenting the food on smaller plates is shown to be effective (Wansink, 2013). However, this nudge will not affect the choice of food (healthy or unhealthy) nor will it change the unhealthy habit of getting a snack from the vending machine.

Moreover, nudging people to subconsciously move into a desired direction will not stimulate the re-evaluation of past behaviour nor will it change the intentions towards future behaviour (Stutzer, 2011). Students will simply not notice the reduction in food intake and waste and will therefore also not be stimulated to evaluate past behaviour nor create intentions to change future behaviour (for example eating smaller portions at home).

Nudges stimulate decisions through inaction and are therefore less likely to result in the kind of committed

follow-up that is often useful for implementing new behaviours or habits (Keller, 2011; Fowlie, 2017). Especially, for situations in which the overall effect of the nudge depends on the ongoing engagement of the person. Like with eating healthy, reducing energy consumption, exercising, saving for future income etc.

2. Nudging makes customers lazy and inactive

A frictionless experience is the new 'must-have' that all companies are trying to achieve. Look for example at the numerous new zero-click retailing, anticipated shopping and payless services that are popping up. These frictionless services facilitate automatic subconscious thinking and they make that the decisions a customer takes go unseen, unnoticed and unprocessed.

Using nudges to remove friction will result in customers that use less and less cognitive capacity to perform certain tasks. Too much nudging may lead to 'excessive convenience' that make customers lazy, disengaged and inactive (Bovens, 2009; Schubert, 2015). This excessive convenience can hinder people from making conscious and deliberate decisions that fit their personal situation best.

► For example: Automatic enrolment is emerging as a strategy to improve retirement savings around the world. In these programs employees automatically start saving for their retirement with a set increase rate. Although the default option shows that more people start saving it does not stimulate them to change their saving behaviour nor make the best fitting choice for their personal situation. And so it may that employees are enrolled into a savings plan

that is not optimal for their situation (Hardcastle, 2012; Fowlie, 2017).

Changing behaviour by nudging alone might be effective for one-time behaviours, services that require infrequent interactions or when a single unified outcome is to optimal course of action (Botti & Iyengar, 2004). However, most service organisations want to create long-term relationships and stimulate an engaged customer base that frequently interacts with the service.

3. Nudges do not necessarily increase the customer experience

Changing the choice environment to facilitate people in their subconscious way of thinking is suggested to result in an improved customer experience. However, these frictionless interactions and experiences do not require (cognitive) effort from customers and will thus not necessarily increase a decision maker's satisfaction and experience (Botti & McGill, 2006; Keller, 2011). Moreover, nudges are completely provider led (service organizations determine the desired behaviour) and do not require active customer input.

“We hoped that through the design and interventions we would improve the (measured) CX and that didn't happen. It stayed the same. I still believe that certain people have had a better experience by being exposed to the nudges” - Client of Livework

A service is a dynamic and interactive exchange between the provider and user over time. The value of a service is generated through the practices (what people do, say, think and feel) of the user in a specific touchpoint (Payne et al, 2008; Reckwitz, 2002). However, nudges do not require customers

to be aware, let alone be involved in, the value creation process. Therefore, nudging customers into desired directions might not increase the perceived value and customer experience of a service.

If organization objectify to create an endured behaviour change that requires customers to get out of the status quo, make an active or individual decision it is essential to get the customer in the right mindset at the right time (Williams, 2017). The objective should thus not be to facilitate automatic and fast thinking alone but to also include behavioural interventions that can stimulate people to switch to more deliberate and conscious thinking when necessary.

“The nudges we created are not manipulative. They are used to make people aware of the options and to make it easier of them. It is about letting people take their own responsibility” - Client of Livework

A review of the interventions created by Livework indicated that at least six interventions prompted customers to activate their reflective thinking and make a conscious decision or change in behaviour. See the example in image 39. **These interventions use micro moments of deliberative friction to disrupt mindless automatic interactions, prompting moments of reflection and more conscious decision making(Cox & Gould,2016). Instead of removing all friction and focussing on creating a seamless experiences that supports only system 1 thinking it is proposed that could be beneficial for service design to find the crucial moments to stimulate conscious thinking.**

Digital Claim Form - Travel Insurance

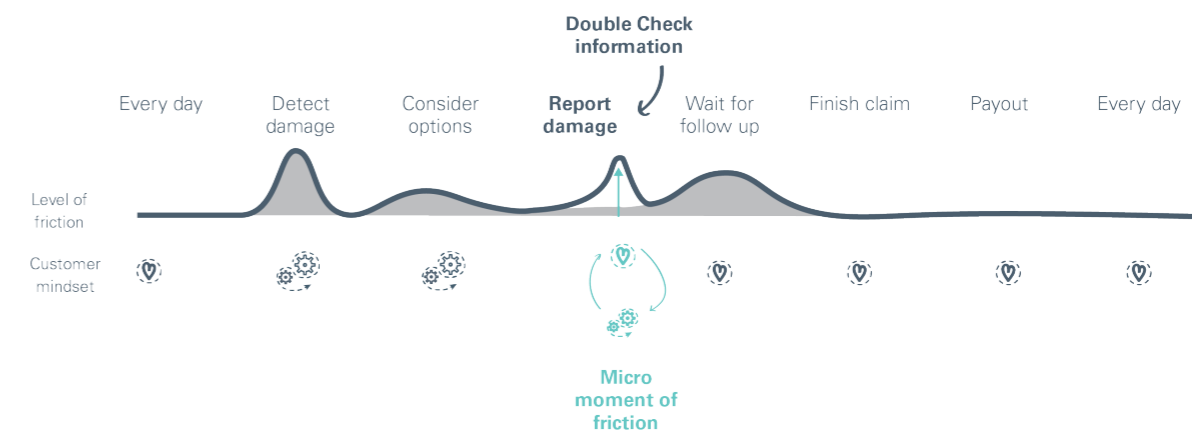
You are almost done!

Have you made sure that all the information is correct?

Your stolen or damaged goods:

Description:	Current value:	Purchase date:
Iphone 6, 64GB, black	€550	12-05-2016
Bose Headphones	€200	05-01-2017
Total	€750	<input type="button" value="change"/>

Yes, I am sure this is the correct and complete information.



► For an insurance company Livework created an 'escape hatch' in the digital claims process to reduce fraud. By creating this additional screen, in which customers are asked to check their information, a micro moment of friction is added. This additional decisions moment stimulates customers to consciously reflect on the action they are about to take. This reduces undesired behaviours like dishonesty (but also errors) since customers need to decide the cheat more than once!

Image 39. An simplification of the escape hatch that prompts people to consciously reflect on the data they provided. The actual intervention is not showed due to confidentially reasons.

4.3 FRAMEWORK

The four studies in the exploratory case study produced insights into the current way of working, hotspots and success factors in applying behavioural economics and limitations and advantages of existing tools and design strategies. All these insights are combined to create an accessible framework of how Livework designers can apply behavioural theory within the design of services.

Framework

The framework (see image 40) serves to describe the general steps and phases the service designer goes through in a behavioural project. The main phases Define, Understand, Imagine, Create, Validate and Implement are deliberately linked to the existing phases in Livework projects. The framework is created in a loop around the behavioural intervention canvas which will serve as 'blue print' for the project.

This framework is used to provide structure and a foundation in the tool development process. The six main phases will be briefly explained.

1. Define

At the start of a project it is crucial to create a clear and specific scope that fit the business objectives and challenges. Together with the client it should be agreed up on which channel and which specific customer journey are taking into account. E.g. In the fraud reduction project it was agreed to select on travel insurance claims in the digital channel.

“ *In this project it clear-cut because we already had a customer journey and clear business objectives. In many other projects you do not*

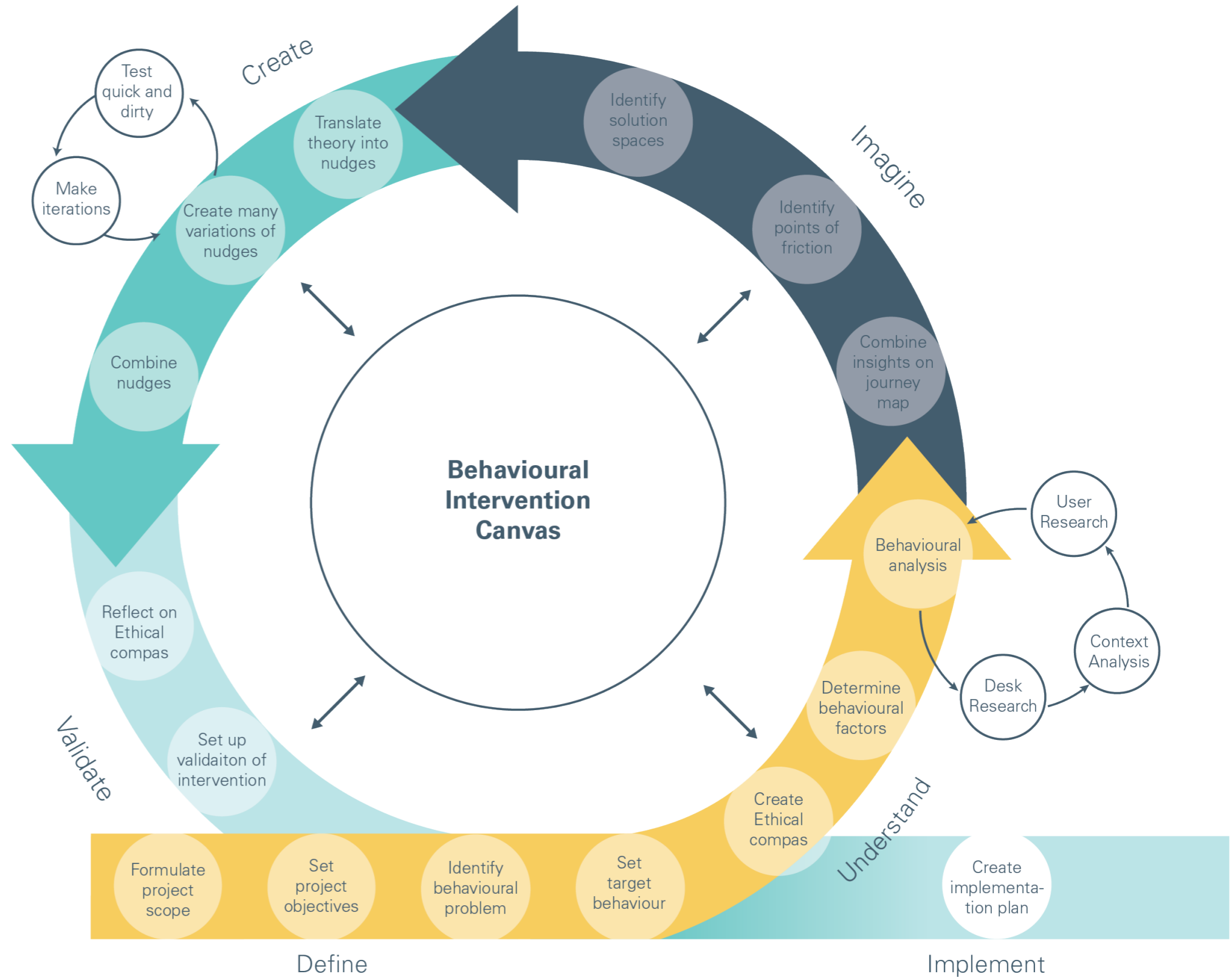


Image 40. The framework that describes the general steps and phases the service designer goes through in a behavioural project

have that and it is more complex and difficult to set up the project goals to match behavioural goals.”- Livework designer

Behaviour can only be changed ‘one at a time’ so in the first stage the current unwanted behaviour and future target behaviour need to be clearly identified.

2. Understand

To design interventions that change behaviour it is necessary to first understand the existing unwanted behaviour. Behavioural models could be used to understand the underlying influencing factors and cognitive biases. These initial insights can create focus and direction for the context and user research.

“ We tried to understand the behaviour based on our experience, customer insights and theory. It was an open dialogue with the client. It is co-created process. - Livework designer

Desk research, context analysis and user interviews can subsequently be conducted to validate initial assumptions and generate in-depth insights into the behaviour.

Since behavioural interventions could be perceived as manipulative it is important to co-create ethical guidelines with the client. Ethical discussions or workshops can help to reflect on the behaviour in a more abstract level (is the current behaviour ethical? how about the target behaviour), identify possible unintended consequences and long-term effects of interventions.

3. Imagine

Insights from theory, context analysis and Livework experience can be combined and integrated on a customer journey. By integrating the behavioural factors, types of thinking (conscious or unconscious) on the steps of the journey a complete and in-depth overview of the behaviour is made.

The overview can be used to identify pain points that enable (or prohibit!) the target behaviour. The relevant behavioural factors and thinking processes can be used to determine the type of intervention (nudge or rational override) that is most suitable in this situation.

“ Sometimes the solution space is really straight forward. Other times we have to see intuitively in which moments we can create the biggest impact. - Practitioner from Private Sector

4. Create

Different examples of interventions can help to make the translation from theory to ideas for practical interventions. The examples need to be relevant or related to elements in service design, thus no examples from marketing or UX alone.

After initial ideas are created it is up to the designers to create many variations and determine the details of the design. This is preferably done internal since it requires a profound understanding of behavioural economics. Quick prototypes can be created and tested with actual users to get intuitive responses

on the intervention.

“ The design part was the exploration and quantity of solutions. Just throwing out as many ideas and variations possible and then narrowing it down and testing it” - Livework Designer

Based on qualitative insights designers can make iterations and combinations of different smaller nudges across the journey.

5. Validate

When the final designs are created it is possible to include more grounded and quantified validation, such as Randomized Control Trials. Depending of the possibility of the clients’ systems, time and budget a trial can be set up. For this phase Livework needs external expertise (from for example academical partners). Qualitative and quantitative data can be integrated to create an thorough understanding of the effects.

“ It is not possible to test the only nudges qualitatively because many of the principles are unconscious and people do not know. But it is still very important to get those results because it shows the effect on the customer experience. “- Livework designer

6. Implement

In the final phase a roadmap or implementation plan can be created that helps the organization to scale the intervention across their services. Internal

capability building can be offered as a final step towards implementation in the organization.

“ There has been more awareness about nudging and we already discussed about using nudging in other places. We are waiting for the results and recommendations. I am quite sure that we will continue....”- Livework designer

4.3 DESIGN GUIDELINES

The insights from the exploratory research were translated to design guidelines. Four general guidelines are described, followed by the specific requirements per tool. The insights indicated that Livework designers could benefit from tools in five steps of the framework.

However, the validate and implement phase have been left out of the tool development since these phases are strongly depended on the running time and budget of a project. Only one project has currently been running through all the phases and therefore the impact of tools in this phase would be incremental. The development of tools for these phases could be a direction for future research.

General design requirements

In order for the toolkit to effectively support Livework designers it should fit the following general requirements, which emerged throughout the project, but especially from the exploratory research.



Practical and Flexible

Since the tools will be used in workshops with clients they should not be too time consuming or difficult to use. They need to be self-explanatory and should not be too theoretical and in-depth. They need to be relevant for service organizations and in a format that is ready-to-use in a project.



“The theory was already less in my memory. I need an effective reminder, to get the theory that I need. It needs to be ready-to-use and pocket sized with real world examples ” - Livework Designer

Projects at Livework vary greatly: behavioural economics could either be used in projects from the start to the end or just be implemented in a short workshop in a more general service design project. The tools should therefore be flexible and modular. By creating different 'building blocks' designers are able to select the tools that fit with the project phase or needs. Moreover, the building blocks enable Livework to sell different kind of projects; from small introductions to elaborate projects that run for a longer period of time.



Facilitate co-creation

Behavioural projects require a high client involvement. Most projects have been done to explore this new approach and build capability within the organization. Therefore it is essential to facilitate co-creation throughout the whole project. Co-creation can additionally support clients to create a feeling of ownership and engagement which will increase the chances at successful implementation.

Designers need to be facilitated by tools since they struggle with the different roles they perform; between being a neutral facilitator or leading expert. Since behavioural projects involve relatively more theory it is necessary to provide clear structure and guidance to Livework designers to take the role of the expert.

Not everything has to be shared with the client. Especially the use of more detailed theoretical models, scoping and selection of solution directions, creation and iteration of the designs are preferred to be done internally.

“It was very important that all the stakeholders were in the co-creation workshop. Especially the designers of the client. They are very focused on their own perspectives. It was important to show them this way of working” - Livework designer

“Internally we linked insights with behavioural theory. But it was not with the client. They were a bit surprised. You should use the complex theory internal and only share the main points with the client. So they understand it is not magic.” - Livework designer

“We had done a brainstorm internally before the workshop. We created ideas and mentioned only the selected ones in the co-creation. For the client this still let them feel part of the solution.” - Livework designer



Different levels of Knowledge

It is important that the tools facilitate people with different levels of knowledge. The tools suit be accessible for people with no knowledge of behavioural theory but also need to support experienced designers to get more in-depth insights. The tools need to have a good balance between the more abstract theory and useful details and practical examples.



Zooming in and out

The tools need to enable designers to think on abstract as well as more detailed levels. While changing behaviour requires a micro perspective it is important to integrate more holistic insights and aspects as well. E.g. what does this intervention or behaviour change mean for the organization, systems or overall customer experience. To get a full understanding of this different effects the tools should allow for different abstraction levels (user, customer, consumer and human) to be integrated.

Tool A - Behavioural Intervention Canvas

Designers have indicated that they need a tool that provides them with a clear overview of the project. They need more structure and guidance to communicate effectively with the client.

The behavioural intervention canvas will provide structure, link the different phases of the project together and clearly show intermediate outcomes.

“In the future I would need an established approach that defines how we go about it. The activities that we are going to conduct and this is how we want to integrate the client.” - Livework Designer



Provide structure and overview of project



Clearly link the different phases and show the intermediate results

Tool B - Scoping and Strategy tool

In the first phase it is important to have a tool that helps to determine if this project is suitable for behavioural interventions.

This tool should support designers to scope the project towards a concrete and specific target behaviour that links directly to the business objectives and challenges.

“Everything you can do to create focus is good. Otherwise you will go everywhere. Creating a model for the scope and show what is in and out makes it clear” - Livework Designer

In order to come to a suitable target behaviour the tool helps to identify current organizational challenges that link to unwanted behaviours (for different customer segments). A brainstorm on possible alternative behaviours can enable the client to start thinking about possible future desired behaviours.

“We tried to align behavioural principles with the business goals but this new system was not in place at all. We cannot improve something that is not there. We changed to scope of the project because of this.” - Livework Designer



Enable linking business objectives to behavioural goals



Identify existing unwanted behaviours for different customer segments



Brainstorm and select target behaviour



Facilitate to formulate target behaviour as clear as possible

Tool C - Analysis tool

The understand phase is a key element in the process. The tool should provide designers with a simple, universal behavioural model that identifies the influencing factors of the unwanted behaviour.

These influencing factors need to be explanatory but not too in-depth since they need to help designers to create an initial research direction for the context analysis.

Unlike a more traditional customer journey map this analysis tool let you integrate contextual insights, behavioural insights and shows the different influencing factors, as well as customer mindset, at each stage of the customer journey.

The integrated overview helps to determine which steps in the journey have the highest potential for behaviour change interventions.

“The reflection with the client on the user insights and behavioural theory was too free. It would have helped to have a tool that creates structure in the insights so vague ideas could get a place and be linked to behavioural theory.”

- Livework designer



Facilitate research planning and insight integration



Enables to identify behavioral factors and mental models



Incorporate conscious and unconscious thinking



Integrate existing and future behaviours



Identify friction points in customer journey

Tool D - Ideation and solution tool

The ideation tool should support designers and clients to come up with ideas for interventions for the selected pain points in the journey.

To translate the theory to actual ideas the tool provides a range of relevant examples. Since there are many different types of interventions that could be suitable a categorization needs to be included.

“In the translating it helped to see examples of nudges in project we have done before.. Than you start to understand the rules of the game and how you can start to translate the theory yourself.” - Livework Designer

The ideation tool should not only provide nudges that stimulate automatic and fast thinking but also provide strategies to create rational override interventions that prompt people to more conscious and reflective thinking. The tool should support designers in the decision between the two types.

“The nudge cards were really helpful. Only the examples are not good. We need more relevant things. Now it is too specific or distant from our practice.” - Livework Designer



Integrate relevant examples for service design



Balance between theory, interventions and examples



Foster the translation from theory to practice



Include nudges and rational override interventions

5. BEHAVIOURAL INTERVENTION DESIGN

In this chapter

- 5.1 A new value proposition
- 5.2 Rational Overrides
- 5.3 Nudge or Rational Override situations
- 5.3 Key take-aways

This chapter will describe the proposed new design approach; Behavioural Intervention Design. First, a short overview of the approach is given followed by a more detailed overview of different rational override strategies. Advantages and disadvantages of the rational override are shortly summarized. Finally, different situational factors are categorized to be either suitable for nudge interventions or rational overrides.

5.1 A NEW VALUE PROPOSITION

The insights that were gathered throughout this project generated an alternative perspective on the possible use and value of behavioural economics in service design. This perspective was used to formulate an extended approach on the design for behavioural interventions. In this chapter the extended approach will be explained and illustrated with examples. This approach is proposed as a new value proposition of Livework. It should be stressed that this alternative perspective is not meant to contribute to theoretical implications but only as a potential practical direction for Livework.

Nudging to make it easy, attractive or social

Human behaviour is a key component in services as the interaction between a user and touchpoints determines the overall performance and value a service delivers. Increasingly, service organisations aim to influence or change behaviours; banks that want people to save for sustainable future incomes, utility providers want people to reduce consumption and switch to green energy and healthcare organizations want people to live a healthier life.

Organizations are struggling to change behaviour since it is complex, dynamic, multidimensional and very often not considered to be rational. Traditional methods to change behaviour include providing more information, making new laws and

regulations or introducing positive (or negative) financial incentives. These traditional approaches are made to be processed by peoples' conscious reflective mindset (Marteau et al., 2011). However, these messages often do not even come across to our consciousness, since 95% of the time people are utilizing their instinctive subconscious mindset.

Behavioural economics focusses on interventions that reduce (cognitive) friction and that facilitate automatic, subconscious thinking. These simple and low costs interventions, a.k.a. nudges, make information or a particular behaviour really easy, attractive or social. Nudges can support service organizations to, among others, quickly resolve adoption problems, smooth channel migration and streamline operations.

Nudges can, in some situations, make specific behaviour really easy by removing the friction. However, the consequences of these frictionless interactions can also tip scales. **Stimulating people in their automatic and unconscious thinking can eventually induce customer to be inactive and disengaged** (Bovens, 2009; Schubert, 2015).

Since a nudge only effects behaviour in the moment and in the particular touchpoint, it is doubtful whether it can create endured behaviour change (Bisset & Lockton, 2010; Stutzer, 2011; Hansen & Jespersen, 2013; Strassheim, 2016; Dholakia, 2016). Without the nudge, people simply will not be

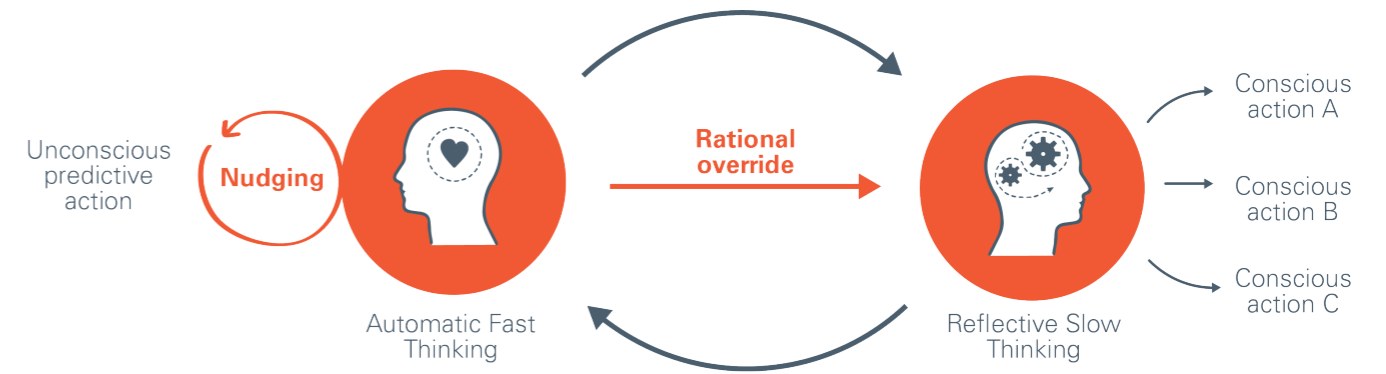


Image 41. Two types of interventions; Nudges & Rational Overrides.

stimulated to perform the desired behaviour. This is particularly important in services; people move from touchpoint to touchpoint, are sometimes even part of large ecosystems, and will thus be in different touchpoints.

Customers who do not make an active and conscious decisions do not experience choice satisfaction (Botti & McGill, 2006; Keller, 2011). Therefore, nudging people through a frictionless experience will not necessarily improve the customer experience

Behavioural Intervention Design

Livework needs an approach to help service organisations to create behaviour change, whilst still improving the customer experience. Insights in this project supported the development of an extended approach to create effective behavioural interventions in services: Behavioural Intervention Design. This approach is focussed on creating behaviour change by getting the customer in the right mindset at the right time. In this approach two types of behavioural interventions are combined across a customer journey to either speed up or slow down the user's momentum. These interventions

do not only facilitate automatic and fast thinking but can, when necessary, switch customers to the conscious state. See Image 41.

Customers can be prompted to switch to the conscious state by creating micro moments of deliberate friction. We will refer to these types of interventions as rational overrides. **Rational overrides can be used to disrupt mindless automatic interactions, prompting moments of reflection and more conscious decision making.**

Not all friction is bad

Friction is usually referred to as specific points in an interaction that prevents users from completing their tasks fast and smoothly. In the perspective of behaviour change, friction is generally thought of as a barrier to perform the desired behaviour. For instance; due to confusing interfaces, unnecessary steps and choice overload. It is common practice among designers (mostly UX) to remove these points of frictions and create a seamless experience.

However, not all interactions require the speed and usability of frictionless experiences. Some situations require users to slow down, focus on

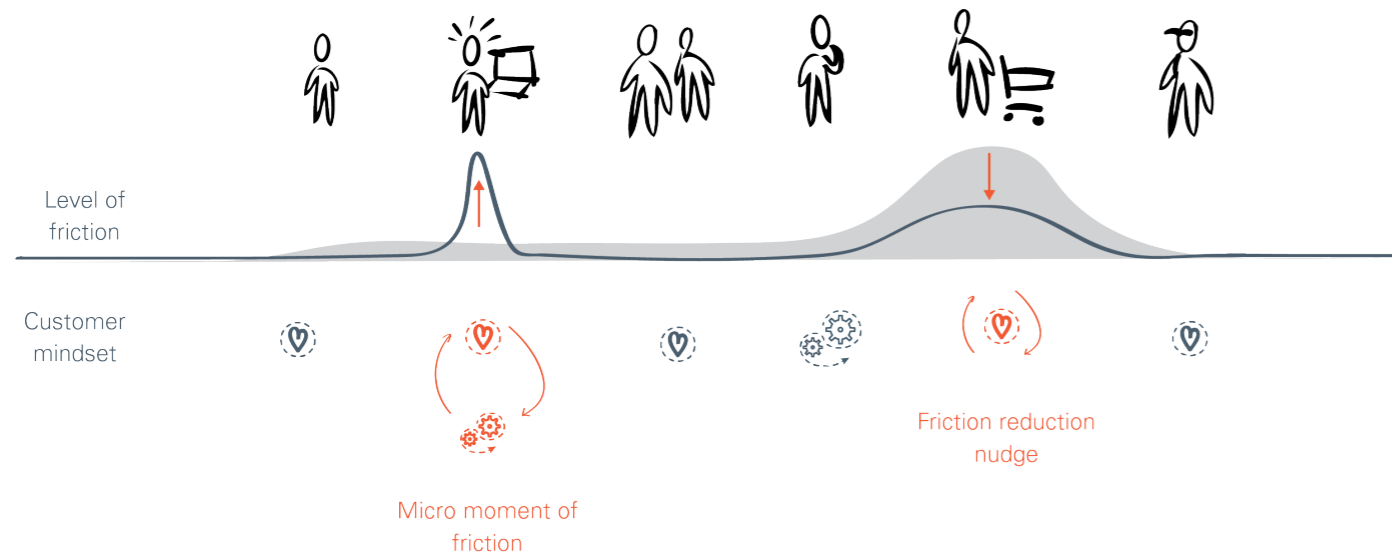


Image 42. The effect of adding (Rational overrides) and removing (nudges) friction in a customer journey

the decision at hand and understand the option that they have. In these situations friction is not bad, it is necessary. Micro moments of deliberate friction change customer behaviour, not because they make things really easy, but because they put users in control of their actions and they help raise their awareness. See image 42.

“ Whilst customers will say that they want things to be easy and friction-free, companies should focus on streamlining and relevancy not simplicity or friction-free. - Dr. Simon Moore, CEO Innovation bubble

Rational overrides & Customer Experience

In some situations people are willing, and even like, to put in effort to overcome friction. An well-known example of this is the IKEA effect; when people put effort into something they like and value it more (Norton & Ariely, 2011). This has also been shown to be true for decision making; the act of making a deliberate decision increase the satisfaction above what the same person would exhibit if the decision was passive (Botti & Iyengar, 2004; Botti & McGill, 2006).

Rational overrides that stimulate active decisions can make people feel more in control, accountable and satisfied. Moreover, making conscious choices stimulates people’s self-worth, development and ability to engage (Keller, 2011).

It is important to ensure that people perceive the rewards to be greater compared to the effort they have to take. Rational overrides need to add enough friction to disrupt customers’ mindless automatic thinking but not so much that it will impede them from moving through the service. When used correctly and at the right time, rational overrides can create an improved customer experience.

► The surge pricing of Uber shows how frictionless experience can turn into a negative customer experience. Although Uber did tell users that prices were higher because of increased demands, people ignored, or not even consciously processed, the information and just clicked continue. This resulted into many dissatisfied customers. The experience turned out to be too smooth. To avoid this, a micro moment of friction was introduced; customers are now forced to manually type the multiplying number to make sure they are aware and make a conscious decision to order.

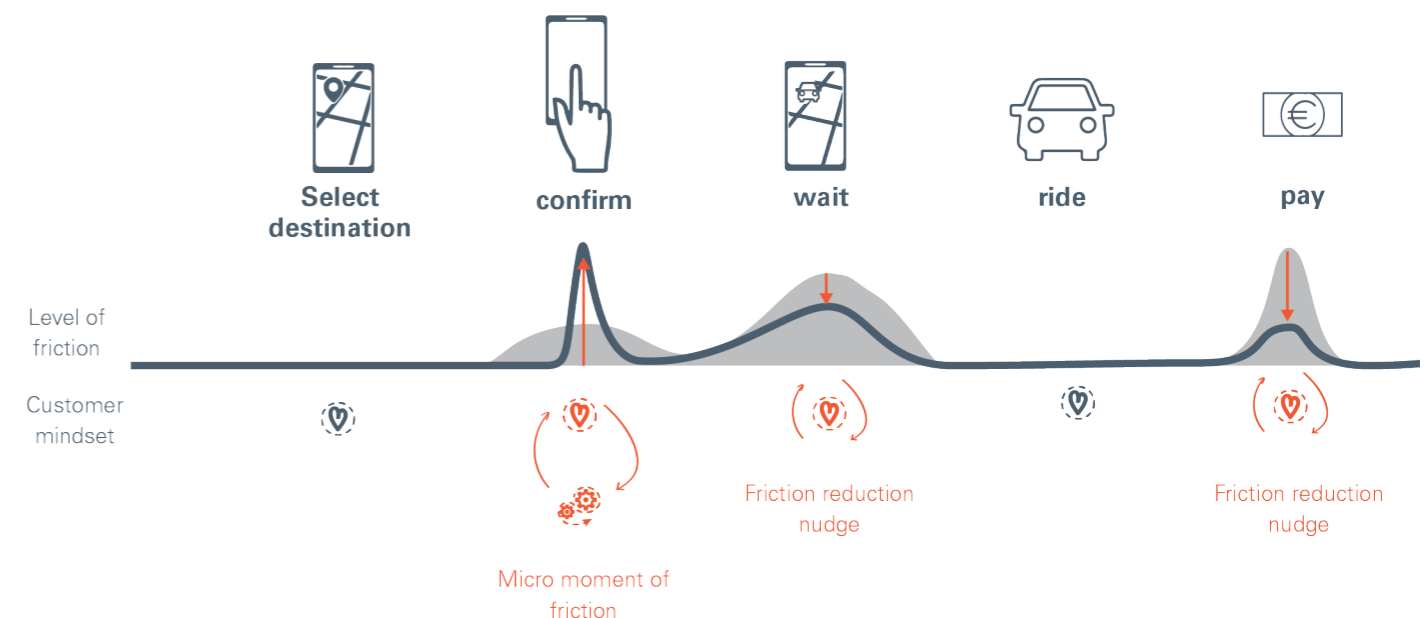
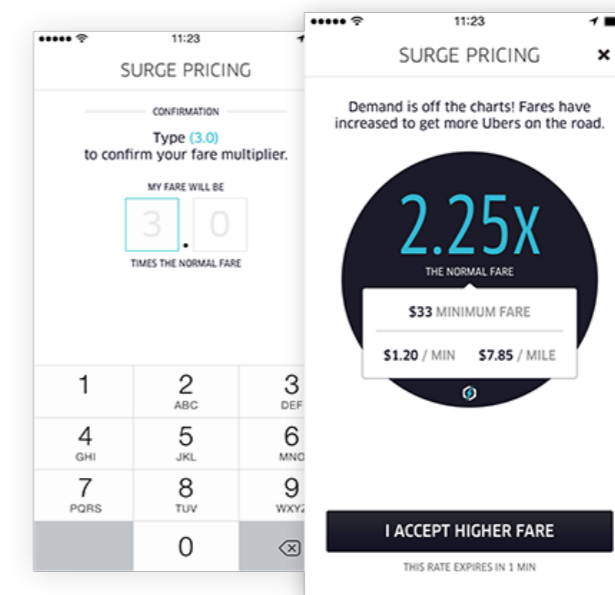


Image 43. Screenshots from the Uber app asking customers to manually type the multiplier rate to make them aware and conscious.

5.2 RATIONAL OVERRIDES

This chapter will elaborate on rational override interventions. A short summary of the existing literature on rational overrides will be shared. Eight different strategies for rational override interventions will be explained. Finally, advantages and potential downsides of rational overrides will be summed up.

What are rational overrides?

These type of mindful interventions have been reported, and are known in the behavioural literature, as debiasing interventions (Jolls and Sunstein, 2004), mindful nudges (Ly, 2013), system 2 nudges (Hansen & Jespersen, 2013; Sunstein, 2015) and inclusion nudges (Nielsen, 2016). Additional literature research showed that in the UX and design discipline interventions like these are referred to as frictional feedback (Laschke, Diefenbah & Hassenzahl, 2015) and micro boundaries (Cox & Gould, 2016).

In comparison to nudging there has been limited attention for behavioural interventions that opt to make people consciously aware of their behaviour. However, different scholars have highlighted the potential of these mindful interventions, but indicate that more research is needed to make a clear distinction (Sunstein, 2016; Strassheim, 2016). Just like with nudges, no univocal definition is present.

The interpretations and applications of rational overrides vary greatly. From top-down debiasing skills, tricks and training (such as prompting people

to think about alternatives by providing information or educating people about biases) to more bottom-up approaches like situated, frictional feedback embedded in products (Laschke et al, 2015).

In this project the following definition, which includes elements of different existing definitions, will be used to describe a rational override:

A rational override is a small moment of intentional friction that attempts to influence people's behaviour or decisions by intervening automatic thinking and activating reflective conscious thinking.

Nine types of Rational Overrides

The exploratory research, additional literature study on deliberate friction and desk research into examples of behavioural interventions resulted in the formulation of nine different rational override strategies. [See page 122-124](#) ▶ .Some of the strategies originate from nudging tools, such as the EAST card set. Although they are categorized as nudges, additional literature research into these strategies revealed that the underlying mental mechanisms fit better with rational overrides.

In some cases there is only a small difference between a rational override and nudge. For example; the descriptive norm and relative ranking, or the foot-in-door principle and commitment contracts. Although these strategies are based on similar biases and behavioural constructs they try to stimulate a different kind of mindset.

The advantage of rational overrides

Aside from the before mentioned increased satisfaction, feeling of being in control and autonomy rational overrides have five main advantages.

1. Making better choices that are in line with future goals

When rational overrides succeed in switching people to the reflective mindset it enables them to make choices that are consistent with people's values (Cox and Gould, 2016), future goals and individual situations (Ly, 2011). If people feel they retain control and their decisions aligns with their personal values, this can improve the user experience and engagement with a service.

2. Provide ongoing engagement and endured behaviour change

Active decisions bring about commitment to the choice or behaviour and can thus create consistent behaviour in the future (Stutzer, 2011). Rational overrides do not only effect behaviour in the present but can stimulate a re-evaluation of past behaviour and intention for future behaviour. Deliberate decisions in areas like blood donation (Stutzer, 2011), reduction of electricity consumption (Fowlie, 2017) and preventive health measurements (Keller, 2011) showed that people experience deeper levels of involvement and engagement than people who are passively nudged to perform the same behaviour.

▶ *An example to illustrate the effectiveness of rational overrides on follow up behaviour and engagement comes from an energy provider. People who were stimulated by an rational override to actively decide to take a time-varying pricing plan showed higher reductions of energy consumption*

than people who were defaulted into taking the pricing plan (Fowlie, 2017).

3. Reducing human 'errors'

Generally, conscious thinking is stimulated when novel things appear, discrepancy with current behaviour or beliefs is present or when a plea for attention is made (as with high risk decisions or high personal relevance). However, people not always use the appropriate system because they fail to recognize the signals. 'Errors' occur when people ...

▶ **treat novel situations as familiar.**

For example: Electric bikes have become fairly popular, especially among the older generation. However, the elderly fail to recognize the differences between the speed of an electric bike in traffic and a regular bike. Accidents happen because elderly do not account for a longer braking times nor do they take safety measurements that are advised with the increased speeds (like wearing a helmet).

▶ **misjudge a genuine discrepancy as consistent.**

For example: Many people that get a fine for not having a valid ticket on the train submit a unsubstantiated complaint because they feel that is not their fault and they did not do it on purpose. They fail to recognize the facts because they try to resolve the cognitive dissonance.

▶ **ignore a prompt for consciousness.**

For example: Many pedestrians walk through rail-crossings on auto-pilot: They don't actively pay attention nor do they see the signs that alert them for possible danger, putting their life at risk. Rational overrides can support people to reduce

these types of 'errors' by providing them with an additional cue for alertness. Service organizations can benefit greatly from this since it enables them to streamline their operations (Cox & Gould, 2016).

► *An example of such an additional plea for consciousness is the conscious crossing. A series of movable gates were placed alongside a dangerous rail-crossing. The cost-effective movable gates create constantly changing physical pathways. This rational override increases the chance of people paying attention, actively engaging with the environment and avoiding risky behaviour.*

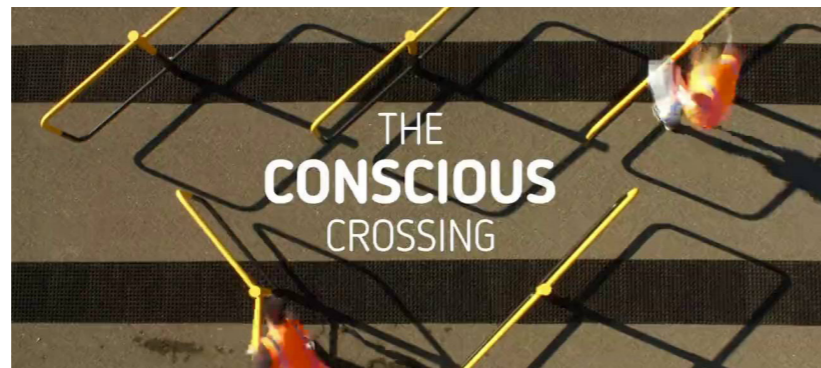


Image 44. Conscious crossing continuously changes the physical pathway, so people are made aware and conscious every time they cross the tracks.

4. Co-create value and loyalty

Rational overrides stimulate an active contribution of customers. While the service organisation provides the moment of reflection it is the customer who decides on the course of action. The value that is created is therefore co-created by the provider and user. Active and engaged customers show higher loyalty to a service provider since they accumulated conscious reasons for remaining in the relationship (Roos, 2011).

5. Effectively establish new habits

Approximately 45% of everyday behaviours and actions consist of habits and routines (Verplanken and Wood, 2006). People do not deliberately choose to leave the lights on or over-eat at a restaurant. They are hard-wired to create habits since it minimizes the cognitive effort to perform an action. People often return to (bad) habits since it requires effort and conscious deliberation to break them (Wendel, 2013).

Rational overrides can support people to establish new routines by creating moments of reflecting during

mindless behaviour. Unlike nudges, rational overrides encourage a user to choose if, and how, a new routine is implemented in their lives. This deliberate decision making requires control, consciousness and willpower. According to Strassheim (2016) rational overrides encourage a conscious learning process and are therefore more likely to result in habit formation than the use of automatic nudges.

The disadvantage of rational overrides

Rational override also have potential downsides in comparison to nudges.

1. The outcome is not predictive and varies across individuals.

What makes nudging so attractive for organizations is that it is predictable and it directs people to one unified outcome. The outcome of a rational override is not predictive, voluntary and varies among individuals. Since rational overrides stimulate

► *KeyMoment is a small key box that presents the bike and car keys, side by side. This key box is meant to trigger people to form new habits; like taking the bike to work. If somebody takes the car key, the bike key is dropped on the ground. People are stimulated to pick up the bike key and reflect on their choice for the car. With both keys in their hands, Keymoment creates a tangible moment of choice to establish new routines (Laschke, 2014).*

reflective and conscious thinking people will make an individual choice. This could also mean that they decide to not perform the desired behaviour or select the desired option. However, if people choose to engage and change into the desired direction it has better effects on the long-term (Wendel, 2013).

2. The Psychological Pleasure and Pain of Choosing

Rational overrides that are successfully stimulating people to make a deliberate decision will create a feeling of satisfaction. Research has shown that even when the outcome of an active choice is incongruent with previously stated preferences it can still be perceived as positive (Botti & Iyengar, 2004). However, negative outcomes of active decisions can also create a feeling of dissatisfaction and pain of losing something.



Image 45. Keymoment is a key holder designed to increase physical activity by raising the frequency of taking the bike instead of the car.

Nine Rational override Strategies



1. Functional Friction

Include small additional steps in the process to disrupt mindless automatic interactions. People are asked to put in a little bit extra effort to get to their goal (Cox & Gould, 2016 ; Laschke, Diefenbah & Hassenzahl, 2015)

Tactics

- ▶ Introduce continuous differentiation in situations
- ▶ Integrate additional actions that require minimum effort

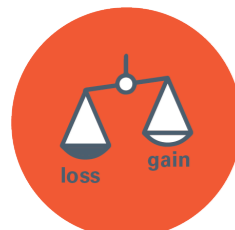


2. Increased decision points

By adding extra decision points at the right time people have the possibility to become aware, take a step back and re-evaluate the decision or behaviour. (Cox & Gould, 2016)

Tactics

- ▶ Provide the possibility to escape an undesired behaviour.
- ▶ Divide a single package, form or screen in multiple separate steps



3. Enhanced Active Choice

Stimulate people to make an active choice in a desired direction by highlighting losses incumbent in the non-preferred alternative. (Keller, 2011; Hansen & Jespersen, 2013)

Tactics

- ▶ Provide the possibility to escape an undesired behaviour.
- ▶ Divide a single package, form or screen in multiple separate steps



4. Relative Ranking*

Provide customers with personalized data, including their rank, in comparison to the performance of similar others. (Hansen & Jespersen, 2013; Allcott & Rogers, 2014; Frey & Rogers, 2014)

Tactics

- ▶ Provide rank through a number, color, percentage or
- ▶ Publicly score people and their peers on consequences of their behaviour

*Difference with descriptive norms: relative ranking stimulate conscious reflection upon personalized data in comparison to others, whereas norms unconsciously creates compliance to a social norm (Nolan, Schultz & Cialdini, 2008).

▶ The 'Lose it' is a food diary app that asks users to take a picture of a meal before eating it. This small extra effort is enough to disrupt mindless decisions and stimulate healthy eating (Zepeda & Deal, 2008).

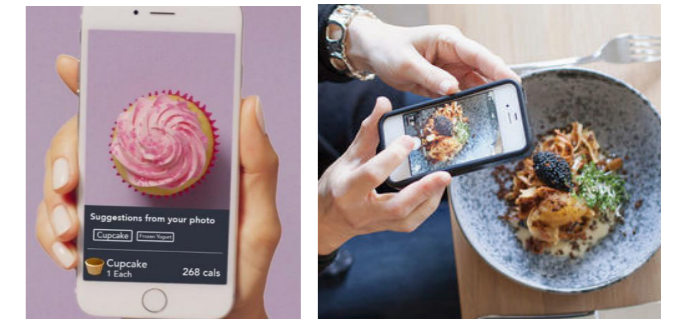


Image 46. Smartphone application Lose It stimulates users to take a picture of their meal to create a moment of awareness and reflection..

▶ See the examples of the Escape hatch in insurance on page 99 & the manually confirmation in the Uber app on page 117

▶ Workwell sends their employees an enhanced active choice to get a flu shot. By highlighting the potential loss people are triggered to consider their options and stimulated to select the first option (Keller, 2011).

**Flu season is here.
Book your appointment today**

Place a check in one box

Yes, I will get a Flu shot this fall to reduce my risk of getting the flu and I want to save \$50

No, I will not get a Flu shot this Fall even if this means I may increase my risk of getting the flu and I don't want to save \$50

Image 47. Enhanced active choice of Workwell in the USA to prompt employees to actively decide to get a flu shot.

▶ Opower uses relative ranking to show customers how their energy consumption compares and ranks to their neighbours. Comparing electricity consumption with that of neighbours will cause people to consciously reflect upon their energy consuming behaviour. (Allcott and Rogers 2014)

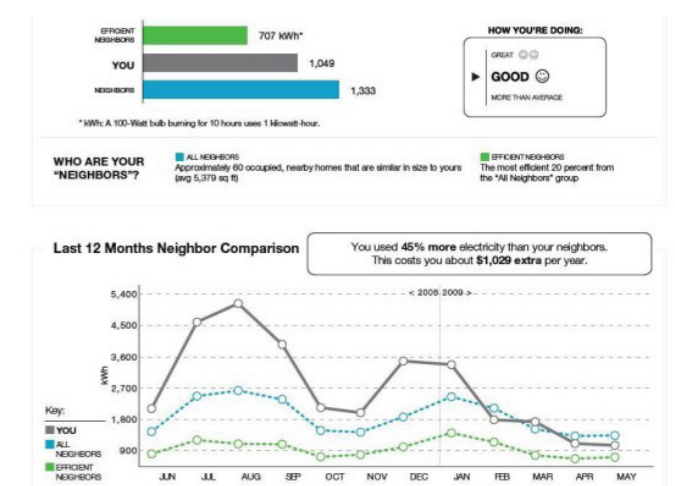


Image 48. OPOWER creates monthly overviews of peoples' energy consumption in comparison and ranked among neighbours in similar houses.



5. Commitments

Let people create an action plan or commitment to achieve a certain behaviour. Make the commitment detailed and action oriented. (Hansen & Jespersen, 2013)

- ▶ Create implementation intentions
- ▶ Create small written or spoken commitment contracts. For instance to a specific date and time.
- ▶ Ask people for confirmation of appointments and or commitments



6. Checklists

Simplify how information is presented in order to make it easy for people to remember and use. Simple checklists for important multistep procedures are effective reminders and useful in preventing errors.

- ▶ Simplify a complex task into a sequence of multi smaller steps.
- ▶ Provide effective reminders for tasks which take some time to complete or involve periods of waiting



7. Real-time feedback

Real-time feedback makes people consciously aware about what is going on. It can show the consequences of current actions and encourages to adjust and improve behaviour. (Hansen & Jespersen, 2013; Wendel, 2013)

- ▶ Provide ongoing feedback about consequences of actions with digital measurements, smart stickers and salient cues.
- ▶ Make future consequences more tangible and visible in the moment.



8. Personalized feedback

Personalized feedback prompts people to reflect on their behaviour since it this type of data is highly relevant to them and they perceive it to be of increased value, as it has taken some effort to produce. (Poddar, A., Ellis, C. M., & Ozcan, T. 2015).

- ▶ Make consequences of current actions more tangible and visible.
- ▶ Provide actionable suggestions that promote desired.



9. Reminders and Alerts

Alerts and reminders can be used to make people aware, help them to remember important actions or persuade people to perform desired behaviour.

- ▶ Create time or location-based reminders to stimulate desired behaviour.
- ▶ Use sounds, visuals, lights or physical objective to make people aware.

The NHS has introduced paper commitment stickers in pharmacies which ask patients to commit to taking their medication as prescribed. The signed sticker was attached to the medications package with increased compliance rates by 10% (Berry, 2015)



Image 49. NHS uses simple paper commitment cards in pharmacies.

Livework redesigned a checklist for a large cable operator to help customers feel in control over the installation or repair process, to remember important steps or checks for later and understand what is installed in their home.

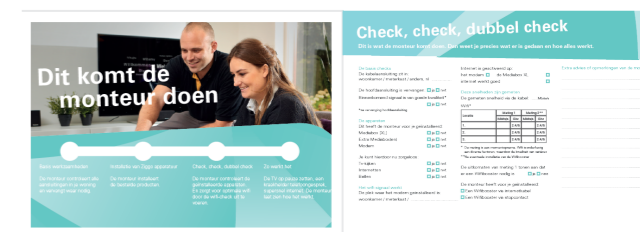


Image 50. A simple medical checklist to help people during the installation or repair process. Together with the mechanic the checklist is discussed.

The Toyota Prius provides feedback about gasoline consumption. As drivers observe the consumption, they can make a direct connection between the way they drive and the rate of fuel consumption. They become consciously aware of their driving behaviour and are more motivated to drive efficiently. (Payne, 2012; Wendel, 2013)



Image 51. Display with real-time feedback on gasoline consumption.

See the example of age progressed photo software to increase pension plans on page 31.

The Axia smart office chair monitors users' sitting behaviour and provides reminders if the user sits incorrectly. A light vibration in the seat reminds the user if he/she sits for too long. These reminder helps to raise the general awareness towards one's sedentary behaviour.



Image 52. The axia smart office chair alerts users to stand up, or sit straight, during a day of work.

*Reminder and alerts are different from real-time and personalized feedback as the purpose is to increase awareness about a behaviour people already are motivated for.

5.3 RATIONAL OVERRIDES & NUDGE SITUATIONS

The exploratory research and literature study has shown that using nudging strategies alone is a suboptimal approach to change behaviour in service design. Although nudges can be very effective they are not always scalable, sustainable or suitable to apply in touchpoints.

Rational override interventions have high potential to change behaviours in a service context. However, it should not be the objective to prompt users in more reflective and conscious thinking in every situation.

Although it might seem that rational thinking would enable people to make better choices it is recognized that automatic thinking can, in some situation, result in better outcomes (Gigerenzer, 2011). Moreover, people do not have the cognitive capacity to use their conscious reflective mindset all the time.

To create successful behavioural change in services it is important to use the right type of intervention in the right situation. In the following section insights into the decision between a rational override and nudge will be shared. Image 53 shows a typical nudge situation and image 54 & 55 on the next page highlight a typical rational override situation.

Outcome

The most important factor to consider in the decisions between a nudge or rational override is the intended outcome. Since nudges stimulate a predictive unified outcome is likely to be effective in

situations in which there is a single optimal course of action, that most people don't take (Keller, 2011).

► Suitable situations for nudging include channel migration, organ donation and recycling.

Rational overrides are suitable for situations in which the optimal outcome is largely depending on an individual's situation. People are prompted to actively decide what is best for them.

► Suitable situations for rational overrides include: Deciding on a mortgage, pension plan or new medical insurance contract.

Habits

Many behaviour change challenges are concerned with habitual behaviour. Both type of interventions can change habits.

Nudges can be used to change routines by automatically cueing desired behaviour. In order for the new routine to become a habit it needs to be repeated frequently and therefore the nudges needs to be present every time. Nudges can thus only be used to change routines in stable contexts (Frey & Rogers, 2014). Habit formation takes time, varying by person and situation from a few weeks to many months (Lally et al. 2010). It is therefore important to consider if and when a behaviour persists when the nudge is discontinued.



Image 53. A Danish hospital introduced free standing salient hand sanitizers with a social norm at the entry of every hospital unit to increase hand hygiene compliance among visitors.

Using nudges to create a new habit will ultimately be the result of an unconscious adaptation (Wendel, 2014). People do not choose to implement a new habit but can unconsciously develop preferences for the desired behaviour or option.

► Suitable habits for nudging include hand washing compliance by employees, flossing your teeth, turning the lights off.

Rational override strategies are more effective to change routines that take place in different environments, at different times and or require a change in people's beliefs, attitudes, or interpretations (Frey & Rogers, 2014).

To consciously change a habit people need to establish a new routine and extensively practice it so it can eventually move down into subconscious thinking.

► To increase hand hygiene compliance by visitors in hospitals a free standing hand dispenser with a salient social norm was placed at the entrance of a hospital unit. This is an very appropriate situation for a nudge; the desired outcome is the same for everybody, it is routine change in a stable context, quantitative effects are more important than qualitative, there is no committed follow-up needed, it does not require active input, is in the present moment, one particular touchpoint and is in line with (most) peoples' intentions.

► Habits that are suitable to change with rational overrides include quite smoking, eat healthy, reduce electricity use and reduce meat consumption.

Quantity or Quality

Generally nudges effect a relatively large part of the target audience. Since nudges do not require extra effort and facilitate the unconscious mindset people are more likely to stick to the status quo and perform the desired behaviour.

Rational overrides are generally less effective, quantitatively speaking. Since the outcome behaviour from a rational override is voluntary, people can also decide to not choice to perform the desired behaviour. However, if people decide in favour of the desired behaviour it produces better effects on the long term.

► For customer acquisition challenges this means that while nudges will probably acquire more customers it are the rational overrides that bring in the customers that really believe in the offer and are willing to commit to a long-term relationship.

Ongoing Engagement & enduring effects

As discussed previously, nudges yield decisions through the inaction of customer. They are therefore less likely to induce the kind of committed follow-up that is often required for an endured behaviour change. Unconsciously agreeing to a sustainable electricity pricing plan will not create effective reduction in energy consumption. Similarly, people that are nudged to select fruit and vegetables may discard them rather than consuming them. Nudges are therefore most suitable for infrequent or one-time behaviours.

► Organ donation, increased voting participation and default double sized printing settings are examples in which nudging could be suitable.

Customers' input

Situations that require an active input of customers are not fitting for nudges. Mindless interventions are appropriate in so called low involvement decisions, ones that involve little conscious deliberation or input (Lehner, 2016)

Within or outside of a context

Nudges only work in the environment in which they are present. Multiple nudges across touchpoints

can be combined to create changes in multiple contexts. However, the behaviour changes need to take place in stable contexts; e.g. in the same places and touchpoints.

In the present or past and future

Nudges are effective in the immediate moment and do not necessarily change intentions to perform the desired behaviour in the future.

Rational overrides can behaviour in the present, stimulate a re-evaluation of past behaviour and intention for future behaviour. Rational overrides stimulate people to re-evaluate their beliefs, attitudes and intentions (Frey& Rogers, 2014).

Established Intention

Nudges can help individuals to align their behaviour with intentions. When people already have a positive intentions towards the desired behaviours nudges can be very effective to close the gap between intentions and actions (Soman, 2015).

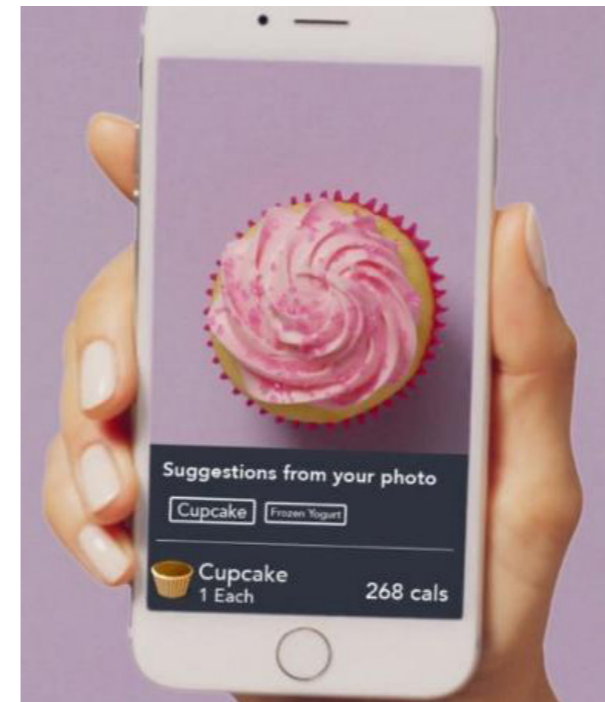


Image 54 & 55. Smartphone application Lose It stimulates users to take a picture of their meal to create a moment of awareness and reflection.

► Changing people's eating habits is very difficult. This app stimulates users to take pictures of their meals before eating it to create a moment of reflection. When a picture is taken the amount of calories is estimated and advice is provided. Asking users to take the extra effort to make a picture is enough to disrupt mindless decisions (Zepeda & Deal, 2008).

This is an very appropriate situation for a rational override since;

- The desired outcome is different per individual
- It is a routine change in different environments and moments in time
- To change behavior enduring engagement and follow-up behaviour is required
- & it requires active customer input

KEY TAKE-AWAYS CHAPTER 5

Behavioural Intervention Design

Behavioural economics only focusses on behavioural interventions that reduce (cognitive) friction and that facilitate automatic, subconscious thinking. Since nudging customers in services has some limitations an additional type of intervention is put forth; the rational override.

To include these two types of interventions a new design approach is presented: Behavioural Intervention Design. This approach is focussed on influencing behaviour by getting the customer in the right mindset at the right time. In this approach two types of behavioural interventions are combined across a customer journey to either speed up or slow down the user's momentum. These interventions do not only facilitate automatic and fast thinking but can, when necessary, switch customers to the conscious state.

Rational Overrides

Rational overrides are defined in this project as a small moment of intentional friction that attempts to influence people's behaviour or decisions by intervening automatic thinking and activating reflective conscious thinking.

Creating interventions to switch people to the conscious state is not new, but in comparison to nudging there has been limited attention for these type of interventions.

The exploratory research, existing literature and desk research revealed nine different strategies to create rational overrides; Function friction, increased decisions moments, enhanced active choice, Relative ranking, Commitment devices, Personalized feedback, Real-time feedback, Checklists and Reminders.

Rational overrides can create choice satisfaction, a feeling of control, better individual outcomes, ongoing engagement, reduction of human 'errors', loyalty and effective habit changes.

However, rational overrides have the disadvantage that they do not result into a predictable single outcome. Moreover, since they are voluntary interventions people can also decide to continue (or perform an alternative) unwanted behaviour.

Nudge and Rational override situations

Rational overrides have high potential to change behaviours in a service context. However, it should not be the objective to prompt users in more reflective and conscious thinking in every situation. In some situation, automatic and fast thinking can even result in better outcomes (Gigerenzer, 2011). Moreover, people do not have the cognitive capacity to use their conscious reflective mindset all the time.

To influence behaviour in services it is important to use the right type of intervention in the right situation and to combine different strategies across touchpoints, channels and stages.

A typical nudge situation is characterized by a unified desired outcome, takes place in a stable context, does not require follow-up behaviour or engagement and does not require active customer input.

A typical rational override situation is characterized by a different desired outcome per individual, takes place across touchpoints and time, requires enduring engagement and active customer input.

6. BEHAVIOURAL INTERVENTION DESIGN TOOLKIT

In this chapter

- 6.1 Tool development process
- 6.2 Behavioural Intervention Design process
- 6.3 The toolkit step by step
- 6.4 Key take-aways

In this chapter, the Behavioural Intervention Design process and toolkit is described. All tool materials (including the earlier versions) can be found in appendix C and D. First, an overview of the tool development process is provided, followed by a description of the overall steps and activities in the Behavioural Intervention Design process. The tools are explained more in-depth with the use of an example case.



6.1 TOOL DEVELOPMENT PROCESS

This chapter provides a short overview of the tool development process. The development process is based on the insights that emerged throughout the project. The design guidelines from chapter 4 are used as a foundation in this design process. A brainstorm workshop was done with seven design students. Several rounds of iterations were made based on feedback of Livework designers. This chapter only shows a broad overview of the development process and iterations. See appendix C for a more detailed overview of the process.

Tool development workshop

A brainstorm session with seven students of the TU Delft was held to broaden the perspective on the usability of existing design tools. See image 56. The goal of the session was to explore the possible activities, visualizations, structures and forms design tools can have. Different behavioural models, the dual system theory and cognitive biases were evaluated on usability, effectiveness and possible opportunities for integration.

The workshop highlighted many different ideas on how to visualize, create activities and different uses for design tools. Five main insights on possible behavioural design tools were gathered:

- ▶ Keep it simple and easy to use for people with different levels of knowledge. The tools should have different levels of complexity. If necessary, additional information should be easily accessible.

- ▶ The cognitive biases are not useful in the tools, but can be referred to if more indepth knowledge is required.
- ▶ Behavioural cards work really well in an ideation activity. However, they should be visual, categorised and easy to apply.
- ▶ The dual system theory is very helpful to understand behaviour and is perceived most useful when applied and integrated on a customer journey map.
- ▶ The Motivation-Ability-Opportunity framework can be used as an analysis tool (understand existing behaviours) and selection tool (where do we need to focus on).

Behavioural Intervention Canvas

To provide designers and client with a clear overview, a canvas was developed. This canvas serves as a 'blue print' throughout the project and clearly links the different phases and intermediate outcomes.

Behavioural Strategy Tool

The strategy tool facilitates the conversation in the kick-off meeting with a client. It enables designers and clients to quickly scope the project down to a concrete target behaviour that is linked to current business objectives. In order to explore different customer segments an additional template was made.



Image 56. Students of Industrial Design brainstorming on different forms, visualizations, uses and activities in existing design tools.

Behavioural Analysis Tool

Different options were explored to guide an behavioural analysis and integration of insights. A tool for initial exploration on behavioural factors was developed based on the Motivation-Ability-Opportunity framework. The tool consist of a template and cardset to help designers and clients to explore possible influencing factors on the behaviour.

Additionally, a tool for insight integration was developed. Extra swimming lanes were added to the familiar customer journey map to enable designers and clients to link context- and user insights with

behavioural factors. This tool supports the selection of pain points and hotspots across the customer journey. These key moments have high potential to influence behaviour.

Behavioural Intervention Tool

For the ideation stage a card set was developed. The cardset includes 9 rational override strategies and 17 nudge strategies categorized on influencing behavioural factors. The cards are colour coded, include an easy to understand visual, provides specific strategies for interventions and illustrate a real-wold example on the back.

6.2 BEHAVIOURAL INTERVENTION DESIGN PROCESS

Behavioural interventions design is an approach that can support service designers, clients and stakeholders to understand and influence behaviour. With the use of the toolkit they can create a strategy, conduct a behavioural analysis and generate ideas for behavioural interventions.

The behavioural intervention design process is divided into six phases. These phases are deliberately linked to the existing Livework phases. The complementary toolkit consists of 5 templates, 2 card sets and 2 databases that can support designers in first four stages of a project. No specific tools were developed for the create, validate and implement phase since the activities in these phases vary greatly and are strongly depended on the running time and budget of a project. Table 1 includes information about the objective, materials and outcomes of each phase. See image 57 on the next page for a process overview.

Client involvement

The six tools in the toolkit can be used to support designer, clients and stakeholders in co-creation workshops. However, it is recommended to have internal moments of reflection, integration and iteration with designers alone. Image 57 shows the suggested client involvement per phase.

Product mode vs. workshop mode

The Behavioural Intervention Toolkit can be used in projects in two ways. In product mode, the toolkit can be used to setup and support designers throughout a whole project; from initiation to the

validation in the enable stage. However, the tools and templates can also be used individually during some of the project phases. The tools are modular and can be seen as 'building blocks' to support designers in different phases of a project.

Depending on the client, case and resources, the toolkit can either be used in project or workshop mode. The tool activities are largely the same, but the amount of time, research and iteration can be adjusted to match the clients or project needs.

In project mode, it is suggested to use the tools over longer periods of time and in separate client workshops. This enables designers to make iterations and acquire more in-depth (scientific) knowledge on the subject.

► *In the behavioural analysis it is beneficial for designers to consult the cognitive database in order to better understand underlying mechanism of the unwanted behaviour.*

In workshop mode, it is recommended to go through phases 2, 3 and 4 in a one-day workshop. Usually the scope of a project is pre-determined and contextual and user research has already been conducted. Along the way, behavioural problems can arise or behavioural solutions want to be explored. The Behavioural Intervention Design tool can support the ideation stage to open up the solution space and include a behavioural perspective.

Phase	Overall objective	Tools from Toolkit	Additional tools and materials	Outcome
Phase 1: Determine strategy	Agree on a clear scope that is related to business objectives and organizational challenges.	<ul style="list-style-type: none"> ► Behavioural Intervention Canvas ► Behavioural Strategy Tool ► Customer Segment Template 	An existing customer journey	A clear and specific scope based on an existing customer journey, customer segment, unwanted behaviour and target behaviour.
Phase 2: Analysis existing unwanted behaviour and context	Analysis the current unwanted behaviour to understand underlying mental mechanisms.	<ul style="list-style-type: none"> ► Behavioural Factor Template ► Behavioural Factor cards ► Cognitive Biases database 	Qualitative context and user research	Key behavioural factors that influence the behaviour and qualitative user insights.
Phase 3: Integrate insights and find key moments to influence	Integrate insights from the analysis on a journey map to find key moments to influence behaviour.	<ul style="list-style-type: none"> ► Behavioural Journey Map 	Customer journey mapping	Key moments to influence behaviour across the customer journey.
Phase 4: Ideation	Generate ideas for behavioural interventions.	<ul style="list-style-type: none"> ► Behavioural Intervention Strategy Cards 	Ideation activities and tools	Ideas for interventions
Phase 5: Create and test intervention	Select promising ideas for development and testing		Prototyping Qualitative research	Qualitative insights that fuel iterations for final design
Phase 6: Validate and implement interventions	Interventions can be combined across a journey to test for quantitative results.		Randomized control trials Before-after measurements	Quantitative results on effect of interventions & implementation plan

Table 1. Overview of the objective, Behavioural Intervention Design Toolkit tools, additional tools and activities and outcome per phase.

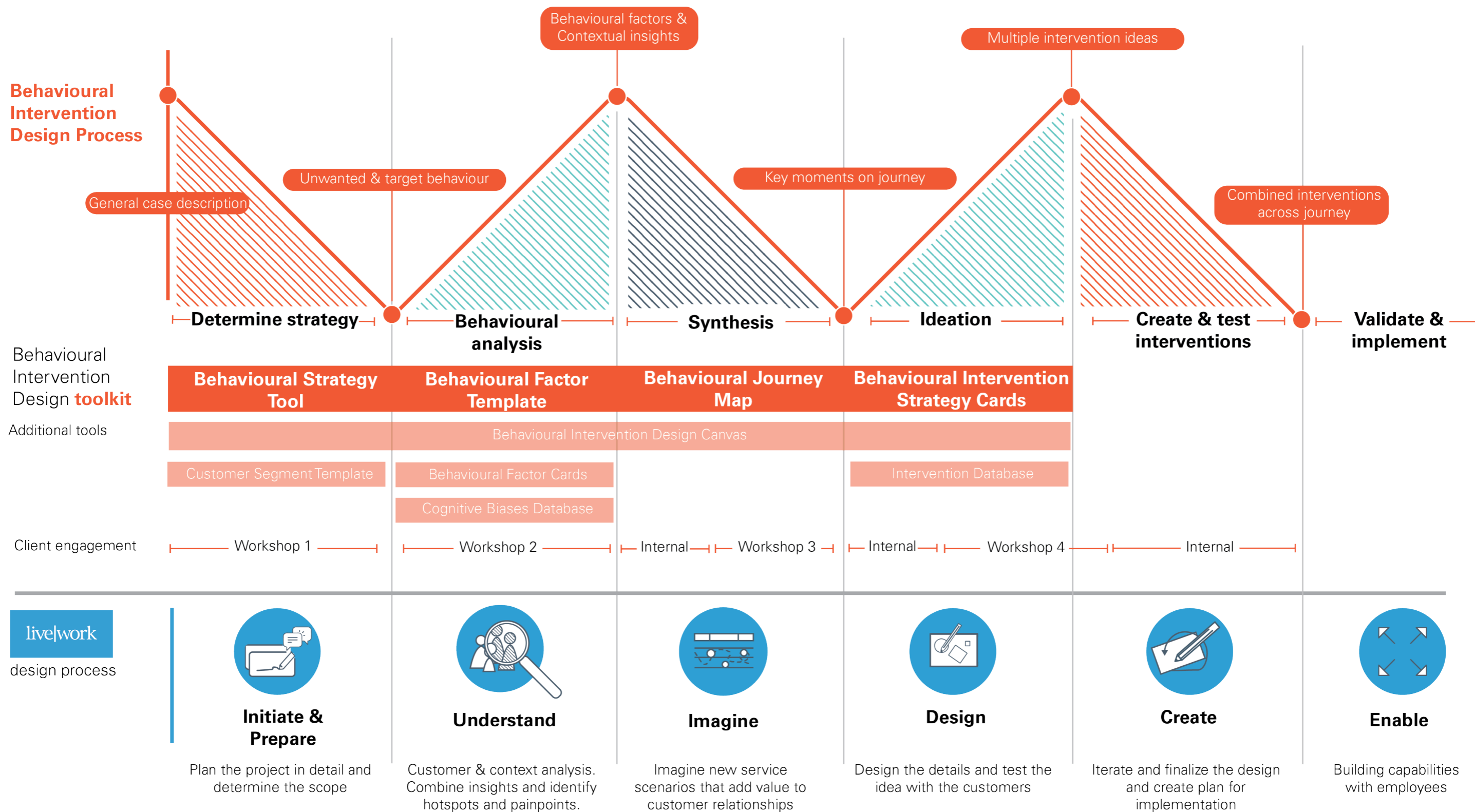


Image 57. Overview of the Behavioural Intervention Design process and toolkit. The stages are related to the existing stages in the Livework process. Client involvement and key outcome are highlighted across the process.

6.3 THE TOOLKIT STEP BY STEP

In this chapter, a more elaborate overview of the process and all the involved steps is provided. See image 58. To illustrate the use of the different tools, an example case is introduced. The presented case is based on real data and information, but does not represent an actual project. This case was used in a validation workshop with design students.

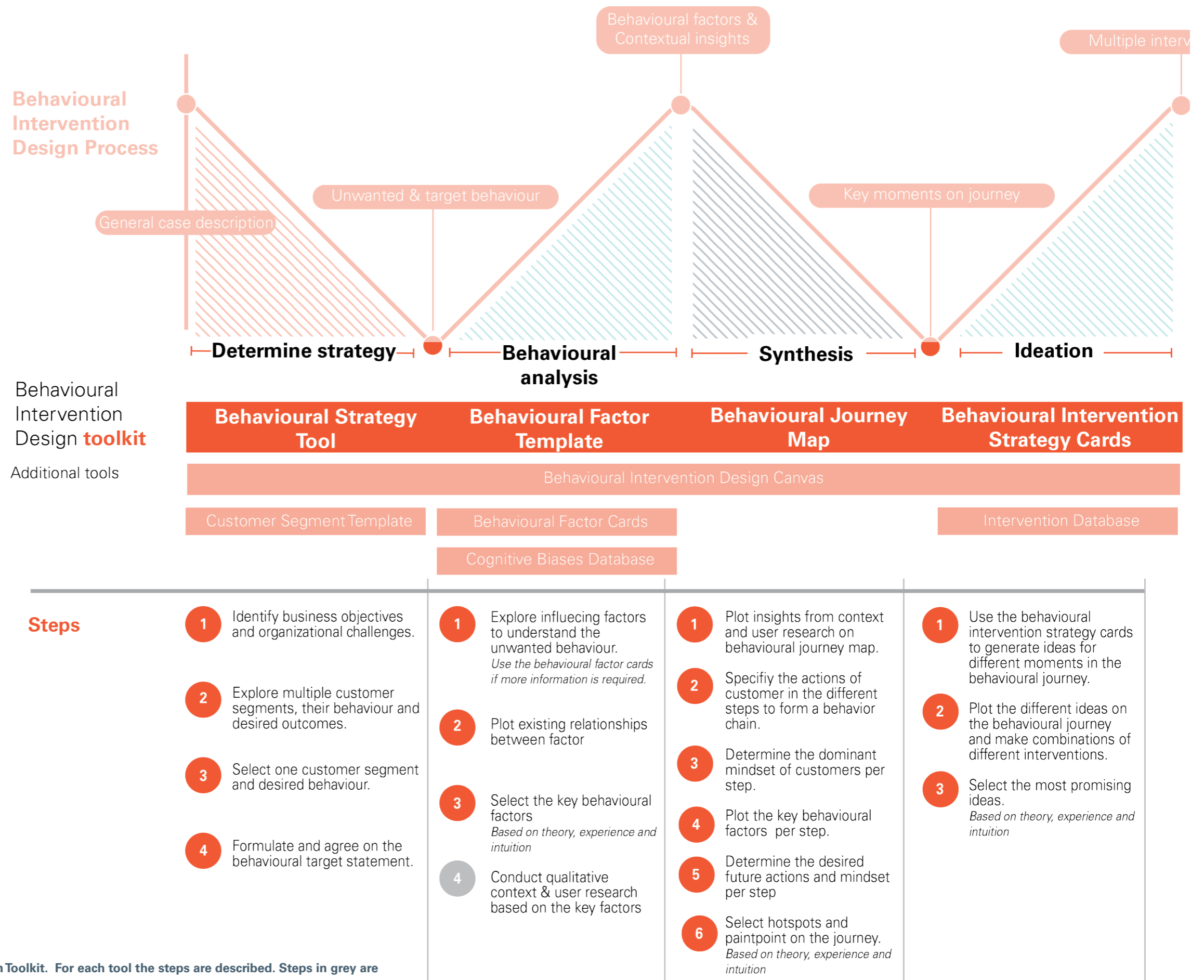


Image 58. Overview of the Behavioural Intervention Design Toolkit. For each tool the steps are described. Steps in grey are not part of the toolkit.

Case introduction

In the Netherlands there is large problem with cancellations of the student travel product. Dutch students can travel by public transport for free or at a reduced rate for the larger part of their studies. However, after 5 years (or after graduation) students are no longer entitled to a student travel product. They must unload this themselves at the station. This will not happen automatically and if students do not unload in time, they risk to receiving a large fine.

Many students are not aware, forget or procrastinate the decisions to cancel their travel product. The systems of the government and public transport organization do not align and therefore students can continue travelling for 'free'.

The Dutch government and the transport organization want to solve this problem and stimulate students to cancel their travel product on time.

Phase 1: Determine strategy

Step 1.1

In the kickoff meeting the business objectives and organizational challenges are discussed with the client and stakeholders. The **Behavioural Strategy Tool** be filled in, see [image 59](#). Together with the client the scope of the project needs to be determined. In this case a redesign of the existing customer journey is suitable.

Step 1.2

The behaviours of different customer segments are explored in the **Customer Segment Template**. In this case we would focus on unaware students that forget, aware students that procrastinate, graduates and deliberate fraudulent students. For each customer segment the Who, What, When and

Student travel product Cancellation process

1. Email notifies 2 months in advance



2. Keep travelling till final date (or beyond the final date)



3. Cancel your product at a NS station.



4. Check if the cancellation is registered at MijnDuo.



5. Select a suitable new seasonal ticket with discount



Where of the unwanted behaviour and situation is specified. The overall objective is to make students more responsible, or less dis-honest. This overall objective can be translated to actual behaviours (e.g. actions).

Step 1.3

The customer segment is selected based on potential, urgency, impact or alignment with the

business objectives. In this case the unaware students that forget or procrastinate are the biggest group, and can thus create a large impact.

Step 1.4

For this customer segment a desired behaviour is selected and the target behaviour statement is formulated together with the client.

Part 1.1 - Behavioural Strategy Tool

Business objectives
What do you want to achieve?

- SAVE COSTS € → Reduce customer churn
- Streamline operations
- improve customer experience

Existing organizational challenges
What are problems that stand in the way of the objectives? Which stakeholders, departments or channels are part of this challenge?

- little control, no possibility to check students → no immediate consequences
- Systems do not align
- many different stakeholders
- automation is not possible: students need to take action

If applicable, specify the scope of the project:
 New customer journey Redesign existing customer journey New touchpoint Redesign touchpoint

Customer segment
Go to tool 1.2 if you want to explore multiple customer segments

1.3 unaware students that forget, procrastinate cancellation

Unwanted customer behaviour
Which current behaviours relate to the business problem?
e.g. Employees commute to work via car and do not exercise enough.
Students have got the email but no action was taken. They procrastinate or completely forget to cancel, leading to fines!

Abstract goals or outcomes
What is the overall customer objective of this project?
e.g. We want people to be cycle to work, exercise more, live more healthy.
→ increase awareness & responsibility of students
→ prevent many unnecessary fines & dissatisfied customers

Desired customer behaviour
Which alternative behaviours would be desirable?
e.g. Take the bike to work 3 times a week, Take the stairs instead of the elevator, Take 10.000 steps every day.
Cancel subscription on time at the station
Take immediate action after email
Select new suitable offer.

Select the most promising one. Do not forget the business objective.

Target behaviour statement
Make sure you are focusing on behaviours and not emotions or outcomes. The statement should be specific, action based and measurable.
When are they performing this behavior?
Where does the behaviour occur? Think about channels and touchpoints.
we want to influence unaware students that are no longer entitled to a travel product to cancel on time at the station.
Mostly in summer after graduation
Email → not read or remembered!

1.1
1.2
1.3
1.4

live/work

Part 1.2 - Customer Segment Template

Customer segment ... deliberate, fraudulent students

Unwanted customer behaviour
Which current behaviours relate to the business problem? Try to think about different customer segments and put them on separate sheets.
e.g. Employees commute to work via car and do not exercise enough.

Abstract goals or outcomes
What is the overall customer objective of this project?
e.g. We want people to be cycle to work, exercise more, live more healthy.

Desired customer behaviour
Which alternative behaviours would be desirable? Make sure you are focusing on behaviours and not emotions or outcomes. It should be specific and action based.
e.g. Take the bike to work 3 times a week, Take the stairs instead of the elevator, Take 10.000 steps every day.

Part 1.2 - Customer Segment Template

Customer segment ... unaware students, not graduated yet

Who
Who are they doing?
unaware students

What
What are they doing?
they forget to cancel their subscription on time

When
When are they performing this behavior?
mostly in summer after graduation

Where
Where does the behaviour occur? Think about channels and touchpoints.
Email → not read or remembered!

Unwanted customer behaviour
Which current behaviours relate to the business problem? Try to think about different customer segments and put them on separate sheets.
e.g. Employees commute to work via car and do not exercise enough.

Abstract goals or outcomes
What is the overall customer objective of this project?
e.g. We want people to be cycle to work, exercise more, live more healthy.

Desired customer behaviour
Which alternative behaviours would be desirable? Make sure you are focusing on behaviours and not emotions or outcomes. It should be specific and action based.
e.g. Take the bike to work 3 times a week, Take the stairs instead of the elevator, Take 10.000 steps every day.

→ increase responsibility of students
→ make them aware of cancellation
→ prevent unnecessary high fines
→ increase customer experience
→ provide students with immediate consequences.

→ Cancel student travel product on time at the station
→ select new & suitable seasonal offer @ transportation organization of choice
→ Be aware of cancellation
→ Directly after email cancel travel product.

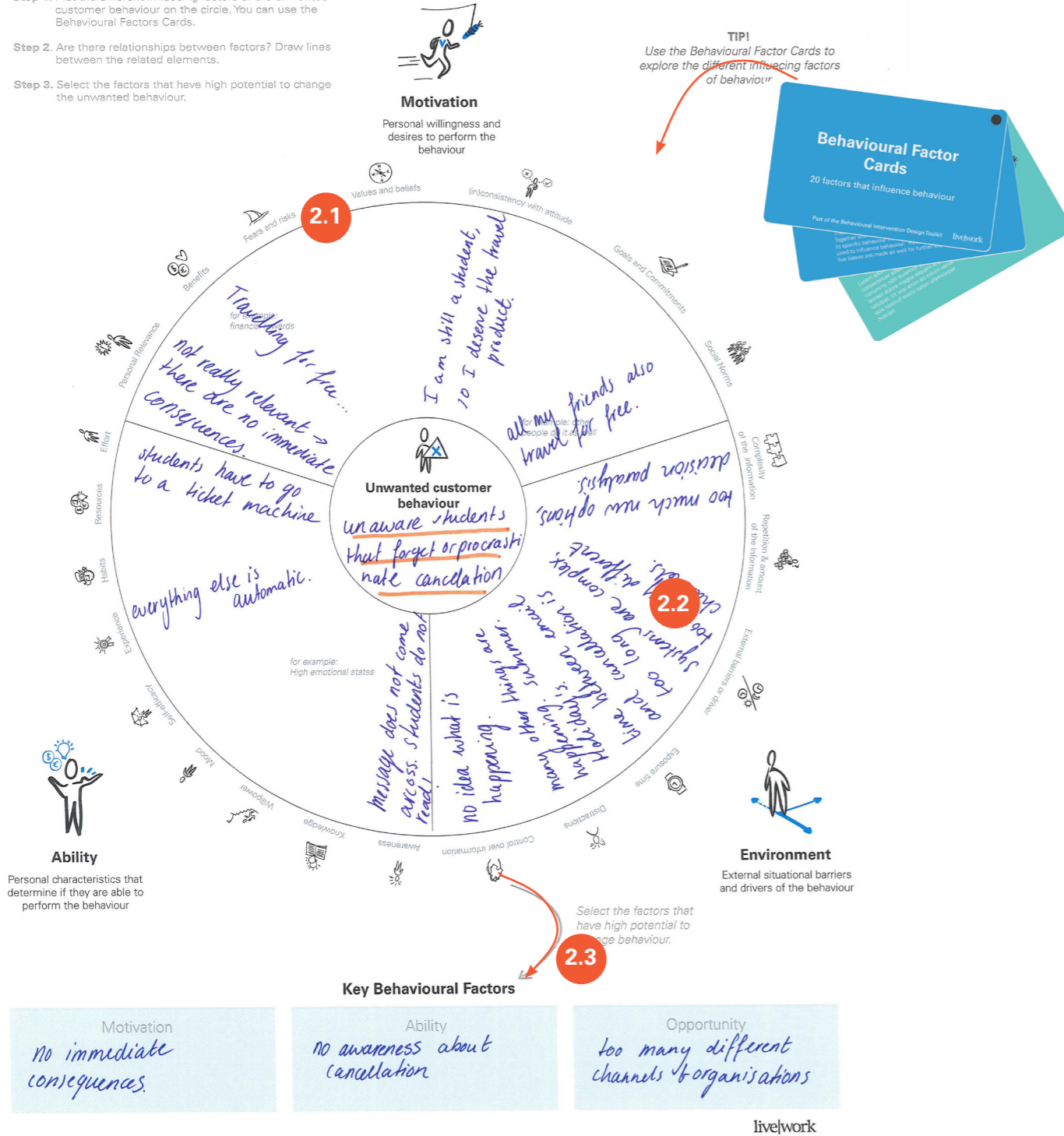
live/work

Image 59 & 60. Filled in Behavioural Strategy Tool and two Customer Segment Templates.

Part 2.1 - Behavioural Factor Template

If we want to understand behaviour we need to look at the factor that influence it. In this template includes 20 behavioural factors, divided into three categories: Motivation, Ability and Environment.

- Step 1. Plot the different influencing factors of the unwanted customer behaviour on the circle. You can use the Behavioural Factor Cards.
- Step 2. Are there relationships between factors? Draw lines between the related elements.
- Step 3. Select the factors that have high potential to change the unwanted behaviour.



Phase 2: Analysis unwanted behaviour

Step 2.1

The **Behavioural Factor Template** is used to explore underlying influencing factors of the behaviour. See image 61. Why do students procrastinate or forget to cancel? This exploration is used to broaden the assumptions and perspectives on the behaviour and to create an initial focus to structure the subsequent research step.

The **behavioural Factors Cards** were used to explore the factors in more depth. Each card includes a short explanation, example and questions to consider to find out if and how they influence behaviour. The cards are categorized on Motivation, Ability and Environment and provide links to related cognitive biases and suitable interventions strategies.

▶ More indepth knowledge can be easily found in the cognitive biases database with around 200 categorized cognitive biases. The behavioural factor cards are shown in more detail on the next page.

Step 2.2

Behavioural factors can be related and together influence the unwanted behaviour. Relationships between factors can be plotted on the circle.

Step 2.3

From all the different factors that could influence behaviour the key factors are selected. There is not hard and fast rule created for the selection of key factors. Designers can base this decisions on their experience, intuition and gut feeling. The three

separate boxes do incentives to select factors from all categories since all these elements need to be present to be able to perform a behaviour.

Step 2.4

The key factors generate the direction and focus for subsequent context and user research. Based on these factors users can be interviewed, service safaries conducted and desk research performed.

Image 61. Filled in Behavioural Factor Template and Behavioural Factor Cards.

Detail of Behavioural Factor Cards

Structure

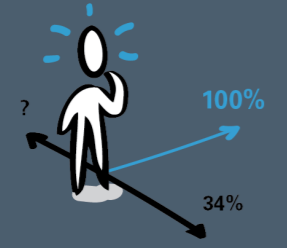
Three factor categories: 20 behavioural factors

Environment		Complexity of information	Amount of information	External barriers and drivers	Exposure time	Distractions		Control over information		
Motivation		Personal Relevance	Benefits and rewards	Fears and Risks	Values and beliefs	(in)consistency with attitude		Goals and Commitments	Social Norms	
Ability		Awareness and Memory	Knowledge	Willpower	Mood and physical state	Self-efficacy		Experience and familiarity	Habit and Routines	Resources Physical and Mental Effort

Front

Short description

Description
People want to feel in control over information, decisions and behaviour. They avoid options or situations that are uncertain or where information is not complete.



PERCEIVED CONTROL

Name of behavioural factor

Questions to consider
Specific questions can help to determine the possible influence of the factor in the context and situation.

Questions to consider

- ▶ Are there uncertainties, risks or missing information?
- ▶ Are the consequences and outcome of the behaviour clear, certain and consistent with what people know?

Example
People prefer a fixed rate mortgage over a variable rate because it provides them with a feeling of control.

Example
Real world example that shows how the factor can influence behaviour and decision making.

Back

Related cognitive biases

- ▶ Ambiguity bias
- ▶ Pseudocertainty effect
- ▶ Illusion of control

PERCEIVED CONTROL

Cognitive biases database
Related cognitive biases are mentioned for each behavioural factor. The cognitive biases can be easily found in the categorized database and provide more indepth ans scientific insights.

Intervention strategy cards
Strategies associated with this behavioural factor are listed. They correspond to the behavioural intervention strategy cardset.

Related intervention strategies

- ▶ Checklists
- ▶ Enhanced active choice
- ▶ Personalised feedback
- ▶ Real-time feedback
- ▶ Loss aversion

Environment

Factor category
All behavioural factors are categorized into Motivation, Ability and Environment. The colours indicate this categorization.

Image 62. Overview of the behavioural factor cards, front and back.

Phase 3: Synthesis

Step 3.1

All insights can be used to create a **Behavioural Journey Map**. See image 63. The first section is concerned with the current unwanted behaviour. Activities and touchpoints in the customers journey are plotted. Since behaviour is made up from multiple smaller actions it is important to plot a behaviour chain: describe each step or action immediately prior to, during and after the behaviour.

Step 3.2-3.4

The key factors from phase 2 are plotted along the journey. Based on all the insights, the dominant

mindset per step can be determined. Mindsets can vary per person. On the journey map the dominant mindset (or mindset of most people) is plotted. In the example case; Students that receive an email about the cancellation are generally in their unconscious mindset.

Step 3.5

The second part of the journey map is concerned with the future desired behaviour. Desired actions and mindsets can be plotted per step.

Step 3.6

The final step on the journey map is to selection of hotspots and pain-points on the journey.

Designers and clients can select the moments that have high potential to influence the unwanted behaviour. Multiple moments can be selected and used in the third part of the process.

Step 4

It is advised that Livework designers internally review the selected moments on the behavioural journey map. Based on the behavioural factors, dominant mindsets and qualitative user insights a pre-selection for behavioural intervention strategies can be made. The **Behavioural Intervention Strategy Cardset** consist of 17 nudge strategies and 9 rational override strategies. The cards can be used to facilitate a idea

generation workshop that can be done with the client. The strategies can serve as guidance and inspiration to generate ideas for interventions. On the next page a detailed overview of the cardset is provided. ▶ The intervention database includes over 80 different real-world examples. More inspiration can thus be found there.

Step 5.

Throughout the project the **Behavioural Intervention Canvas** is filled in with the main insights and intermediate results, see image 64. It provides an overview and can be used to start and end a workshop or meeting.

Part 2.2 - Behavioural Journey Map

This canvas can be used to plot and integrate insights from theory and research.
Step 1. Fill in the different elements per stage for the current unwanted behaviour.
Step 2. Brainstorm on possible future scenario's.
Step 3. Select the key moments in the journey map that have high potential for an intervention.

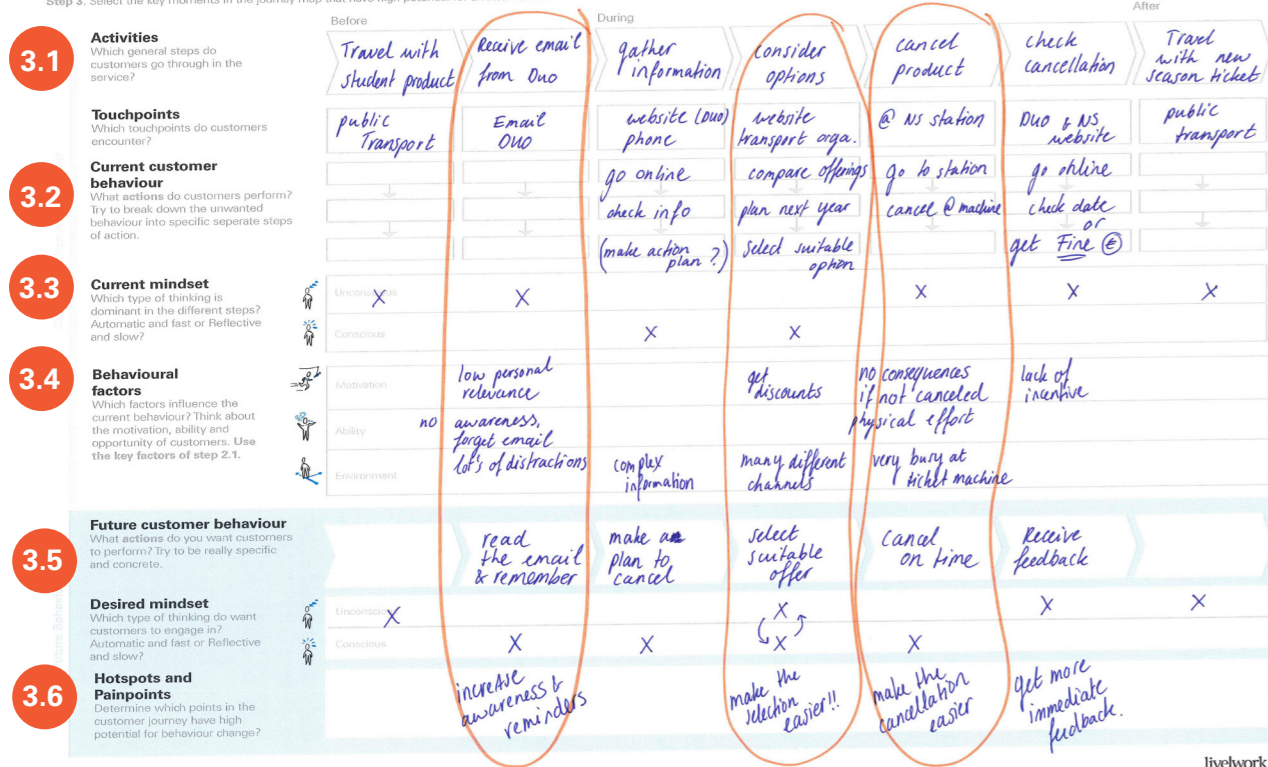


Image 63. Filled in Behavioural Journey Map. Three key moments are highlighted in orange.

Behavioural Intervention Canvas

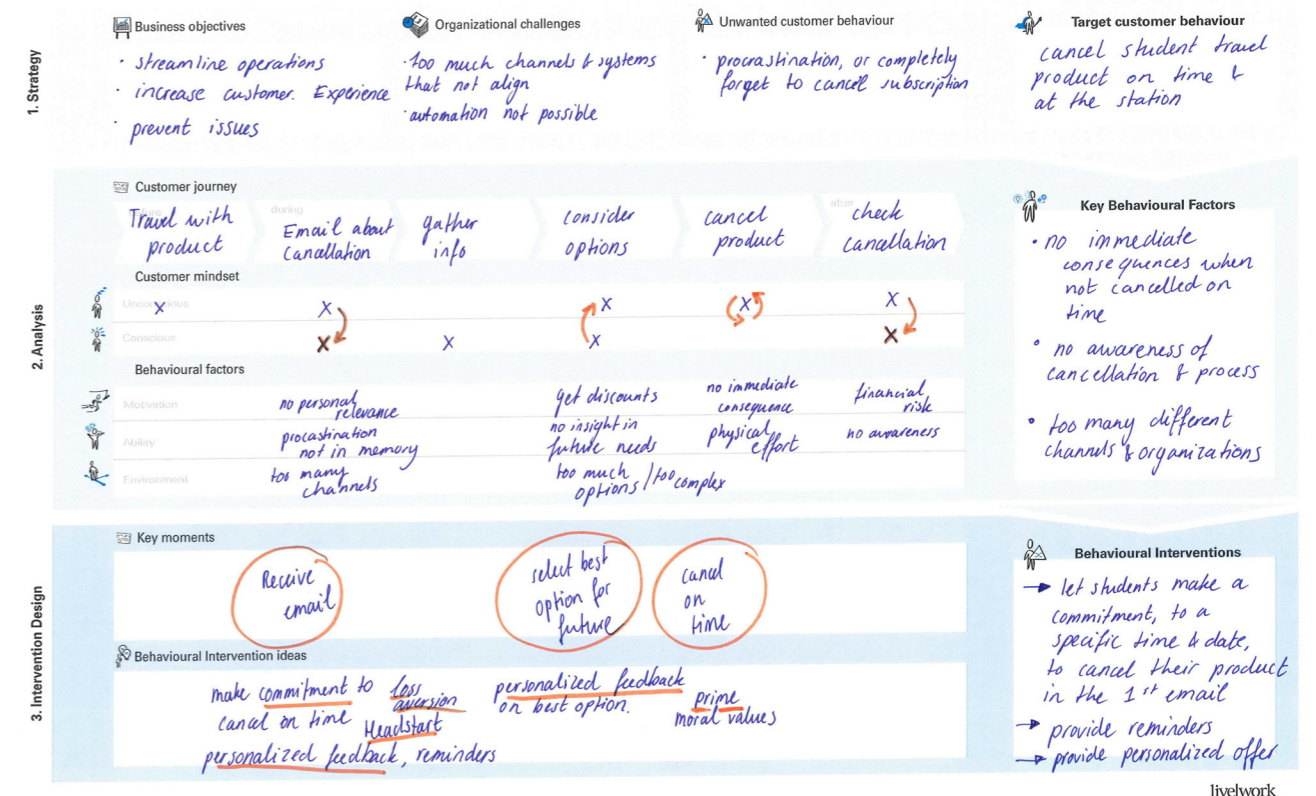


Image 64. Filled in Behavioural Intervention Canvas.

Detail of Behavioural Intervention Strategy Cards

Structure

Three factor categories: 9 rational override strategies 17 nudge strategies

Environment	Functional friction	Extra decision points	Checklist				Priming	Increase Salience	Reduce Effort	Reduce uncertainty	Credible messenger				
Motivation	Personalized feedback	Real-time feedback	Commitment contract	Enhanced Active Choice	Relative Ranking		Foot-in-the-door technique	Door-in-the-face technique	Social Norms	Head-start	Reciprocity	Emphasize ownership	Highlight deadlines	Avoid Losses	Framing
Ability	Reminders and Alerts						Peak-End effect	Default	Piggyback existing habits						

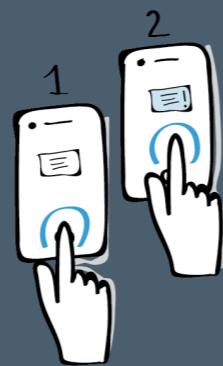
Front

Short description

Strategy By adding extra decision points at the right time people have the possibility to become aware, take a step back and re-evaluate the decision or behaviour.

Additional decision points help to establish boundaries that can minimize the risk of making a mistake or undesired decision.

- Tactics**
- ▶ Provide the possibility to escape an undesired behaviour or action.
 - ▶ Divide a single package, form or screen in multiple separate steps.
 - ▶ Create prompts or salient cues in situation where mindless behaviour occurs.



EXTRA DECISION POINTS

Name of Intervention strategy

Tactics

Specific actions that can be taken to create the interventions

Color coded on behavioural factors

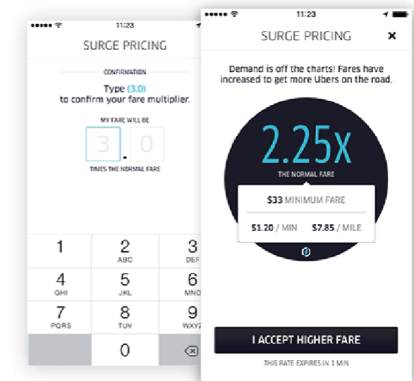
Back

Concrete examples

Real world examples of this strategy in use

Example

To reduce complaints about unexpected high bills Uber introduced an extra decision moment. During surge pricing Uber asks users to manually type the multiplier number to make sure they are aware and make a conscious decision to order an uber for a higher price or not.



Example

A few red coloured potato chips were inserted in a canister to divide a single package up into different intervals. This salient cue makes people conscious of their mindless eating and prompts them to actively decide to continue eating.

EXTRA DECISION POINTS

Rational Override

Environment

Type of intervention

Every strategy is categorised into a rational override or nudge

Associated influencing factor category

This strategy is suitable for behaviour that is strongly influenced by this factors from this category

Image 65. Overview of Behavioural Intervention Strategy Cards, front and back.

KEY TAKE-AWAYS CHAPTER 6

Tool development

Based on the insights that were gathered throughout this project a toolkit and design process was developed. A co-creation workshop was done with seven design students. Several iterations were made during the development based on insights from students and Livework designers.

The process

The behavioural intervention design process consists of six phases and is deliberately linked to the existing Livework phases. The process and tools can be used in project mode or workshop mode. In the project mode the whole process is followed, while the workshop mode only includes parts of the process. The process consists of:

Phase 1: Determine strategy

Agree on a clear scope that is related to business objectives and organizational challenges.

Phase 2: Analysis unwanted behaviour and context

Analysis the current unwanted behaviour to understand underlying mental mechanisms.

Phase 3: Integrate insights and find key moments to influence

Integrate insights from the analysis on a journey map to find key moments to influence behaviour.

Phase 4: Ideation

Generate ideas for behavioural interventions.

Phase 5: Create and test interventions

Select promising ideas for development and testing

Phase 6: Validate and implement interventions

Interventions can be combined across a journey to test for quantitative results.

Behavioural Intervention Design Toolkit

The toolkit consists of 5 templates, 2 card sets and 2 additional databases and can support Livework designers in first four stages of behavioural project. The tools are created in such a way that they can be used in workshops with clients and stakeholders.

The Behavioural Intervention Design Canvas, Strategy Tool, Customer segment template and Behavioural journey map are relatively simple templates that support designers to communicate the process and results to the client. The template mainly serve to provide structure and integration of insights.

The Behavioural Factor Template and Factor Cardset integrate insights from behavioural economics, consumer behaviour and psychology. The well-known Motivation-Ability-Opportunity framework was used as a basis to enable designers to explore any type of behaviour. The tool includes 20 influencing factors of behaviour and can generate a direction for further user and context research.

The main tool in the kit is the Behavioural Intervention Strategy card set, consisting of 9 rational override strategies and 17 nudge strategies. The cards can be used in brainstorm activities to create behavioural interventions across customer journeys.

7. VALIDATION

In this chapter

- 7.1 Validation
- 7.2 Recommendations
- 7.3 Key Take-aways

This chapter provides an overview of the validation steps that were taken to evaluate the Behavioural Intervention Design approach, Toolkit and use of rational override strategies. This validation includes a workshop with design students, feedback from experts and a workshop with a Livework client. All activities together provided insights into the applicability, usefulness and value of the Behavioural Intervention Design approach and Toolkit. Recommendations for further development and implementation are provided.

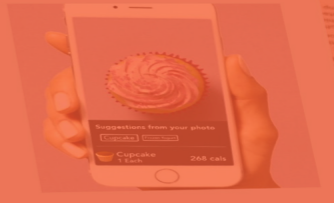
Strategy By adding extra decision points at the right time people have the opportunity to become aware, take a step back and re-evaluate the risk of making a mistake or undesired decision.

Tactics

- ▶ Provide the possibility to escape an undesired behaviour or action.
- ▶ Divide a single package, form or screen in multiple separate steps.
- ▶ Create prompts or salient cues in situation where mindless behaviour occurs.

EXTRA DECISION POINTS

Example
'Lose it' is a food diary app that stimulates users to take a picture of a meal before eating it. This small extra effort is enough to disrupt mindless decisions and stimulate healthy eating.



Example
The UK police introduced a 5 second wait before answering the phone. This small break reduced the number of inappropriate calls because it lets the caller reflect on the purpose of their call and its appropriateness for the police.



7.1 VALIDATION & RECOMMENDATIONS

To validate the applicability, usefulness and value of the Behavioural Intervention Design approach, Toolkit and rational override strategies different validation activities were performed. Validation workshops with design students and a Livework client were supplemented with feedback and insights from various experts. These three activities helped to provide evaluation on three critical validation points. See [image 67](#) for an overview of validation elements.

Validation with design students

A workshop with five design students from the faculty of Industrial Design was done as a pilot to

gain initial insights into the understandability of the toolkit and approach. See [image 66](#). An example case, the same as in chapter 6.3, was presented to the students. Due to the limited amount of time, two groups were created and each group used part of the tools from the toolkit. The focus in group 1 was on strategy development and a behavioural analysis, while group 2 was asked to conduct a behavioural analysis, plot insights on a behavioural journey map and brainstorm on possible interventions.

Video recordings were made and a detailed feedback questionnaire was presented at the end of the workshop. In a group discussion insights and feedback was shared.



Image 66. Filled in Behavioural Intervention Canvas.

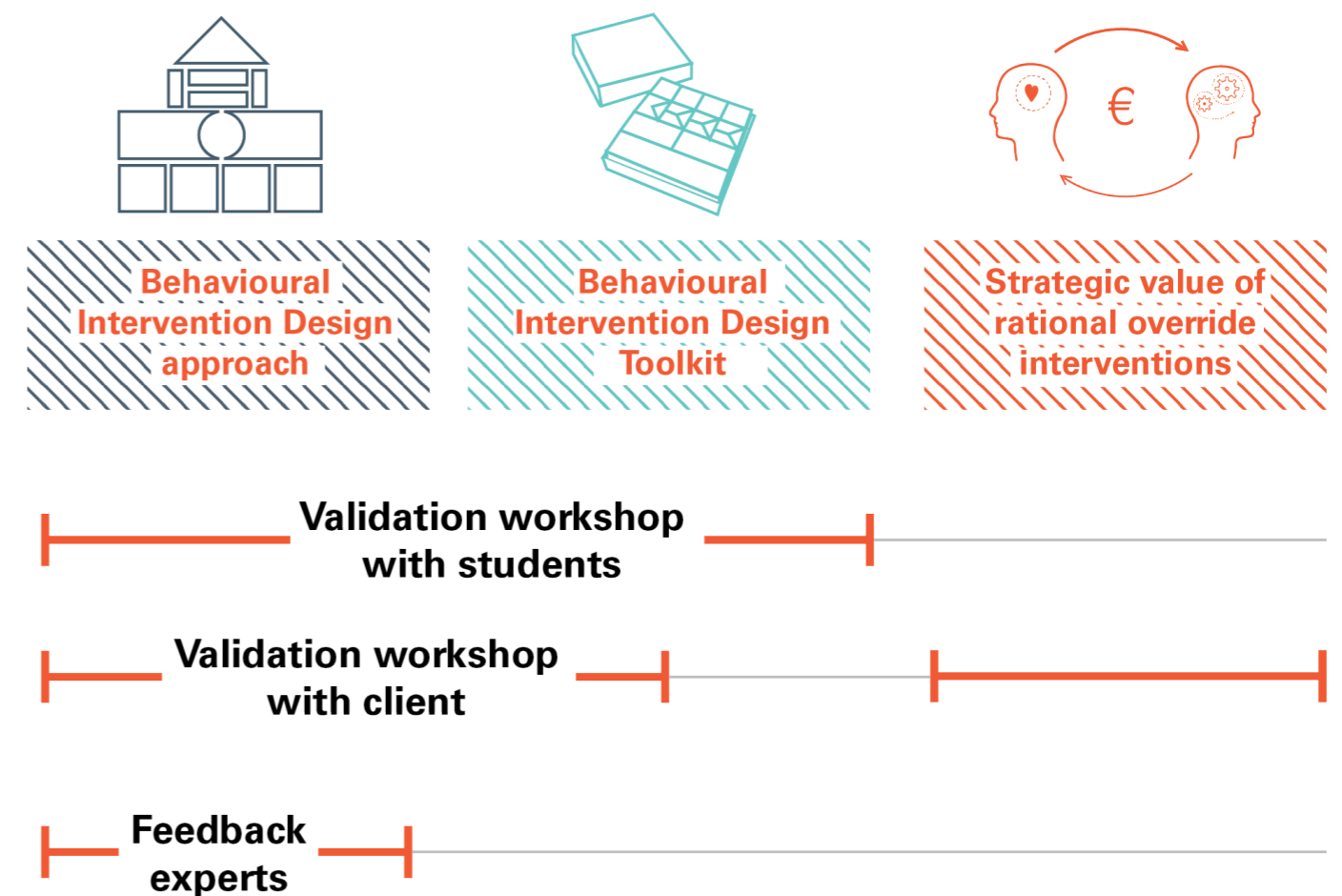


Image 67. Overview of how the different validation activities relate to the critical points of validation.

Validation with Livework Client

In order to evaluate the strategic and business value of this alternative design approach (and especially the rational override strategy) a validation workshop with a client of Livework was conducted in Oslo. This client has done already two behavioural projects with Livework and is therefore considered to be very suitable to evaluate the usefulness, applicability and strategy value of the rational override.

The workshop consisted of a small exercises around two tools of the toolkit and a large feedback session on the strategic value of rational override

interventions. The participants in the workshop ranged from behavioural experts to the Executive Vice President to capture different perspectives.

Feedback by experts

Experts from different backgrounds, and employed in different domains, were asked to provide feedback on the new design approach and especially the rational override strategies. Experienced practitioners as well behavioural economics experts and academics provided insights into the practical applicability and theoretical substantiation of the rational override intervention.

Validation of Behavioural Intervention Design approach

In all validation activities the approach, and especially the rational override, was evaluated.

Positive friction to slow users down

Experts highlight that this type of intervention is not completely new. In different fields, including consumer behaviour and UX design, references are made to positive friction or more conscious nudges. However, experts recognize that not many organizations are utilizing, let alone integrate, these type of interventions across journeys.

More and more organizations try to integrate both system 1 and system 2 thinking. The combination between the rational override, nudging and service design is seen as surprising and new. It is stressed by some experts that especially the combination of these approaches is valuable and that this is the direction in which the field is going to develop.

“I think that behavioural economics 2.0 is going to be like this approach. An interplay between system 1 and system 2 thinking... so that is going to be the interesting space.”
- Expert in Behavioural Economics

The approach reaches beyond nudging and behavioural economics

Experts recognize that the proposed design approach has combined the strengths from behavioural economics, consumer behaviour and some aspects of psychology into a service design context. Without prior knowledge of the toolkit or use of the motivation-ability-opportunity model, references to this theory and model were made by a professor in behavioural economics as a

recommendation. This strengthens the choice for this model as a basis for the complete toolkit.

“I think the MAO framework is relevant for the work, since it deals with motivating thoughtful processing of persuasive messages. Many MAO factors are related to the rational overrides, since they encourage elaboration of arguments rather than influence through peripheral cues – or nudges” - Prof. Siv E. Rosendahl Skard from the Norwegian School of Economics

Validation of the toolkit

The validation workshop with students mainly resulted in general improvements to the instructions, wording and templates in the toolkit to make them more clear and accessible. Generally, the tools were perceived as useful. Every tool includes a diverging and converging elements that support the designer to quickly come to conclusions and valuable results.

“Each tool includes good divergent and convergent steps, that help you to quickly come to valuable results.” - IDE design student

The Behavioural Factor Tool and Behavioural Journey Map were perceived as really rewarding exercises in which designers could quickly explore existing unwanted behaviours, connect insights and select important moments in the journey.

“This tool is easy to use and is really rewarding...you can quickly integrate different insights and come up with ideas.”
- IDE design student

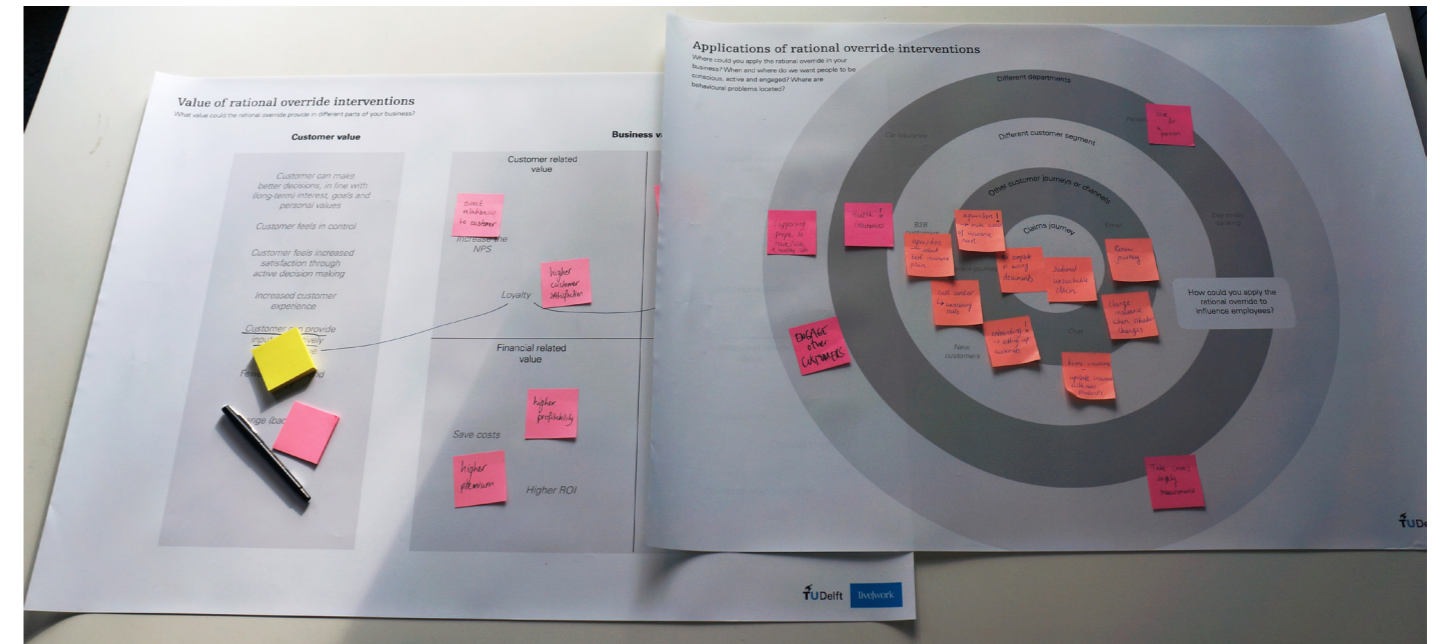


Image 68. Feedback assignment and discussion posters used during validation workshop with Livework client.

The participants mentioned that the intervention strategy cards were suitable to use in an ideation activity. Content-wise they had suggestions on the amount and graphical presentation of information. The ‘tactics’ were very helpful and the examples on the back helped designers to first think about the strategy without restrictions. An important point was made on the distinction between a nudge and rational override. The difference might be important in the steps before, but during brainstorming this distinction might reduce creativity. Therefore, the final version of the cardset only includes the nudge or rational override indication at the back of the card and no colour coding was used for this category.

“The intervention cards work really well, especially the tactics and examples... It is nice to have the example on the back.. so you can choose when to read them. For some it can block creativity to see solutions immediately.”- IDE design student

In feedback conversations with Livework designers expressed that the toolkit adds value to their existing practices and would predominantly help them to structure the process and design activities.

“This toolkit will actually really help us to structure the process and explain it to the client. We have been integrating the steps from the toolkit into the process already, but is happened organically and more ad-hoc. Now we can do it in a more structured and efficient way” - Livework designer

Validation of strategic value

Lastly, the potential strategic values a rational override can create were evaluated. Strategic values that were mentioned in relation to rational override interventions include higher profitability, increased loyalty, bigger market share and increased referrals. See image 68.

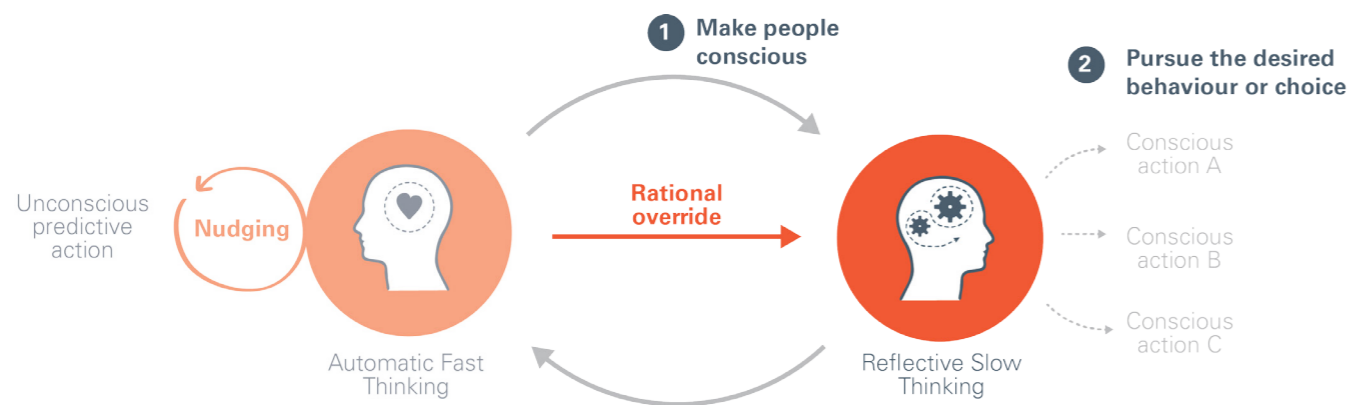


Image 69. Getting a customer conscious is only the first step of the rational override. It is important to also consider the subsequent choices that a customer has in order to stimulate a desired outcome.

Opportunity moments for rational overrides

Experts mentioned that the biggest opportunities and application possibilities for rational overrides are with lifestyle decisions, long-term decisions and financial decisions. These type of decisions and behaviours are generally hard to influence with nudging, do not have a one size fits all outcome and happen across touchpoints and time. Regulators are already opening the door, by suggesting (and sometimes oblige) organizations to be transparent and help customer in making a balanced decision.

From the client workshop it became clear that the rational override can be also used to increase the contact moments with users. Where in insurance you would normally only have three interaction moments (at the start, with a claim and when they renew or leave) the rational override can be used to extend the relationship beyond these three moments. For example; If we can get customers in a conscious mindset right after a claim they might be more susceptible to consider risk management options or take preventive actions.

Getting people conscious is just the start

In the feedback discussion with the insurance

company it became clear that the rational override, and getting people aware and conscious, is only the first step. If we can be effective in making people conscious we should also think about (and design for!) the follow-up behaviour or decision. Where nudging leads to an immediate predictive action or behaviour, this is relatively unsure with rational override. Conscious customers might decide to do nothing, or choose the non-desired alternative (e.g. switch to another provider). See image 69.

“Use positive friction to nudge people to have a look around and see what their option are. BUT you need to still help them to make a more balanced decision and present the choices in a comprehensive manner.” - Expert in Behavioural Economics

The potential downside of a conscious customer

Besides multiple benefits of a conscious customers there were also some concerns. In the client workshop it was mentioned that if customers decide to choose for the undesired option this might negatively effect the business. This point was also made by another client of Livework, who was shortly introduced to the rational override interventions and possibilities. See image 70.

“Holding up the red flag in the renewal process has a scary downside... Instead of the frictionless automatic renewal process, customer now might decide to switch provider.” - Head of Brand and Brand Experience of an insurance organization

This validation highlights the before-mentioned difference between nudging and rational override in terms of quantity and quality. Nudging might effect a relatively larger group of customers (more customer will renew if it is a default). With rational overrides the number of people that choose the desired outcome will be smaller but the ones that do can provide more value. As people actively decide to renew with this provider they will be more loyal and engaged with the organization. However, it is questioned whether a service organization can benefit more from many inactive and disengaged customers or relatively few active and engaged customers.

Use the rational override to start relationships

Finally, rational overrides have been suggested to enable organizations to create relationships with customers. Service organizations could benefit from active and engaged customers that co-create value. In the insurance context examples included: customers that actively take part in risk management, take preventive measurements and act on behalf of the company in referring to the service to friends and family.

“I would put my money at the health insurance... We currently try to help people to adapt their lifestyle by providing information but they do not listen.... It would be really interesting to try to use the rational override to see if we can effect on people's habit.” - Head of Brand and Brand Experience of an insurance organization



Image 70. The rational override was shortly introduced in a workshop with an energy provider to evaluate the understanding of the concept and the possible applicability in a renewal journey. Stickers were used (purple = rational override, blue = nudge) to provide an extra perspective on potential ideas for improvement.

8 CONCLUSION & DISCUSSION

In this chapter

- 8.1 Conclusion
- 8.2 Limitations, implications and recommendations
- 8.3 Personal reflection

This final chapter includes a short conclusion on the project and two research questions. Limitations to the research and project are mentioned as well as recommendations for further development and future research. The implications of this thesis for Livework and knowledge in general are discussed as well.



8.1 CONCLUSION

The purpose of this project was to understand how service designers of Livework can use behavioural knowledge to influence (and eventually change) customer behaviour. An alternative design approach, Behavioural Intervention Design, was developed to support service designers in the development of behavioural interventions across customer journeys. This approach goes beyond the theory and applicability of behavioural economics and nudging. Key principles from behavioural economics, consumer behaviour, psychology and service design were integrated and synthesized towards a new design approach and toolkit.

Behavioural Intervention Design is focused on influencing behaviour by getting the customer in the right mindset at the right time. The approach includes two types of behavioural interventions that can either speed up or slow down the user's momentum. These interventions do not only facilitate automatic and fast thinking, like nudging does, but can, when necessary, switch customers to the conscious state. By integrating micro moments of deliberate friction, also referred to as rational overrides, we can disrupt mindless automatic interactions and create active, conscious and engaged customers.

The foundation for the design approach is outlined in chapter 5. This thesis presents and demonstrates the design approach and supporting toolkit for service designers to develop effective behavioural interventions (highlighted in chapter 6).

Addressing the research question

At the start of this project two research questions were formulated. To answer both questions, an extensive internal and external research was done to identify in what way and form Livework designers could be best supported to apply knowledge from behavioural economics. Sixteen interviews with Livework designers, Livework clients, behavioural experts and practitioners from different domains were conducted, analysed and integrated.

Along the way the scope broadened and insights from consumer behaviour and cognitive psychology were taken into account as well. This resulted into an alternative design approach and toolkit that supports service designers to create behavioural interventions that goes beyond the current nudge theory.

Behavioural Intervention Design supports service designers to create multiple interventions across customer journeys so together they can start an endured behaviour change. Nine rational override strategies and 17 selected nudge strategies are integrated into a toolkit to enable designers to create tailor-made solutions that fit both the customer, business and organization.

In conclusion, this approach and toolkit is the first step towards systematically applying two different types of behavioural interventions across customer journeys to influence (and eventually change) behaviour, and should be interpreted as such.

8.2 LIMITATIONS, IMPLICATIONS AND RECOMMENDATIONS

This chapter discusses the limitations of the research, implications of the work and recommendations for future research and development at Livework.

Limitations

This research offers a new design approach to support service designers of Livework towards creating effective behavioural interventions. However, it is acknowledged that there are some limitations to be considered. Since the research has been extensive, the limitations are discussed per phase.

Limitations in the literature research

In the first phase, understand, a literature study into service design and behavioural economics was done. The literature study was done to create an in-depth understanding of both fields, find relationships between the two fields and identify gaps in knowledge. The main purpose of the study was to find insights that could be used as a basis in the exploratory research. The field of behavioural economics (and even broader consumer behaviour and psychology) has an overwhelming amount of literature and thus information or insights might have been missed. Moreover, the literature study was not planned according to research guidelines but had a more informal approach.

Limitations of the multi case study analysis

The case study analysis included seven projects from different Livework studio's. These seven projects

enabled the researcher to gather many different perspectives and insights. This helped to come up with design guidelines that represents multiple types of behavioural projects and processes. However, the large amount of data made it very difficult to include additional people into the data analysis. The data analysis and synthesis was therefore solely done by the researcher which could have resulted in biased interpretations. In order to increase the credibility and validity of the results obtained, an additional data analysis should be carried out to triangulate the results.

Limitations of the external case study analysis

Due to time constraints, it was only possible to interview three practitioners. Although these practitioners work with the nudge theory in different domains, to different extents and have various backgrounds it is recognised that to increase the validity of these insights, more interviews should be carried out. It is suggested for future research to conduct interviews with practitioners from larger (private sector) organizations to enlarge the understanding of nudging in a corporate contexts.

Limitation of the toolkit development and validation

Based on a validation workshop with design students an initial proof of tool concept was acquired. Within the time frame of this project it was not possible to evaluate all the tools in the toolkit and it was only possible to test the tools in the 'workshop' mode. Moreover, the participants in

the validation workshop were design students and not Livework designers. Due to these facts, and the presence of the researcher in the workshop, the validity of the test cannot be fully confirmed. To validate the toolkit on usability and effect, the complete toolkit should be evaluated in a real-life project by Livework designers.

The toolkit is developed for service designers and (inexperienced) clients of Livework. The tools in the kit require basic understanding of behavioural interventions and there will be a learning curve when a design team starts to use the tools. The designers would have to familiarise themselves with the tools in order to use them effectively. In the project, there has been made a trade-off between how detailed and in depth the tools are, and how easy it is to pick up and use it straight away. Therefore different levels of complexity have been added and can be used if the designer or project requires it. Especially the Behavioural Factor Tool, Behavioural Factor Cardset and Intervention Strategy Cardset need to be used multiple times by designers to work out the details and be able to effectively and efficiently apply the theory to specific contexts and situations.

Limitation of the validation of the rational override

Although three behavioural experts and several employees of a service organization were involved to provide feedback on the rational override and the Behavioural Intervention Design approach in general, it is reckoned that is not enough to provide full validation.

The introduction of the rational override, as an alternative type of intervention, should be seen as a first step towards an effective approach to influence

behaviour. The rational override intervention is not new: in different streams of literature this type of intervention is mentioned. However, there has been limited attention for behavioural interventions that opt to make people consciously aware of their behaviour.

In the validation workshop an initial start was made to evaluate the applicability and potential strategic value. More research is needed in order to transfer the current theoretical assumptions about the rational override into more validated practical opportunities.

Contributions to the Livework Practice

This thesis provided Livework with a new(or actually extended) offering. Behavioural economics and behavioural interventions were already part of the current offering of Livework. This project has broadened the possibilities and applicability of their offering.

The results of this project provide Livework designers with a structured and theoretically grounded approach and toolkit. They can use this toolkit in future projects to create sustainable and scalable interventions across customer journeys. The tools are not radically different from the current tools and activities. However, they opt to facilitate and integrate the different perspectives (business goals, theoretical insights, user insights and organizational constraints among others) that are necessary in a behavioural project.

Contributions to new knowledge

In this thesis an addition to the current knowledge and application of behavioural interventions is put forward. However, the goal of the introduction of the rational override was modest: to provide an



Image 71. Recommendations for future research and development at Livework for both the near term and future.

initial list of strategies that can be used to create rational override interventions. The strategies are all supported by empirical evidence but more research is needed in order to validate the effects and specifics of these type of interventions.

Future research

To conclude, some of the limitations hereby presented were also useful to indicate future recommendations. In image 71 an overview of the recommendations is provided for the near term and future.

Recommendations for further development at Livework

If Livework wants to follow up on this graduation project it is suggested that they use the behavioural intervention design toolkit in a future project. In future projects it is valuable to integrate nudges and rational override across a customer journey

and to (quantitatively and qualitatively) measure the impact the interventions have. By using the toolkit in a real-life setting (and in a project mode) they are able to assess the effects of the tool on the process, stakeholder collaboration, design outcomes and behavioural effects. Moreover, it is advised to share the results and insights of this project with experts and thought leaders to increase understanding of the concept, search for promising applications and evaluate the potential strategic value. Finally, it is suggested to make iterations and adaptations to the current toolkit based on insights and practical experiences with the tools.

8.3 PERSONAL REFLECTION

This project started with the questions 'how to effectively use and implement knowledge from behavioural economics in service design'. Having only little knowledge about behavioural economics I started to emerge myself into the world of nudging and cognitive biases. Books like 'Thinking Fast and Slow' and 'Nudge' helped me to quickly get an understanding of what a great potential there is for (service) designers to apply this knowledge. Behavioural economics is not magic but it is a potential goldmine of insights that could be very useful for designers.

After 8 months of research on this topic I think I can call myself an (theoretical) expert on behavioural economics and nudge theory. My inexhaustible curiosity motivated me to read so many books and articles, know almost every single cognitive bias and even become a "example machine" of nudges (as Giulia calls me).

Since behavioural economics and nudging also has controversial applications I have found myself so many times in conversation about the ethics of this all. Designers, but also friends, asked me whether I felt comfortable manipulating people. I always had one answer: everything we design, no matter our intentions, will manipulate people in some sort of way. Why not use all of this knowledge on behaviour to create positive experiences and effective designs that can support people and organizations into creating value.

Part of my motivation for this project was to show that behavioural economics and nudging is so much more than this short sided and negative image. I hope I have demonstrated with this thesis that there are great opportunities and that we (as designers) should not back away if sometimes seems difficult.

Since I have only applied the knowledge in a theoretical context I am really curious and eager to apply my knowledge in practice. Along the way, I have had the chance to already generate some small ideas and applications but it would be great to work on a real-life project and design, iterate and test my own interventions.

In one of the feedback sessions an expert told me that there are a few people which understand the behavioural theory so thoroughly and are able to integrate the duality of behaviour and decisions making into one simple and understandable model. I take his feedback as a huge compliment on my work as he has years of experience in this field.

I also see it as a huge honour that my professors think this thesis has produced results that are suitable and compelling enough to write a journal or conference paper on. I happily take on this next challenge!

The main personal learning from the project is that I have accepted that although you plan everything

to the last detail, things will always go differently. I have experienced this in the project, where the scope and approach changed multiple times. But also in the management of all the different stakeholders and interests that were involved in this project. I have learned to be more flexible and to adapt and adjust to the situation.



Image 72. Working on the data analysis on the multi case study analysis at the Livework studio in Rotterdam.

REFERENCES

Ajzen, I. (1991). The theory of planned behavior. *Organizational behavior and human decision processes*, 50(2), 179-211.

Alter, A. L., Oppenheimer, D. M., Epley, N., & Eyre, R. N. (2007). Overcoming intuition: metacognitive difficulty activates analytic reasoning. *Journal of Experimental Psychology: General*, 136(4), 569.

Ariely D. (2008). *Predictably irrational: the hidden forces that shape our decisions*. 1. New York: HarperCollins.

Arriaga et al. (2013), *Simulation-Based Trial of Surgical-Crisis Checklists*, *New England Journal of Medicine*.

Benartzi, S., & Lehrer, J. (2015). The smarter screen: Surprising ways to influence and improve online behavior. *Portfolio*.

Bernstein, D. M., Erdfelder, E., Meltzoff, A. N., Peria, W., & Loftus, G. R. (2011). Hindsight bias from 3 to 95 years of age. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 37(2), 378.

Berry, D. (2015), *Testing a simple patient commitment to taking medication as prescribed*, Retrieved from: <http://www.hra.nhs.uk/news/research-summaries/testing-a-simple-patient-commitment-to-taking-medication-as-prescribed/>

Bisset, F., & Lockton, D. (2010). Designing motivation or motivating design? *Exploring Service Design, motivation and behavioural change*. *Touchpoint: The Journal of Service Design*, 2(1), 15-21.

Botti, S., & Iyengar, S. S. (2006). The dark side of choice: When choice impairs social welfare. *Journal of Public Policy & Marketing*, 25(1), 24-38.

Botti, S., & McGill, A. L. (2006). When choosing is not deciding: The effect of perceived responsibility on satisfaction. *Journal of Consumer Research*, 33(2), 211-219

Bovens, L. (2009). The ethics of nudge. In *Preference change* (pp. 207-219). Springer Netherlands.

Brest, P. (2013). Quis custodiet ipsos custodes? Debiasing the policy makers themselves. In E. Shafir (Ed.), *The Behavioural Foundations of Public Policy* (pp. 481-493). Princeton, NJ: Princeton University Press

Campo, C., Pauser, S., Steiner, E., & Vetschera, R. (2016). Decision making styles and the use of heuristics in decision making. *Journal of Business Economics*, 86(4), 389-412.

Camerer, C. F. (2004). Behavioral economics: Past, Present, and Future in *Advances in Behavioral Economics*." Colin F. Camerer, George Loewenstein and Mathew Rabin, eds. New York: Russell Sage.

Catalanotto, D. (no date). Stop solving all the issues, SDN, Retrieved from: <https://www.service-design-network.org/community-knowledge/stop-solving-all-the-issues>

Chase, R. B., & Dasu, S. (2001). Want to perfect your company's service? Use behavioral science. *Harvard business review*, 79(6), 78-84.

Clark, G.L. (2009) 'Human nature, the environment, and behaviour: explaining the scope and geographical scale of nancial decision-making'. *SPACES online*, 7(2009-01).

Cox, A. L., Gould, S. J., Cecchinato, M. E., Iacovides, I., & Renfree, I. (2016, May). Design Frictions for Mindful Interactions: The Case for Microboundaries. In *Proceedings of the 2016 CHI Conference Extended Abstracts on Human Factors in Computing Systems* (pp. 1389-1397). ACM.

Datta, S., & Mullainathan, S. (2014). Behavioral design: a new approach to development policy. *Review of Income and Wealth*, 60(1), 7-35.

Davies, U., & Wilson, K. (2013). *Design methods for developing services*. Design Council. UK.

De Ridder & Gillebaart (2015), *Wetenschappelijk kader nudging in de publieke gezondheidszorg*, Retrieved from: http://selfregulationlab.nl/wp-content/uploads/2014/01/Eindrapport_Nudging_in_de_Publieke_Gezondheidszorg.pdf

Devine, J., (2012), *The human factor in service design*, McKinsey Quarterly, McKinsey & Company, Retrieved from: <http://www.mckinsey.com/business-functions/operations/our-insights/the-human-factor-in-service-design>

Dholakia, Utpal, M. (2016) *Why nudging your customers can backfire*, HBR, APRIL 15, 2016

Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of management review*, 14(4), 532-550.

Enninga, T. e.a. (2013), *Service Design, inzichten uit negen praktijkvoorbeelden*, Hogeschool Utrecht, Kenniscentrum Technologie en Innovatie, Utrecht;

Eris, O & Badke-Schaub, PG (2014). A theoretical approach to intuition in design: Does design methodology need to account for unconscious processes? In A Chakrabati & LTM Blessing (Eds.), *An anthology of theories and models of design* (pp. 353-370). London: Springer-Verlag. (TUD)

Fabricant, R. (2009). Behaving badly in Vancouver. *Design Mind*, 11.

Fogg, B. J. (2009a) A behavior model for persuasive design. In *Proceedings of the 4th international Conference on Persuasive Technology* (p. 40). ACM

Fowlie, M., Wolfram, C., Spurlock, C. A., Todd, A., Baylis, P., & Cappers, P. (2017). Default effects and follow-on behavior: evidence from an electricity pricing program (No. w23553). National Bureau of Economic Research.

Frey, E., & Rogers, T. (2014). Persistence: How treatment effects persist after interventions stop. *Policy Insights from the Behavioral and Brain Sciences*, 1(1), 172-179.

Fullerton, B. (2009). Co-creation in service design. *interactions*, 16(2):6-9.

Gardiner, E., (2013) Designing behavioural change by design. Design Council. Retrieved from: <http://www.behaviouraldesignlab.org/wp-content/uploads/2013/02/Changing-behaviour-by-design.pdf>

Gavert, C., (2017, March), Is it a Nudge? [blogpost]. Retrieved from: <https://christinagravert.wixsite.com/cgravert/single-post/2015/12/09/Is-it-a-Nudge>

Galbraith, B. (2013). The Designer Nudge - Defining the Role of Design in Behavior Change.

Gigerenzer, G., & Gaissmaier, W. (2011). Heuristic decision making. *Annual review of psychology*, 62, 451-482.

Goldstein, D. G., Johnson, E. J., Herrmann, A., & Heitmann, M. (2008). Nudge your customers toward better choices. *Harvard Business Review*, 86(12), 99-105.

Hales, B. M., & Pronovost, P. J. (2006). The checklist—a tool for error management and performance improvement. *Journal of critical care*, 21(3), 231-235.

Halpern, D. (2016). *Inside the Nudge Unit: How small changes can make a big difference*. Random House.

Han, Q. (2009). Managing stakeholder involvement in service design: Insights from British service designers In First Nordic Conference on Service Design and Service Innovation.

Hansen, P. G. (2016). The Definition of Nudge and Libertarian Paternalism: Does the Hand Fit the Glove?. *European Journal of Risk Regulation*, 7(1), 155-174.

Hardcastle, R. (2012). *How Can We Incentivise Pension Saving?: A Behavioural Perspective*. Department for Work and Pensions.

Haynes et al (2009), A Surgical Safety Checklist to Reduce Morbidity and Mortality in a Global Population, *New England Journal of Medicine*

Heine, S. J., Kitayama, S., Lehman, D. R., Takata, T., Ide, E., Leung, C., & Matsumoto, H. (2001). Divergent consequences of success and failure in japan and north america: an investigation of self-improving motivations and malleable selves. *Journal of*

personality and social psychology, 81(4), 599.

Hekkert, P. P. M., & Desmet, P. M. A. (2002). The basis of product emotions. In *Pleasure with products: beyond usability*.

Hermesen, S., et. al. (2014). *Persuasive by Design: a model and toolkit for designing evidence-based interventions*.

Hershfield, H. E., et. al. (2011). Increasing saving behavior through age-progressed renderings of the future self. *Journal of Marketing Research*, 48(SPL), S23-S37.

Hollingworth, C., (2014), Chief Behavioural Officer: It's the new 'must-have' role. Retrieved from: <https://www.marketingsociety.com/the-library/chief-behavioural-officer-its-new-'must-have'-role#RAVwpgHQfdc6lc1Y.97>

Hollingworth, C. (2015). BE Careful: A little knowledge can be a dangerous thing. Retrieved from <https://www.marketingsociety.com/the-library/be-careful-little-knowledge-can-be-dangerous-thing>.

Hunnes, M. G. (2016). Nudging: How human behavior is affected by design. *Annual Review of Policy Design*, 4(1), 1-10.

Iyengar, S.S., Lepper, M., 2000. When choice is demotivating: can one desire too much of a good thing? *Journal of Personality and Social Psychology* 79 (6), 995–1006.

Jaakkola, E., Helkkula, A., & Aarikka-Stenroos, L. (2015). Service experience co-creation: conceptualization, implications, and future research directions. *Journal of Service Management*, 26(2), 182-205.

Jackson, T. (2005) 'Motivating Sustainable Consumption: a review of evidence on consumer behaviour and behavioural change'. Report to the Sustainable Development Research Network.

Johnson, E. J., Shu, S. B., Dellaert, B. G., Fox, C., Goldstein, D. G., Häubl, G., ... & Wansink, B. (2012). Beyond nudges: Tools of a choice architecture. *Marketing Letters*, 23(2), 487-504.

Jolls, C., & Sunstein, C. R. (2006). Debiasing through law. *The Journal of Legal Studies*, 35(1), 199-242.

Kahneman, D. (2011). *Thinking, fast and slow*. Macmillan.

Keller et al. (2011). Enhanced Active Choice. *Journal of Consumer Psychology* 21.

Lally, P., Van Jaarsveld, C. H., Potts, H. W., & Wardle, J. (2010). How are habits formed: Modelling habit formation in the real world. *European journal of social psychology*, 40(6), 998-1009.

Laschke, M., Diefenbach, S., Schneider, T., & Hassenzahl, M. (2014, October). Keymoment: initiating behavior change through

friendly friction. In Proceedings of the 8th Nordic Conference on Human-Computer Interaction: Fun, Fast, Foundational.

Laschke, M., Diefenbach, S., & Hassenzahl, M. (2015). Annoying, but in a nice way: an inquiry into the experience of frictional feedback. *International Journal of Design*, 9(2), 129-140

Lehner, M., Mont, O., & Heiskanen, E. (2016). Nudging—A promising tool for sustainable consumption behaviour?. *Journal of Cleaner Production*, 134, 166-177.

Lewin, K. (1935). *A dynamic theory of personality: Selected papers* (DK Adams & KE Zener, Trans.). New York: McGraw.

Lockton, D., Harrison, D., & Stanton, N. A. (2010). The Design with Intent Method: A design tool for influencing user behaviour. *Applied ergonomics*, 41(3), 382-392.

Lilley, D. (2009). Design for sustainable behaviour: strategies and perceptions. *Design Studies*, 30(6), 704-720.

Ling, T., Xiao, Y. G., & Badke-Schaub, P. G. (2014). HOW INTUITION AFFECTS DESIGNERS' DECISION MAKING: AN INTERVIEW STUDY. In *DS 77: Proceedings of the DESIGN 2014 13th International Design Conference*.

Ly, K., Mazar, N., Zhao, M., & Soman, D. (2013). A practitioner's guide to nudging.

Mager, B., (2014), From shareholder value to shared values, Touchpoint, Volume 4, no. 3, January 2013.

Maynes, J., Rawson, A., (2016), Linking the customer experiences to value, McKinsey & Company, Retrieved from: <http://www.mckinsey.com/business-functions/marketing-and-sales/our-insights/linking-the-customer-experience-to-value>

Mazar, N. and Zhong, C. (2010), "Do Green Products make us better people?," *Psychological Science*, 21(4) 494-498, 2010

McDonald, I. M. (2008). Behavioural economics. *Australian Economic Review*, 41(2), 222-228.

Milkman, K. L., Chugh, D., & Bazerman, M. H. (2009). How can decision making be improved? Perspectives on *Psychological Science*, 4(4), 379-383.

Mirsch, T., Lehrer, C., & Jung, R. (2017). *Digital Nudging: Altering User Behavior in Digital Environments*.

Mollen, S. (2013). *Fitting in or breaking free?: on health behavior, social norms and conformity*

Moritz, S. (2005). *Service design: Practical access to an evolving field*. Cologne, Germany: Köln International School of Design.

Mullane, M., & Sheffrin, S. (2012). *Regulatory Nudges in Practice*. White paper. Tulane University.

Naumof, N., (2014) *It makes no sense*, Book Country, New York, ISBN, 978-1-4630-0403-3

Niedderer, K., et. al. (2014). Design for behaviour change as a driver for sustainable innovation: Challenges and opportunities for implementation in the private and public sectors. *International journal of design*, 10(2), 67-85.

Nielsen, T. C. & Kepinski, L., (2016). *Inclusion nudges guidebook*.

Nisbett, R. E., & Wilson, T. D. (1977). Telling more than we can know: Verbal reports on mental processes. *Psychological review*.

Nolan, J. M., Schultz, P.W., Cialdini, R. B., Goldstein, N. J., & Griskevicius, V. (2008). Normative social influence is underdetected. *Personality and social psychology bulletin*, 34(7), 913-923.

Otani., A., (2015) A behavioral approach to product design; Four steps to designing products with impact. Retrieved from: <https://medium.com/swlh/a-behavioral-approach-to-product-design-166d22628970>

Patton, M. Q. (2002). Qualitative interviewing. *Qualitative research and evaluation methods*, 3, 344-347.

Papeschi, F. (2010). Rethinking behaviours: Beyond persuasion, questions and ideas on longlasting change, environment and service design. *Touchpoint, The journal of service design* 2 (1), 46-53, sdn, Köln.

Payne, A. F., Storbacka, K., & Frow, P. (2008). Managing the co-creation of value. *Journal of the academy of marketing science*, 36(1).

Payne, O. G. (2012). *Inspiring Sustainable behaviour: 19 Ways to ask for Change*. Routledge.

Pfarr., N., (n.d.) Behavioural Economics and design, Whitepaper Artefact, Retrieved from: <https://www.artefactgroup.com/resources/behavioral-economics-design/>

Poline, A., Løvlie, L. & Reason, B. (2013). *Service Design: From Insight to Implementation*. USA: Rosenfeld Media

Powell, M., & Ansic, D. (1997). Gender differences in risk behaviour in financial decision-making: An experimental analysis. *Journal of economic psychology*, 18(6), 605-628.

Renes, R. J., & Hermsen, S. (2016, June). Developing a theory-driven method to design. In *Conference Proceedings (Vol. 2016)*. Design Research Society.

Roos, I., Gustafsson, A., Edvardsson, B., et al. (2011) SPAT (Switching Path Analysis Technique)—A Method for Understanding Switching Paths and Future Behavior. *Advances in Service Quality, Innovation and Excellence*, Ithaca

Rubinstein, H., (2017), Behavioural science in the private sector: guidelines for avoiding misuse, Retrieved from: <http://www.>

innoviatech.com/wp-content/uploads/2017/01/250117-Behavioural-science-white-paper-booklet-A5.pdf

Sanders, E. B. N., & Stappers, P. J. (2008). Co-creation and the new landscapes of design. *Co-design*, 4(1), 5-18.

Samson, A. (2014). *An Introduction to Behavioral Economics*. Retrieved from

Schubert, C. (2015). On the ethics of public nudging: Autonomy and Agency. Retrieved from SSRN: <http://ssrn.com/abstract=2672970>

Selinger, E., & Whyte, K. P. (2012). What counts as a nudge?. *The American Journal of Bioethics*, 12(2), 11-12.

Simon, H. A. (1956). Rational choice and the structure of the environment. *Psychological review*, 63(2), 129.

Sleeswijk Visser, F. (2013). *Service design by industrial designers*. Sleeswijk Visser, TUDelft. ISBN, 978946186.

Soman, D. (2015). *The last mile: Creating social and economic value from behavioral insights*. University of Toronto Press.

Spiegler, R. (2015). On the equilibrium effects of nudging. *The Journal of Legal Studies*, 44(2), 389-416.

Stanovich, K.E., & West, R.F. (2000). Individual differences in reasoning: Implications for the rationality debate? *Behavioral and Brain Sciences*, 23, 645–726

Strassheim, H. (2016). Not all nudges are automatic: freedom of choice and informative nudges.

Stutzer, A., Goette, L., & Zehnder, M. (2011). Active decisions and prosocial behaviour: a field experiment on blood donation. *The Economic Journal*, 121(556).

Sunstein, C., & Thaler, R. (2008). *Nudge. The politics of libertarian paternalism*. New Haven.

Sunstein, C. R. (2015). Nudging and choice architecture: ethical considerations.

Thaler, R., H. (1991). *Quasi rational economics*. New York: Russell Sage.

Thaler, R. H. (2015). The Power of Nudges, for Good and Bad. *The New York Times*, 6.

Trout, J.D, (2005), Paternalism and cognitive bias. *Law and Philosophy*. 24:393–434

Teovanovi, P., Kneževi, G., & Stankov, L. (2015). Individual differences in cognitive biases: Evidence against one-factor theory of rationality. *Intelligence*, 50, 75-86.

Vaajakallio, K., Lee, J.-J., Kronqvist, J., Mattelmäki, T., 2013. *Service Co-Design With The Public Sector: Challenges And Opportunities In A Healthcare Context*. Proceedings from the Include Asia 2013.

Verplanken, B., & Wood, W. (2006). Breaking and creating habits: Consequences for public policy interventions. *Journal of Public Policy & Marketing*, 25, 90–103

Walter, A., & Spool, J. M. (2011). *Designing for emotion* (pp. 978-1). New York: A book apart.

Walsh, M., Fitzgerald, M. P., Gurley-Calvez, T., & Pellillo, A. (2011). Active versus passive choice: Evidence from a public health care redesign. *Journal of Public Policy & Marketing*, 30(2), 191-202.

Wansink, B., & Van Ittersum, K. (2013). Portion size me: Plate-size induced consumption norms and win-win solutions for reducing food intake and waste. *Journal of Experimental Psychology: Applied*, 19(4), 320.

Wang, J., & Keys, B. J. (2014). Perverse nudges: Minimum payments and debt paydown in consumer credit cards.

Weinmann, M., Schneider, C., vom Brocke, J.: (2015), *Digital Nudging*, <http://dx.doi.org/10.2139/ssrn.2708250> (Accessed: 28.04.2015)

Welch, N. (2010). A marketer's guide to behavioral economics. *McKinsey Quarterly*, 47(1), 1-4.

Wendel, S. (2013). *Designing for behavior change: Applying psychology and behavioral economics*. " O'Reilly Media, Inc."

West, R. F., Meserve, R. J., & Stanovich, K. E. (2012). Cognitive Sophistication Does Not Attenuate the Bias Blind Spot. *Journal of Personality and Social Psychology*. Advance online publication. doi: 10.1037/a0028857

Wever, R., Van Kuijk, J., & Boks, C. (2008). User-centred design for sustainable behaviour. *International journal of sustainable engineering*, 1(1), 9-20.

Williams, B., (2017), *When making it hard for customers can be a good thing*, Blogpost, Retrieved from: <http://www.briwilliams.com.au/articles/Blog-News-When-making-it-hard-for-customers-can-be-a-good-thing>

Zaltman, G. (2003). *How customers think: Essential insights into the mind of the market*. Harvard Business Press.

Zomerdijk, Leonieke & Voss, Chris. (2010). *Service Design for Experience-Centric Services*. *Journal of Service Research*

Zepeda, L., & Deal, D. (2008). Think before you eat: photographic food diaries as intervention tools to change dietary decision making and attitudes. *International Journal of Consumer Studies*, 32(6), 692-698.

