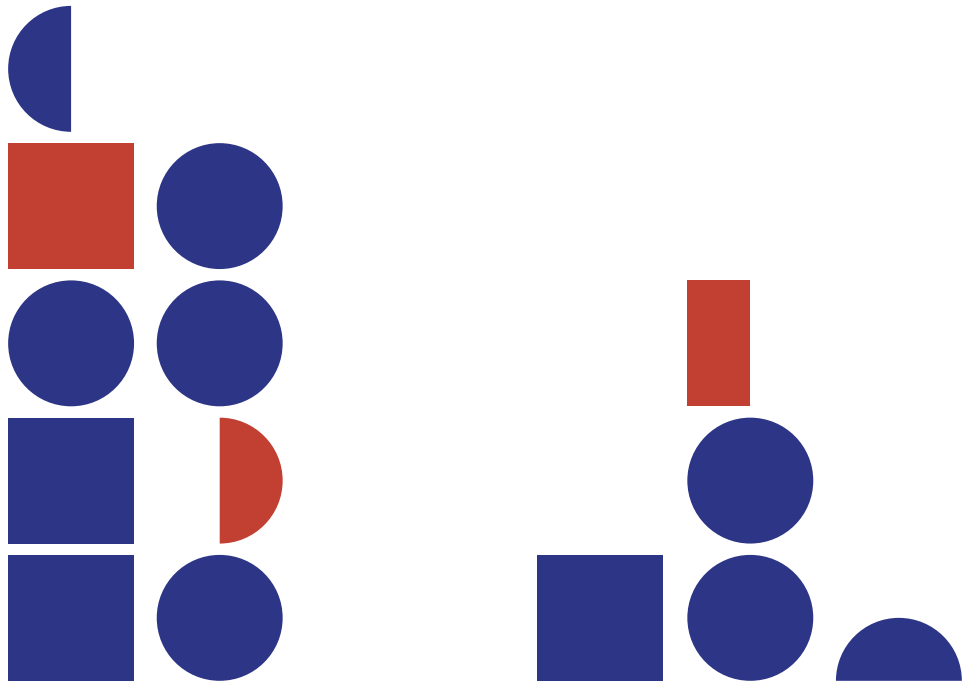


# **INCLUSIVE SERVICE DESIGN, APPLICATION TO BOOKSTORE SERVICE SYSTEM INNOVATION**





**Politecnico di Milano**  
**Department of Design**  
**Master in Product Service System Design**  
**A. Y. 2018/2019**

—  
Thesis

*Inclusive service design, application to  
bookstore service system innovation*

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My thesis project is a challenging and inspiring journey for me and my career. I want to express my gratitude at the beginning to the people that supported me during the adventure.

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# ABSTRACT (EN)



With the growing prevalence of online bookstore and chain bookstore, independent bookstores are struggling to survive. They want to change the situation by renovating the bookstore, like integrating café, event place, stationery stores into one place. However, the complicated service offerings are not designed in a systematic and holistic way, so that customers get confused and frustrated. To solve the problem, the thesis investigates the current bookstore service system from the perspective of inclusive design.

When designers innovate new or improved solutions with increasingly complicated service systems, service exclusion is produced as a byproduct. Because the designers tend to make uninformed decisions by overlooking or simplifying human diversity and social changes in many cases. To bring explicitly human diversity and a systematic evaluation process to service design, the thesis combines the inclusive design philosophy and methodology with service design.

The thesis aims to optimize the current bookstore service that draws upon the mismatched interactions of various customers as well as enables them to be guided and inspired in purchasing, discovering and connecting with the bookstore.

## KEYWORDS (EN)

Service design, inclusive design, bookstore service, service exclusion, service inclusion

# ABSTRACT (IT)



Con la crescente prevalenza della libreria online e della catena di negozi, le librerie indipendenti stanno lottando per sopravvivere. Vogliono cambiare la situazione rinnovando la libreria, come integrare bar, luogo di eventi, cartolerie in un unico posto. Tuttavia, le complicate offerte di servizi non sono design in modo sistematico e olistico, in modo che i clienti siano confusi e frustrati. Per risolvere il problema, la tesi indaga l'attuale sistema di servizi di libreria dal punto di vista del design inclusivo.

Quando i design innovano soluzioni nuove o migliorate con sistemi di servizi sempre più complicati, l'esclusione del servizio viene prodotta come sottoprodotto. Perché i designer tendono a prendere decisioni non informate trascurando o semplificando la diversità umana e i cambiamenti sociali in molti casi. Per portare esplicitamente la diversità umana e un processo di valutazione sistematica alla design del servizio, la tesi combina la filosofia e la metodologia del design inclusivo con la design del servizio.

La tesi mira a ottimizzare l'attuale servizio di libreria che si basa sulle interazioni non corrispondenti dei vari clienti e consente loro di essere guidati e ispirati nell'acquisto, nella scoperta e nel collegamento con la libreria.

## KEYWORDS (IT)

Design del servizio, design inclusivo, servizio di libreria, esclusione del servizio, inclusione del servizio

# INTRODUCTION

## CHAPTER ONE

## 1. Introduction

### 1.1 Background

#### 1.1.1 Bookstore industry current situation

Compared to 10 years ago, the book sale decreased by hundreds of million euros in the EU and EEA. (See Fig 1.) What promising is that in 2016, the publisher turnover from book sales presented an increase, which may lead to a mild upslope for the book sale by the forecast. (Federation of European Publishers, 2017) As a big part of the culture industry, the bookstore is still a powerful drive for providing people with consumptions of all kinds of knowledge and cultural values.

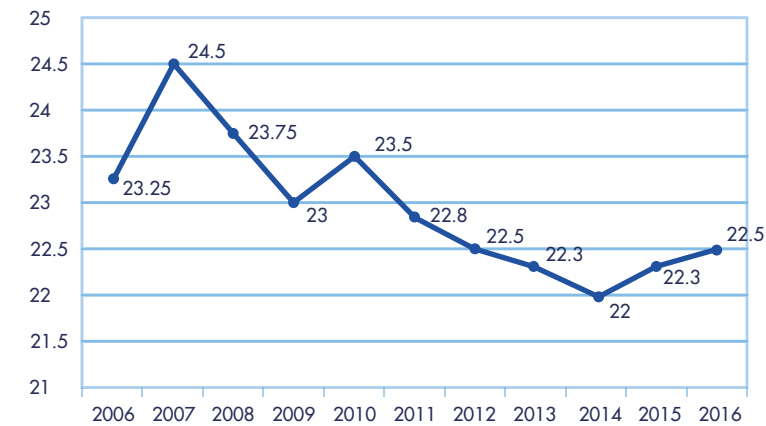


Figure 1. Net publishers' turnover from book sales in the EU + EEA, 2006-2016 (€, billion).  
Source: FEP Survey. Reproduced from Federation of European Publishers (2017).

With the digitalization sweeping all the industries, the digital market is just emerging in the bookstore industry in Europe. The share of digital books was estimated to represent 6-7 % of the total market. (FEP, 2017) In Europe, even though the numbers of people who prefer audiobooks and e-books are increasing, but studies showed that the majority of the readers still prefer printed format books. According to Statista, a survey conducted in France in 2014 showed that about 59 percent of the printed- book readers don't have the intention of reading e-books. Similarly, in Spain in 2014, about 79 percent of survey respondents read printed books and only 11.1% preferred e-books.

The figure 2 shows the total number of specialized stores selling books in the EU in the last years. The numbers faced an upslope increase compared to 2013. (EUROSTAT, 2014) It means that people start to come back to specialized stores to purchase books, because of the experience

in the bookstore, the expert's advice from the staff, etc. The statistics show people's steady consumption of books directly.

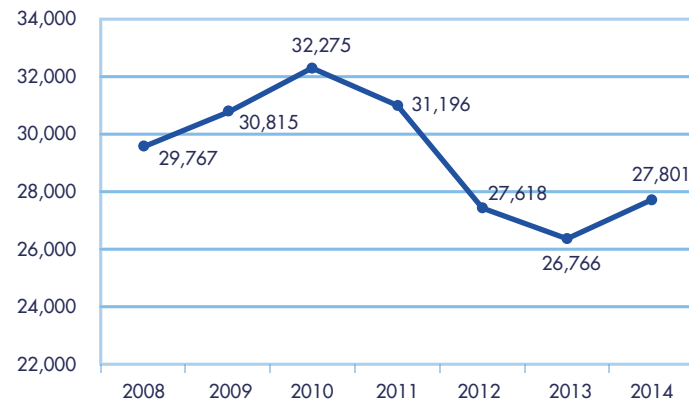


Figure 2. Retail sale of books in specialized stores, a number of enterprises in the EU, 2008-2014. Source: FEP Survey. Reproduced from Federation of European Publishers (2017).

However, the projections of the bookstore industry are not optimistic. Many consumers prefer to purchase books online. In Germany for example, the number of online buyers who purchased printed books on the internet increased consistently from 13.11 million in 2012 to 15.04 million in 2015. (Statista) Many physical bookstores started to rethink how the stored should be.

### 1.1.2 Evolutions in bookstore

These changes posed big challenges for physical bookstores to deal with, especially for the independent bookstores. The chain bookstores usually provide consistent experience and branding despite the locations. They have larger selections and lower prices, which tend to attract a wider range of customers. The situations require the independent bookstores to innovate on their strategies and designs more than ever before. They have been adapted to the change, personalize, customize and localize their service offerings. Maintaining existing customers and attracting new customers is the key point for them to survive nowadays. (Shep, 2018) Revolutions are happening in the bookstore industry. Innovations on spatial design, service design, promotion strategies, branding are being adopted by traditional bookstores.

For the customers, purchasing books in the physical book store is not simply to buy the actual books, but a series of experiences in the bookstore ecosystem. The concept of purchasing books perceived by customers is changing. It also means enjoying a cup of coffee while reading, or

meeting people sharing the same interests in the reading events, or bringing the children and foster their interests in reading, or posting social media pictures of the bookstore; or meeting with your favorite writers. It is about the overall experience happening in the bookstore, more than the book itself.

The growing complexity of service system in the bookstore has both pros and cons. The service offerings of the bookstore both online and offline are making the experience different. The service systems become complex with multi-touchpoint and difficult to operate for bookstore staff. The various service offerings in the bookstore are attractive to customers, yet different customers may feel left out or confused when experiencing the service. It reflected that the fast-growing service system neglected the development of service inclusion. To balance the cost and turnover in the short term, in the service provision, only the "average" customers are considered as the main target of the service. People with various situations are usually ignored as the "minority group", but in fact, their ignorance overlooked the needs of more than half of the population according to the population pyramid.

To exploit the market potentiality to a deeper level, the service ecosystem needs to be designed in an inclusive way to make the bookstore a welcoming and enjoyable place to as many people as possible.

### 1.1.3 The bookstore, le merle moqueur

Le merle moqueur is located in the 20th arrondissement in Paris, surrounded by a rather busy and lively neighborhood. Some geographical statistics show it is a lively neighborhood with wide age ranges of residents and a number of foreigners. (See Fig 3. and Fig 4.)

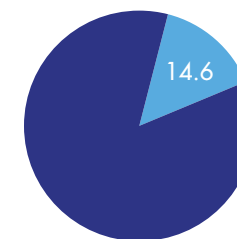


Figure 3. Foreigner residents in the 20th arrondissement in Paris. Source: UrbiStat (2014)

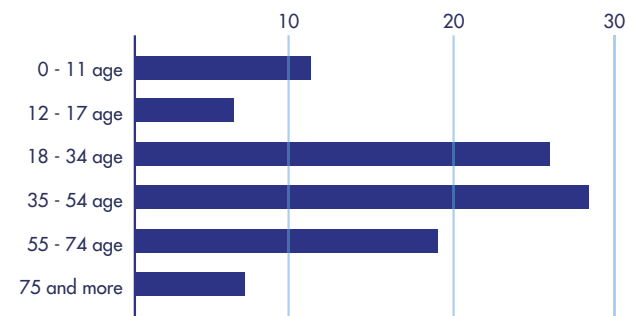


Figure 4. Age classes of the residents in the 20th arrondissement in Paris.  
Source: UrbiStat (2014)

The location of the bookstore used to be a garage and then the owner of the bookstore transformed it into a bookstore. As an independent bookstore, it has a spacious space a big selection of books. Le merle moqueur just celebrated its 10th birthday since its first opening.

In the bookstore service system, the actors are the customers and the staff. They are the two actors have constant direct interactions. The stakeholders are the bookstore owner, the publishers, which are in the stage. There are also actors like writers, authors who have interactions with the bookstore on event occasions.

About 4 years ago, the bookstore worked with the designer, Malte Martin, on the new branding and store interior design. (See Fig 5. and Fig 6.) The branding has been quite recognizable and suitable for the bookstore's identity. the visual identity, le merle moqueur, which means the mocking bird is friendly and strong. The identity is designed in a timeless way, which provokes people's curiosity and inspires customers. However, the bookstore design is not as successful as branding. The weakness of the design is showing along the time.



Figure 5. The identity of le merle moqueur.



Figure 6. The interior of le merle moqueur.

Customers always have problems with orienting independently and find what they want in the store. The signages seem not enough to guide the customers to find the books. These issues are more obvious for older customers, tourists, foreigners, children. Besides, the bookstore holds events constantly, including reading clubs, meetings with writers, presentations, sometimes even gig shows. So, the service needs to adapt to the new offerings of the bookstore.

## 1.2 Inclusive design in bookstore service design

To cope with the evolving needs of people and to survive through the crisis, the service systems become much more complex than before. (Patrício, Fisk, e Cunha, & Constantine, 2011) The growing complexity of the service system is a double-sided coin for the customers. On one hand, the various service offerings provide customers with more functions; the multi-touchpoints make it more accessible online and offline. On the other hand, the service becomes more capability demanding to fully participate in; more barriers are set unintentionally because of the mismatch between the customers and services.

Firstly, the older customers, less abled people, the migrants, or other “minority groups” are often ignored in the design process, Secondly, the temporary and situational impairments also accounting as a big part of the customers' varieties. In chapter 2 and chapter 3, the diversity of customers is discussed in detail. This blindness to include different varieties of customers is not rare to see in service design projects nowadays. In other words, a big portion of the population's needs and expectations are being underestimated somehow. They don't have equal access to the designed world. The marginalization and the service provision become a vicious circle for the people with difficulties. Out of humanism, we should build a world that striving for equal rights and access. In a long term, designing solutions for the older population, for the less abled

people, etc. is actually a way to design for our future selves, because we will be experiencing that someday in some situations.

What's more, a great financial potentiality is lying in this unexploited market. The unsatisfied needs and expectations will bring a boost to the economy if they will be met. In chapter 2, the importance of adopting a more inclusive design approached is discussed more in detail.

Therefore, an inclusive approach is in need of service design to include as many people as possible in the design process as well as the output.

### 1.2.1 Objectives

- Integrate inclusive design with service design

By doing theoretical research on the methodologies as well as the philosophies of both the disciplines, and collecting insights from the case studies, the thesis will synthesise the methodologies and tools into an inclusive service design approach. The approach will be applied and tested in the bookstore service system innovation project.

- Creating an inclusive bookstore service system

To accommodate emerging customer needs and new service offerings of the bookstore, the thesis project will create an inclusive service system in the bookstore to decrease the service exclusion by offering a usable, desirable and profitable service to various of customers.

### 1.3 Outline of the thesis

The thesis has seven chapters in total. The first chapter is an introduction of the background of the thesis project, including the bookstore industry and my methodology. The second chapter is dedicated to a in-depth study in service design and inclusive design, and a combination of both. I also state my approach to combine them in my project. Then to enrich my methodologies, I collect and study three inclusive service design case studies in the third chapter. The fourth and fifth chapter is about the research process and translate it into design directions. The next chapter is the design process, including the concept generations, proposal and development. Last but not least, I conclude the thesis with the seventh chapter to reflect on my thesis work.

# THEORETICAL RESEARCH

## CHAPTER TWO

## 2. Theoretical Research

### 2.1 Service design

Service design is still an emerging field that keeps evolving. One single definition might actually influence the evolving feature of service design, but a common understanding of service design thinking is crucial. (Schneider, Stickdorn & Soo, 2011, p.29) In this section, the research starts with clarifying the concept of service and service design, then to demonstrations on the history and evolutions in service design. Finally, the research is dedicated to processes, tools, and methods in service design.

#### 2.1.1 What is service design

The first question I need to clarify is “What is a service?” Usually, a service is widely defined to be activities, processes, and interactions. (Solomonet., 1985; Lovelock, 1991). Lovelock (1992) defines a service as “a process or performance rather than a thing”. Compared to physical products, services have four main characteristics that are widely accepted. These four characteristics are intangibility, heterogeneity, inseparability of production and consumption, and perishability (Zeihaml et al.1985, Edgett and Parkinson 1993). Intangibility means that services cannot be sensed by people as physical products before purchase (Kotler, 2003). Heterogeneity is describing the quality of services that the service performance may vary especially in labor-intensive services. Inseparability of production and consumption is stating that service is a process that needs the presence of the customers. Finally, the perishability is reflecting that services cannot be stored, saved for another reuse.

Service design is a discipline emerged with the development of the service industry. What exactly is service design? There is not a common definition for it. Several widely used definitions of service design are listed here.

Definitions	Authors/ Organization
“Service design is the activity of planning and organizing a business’s resources (people, props, and processes) in order to directly improve the employee’s experience, and indirectly, the customer’s experience.”	Nielsen Norman Group
“Service design here refers to the design of facilities, servers, equipment, and other resources needed to produce services. It includes a blueprint of service system, specifications, procedures, and policies.”	Ghosh S., Surjadjaja H.T Antony J. (2004)

“Service design helps to innovate(create new) or improve (existing) services to make them more useful, usable, desirable for clients and efficient as well as effective for organizations. It is a new holistic, multidisciplinary, integrative field.”	Stefan Moritz, 2005
“..Planning of the service concept, service process, and service system in a manner that enables the value-in-use of the intended service to be realized”	Åkesson M. T Edvardsson B (2008)
“Service design is the application of established design process and skills to the development of services. It is a creative and practical way to improve existing services and innovate new one.”	Livelwork, 2010

Table 1. Definitions of service design.

I wouldn't draw my own version of a service design definition, but I summarize two common understandings of service design from the definitions above.

Firstly, most definitions take service design as an approach for improving the existing service and innovating new ones. Secondly, service design aims to improve the experience for both service providers, stakeholders, and customers by the solution.

### 2.1.2 Service design is an evolving discipline

The term “service design” was born in 1982, created by Lynn Shostack. Then it developed as a discipline with a marketing and management perspective. In the early 1990s, service design became a discipline spreading out from the marketing field. Bill Hollins and Gillian Hollins (Bill Hollins and Gillian Hollins, 1991) raised awareness of the necessity and methods of service design. In 1991, Prof. Dr. Michael Erlhof proposed that service design be considered a design discipline that should be taught in universities. In the following years, with the emerging of tools like personas, customer journey maps, and development of methodologies like user-centered design, design thinking, services design was evolving and enriched. Then in the 2000s, service design as a multidisciplinary design approach was applied in many organizations, companies, even public service sectors. The practices and applications of service design, further research in service interactions, design thinking contributed to developing many service design tools that we are using today.

Nowadays, the growing complexity of service and emerging needs of people demand service design to “shift from a user-centered design approach to a human-centered design approach (HCD), from designing for experience for designing for co-experience, from field studies to

enhancing empathy and on cocreation” (Meroni, 2011). HCD approach involves the exploration of the needs, and behaviors that will be involved in the solution: providers, final users and those inadvertently involved (Meroni, 2011). Co-experience is described as user experience in social contexts, and it is created together with other users and service providers. Co-creation and co-design take users as experts of their own experience. The creativity and design ability become open source to the actors involved so that a higher level of empathy can be achieved.

One of the directions that service design has been evolving is to developing as well as applying tools and methods to understand, study the users, to increase the empathy level, to co-create the service so that the output can be genuinely meeting the needs, usable and enjoyable to the users. Service design has a strong focus on people, like users, service providers, and communities, which actually goes along with the philosophy of inclusive design. To empathy with and understand users' capabilities and variations explicitly in the process of research and design is one of my motivations to combine service design with the inclusive design tools and methodology.

### 2.1.3 Service innovation

In 2007, services represented 69.2% of the total employment and 71.6% of the gross value added generated by EU:27. Service sector has become the quantitatively most important sector in all OECD economies. (OECD,2005/3). Service innovation functions as “the engine of economic growth and pervades all service sectors” (Snyder et al., 2016) according to astrom et al. (2010), service innovation creates value for customers, employees, business owners, alliance partners, and communities through new and/or improved service offerings, service processes, and service business models. Toivonen and Tuominen also proposed similar argument.

Gallouj & Savona (2009) proposed three main approaches to service innovation:

- A technologist and assimilation approach that equates or reduces innovation in services to the adoption and use of technologies.
- A service oriented or differentiation approach that seeks to identify any possible particularity in the nature and organization of innovation in services.
- An integrative and synthesizing approach which tends to create a common conceptual framework.

To study the level of the service innovation, van der Aa & Elfring (2010) propose the framework of service innovation degrees. The first one is ‘radical innovation’, which denotes the creation of a totally new product, i.e. one defined in terms of characteristics unconnected with those of an old product (e.g. new online course for a traditional university). The second one is incremental innovation, which means that the system is changed marginally through the addition or substitution of new elements (competences, technologies, methods..) (e.g. new automatic

check out in supermarkets). The last but not least is the improvement innovation. It consists of improving certain characteristics without changing the structure of the system (e.g. improved registration process).

I synthesis these two frameworks and then try to position the potential output of my service innovation. (See Fig 7.)

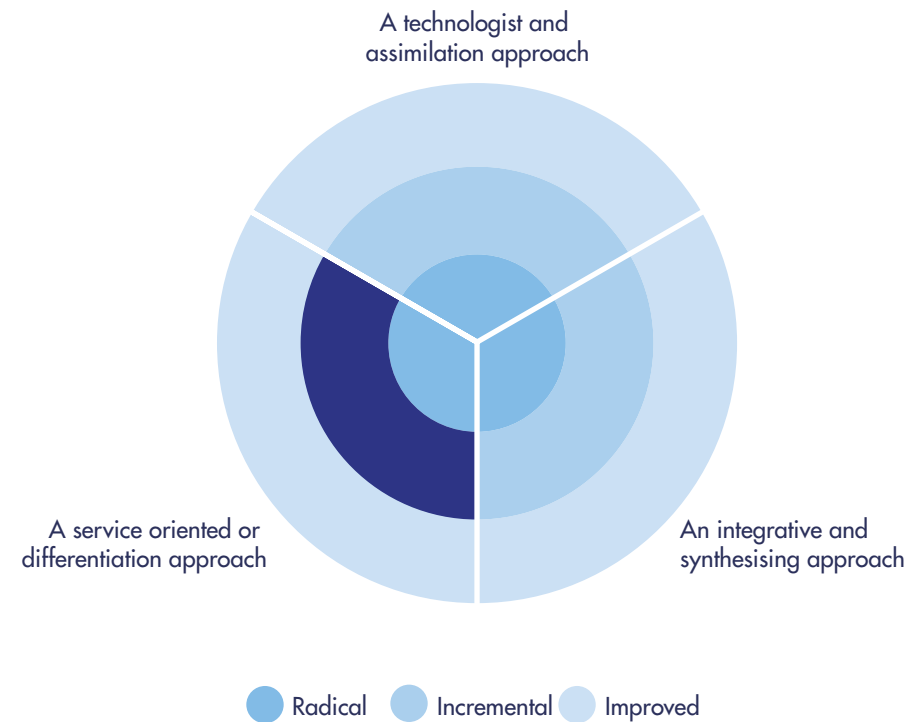


Figure 7. Service innovation synthesis.

I will adopt a service-oriented approach to design the solution, “to rebalance the focus on technology and enlarge the innovation perspective to embrace non-technological aspects” (Gallouj & Savona, 2009). The output of my project may lead an incremental innovation, with additional new inclusive elements added into the current bookstore service.

## 2.1.4 Service design methodology

### Double Diamond Model

The current commonly used and taught service design process is originated from the design thinking process that fit usually fit any design work, which was proposed by the British Design

Council in 2004. “It is a clear, comprehensive and visual description of the design process.” (British Design Council). I will adopt the Double Diamond model as a basis for my work process, and then embedded inclusive design process and philosophy into it to frame my own process model.

The design process becomes to be an iterative one including four steps based on convergent thinking and divergent thinking. The iterative model means that the design process is not confined as a linear one, designers sometimes need to take a step back or from the scratch then go over the loop again.

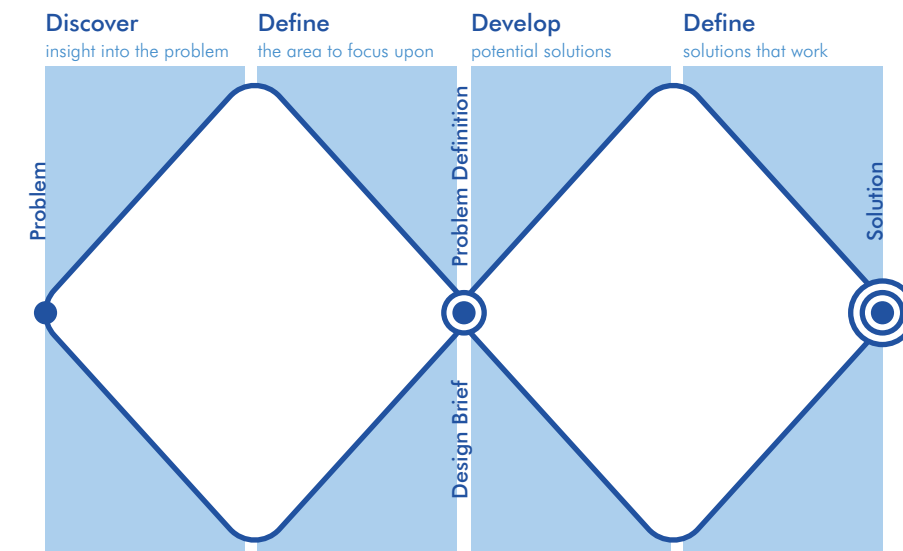


Figure 8. The ‘Population Pyramid’ showing a breakdown abilities difficulties for American adults of working age (16-64) from the Microsoft (2003) survey. Reproduced from Hosking et al. (2010).

In detail, the British Design Council gave us further explanations for each step:

- Discover.  
The first diamond helps people understand, rather than simply assume, what the problem is. It involves speaking to and spending time with people who are affected by the issues.
- Define.  
The insight gathered from the discovery phase can help you to define the challenge in a different way.
- Develop.  
The second diamond encourages people to give different answers to the clearly defined problem, seeking inspiration from elsewhere and co-designing with a range of different people.

- Deliver.

Delivery involves testing out different solutions at small-scale, rejecting those that will not work and improving the ones that will.

## 2.1.5 Design for services

So, what can service design contribute to our lives and be applied in the industries? Dr. Anna Meroni and Dr. Daniela Sangiorgi gave us quite comprehensive answers to and far beyond this question. The answers provide me with a bird's-eye view on what my project will be and what practices it might adopt so that I could shape the combination of inclusive design.

In the book design for service, Meroni and Sangiorgi developed a map, centered with a human-centered approach, to visualize the contributions, applications, practices in the four intervention areas of service design. Besides, the designer's positions and capabilities are represented in service design projects. It synthesized a variety of perspectives (service experiences, touchpoints, service model or system configuration, usability, feasibility, sustainability, service modularity or experiential quality).

The areas of interventions are:

- Design interactions, relations, and experiences  
Design for Services can focus on evaluating and designing service experiences, relations and interactions linking field observations with co-creation.
- Design interactions to shape systems and organizations  
The redesign of service interactions can be the main driver for innovation, organizational change and business development.
- Exploring new collaborative service models  
Design for services can work on imagining and experimenting with new service models emphasizing on co-creation, observing and probing emerging practices and using new media.
- Imagining future directions for service system  
Design for services can generate scenarios for regions, places and service systems, by imaging alternative directions for more sustainable futures on a local scale.

According to the map, I envision my service design project is positioned in “Design interactions, relations, and experiences” and “Design interactions to shape systems and organizations”. (See Fig 9.)

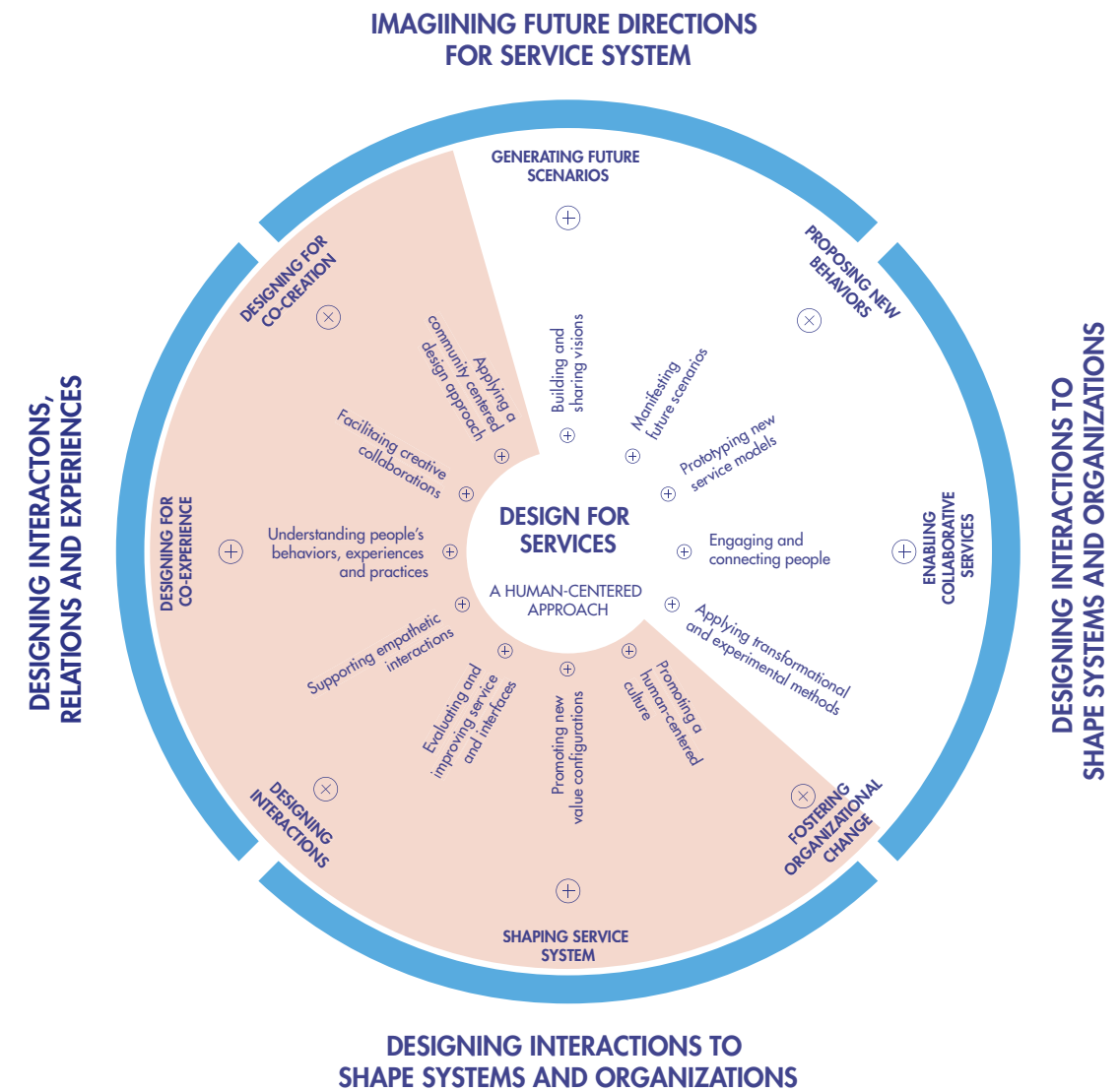


Figure 9. Position of my project in “Design for service”.

Firstly, in my project, the service design “can focus on evaluating and designing service interactions, relations, and experiences” (Meroni & Sangiorgi, 2011, p.206). The aim is “to improve and enable better experiences and supporting more empathetic and effective interactions among people and service systems.

Specifically, for my bookstore service project, I may need to:

- Deeply understand, visualize and interpret customers’ behaviors, experiences in the bookstore as a starting point for the design.

- Evaluate and design the service concept and encounter for supporting more empathetic interactions among customers, bookstore staff and the bookstore.

Secondly, the direction can also be “redesign the interactions as a driver for innovation, or organizational change”. Based on a human-centered approach, the intent is to improve the service by suggesting new or improved interaction including user-staff, user-service system, staff-service system interactions.

Applied the methods into my project, I may need to:

- Evaluate and improve service interactions and interfaces at different levels, like service usability, seamless experience, clearer processes in the bookstore.
- Foster the bookstore change by promoting a human-centered service for the customer, bookstore staff and stakeholders.

## 2.2 Inclusive design

### 2.2.1 History

The book, *Designing for the Disabled* (Goldsmith,1963), led to a prosperous period for the development of “barrier-free design” and “universal design”. In the UK around 1990s, the work of Goldsmith became the breeding ground of the emergence of inclusive design. The first published reference for inclusive design appeared in August 1994 in a paper *The Case for Inclusive Design* presented at the 12th Triennial Congress of the International Ergonomics Association in Toronto Canada(Coleman,1994). It differentiates inclusive design from universal design by setting its principals. Besides, it focused on providing a convincing business case study and a knowledge base, including design tools, research methods. (John Clarkson & Coleman, 2015)nor a separate specialism, but as a general approach to designing in which designers ensure that their products and services address the needs of the widest possible audience, irrespective of age or ability. Inclusive Design (also known [in Europe] as Design for All and as Universal Design in the USA Since then many research and studies have built and enriched the knowledge base and business case for inclusive design.

After the 2000s. inclusive design research has developed a broader sense of inclusion. Especially the inclusive design department in Microsoft design, lead by Kat Holmes, consider inclusive design is more than include people with impaired physical abilities or the elderly people, but various people with a diverse physical and psychological conditions (Roger Coleman, John Clarkson, Julia Cassim,2003; Holmes,K, 2018). Since exclusion are happening when people have mismatched interactions experiencing the service in a “not supposed” way by designers.

According to Kat Holmes, exclusion is the byproduct of design and inclusive design might be the only remedy for that. She also proposed the idea that in this designed world, disability isn’t only indicate the impaired personal health condition, but more about the mismatched human interactions. This new proposal highlights the responsibilities of the people who create the solutions.



Figure 10. Reproduced from “redefine disability” by Kat Homes. (2018)

### 2.2.2 Define inclusive design philosophy

In my project, I want to apply inclusive design philosophy as a top-level mindset to guide me to make informed decisions in the process. To achieve this, I started with study in-depth on the definitions of inclusive design.

Four prevalent definitions of inclusive design are listed in the table.

Definition	Author/ Organization
products, services, and environments that include the needs of the widest number of consumers	UK government (2000)
a general approach to designing in which designers ensure that their products and services address the needs of the widest possible audience, irrespective of age or ability.	Design Council (2006)
The design of mainstream products and/or services that are accessible to, and usable by, as many people as reasonably possible on a global basis, in a wide variety of situations and to the greatest extent possible without the need for special adaptation or specialized design.	British Standard (2005)

A methodology that enables and draws on the full range of human diversity. Most importantly, this means including and learning from people with a range of perspectives.	Microsoft Design (2016)
--	-------------------------

Table 2. Definitions of inclusive design.

From the definitions, inclusive design can be defined in a broad sense like the one from Microsoft, or defined accurately based on many conditions like the one from the Design council. The definitions are no longer confined in focusing on ability and age barriers, but on physical and psychological human diversities. The common essence of the definitions lies in user/human diversity. Inclusive design is about identifying user diversity and making informed decisions to address the needs of the widest users. (Waller et al., 2015)Engineering Design Centre's (EDC

It is notable that the 'inclusive' definition in the research needs to be expanded from just being the traditional users to include anyone who needs to interact with the product/service for its successful operation, like installers, support staff, maintenance and so on. (Keates & Clarkson, 2004), which is aligned with service design to coordinate the actors involved in the service.

Another aspect to define inclusive design is to differentiate it with the similar concept of "universal design". Even though both rooted in barrier-free design, inclusive design and universal design have many differences in their approaches. Firstly, universal design emphasizes the qualities of a final design, especially on the qualities of physical objects. Inclusive design, conversely, pay more attention to how a designer arrived to that design, whether they adopt an inclusive approach. (Holmes, K. 2018) The second major difference, initially coined by Treviranus: Universal design is "one-size-fits-all", inclusive design is "one-size fits-one".

The philosophy of inclusive design, draw and enable human diversity in wide variety of situations, will be a design philosophy that embedded in the whole project from research to design based on the broader definition.

### 2.2.3 Methodology of inclusive design

To embed the philosophy into my service design project, I will introduce the commonly used inclusive design process and the evaluation tools in this section.

#### The Inclusive Design waterfall model (Clarkson, Coleman, Hosking, & Waller, 2007)

The waterfall model produced by Clarkson et al. in 2007 provides a useful tool to visualize the design process with a user-centered approach.

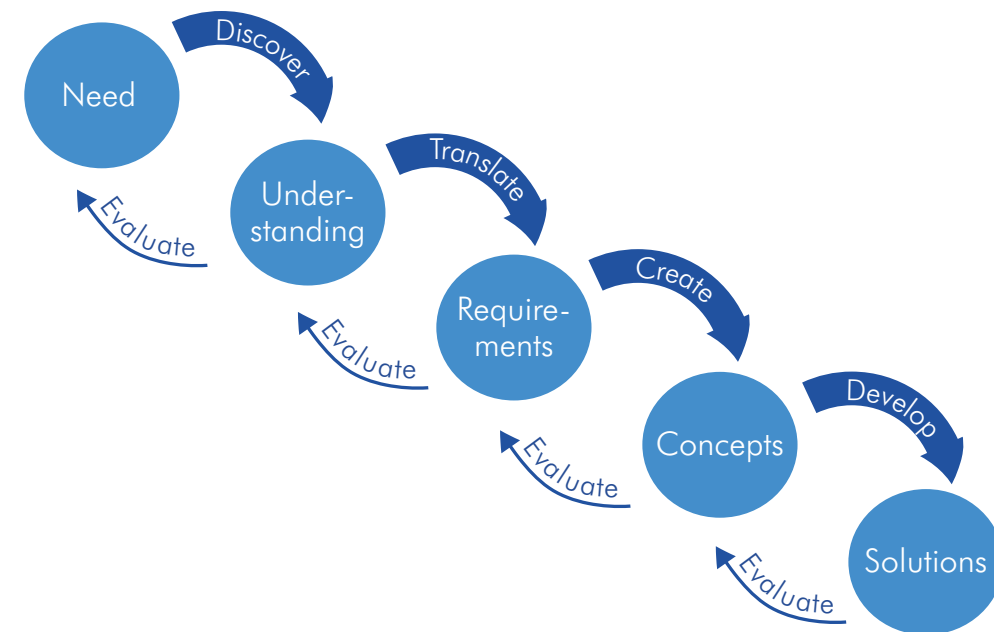


Figure 11. The Inclusive Design waterfall model (Clarkson et al., 2007)

It comprises four steps:

- Discover.  
This step focuses on research on the needs of the users and the expectations of stakeholders. the outcome is an understanding of the real need;
- Translate.  
This step is about converting the understanding into a categorized and well-defined description of the design brief; the outcome of this step is: a requirements specification;
- Create.  
This step is an iteration of the creation of concepts and evaluation against the requirements; the outcome of this step is: concepts;
- Develop.  
In this step, the detailed design of the final product or service, ready to be manufactured or implemented; the outcome of this step is solutions.

There are also other approaches, for instance, the 7-level approach (Keates & Clarkson) that drawn from the engineering design area, which is compatible to use with other frameworks.

### A systematic evaluation process

As we can see from the inclusive design approaches that evaluation is an essential stage in the whole process. In the inclusive design toolkit, Waller and Goodman introduced several evaluation tools. These tools can be used throughout the design process to evaluate the concepts or solutions to achieve more inclusive solutions.

- Capability simulators

This tool could be used to simulate the capability reduction with physical stimulators or software simulators. This kind of simulation helps the designers empathize with the users who have capability impairments and evaluate the product or service from their perspective. However, it is not comparable to test with real users with impaired capabilities. (Waller & Goodman)

- Expert appraisal

This tool is refereeing to someone with professional knowledge and experience to make an informed and unbiased judgment on the design. It can be used to identify possible causes of exclusion and suggest improvements to reduce the exclusion.

- User involvement

Getting users involved in any or all the stages in the project is undeniably an effective and instant way to know what the design should be or should not be. The ways to involve users can be: ask, observe and participate. Participate can be present as participatory design and co-design to co-create solutions with designers.

- Capability assessment

The assessment tool is used to evaluate the level of capability demanding when using a product or service. It is a quick and simple way to evaluate the solutions. The measurements are crude and subjective, but it can provide a visualized comparison between the different solutions.

## 2.3 Inclusive service design

The application of inclusive design philosophy in the service sector is relatively less compared to other traditional design disciplines, for instance in interior design, industrial design, etc. There are some scholars already doing research on the situations, motivations, methodologies, and applications, in the service sector in terms of inclusion and exclusion. Then I will justify explicitly my motivations and approaches as a service designer.

### 2.3.1 Service exclusion and service inclusion

Javier and Esteban define service exclusion as “referring to the unfairness that occurs when ser-

vices deliberately or unintentionally fail to include or to adequately serve customers in a fair manner”. Such exclusion often happens when designers do not make informed decisions according to user diversity. (Keates & Clarkson, 2003) Towards a better inclusive design practice, it is fundamental for the designers to identify the barriers in the current service provision and try to reduce the barriers by making informed decisions.

Service exclusion is no longer presented as exclusions on the disabled and the elderly but on the people have mismatched interactions when experiencing the service. These mismatched interactions can happen among a diverse range of customers. According to Microsoft design, the exclusions can be permanent, temporary or situational for the people.

The concept of service inclusion is built on social inclusion. Drawing on definitions of social inclusion and taking a customer experience perspective (Lemon and Verhoef, 2016), Javier and Esteban define service inclusion as an “egalitarian system that provides customers with fair access to a service, fair treatment during service and fair opportunity to exit a service.” (Javier & Esteban, 2010) And they added to remind that the system first needs to evolve with trends and changes; secondly, the “fairness” is an individual perception towards the service, and only if the service manages to realize inclusion at individual, community and state level, it can be fair to everyone.

Bue and Begnum(2018) define universal design in service design methodology as the customer journey is usable to everyone to the possibly greatest level and the touchpoints in the service don’t need to be specially designed. This is a supplementary concept to service inclusion.

Some research and studies are framing the practice as “Inclusive service”. Inclusive services are those which are available, usable and accessible to all customers equally, regardless of their personal circumstances (BS 18477, 2010).

In this paper, the two terms are considered as similar concepts that rooted in the integration of inclusive design theory and service design theory with a focus on an available, usable and accessible customer journey to a wider range of users.

### 2.3.2 Calling for service inclusion

#### Population diversity in nature

At the beginning of the inclusive design, the objectives to include are always the elderly and the disable community. The older population is usually facing the reduction of functional capabilities, which result in the gaps between the society and the older population. So, they are having difficulties in maintaining the quality of life and living a modern life independently. (Keates and Clarkson, 2003; Waller et al., 2007) The disabled community’s growing expectations for social integration and participation in daily life are driving the designers reacting to the challenge. In response, the government and organizations have developed legislation aimed at tackling discrimination and enabling access to buildings, products, services, information. (Design Council, 2006) In fact, the inclusion objectives are more than those two.

No matter how healthy and fit you may (or may not) feel at the moment, at some point or situation in your life you will experience a reduction in your functional capability. In other words, your ability to perform common actions will be impaired. (Keates and Clarkson, 2003) All generations of people are actually confronting this kind of mismatch of capabilities with the 'designed' world. It can be permanent, for example, the born disabled; it can be temporary, for example through accidents; it can also be situational, for example carrying heavy goods in both hands. The Inclusive 101 Toolkit from Microsoft design just addresses this kind of diverse situations as "mismatch" interactions among people, products, services, environment and etc.. The 'disability' is no longer only about physical impairments, but the mismatched interactions that could happen to all of the population.

In order to better understand population diversity, Benktzon introduced a segmented pyramid model in 1993 to show the full range of ability variation within a population. (See Fig. 12) In 2003, the research from Microsoft shows a specific interpretation of this pyramid model. Population diversity can be further broadened to consider a diverse range of usage cases, which is associated with different real-world contexts, lifestyle, aspirations, gender, and past experiences.

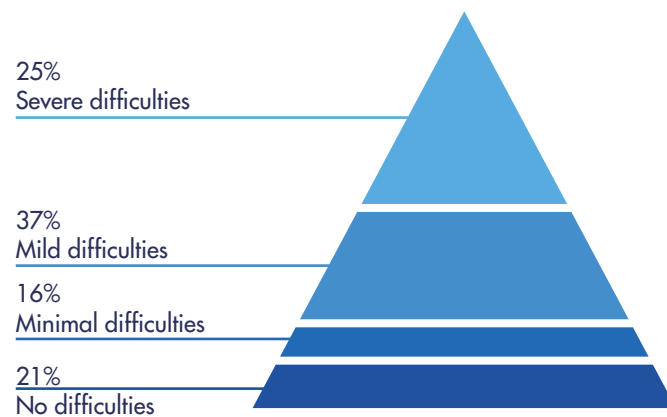


Figure 12. The 'Population Pyramid' showing a breakdown abilities difficulties for American adults of working age (16-64) from the Microsoft (2003) survey. Reproduced from Hosking et al. (2010).

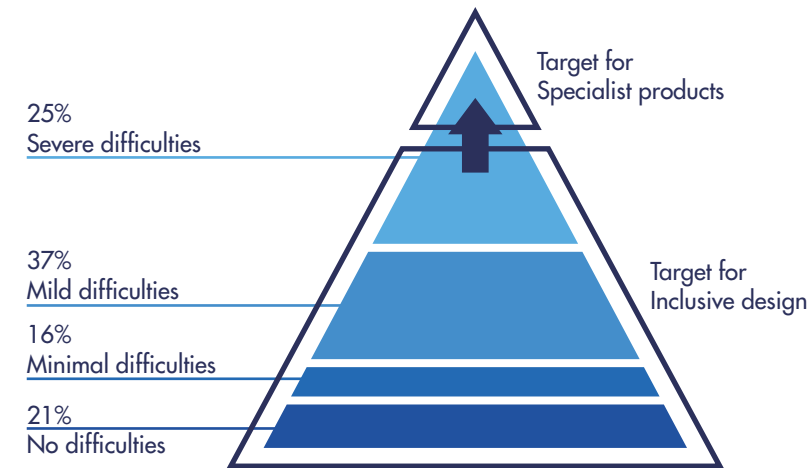


Figure 13. Inclusive design is defined using the 'Population Pyramid' from Fig. 12 to represent an appropriate design response to diversity. Reproduced from Hosking et al. (2010)

The existing market usually focuses on the bottom of the 'Population Pyramid' (See Fig 12). Waller et al. show how inclusive design aims to expand the target further up compared to a traditional market target or assistive products target. (Fig 13)

### Social and anthropological changes

Social exclusion may be quite stubborn, but service exclusion can be reduced dramatically by adopting practices that can achieve service inclusion. Compared to the traditional design discipline, service design as an interdisciplinary subject, its approach exposed to more changes in people's living and working aspects. Besides the arguments discussed before, other emerging changes are also calling for service inclusion. These social and anthropological changes are happening globally, which resulting varieties in cultural values, mentalities, physical abilities among the people.

- Changing roles and family structures

The number of bi-racial, single-parent, adoptive, childless and same-sex families is increasing. (Powell et al., 2015) Along with female equal and ubiquitous participation in the work, gender roles are redefined in the family and in labor markets (Pessin, 2017; Goldscheider et al., 2015). The changing roles and family structures are asking fair access to the public and private service without discrimination or bias.

- Global migration

In recent decades, there is an ongoing and unprecedented movement of people in the world (UNHCR, 2017). Coming from different cultural backgrounds, migrants have different service

expectations compared to mainstream, local consumers (Stevenson and Plath, 2006) The lack of life experience in the host country as well as their different characteristics (visible or non-visible) make them vulnerable. The services should have adaptivity by offering choices to the migrating population.

### 2.3.3 My role as a designer

Service design is an emerging discipline (Mager 2009), its methodologies and philosophies are still being developed and enriched from other disciplines. Along with the increasing complexity of the service systems, many tools are being borrowed and created to make service design human-centered, for example, the co-design approach, customer journey maps, personas, etc. To bring human diversity more explicit and systematic to service design, I feel the necessity to combine the inclusive design philosophy and methodology with service design. The marriage of two disciplines may inspire service designers to obtain new perspectives to approach the problems; more importantly, to make informed decisions and decrease service exclusion in a conscious mind.

To visualize the contributions of the two disciplines in my project, I use the figure that created by Carlos Aceves González to represent

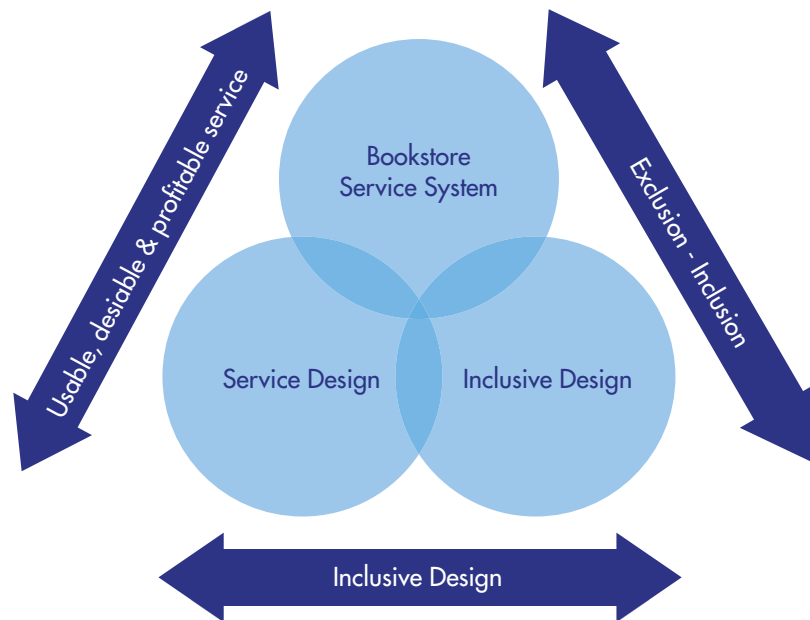


Figure 14. Conceptual frame to design inclusive service system in the bookstore.

In my research, to engage service exclusion and inclusion consciously in every process and decision-making, I will borrow certain methodologies from inclusive design.

- Identify the customers' diversity

In the research phase, start the inclusive approach with identifying and studying on the customers' diversity as well as the diverse use cases.

- Reveal the exclusions by studying the mismatched interactions in the service

In order to know why and how the exclusion happens to the customers and service actors, service barriers need to be revealed and identified. Besides, it is worthy to study how the barriers are causing mismatched interactions.

- Engage and evaluate with customers and experts

In order to always be aware of the exclusion and avoid set up barriers, evaluation tools like expert appraisal, user involvement will be introduced to the service design process in my project.

From the perspective of me, as a designer, I want to clarify my approaches to combining service design and inclusive design in my project.

Regarding the design process, I will combine the double diamond process with the waterfall inclusive design process. Aceves-González integrated the Double Diamond design process with the waterfall inclusive design process in 2014 in his paper 'The application and development of inclusive service design in the context of a bus service'.

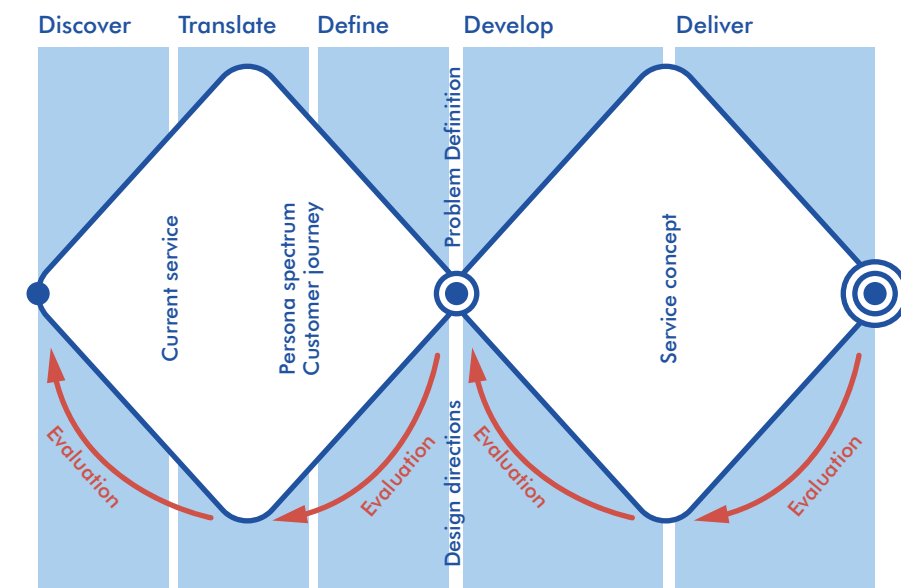


Figure 15. My inclusive service design process.

According to the paper, even though the two models have their own characteristics, they have several similarities in thinking. For example, the two models both starting with the Discover stage, which focuses on understating the user needs, problems and expectations. Then the Translate stage (Waterfall model) is similar to the Define stage (Double Diamond Model) with the broad understanding as input and defining the requirements as output. The Create and Develop stages (Waterfall model) fit with Develop and Deliver stages (Double Diamond Model) because of the similar activities involved. Besides, they are both iterative processes that can be used flexibly by the designers or non-designers in a specific project.

Regarding the design tools, I will adapt service design tools to the inclusive design philosophy, especially two main tools that I will use in my process.

The first tool is persona spectrum, which is firstly introduced by Microsoft Design. The traditional persona that we usually build is a so-called archetype of the users, which is believed to be a representative average user of the target. However, there isn't an average user in real life, and studies showed that most users don't fit into the average design resulted from the needs of the 'average users'.

Rather than building a 'fake person' as an average user, the persona spectrum is identifying a group of people who shares a similar "mismatch" either permanent, temporary or situational. These mismatched can be physical, cognitive, sensory and societal ones. It means that when we designing for one (the permanent), it extends the solutions to more. And according to Holmes, K., the persona spectrum pushes the designers to find the motivations to use the solutions behind their struggles, which are usually some universal human needs. These motivations are the glue that keeps the persona spectrum together.

The persona spectrum can improve the inclusion of the design, extend the seemingly niche solutions to broader populations of people, and future-proof the solution.

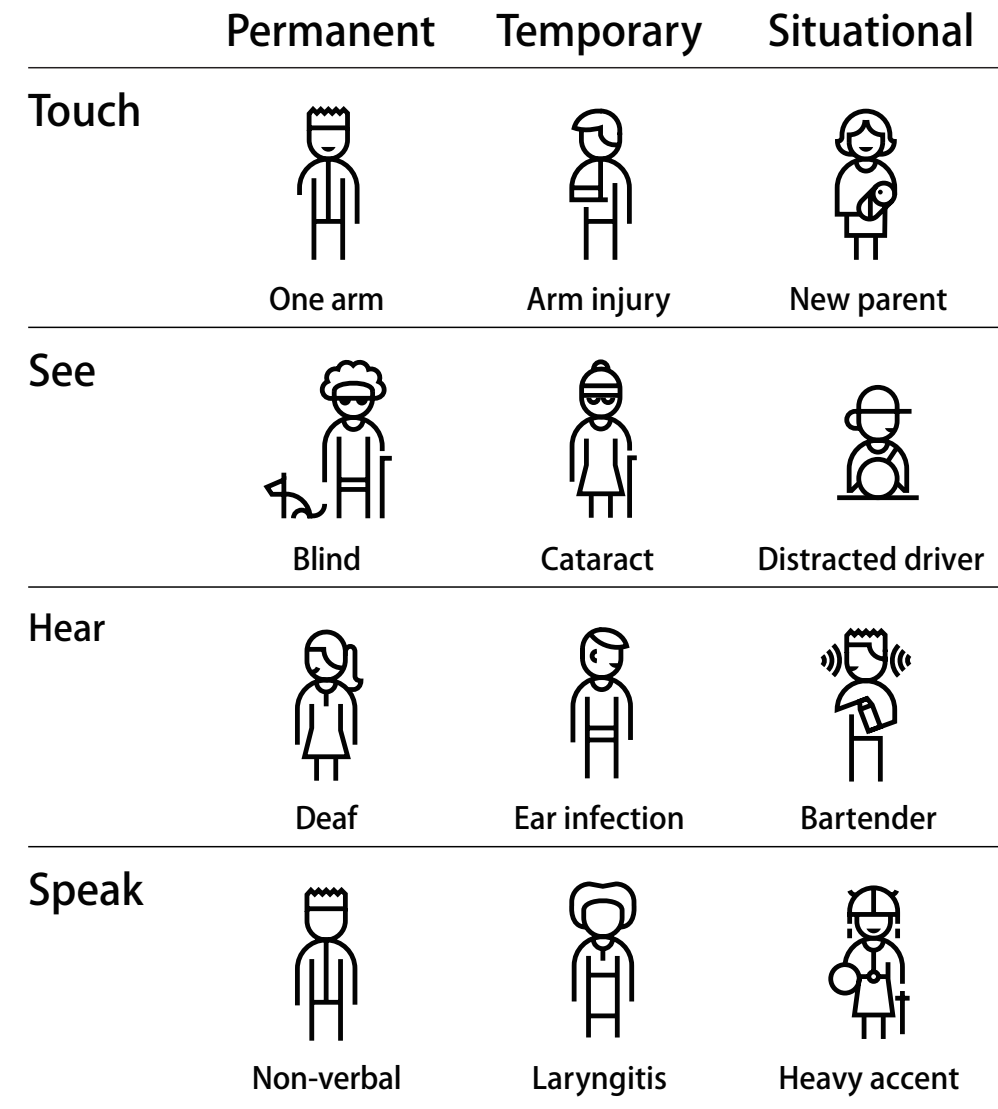


Figure 16. Persona spectrum from Microsoft inclusive design.

The second tool is an adapted version of the customer journey map. Inspired by the service blueprint that created by Aceves-Gonzalez in his paper The application and development of inclusive service design in the context of a bus service, I adapted the customer journey map (CJM) to a map that also reflects the mismatched interactions and exclusions in the process. And the CJM in my project acting as a bridge between the research and design. I use it to translate the research into a tangible journey and inspire me to create a inclusive service concept.

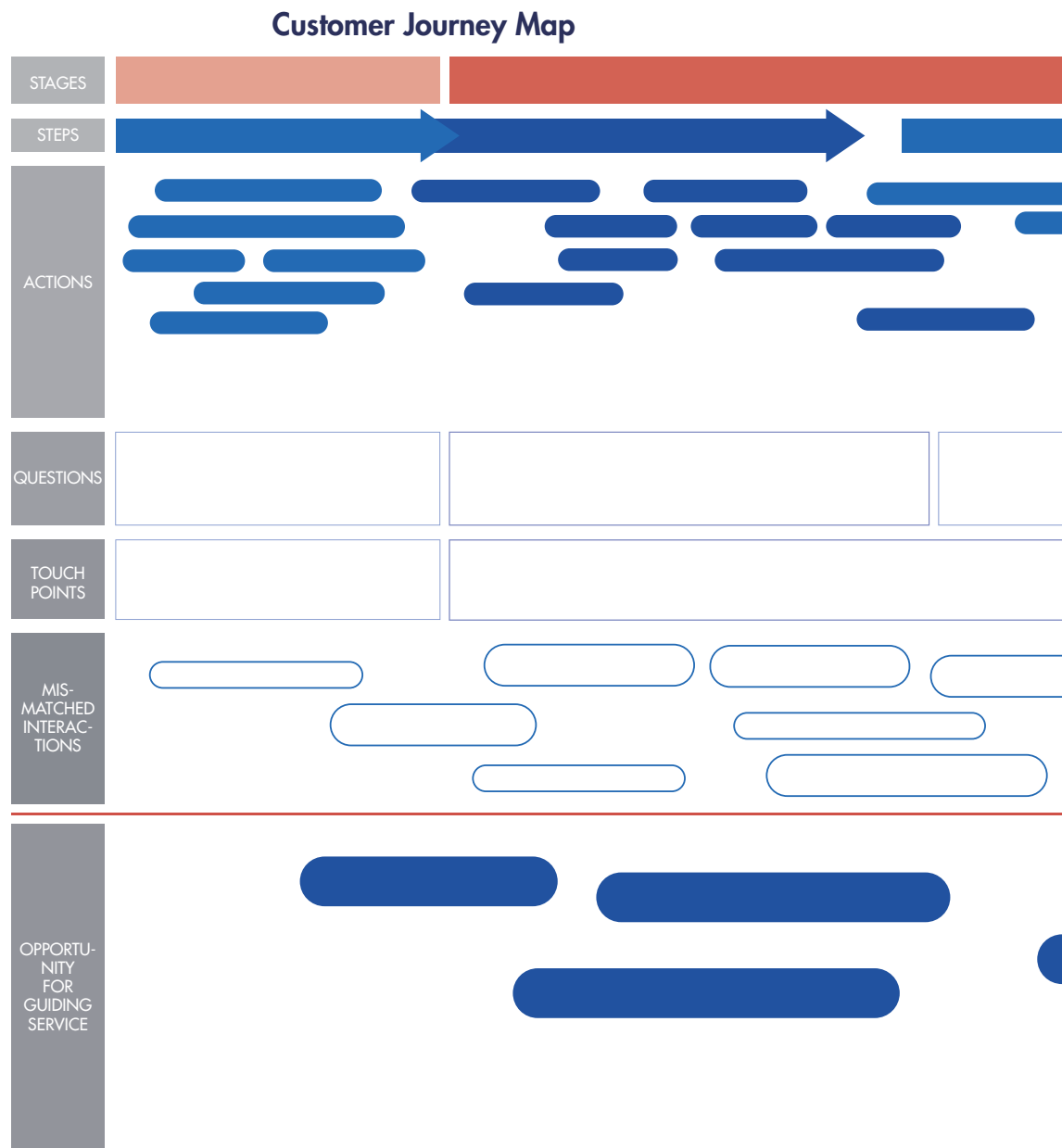


Figure 14. Inclusive service design customer journey map.

# CASE STUDIES

## CHAPTER THREE

### 3. Case studies

To gather more information and insights on the tools and methods that are potentially effective in the inclusive service design process, I searched for and studied several inclusive design and service design case studies. For each case study, I started with understanding the background, then studied and interpreted the research methods and design methods that they adopted. Therefore, I could plan my own research methods and design tools to achieve an inclusive service concept.

#### 3.1 Inclusive service design in the context of a bus service

In this case, I will study in-depth the research approach, which is actually a crucial part of the case.

##### 3.1.1 Background

Because of the lack of complete regulations and legislation, there isn't much motivation for the transportation service to offer inclusive bus service. The existence of "informal" systems of buses causes issues of security, accessibility, and usability for elderly and disabled passengers.

##### 3.1.2 Research Methods

The case integrated the Waterfall Inclusive Design model and the Double Diamond Service Design model in the research and design process. The research methodology has two complementary parts and both applied a mixture of quantitative and qualitative methods.

The first part was designed to obtain from stakeholders a big picture of the service operation, context, and the experience and needs of actors involved in the service provision, for example, the bus drivers and service staff. To have an overview of the service characteristic, issues, semi-structured interviews were conducted with stakeholders and service actors. The interview recordings were thematically analyzed by software. Besides, as a supplementary method document analysis was also used, such as laws, regulations, plans, and newspapers are analyzed. In this section, the data analysis included the examination, reading, and interpretation of the documents.

The second part was designed to identify the issues, impact or barriers that the bus service imposed on younger and older people. In order to obtain information regarding how users think and feel about the bus service, this study used a series of focus groups to identify the issues aiming to find the true motivations and insights behind the perceptions. To analyze the data,

the study extracted quantitative and qualitative information from the questionnaire and audio recordings.

Then the designer translates the discoveries from the research into developing a service blueprint for the current bus service.

Beyond the general service blueprint format, an additional section was added below the blueprint to describe the main barriers in using the bus service (see Fig. 15 )

* Main barriers in using the bus service	Psychosocial
	Service operation
	Physical

Figure 17. Additional section to describe the barriers in case study 3.1.

The final blueprint was designed and presented in A0 Size. Here shows part of the final service blueprint. (See Fig.18)

### 3.1.3 Summary

The case focuses on the Discover and Define (Translate) stages in the process. Rather than use service blueprint as a tool to design and present the final service encounter, but a tool to visualize and communicate the research findings as well as exclusions in the current service system. The author concluded that the inclusive service approach and the blueprint tool have the potential for supporting the bus service improvement. The approach, in this case, contributes to my understanding of conducting an inclusive service design research and tools to communicate.

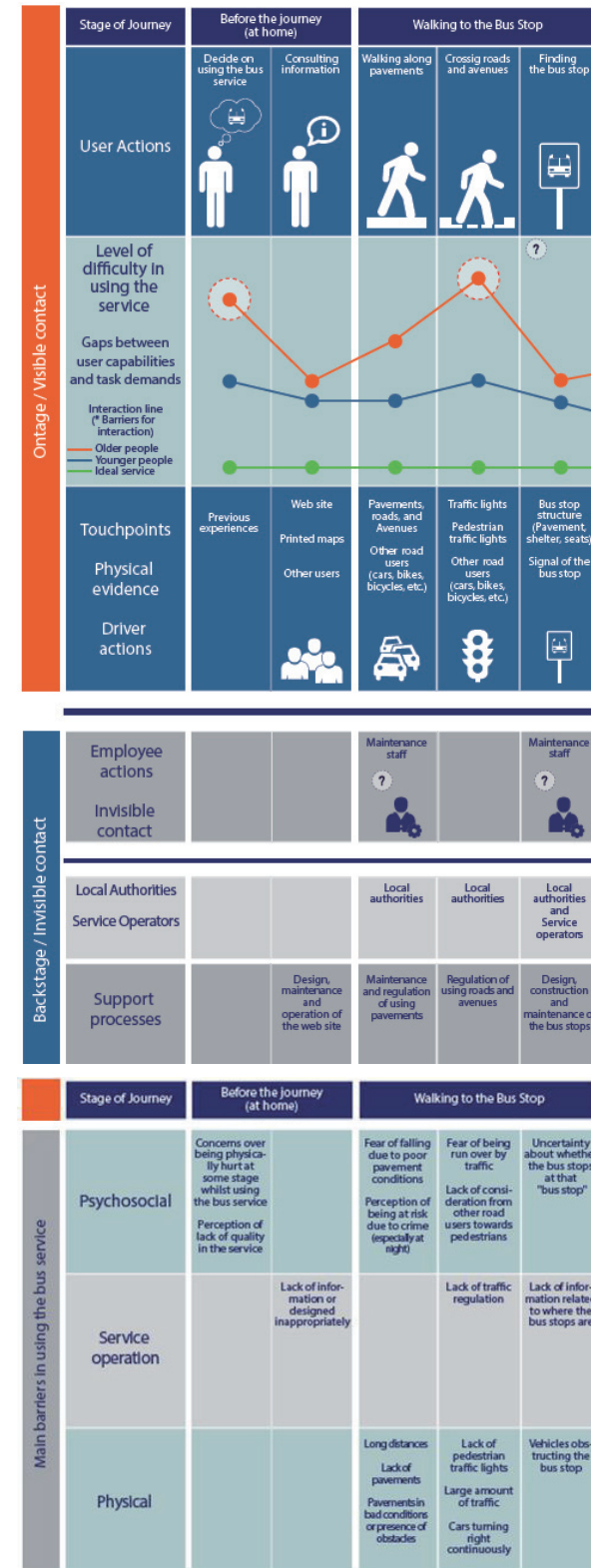


Figure 18. Service blueprint in case study 3.1.

### 3.2 Commercial Journey Vision for the Schiphol airport

The case was chosen for its design process to achieve an inclusive service design.

#### 3.2.1 Background

The main focus of the design team is to develop commercial experience scenarios for Schiphol airport through co-creation with passengers so that the passengers' commercial experience will be improved.

#### 3.2.2 Research process

Based on the existing research and insights, the team starting with building a tangible 'passenger journey'. To dive deeper into the journey, a two-day 'service safari' and interviews at the Schiphol airport were used to validate and enrich the passenger journey. Then a passenger journey with the current customers' emotional state, thoughts and actions triggered the need for identifying new service scenarios.

#### 3.2.3 Design process

The design team involved a total of 20 passengers and client stakeholders in 5 co-creation sessions to validate these needs and moments of truth in the passenger journey. Then worked out relevant commercial scenarios with them.

After validating and fine-tuning the customer insights and co-creating relevant service scenarios, the design team formulated the customer needs explicitly per phase (yellow row) and defined 14 commercial focus points (light blue row) that we mapped on these phases and customer needs.

These were then reviewed and discussed in a client-workshop with all involved stakeholders/domain experts. Based on these insights, the stakeholder/ domain experts discussed examples and solutions and put them on the journey with post-its, which helped to internalize the customers' insights. (See Fig.19)

At last, the design team categorized the insights and solutions into three scenarios on customer experience vision, including commercial focus areas, customer needs, and commercial touch-points, as Guide Me, Relieve Me, Excite Me. To make the vision more accessible and easier to communicate, the team developed storyboards to visualize the three scenarios. (See Fig.20)

#### 3.2.4 Summary

Customer journey as a powerful tool that runs through the research and design process. As a

research tool, it helps to make the intangible customer experience tangible; as a design tool, it guides the co-design participants to create and visualize the insights in concrete.



Figure 19. Design process in case study 3.2.

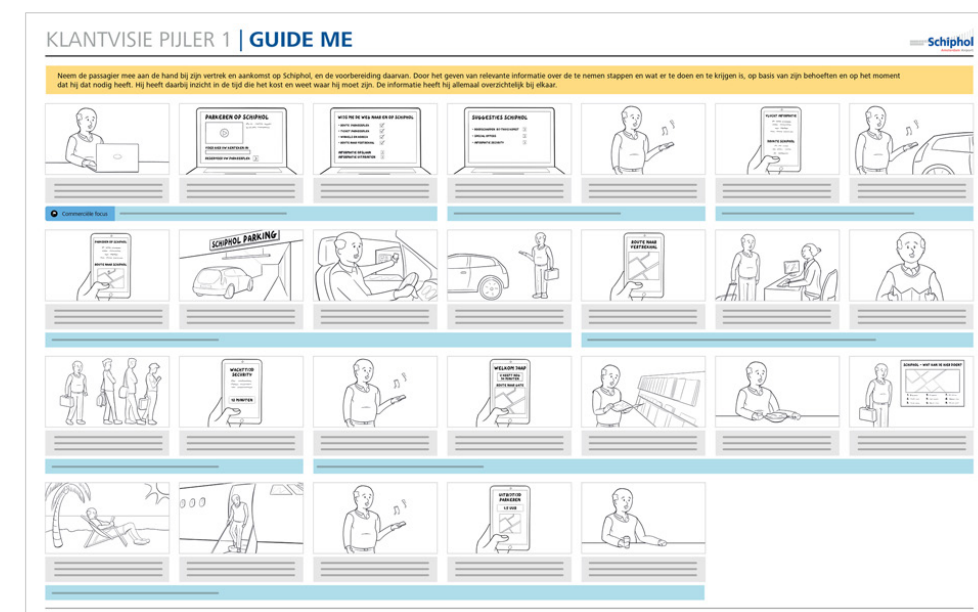


Figure 20. Scenario in case study 3.2.

### 3.3 Designing inclusive shopping experience

#### 3.3.1 Background

The Safeway store in the UK worked closely with the Royal College of Art tutors and students on a project to develop innovations that offering benefits to the customers of all ages and abilities, especially for older customers. The innovations including store design, packaging, customer service and other aspects of the stores business.

#### 3.3.2 Research process

The crucial part of the process is in-store observational studies of older consumers. The team identified store features that create problems for the customers, for instance, the height of the shelves, the signage, the lighting, etc. The audit resulted in initial design guidelines and requirements.

Then a further study on the sensory quality of the environment was done to understand how it affected the older and less able customers. The information was gathered through observations, discussions with manager and customers a work-study analysis of the supermarket environment in action.



Figure 21. Research process in case study 3.3.

#### 3.3.3 Design process

Based on the research, the students argued that an environment designed to enhance sensory feedback and pleasure would be helpful to attract older people. Then by combining the store design with emerging technologies, the students developed scenarios of better shopping experience for all the customers. The scenarios were presented with collages and picture stories.



Figure 22. Design process in case study 3.3.

#### 3.3.4 Summary

This case is chosen for its research process. The observational study as a non-participating research method is powerful to understand the interactions among the customers, the environment and the staff. Following the observations was a participating method to have discussions with the people involved. In this way, the discoveries are deepening along the process.

# DISCOVER

## CHAPTER FOUR

### 4. Discover

In the 'discover' phase, the aim is to conduct desk research, field research in an inclusive way to have a deep understanding of the situation and the problems for the customers and the bookstore. So that I can identify the varieties of customers and the barriers that causing mismatched interactions.

#### 4.1 Research planning

##### 4.1.1 Empathize with my own bias

It is necessary for me to empathise with my own biases that might interfere with my decisions in research and design process. Acknowledging my own biases is the very first step for me to design inclusively in a conscious way. Because it is preventing me from doing research, interpreting, thinking, or designing with a narrow and biased mind. My own bias mainly from two aspects, the first is being a foreigner in Europe, the second is as an ebook reader and traditional book reader at the same time.

- As a foreigner in Europe

As a foreigner studying and living in Europe, my own experience sometimes is prominent in my interpretations of the people, the environment, etc. I need to have a critical eye for this kind of bias since it can be too dominant, but it can also be a voice from another perspective. For example, when I have trouble reading the signages in Italian and French, I would see it as a major barrier for customers. But actually, the language mismatch is not a major barrier for the majority of the customers, because the customers usually come from the neighborhood who are locals.

- As an e-book reader and traditional book reader at the same time

Myself as a kindle user, I do enjoy reading traditional books and ebooks on different occasions. However, it is not happening to everyone. Some people still prefer to read traditional books, some people are totally into ebooks. So it is important to be critical and see the user habits and behaviors from a distance.

##### 4.1.2 Competitors Benchmark

To have an overview of how the bookstore industry now in reality and the guiding service is designed, I went to several well-designed bookstores in Milan and Paris covers chain bookstores and independent bookstores. The research will be conducted through observations and document

analysis. The analysis is going to be done by comparing the weakness and strengths of each bookstore. The criteria of the comparisons will be drawn from the principals of inclusive design and service design.

- Adaptability to flexible usage – different people can use the service in different ways
- Convenient & enjoyable for everyone to use – less effort/ capability/ skills demanding
- Barrier-free service – accommodating and welcoming diverse customers
- Consistent experience – Look & feel consistent with visual styles, interactions, etc.
- Digital accessibility – accessible both online and offline with multiple touchpoints

### 4.1.3 Desk research

Desk research will be conducted to collect the online reviews, data, online channels, of the bookstore. Besides, research on existing solutions for inclusive design in the bookstore will also be a part of desk research.

### 4.1.4 Field research

In the field research, the aim is to recognize and study the customers’ diversity and the diverse use cases in the bookshop; it also aims to identify the barriers in the service provision of the bookshop for the customers, the staff and any potential actors. The research will be a mixture of quantitative and qualitative methods.

Methods	Objectives
Semi-structured interviews for service providers	I plan to do a semi-structured interview with service providers to know their opinions on the situations of the bookstore. And dig deeper into the motivations and issues behind that with them.
Observations in the bookstore	By observing the environment, spaces people, the flow, the interactions in the bookstore, the aim is to have a deeper understanding of the service, especially the barriers and mismatched interactions that result in service exclusion.

Questionnaire online	By observing the environment, spaces people, the flow, the interactions in the bookstore, the aim is to have a deeper understanding of the service, especially the barriers and mismatched interactions that result in service exclusion.
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Table 3. Research planning.

To visualize and communicate the research results, a customer journey will be created (similar to the methodology used by Aceves-González in Chapter 3) to make the results more tangible and easy to understand. And the customer journey map will be a foundation to discover opportunities and lead to generate a primary concept.

## 4.2 Competitors benchmark

### 4.2.1 ICI librairie

ICI librairie is an independent bookstore in the rather center neighborhood of Paris. It defines itself as a cultural center and a café of the neighborhood with a team of passionate booksellers. It has two floors.

The ICI Librairie is offering people more than books and café, it is a place for all the customers to enjoy the atmosphere alone or with a companion. It succeeds in making everyone feel welcomed. Beyond the big selection of books, there is a café area on the ground floor; the underground floor also has a sitting area for people to read and relax. The two floors are connected by stairs and an elevator. The interior is well designed with warm colors, which present customers with an atmosphere that is inviting and cozy. Customers feel welcome to enter and comfortable to grab a book, to read and to explore in the bookstore. Even though the color contrast is not strong enough for people to see clearly and easily, but the mild colors do help to create a friendly and inviting atmosphere.

They have a website providing online services and information to customers. The website makes purchasing books available online. It also highlights the bestsellers, the favorites and the selections from the bookstore. The information about the team, events, social networks are available online as well.

The website more than an online shopping platform for ICI. It is an online touchpoint for customers to discover and trust the bookstore.



Figure 23. ICI Librerie inside.

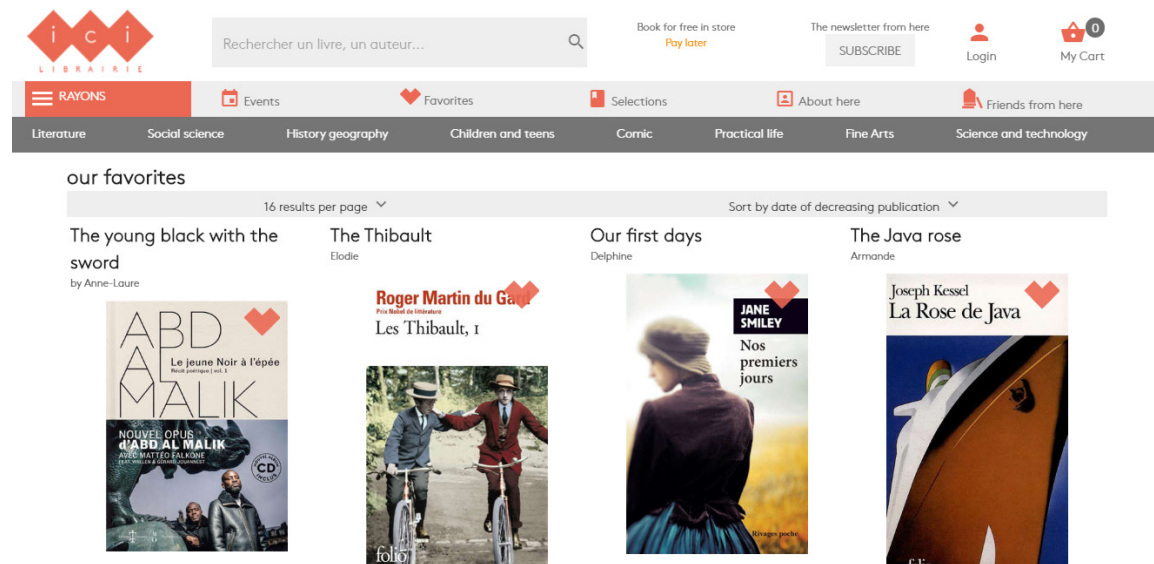


Figure 24. ICI librairie websites.

#### 4.2.2 Gibert Joseph Paris 13 – Grande Bibliothèque

Gibert Joseph is a grand chained bookstore in France. The one that I visited is located close to the Odeon theatre. It has 7 floors of ground and underground. The concept of the bookstore is more like a book supermarket. There are stairs, lift and elevator that available to the customers, and there are several cashiers paralleled at the exit of the bookstore. The staff is busy organizing books. There is a color range representing each floor. However, the categories on each floor are hard to locate, because of the small signages and high bookshelves. It is hard to find books if you are not a French speaker.

Like other chain bookstores, Gibert Joseph has a powerful online website that offers customers much convenience and information. The website is a platform for people to buy books (new and used), music records, video DVDs, stationaries, office products, games, and toys. Customers can also sell used books online. The information about promotions, events, practical things is available on the website. The range of books and products is huge compared to an independent bookstore. Consequently, they have a wider customer range including customers prefer physical



Figure 25. Gibert Joseph Paris 13 bookstore.

bookstore and online bookstore. They also have an app for mobile users. They also provide digital books for customers who prefer to read on digital devices. These aspects all contribute to the inclusiveness of their service.

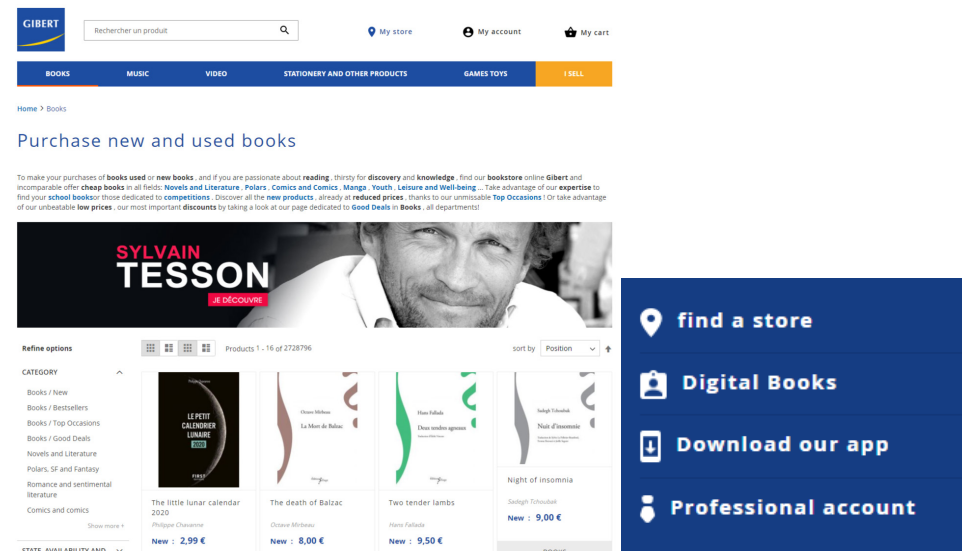


Figure 26. Gibert Joseph bookstore website.

### 4.2.3 Libreria Hoepli – the international bookstore

The Libreria Hoepli is a grand international bookstore with 5 floors. It is one of the largest bookstores in Italy and in Europe, which houses over 100,000 books. And 20% of them are foreign books.

The guiding signages are consistent in style including colors, fonts, sizes, compositions, languages, and placements. The hanging signages and the ones on the bookshelves are the same dark blue colored background with white fonts. The hierarchy of the signages is created with sizes and placement. The ones hanging on the ceiling are the most visible ones, which represent the category of the shelves section; the ones stick to the shelves are representing the category for the specific shelf. Also, you could ask for a portable card with all the floor categories, contact information, social media, etc. in the information desk. The stairs are the main connection between each floor. There is also a lift available in the corner on each floor.



Figure 27. Libreria Hoepli interior.

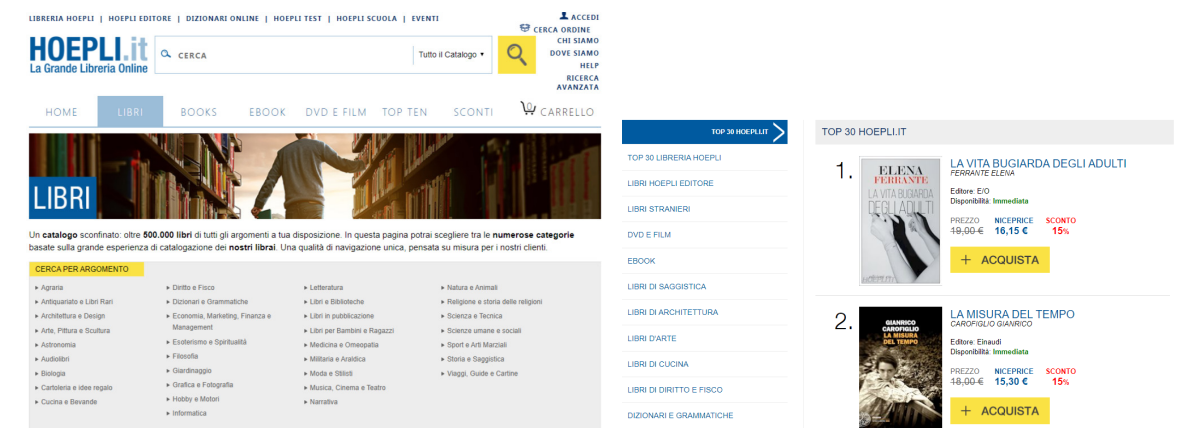


Figure 28. Libreria Hoepli website.

As a grand international bookstore, it provides a market-like experience. You can grab a basket at the entrance and wander around the bookshelves. If you need to ask something, there is always staff available on each floor. Besides, computers are provided to check the books by yourself.

The grand bookstore has both online and offline bookselling services for customers. For the online bookstore, you can check and order books online then get the book shipped to your place or you can go to the bookstore to get it by yourself. Besides, promotions, bestsellers, news are available on the website. For the Online Hoepli, it is actually more than a bookstore, there is 'Dizionali Online' 'Hoepli Test', 'Hoepli Scuola' that provided various services to the customers.

#### 4.2.3 La Feltrinelli- one of the biggest chain bookstore in Italy

La Feltrinelli has opened 115 bookstores in Italy since 1957. It has a specialty in its wide range of books and music choices. The bookstores also hold meetings and events. The Feltrinelli Foundation has another kind of bookstore, RED, which is branded as a bookstore that you can read books, eat meals and relax.

The bookstore that I visited is la Feltrinelli in the Vittorio Emanuele II Gallerie with a rather hidden entrance among the luxury shops. It is a massive underground bookstore that sells a wide range of books, music records, stationery, bags, etc.

Even though it is underground, but it is totally accessible for the disabled. It has a lift from the ground floor; it is distributed on one floor; inside the bookstore, there are no stairs at all but slopes; the spaces among the shelves are wide and easy to pass. But the guiding service in the bookstore is not sufficient. The information hierarchy is confusing; signage is not enough to find the books. The info points in the bookstore are the core of the service, yet the staff are not sitting there but around the shelves. It is more efficient you ask a staff around the shelves because there are several customers waiting at the info point. The cashiers are arranged in the corners of the bookstore.



Figure 29. La Feltrinelli in the Vittorio Emanuele II Gallerie.



Figure 30. La Feltrinelli website.

#### 4.2.4 Summary

From the competitor benchmark on independent and chain bookstore, I conclude my competitor research according to the criteria.

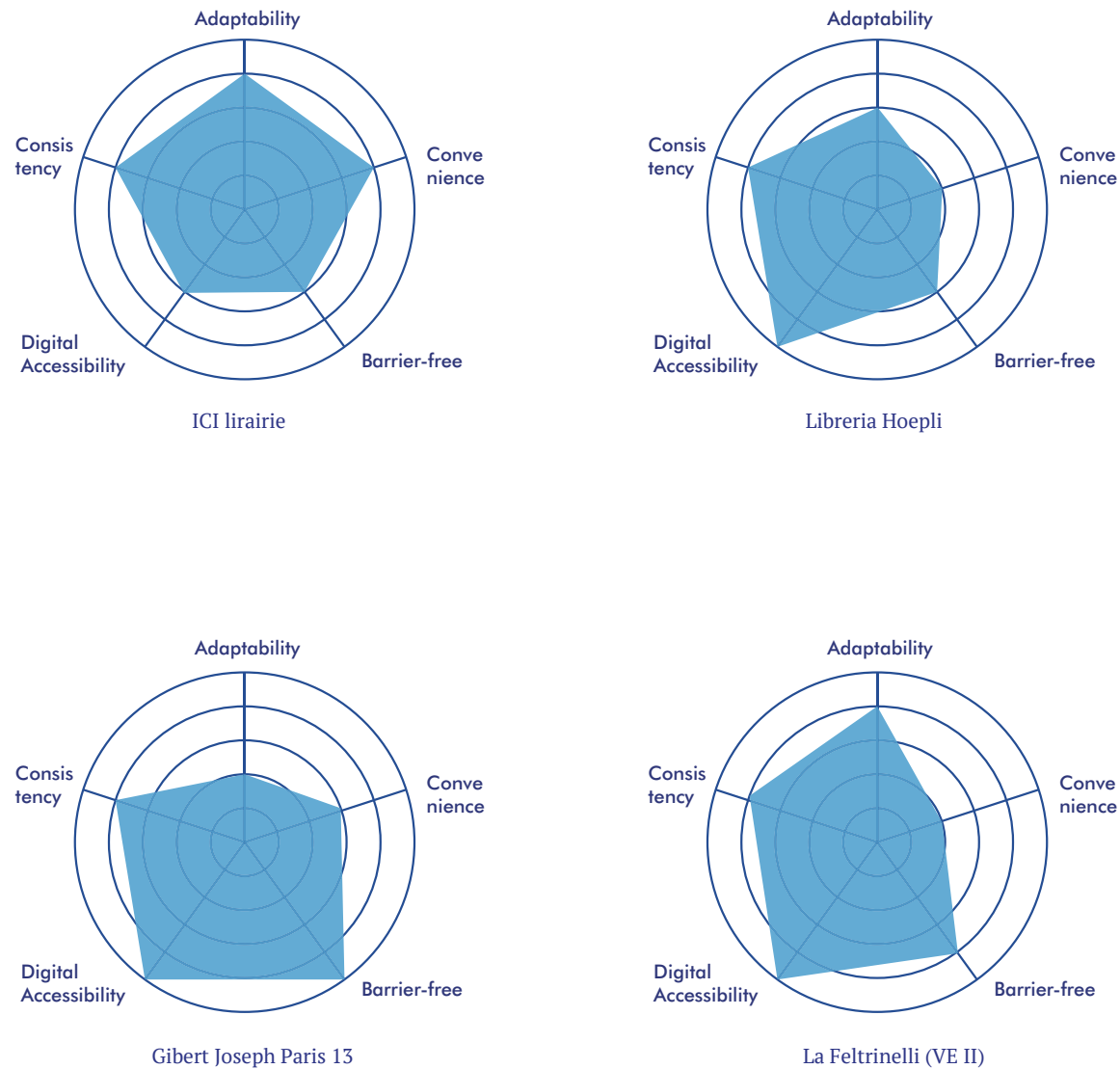


Figure 31. Competitor benchmark comparison.

- **Adaptability to flexible usage** – different people can use the service in different ways  
Compared to independent bookstores, chain bookstores usually have a strong environment design to guide and shape the customers' experience. Customer's behavior is transformed into standardized sequenced actions without many adaptabilities.
- **Convenient & enjoyable for everyone to use** – less effort/ capability/ skills demanding  
Usually, a well-designed independent bookstore is more convenient and enjoyable for general customers. The less complicated environments and facilities demand less effort and skills from the customers.
- **Barrier-free service** – accommodating and welcoming diverse customers  
Even though the chain bookstores are less convenient and enjoyable, but they are able to invest budget on barrier-free designs and assistive facilities.
- **Consistent experience** – Look & feel consistent with visual styles, interactions, etc.  
The spatial design and physical interactions in the bookstore deliver an instore consistency; the online websites and social channels provide an online consistency with the store experience. ICI bookstore is the best example of this criterion.
- **Digital accessibility** – accessible both online and offline with multiple touchpoints  
Compared to an independent bookstore, chain book stores invest more in their online accessibility. Mostly, they have a powerful website and even an adaptive mobile solution for the service.

#### 4.3 Desk research

For the desk research, I looked into online information of le merle moqueur to help me know it better. Then I searched for existing design for the bookstore service.

##### 4.3.1 Popular times of le merle moqueur

I found google map is a helpful source to collect data about the volume of customers, the reviews. From the popular times, we can see the bookstore has a high volume of people from 5 pm to 7 pm on weekdays; On weekends, the customers are more than weekdays. From the customer review, one of its great advantages is that it opens on Sunday.

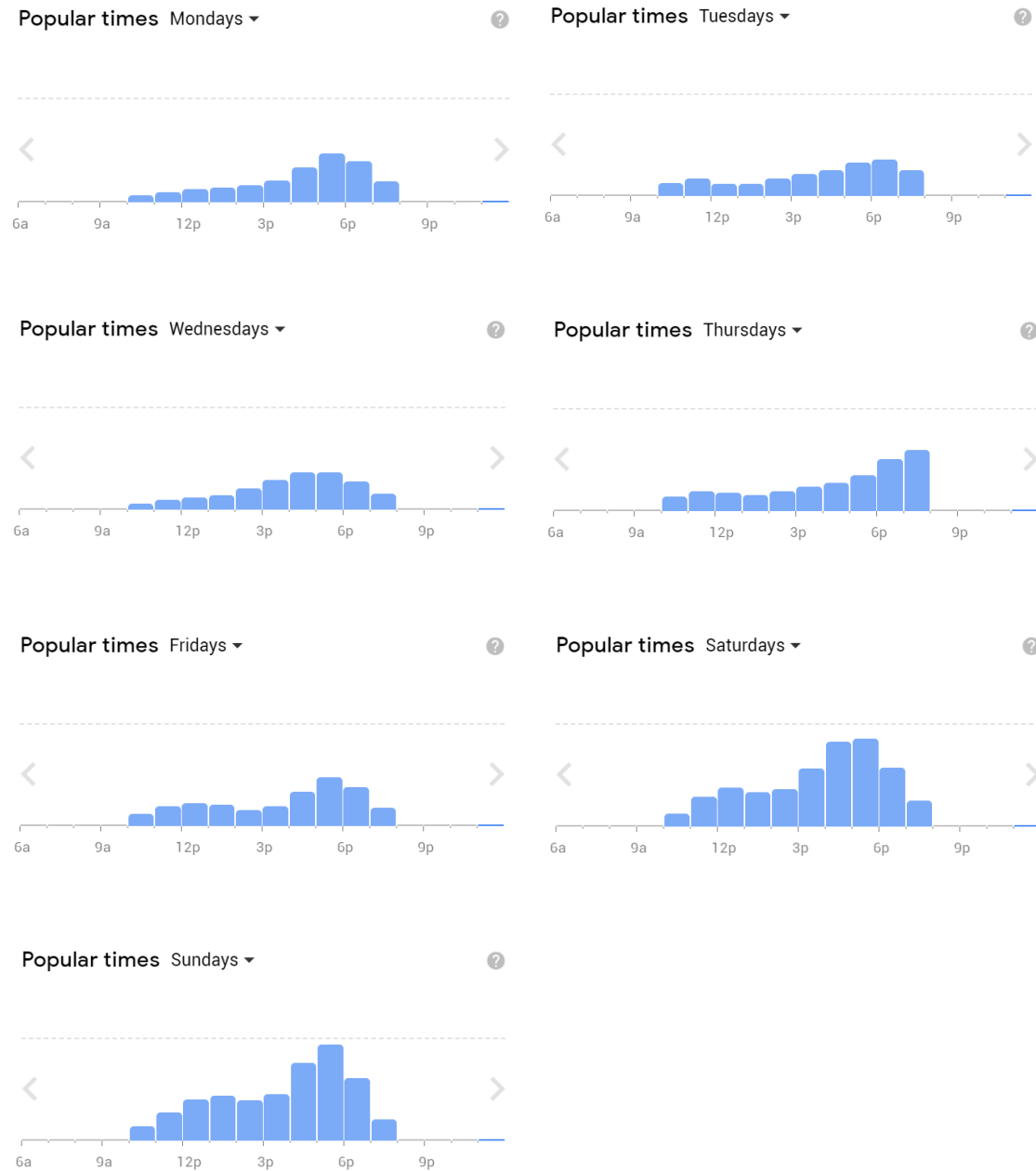


Figure 32. Popular times of le merle moqueur.

### 4.3.2 Customer reviews

The customers' reviews shed some light on the advantages and disadvantages of the bookstore. The advantages are quite obvious, including a large selection of books, spacious spaces, the selections of children's books, opening on Sunday, a warm and welcome atmosphere, good prices in Paris, wise advice from the staff. The disadvantages are various. Some customers complained about the coldness or even rudeness of the staff; some complained the books are difficult to find.

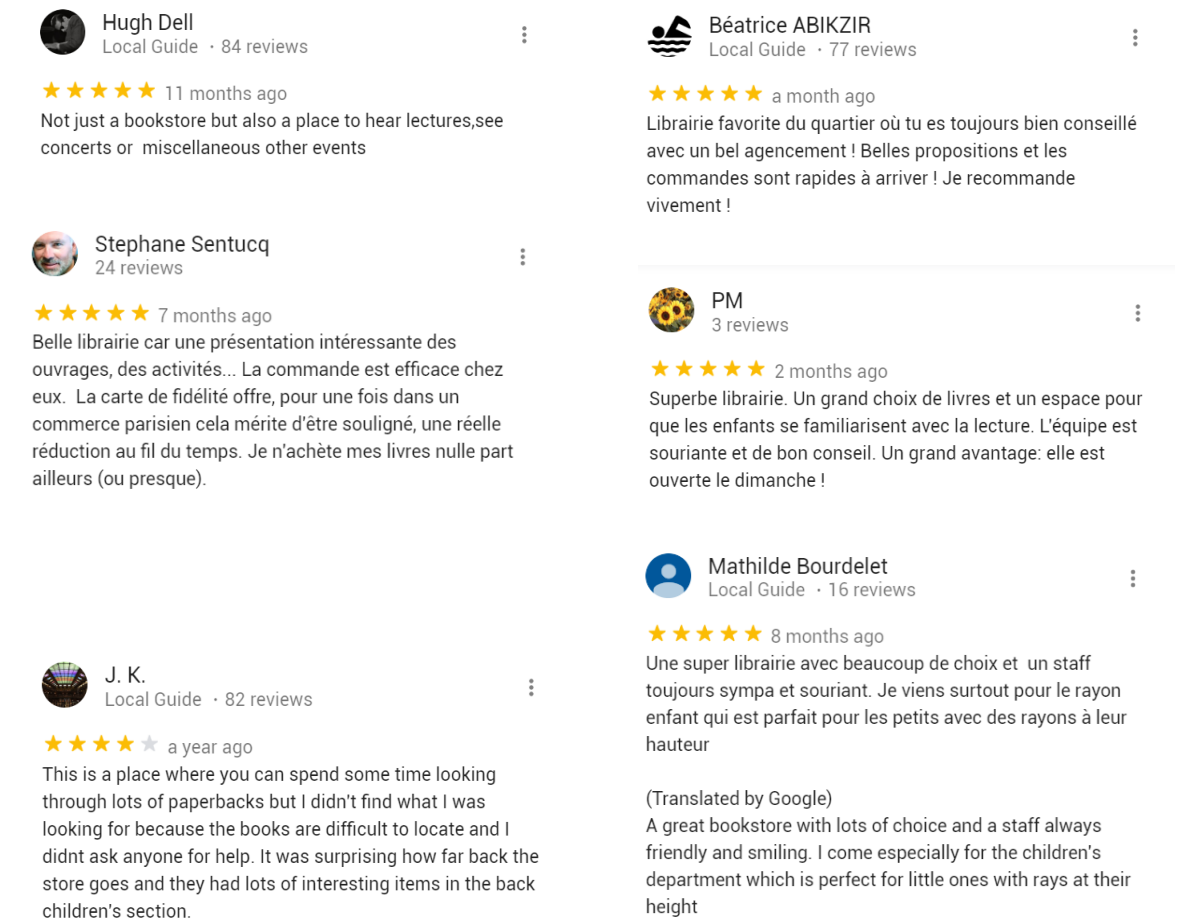


Figure 33. Reviews on google map.

### 4.3.3 Existing solutions for inclusive design in the bookstore

#### The living cover

This experimental interaction design shed some light on how the book searching experience can be innovated by combining with technology. The projection somehow makes the book a proactive living object to motivate to grab it and buy it. The solution changes the traditional way of interaction between books and customers.



Figure 34. The living cover.

#### Amazon brick-and-mortar physical bookstore.

The amazon brick-and-mortar bookstore introduced a different way of thinking on the physical retail store. They implanted the logic of designing the user experience in the digital store directly into the physical experience in the bookstore. They put the customers reviews, stars in the bookstore. They present the books in Amazon's logic based on the sale and rate. It is smooth and easy for customers who are already amazon users. It is new to customers who haven't tried amazon and reshaping the physical bookstore experience for them.

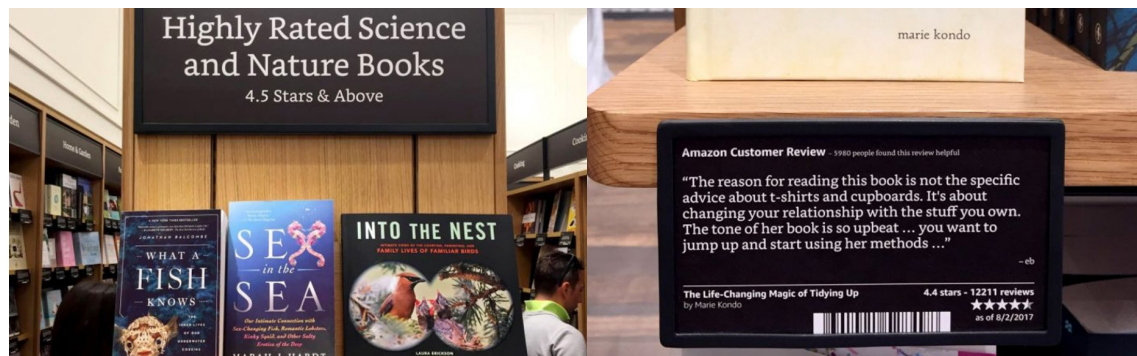


Figure 35. Amazon brick-and-mortar physical bookstore.

#### The talking bookmarks – the gift of reading

The talking bookmark is designed to stimulate the customers to buy and then donate the children's books to the children in need of reading. Each bookmark featured the voices and faces of real children in need. Strategically placed in bookstores, these objects invited the public to buy books for the children tailored to their interests.

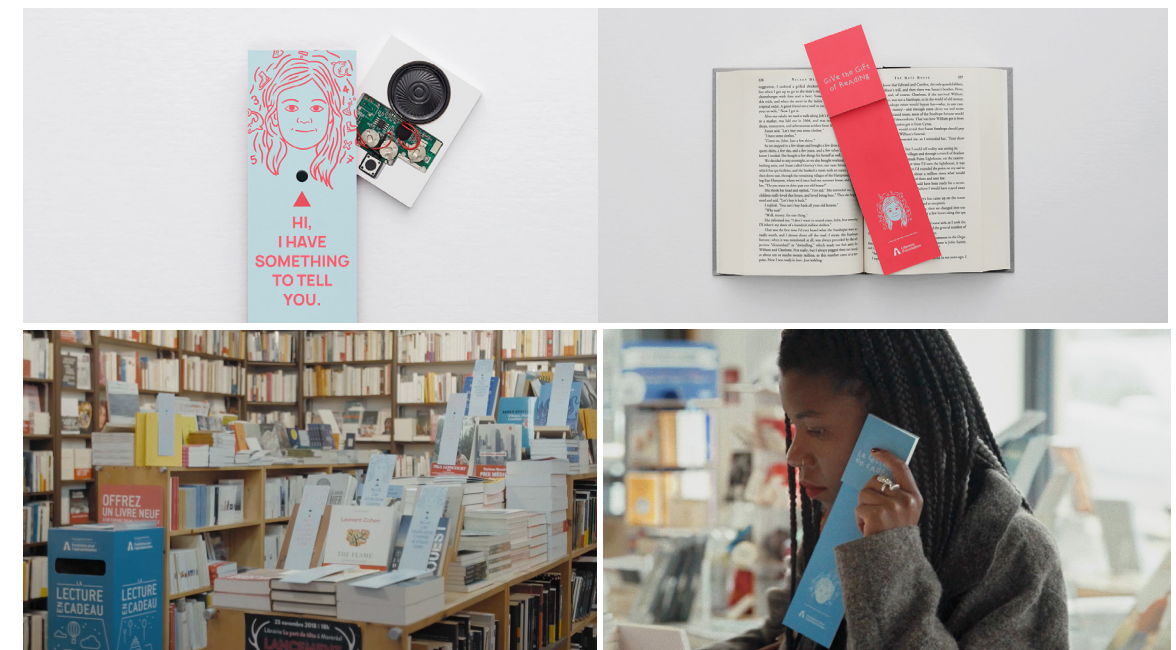


Figure 36. The talking bookmarks.

The donator would then be greeted by an animated Thank-you message by the specific kid. The inspiring aspect of the design is that they integrate the hearing sense into the bookstore experience by combining the voice with the bookmarks. It could be an inspiring solution to make the bookstore experience more inclusive to the customers who have hearing sense impairment.

## 4.4 Field research

### 4.4.1 Semi-structured interview

I had a telephone interview with the bookstore owner on 8<sup>th</sup> October. He also works as a service provider, a staff in the bookstore almost every day.

I prepared a semi-structured 30-minutes interview, including five parts: Introduction of my project, the current bookstore inclusion situation, asking the staff routine and the interactions between customers, opinions on the reasons and motivations of the problems, his vision about the bookstore.

To open the conversations, I started with my project introduction. He was interested in my topic and when asking the current bookstore inclusion situations, he became quite proud. He told me that the bookstore is doing great in welcoming people with wheel-chairs. The bookstore received comments from the disabled people that they come to le merle moqueur because they've done a better job than other bookstores on the accessibilities in the space.

Then in the second part of our conversation, I learned that they have 11 workers employed in the bookstore. They work in shifts, so usually, there are 4-6 workers in the bookstore. They are often occupied with receiving, checking and categorizing the books; meeting with publishers. Sometimes, they need to provide help and advice to customers. The questions are mostly about finding the specific books, also about purchase recommendations in some cases. They find that it is not easy for the customers to orient in the bookstore and find the books they like, so many are left without buying anything.

In the third part, the bookstore owner told me that the potential reasons that lead to the problem may be that the guiding service is not enough for people to find the books and discover books they might be interested in. Also, some people prefer not to speak to the staff may also the reason.

Finally, I asked him what is his vision of the bookstore. He told me that he hoped that the bookstore will become a cultural center in the neighborhood and attract customers from and outside the neighborhood. They already hold events now in the bookstore, like sign sessions, a presentation from authors, children events, etc. He imagined adding more service offerings to the bookstore, like a small café.

## 4.4.2 Observations

The observation method is a crucial part of my research. The aim of the observation research is firstly to collect information about the environment and space; besides, to observe and study the behavior and interactions between the customer and the bookstore. From my perspective, observation is a passive way to do user research. Compared to observations, when interviewing the customers how their journey like in the bookstore, their unconscious behaviors become inaccurate and adorned by their own words and minds. So I chose to observe how customers behave and interact during their experience at the beginning.

I visited the bookstore from 28<sup>th</sup> to 30<sup>th</sup> in October and had observations in the bookstore at different time periods of the day.

Here are my observation activities:

Timing	Observation activities
17:00 – 19:00 28 <sup>th</sup>	Observation of the bookstore environment, staff and customers during the evening (a cloudy day), while the lights are the essential illumination recourse. It was the customers' peak period of the day. Most of the observations were focusing on the interactions between the customers and the environment of the bookstore.
15:00-18:00 29 <sup>th</sup>	Observation of the bookstore staff and customers during the daytime (a rainy day). It wasn't a busy period for the bookstore. More communications and interactions were happening between staff and customers, which is the focus of the observation
10:00 – 12:00 30 <sup>th</sup>	Observation of the bookstore staff, environment, and customers during the daytime (a rainy day). The staff was busy in categorizing the books and receiving new books. The observation was focusing on the relationships among the staff, environment, and customers.

Table 4. Observation activities.

In general, the customers are various depending on which time period and which day of the week. During the daytime, the customers are mainly the elderly, and parents with a child, passers-by. It is not a busy time period, and customers have time and patience to explore and discover. Around 16:30 to 17:30, the bookstore becomes busier. (On weekdays, usually starts at 17:30; on weekends, usually start earlier at 16:30.) The time that customers spend in the bookstore is

relatively shorter than the day time customers. On weekends, the customers are mainly workers coming after work, students coming after school. On weekends, the customers are various, including all kinds of people from the neighborhood or somewhere further.

My observations on the interactions of the customers, I discovered several mismatched interactions among the customers, the bookstore and the staff. Especially how people interact with the signages for categories, bestsellers, recommendation sections; how do people interact with the books; how people approach staff and interactions; how do they move around in the bookstore; how do they interact with the bookshelves; the main findings are as follows:

- Distracted customers

The customers who get distracted by some books or cards in the bookstore would miss the signages and other signs of the guiding service.

- Unable to speak the local language well

There are some customers who may not speak French well. So, they cannot communicate fluently with the staff, like students, tourists, newcomers in the neighborhood.

- Unwilling to speak even though they need advice

There are customers who are not willing to speak with the staff because of many reasons, they feel socially anxious; they don't trust the staff's advice; they like to discover by themselves; they are lazy to ask; there are several people waiting for assistance; they are in a rush to leave...

- Ability to touch

carry a heavy bag/coat/skateboard

These kinds of situations happened a lot: the working adult enters with a heavy bag; on a cold day, the customer holds a coat in one hand; a teen enters carrying a skateboard with a heavy backpack...

Other important discoveries from the observations are the aims of the various customers. The aims of the customers are not key aspects of studying how they experience, it still worthy to make sure the aims can be fulfilled with satisfaction.

- Purchasing the books

Customers with this aim would spend time in the bookstore to explore and discover. They are more likely to check all the shelves and sections; if they are still not satisfied, they will ask the staff for help. Customers with this aim are the reliable financial sources of the bookstore. There are also cases that they want to buy a book as a gift for somebody else. So they might want to know the recommendations and reviews from the staff and other customers.

- Trying to find some books I like and may buy

Customers with this kind of aim may be attracted by the 'window shopping'; or they live in the

neighborhood and they want to go to the bookstore nearby, or they are attracted to the bookstore from the outside. The aim is not as determined as the first one, however, they are the most potential customers for the bookstore. The key to triggering them to purchase books is that if they can find books they like.

- Relax and spend time here

Customers who are alone with this aim prefer to spend time by themselves and discover their interests. Usually, customers with a companion would either explore alone or they would go to some other bookstore with a sitting area, a café. Parents like to bring their kids to the bookstore. The bookstore has an area for the kid to play and read. In the meanwhile, the parents can read, relax, discover the books that they like.



Figure 37. Pictures from observations.

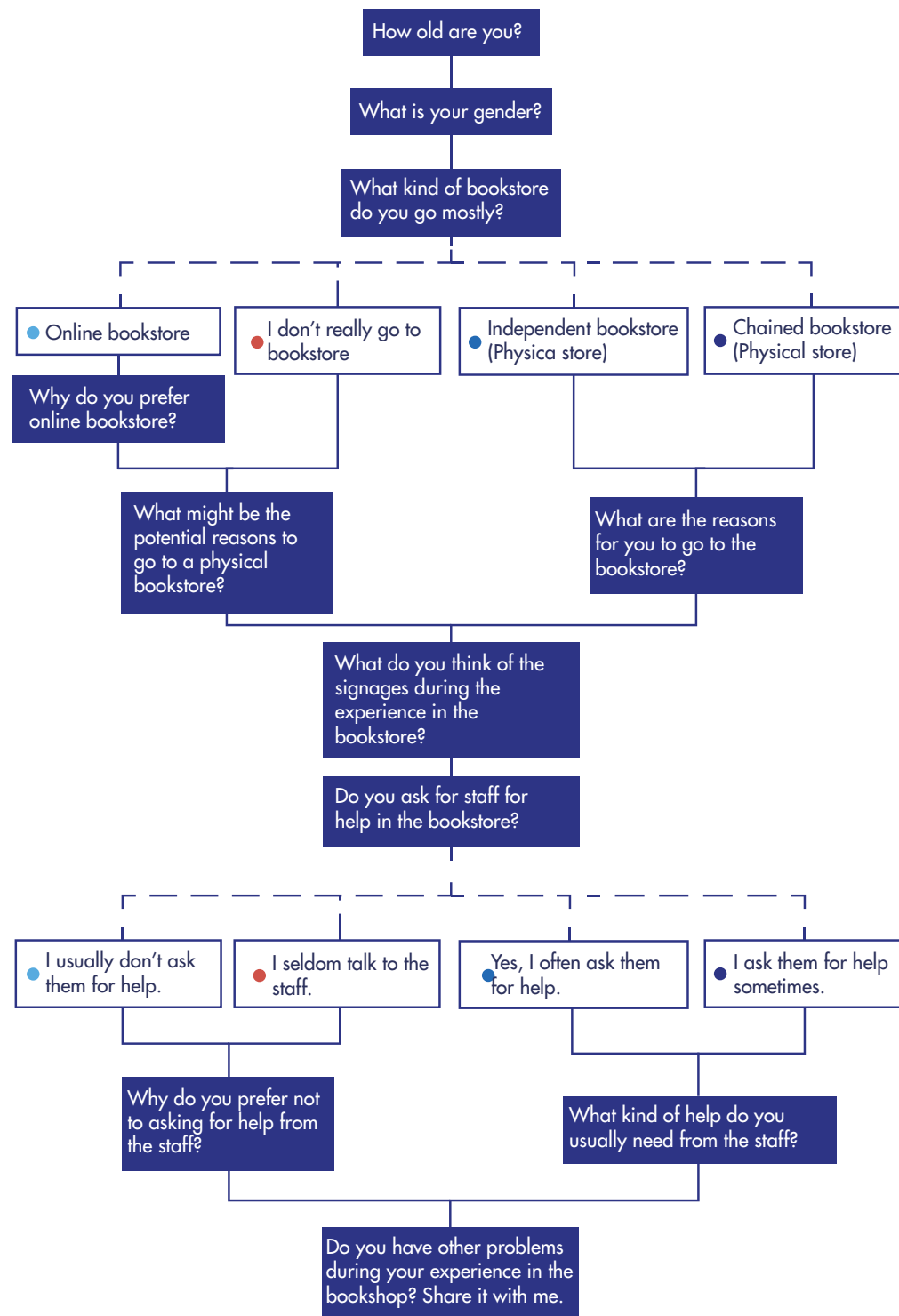


Figure 38. Structure of the questionnaire

### 4.4.2 Questionnaire

The questionnaire is designed to validate my observations findings and to know further the customers' orienting habits and their interactions with the staff.

How old are you?

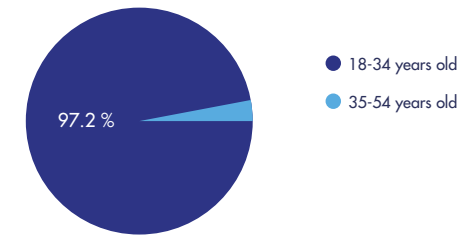


Figure 39. Question 1.

How is your gender?

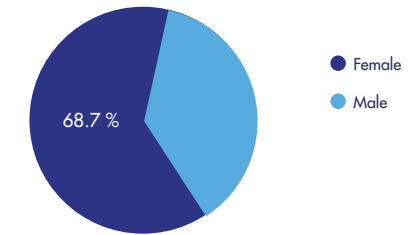


Figure 40. Question 2.

The first two questions are asking about the geographical information of the participants. To see if we can find some result rules related to the geographics. (See Fig. 39 and Fig. 40)

What kind of bookstore do you go mostly?

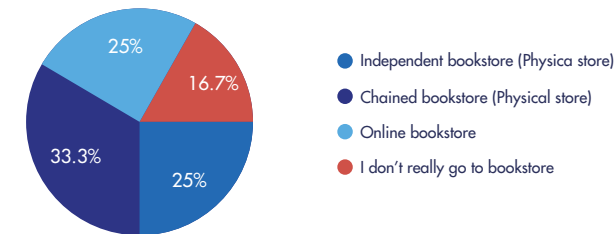


Figure 41. Question 3.

More than half of the participants prefer to go to the physical bookstore, the majority of which prefer chain bookstore rather than independent store. One-fourth of the participants prefer online bookstore. (See Fig. 41) There are a number of people who don't really go to the bookstore. So, there is a potential market for the independent bookstore to gain.



Figure 42. Question 4.

For the customers who already go to the physical bookstore, the three main reasons are for purchasing books, for exploring and discovering, and enjoying the atmosphere in the bookstore. (See Fig.42)

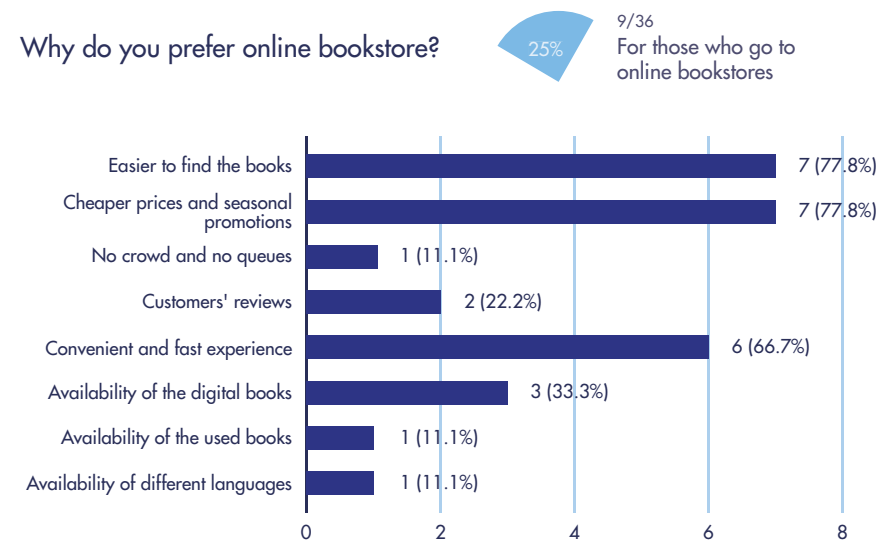


Figure 43. Question 5.

For those who prefer online bookstore, there are three main reasons: it is easier to find the book; it has cheaper prices and seasonal sales; it is convenient and fast to purchase. To attract these customers to the physical bookstore, the advantages of online shopping can be added to physical

bookstores, for instance, improving the existing strengths of the physical bookstore to a higher level is a solution from another perspective; another opportunity is building the connection of the physical bookstore and the online bookstore.

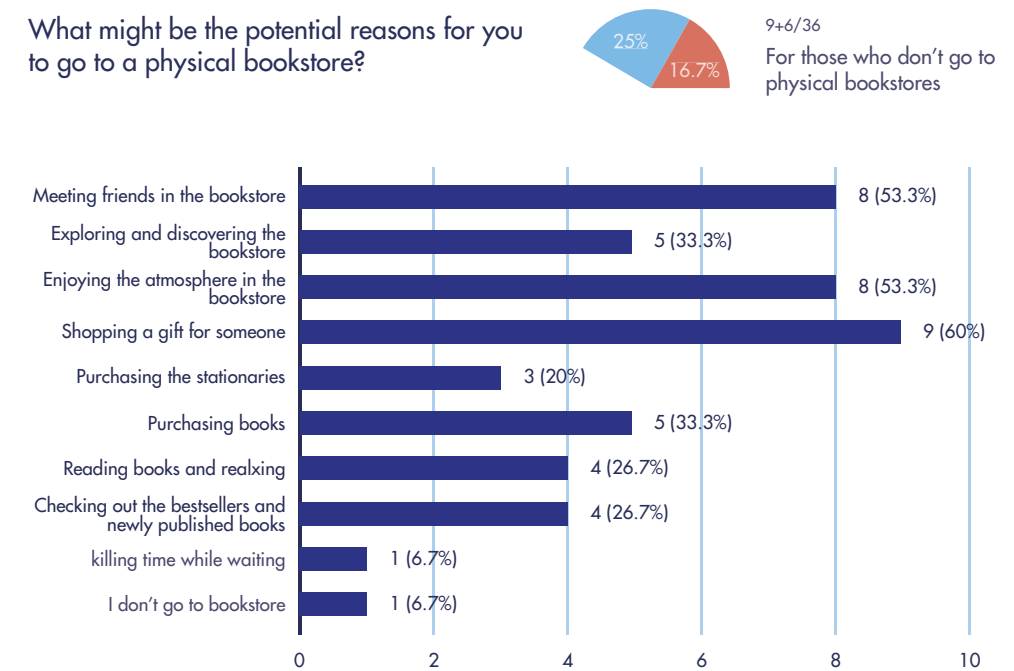


Figure 44. Question 6.

For the potential market of online shoppers and don't-go-to-bookstore customers, there could be several reasons for them to go to one, like shopping a gift, meeting friend in the cafe, enjoying the atmosphere, etc.

What do you think of the signages during the experience in the bookstore? (The signage is the visual and words guiding sign in the bookstore, like the categories sign, the way-finding sign, the promotion sign, the bestseller sign, etc.)

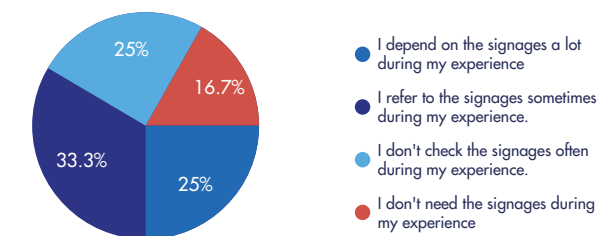


Figure 45. Question 7.

Do you ask for staff for help in the bookstore?

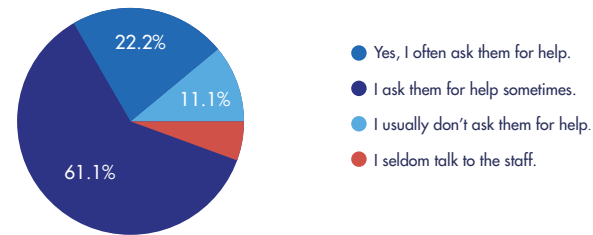
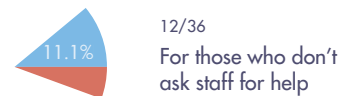


Figure 46. Question 8.

For the customers in the bookstore, most of them take the signages and staff as an additional reference and help with their experience. (See Fig. 45 and Fig. 46) It shows that signages as part of the guiding service of the bookstore, it is not really used by customers. Also not everyone like to ask staff for help.

Why do you prefer not to asking for help from the staff?



12/36  
For those who don't ask staff for help

I usually don't buy books on a store, so I get recommendations online. Also, I don't ask because of the language  
Generally I can finish shopping by my own.  
Cause I'm just window shopping for books. Cause I always buy online  
I am usually lazy to ask to the staff  
Because I don't go to bookstore.  
They are a bunch of self-entitled idiots  
I prefer look around and find the book I was looking for alone. In this way, sometimes I found other interesting books.  
I am usually able to find what I'm looking for  
I prefer to explore alone  
Kind of enjoy searching around and exploring new things  
they are usually busy  
I am enjoy exploring by myself.

Figure 47. Question 9.

For those who prefer not to asking for help, most of them prefer to explore on their own, and some of them don't find the staff's advice trustful. (See Fig. 47)

Do you have other problems during your experience in the bookshop? Share it with me.

It is difficult to find a book to read because there's no way of trusting if the recommendation will fit your taste in books.  
Too many inputs (books everywhere, sentences, prices) make the experience overwhelming and confusing  
Usually I would like recommendations for books to read. I am not seeking about literature and don't know which books could be of my interest. And I feel that asking the staff dor help would no be effective and they wont really help me  
No  
Sometimes I would like to have more books written in original language  
There are so many books that the categories are not enough to me, I would like to have something else.. Maybe award winning, nominees!  
Buying too many books maybe  
Nope  
fancy bookshop alwasys full of people

Figure 48. Question 10.

In the end, I asked an open question about if you have encountered other problems in the bookstore. Some people complaining about it is hard to trust the recommendations and find some books truly fits their interests; some participants think that the recommendations, sentences, books, sales are overwhelming to their experiences; Yet with all those things, some people still think that the categories are not enough.

From the questionnaire results, we can see that the signages and staff are used as additional assistance for the customers to orient in the bookstore. Customers are still discovering the bookstore by themselves mostly, and they are seeking to get some truly fit and trustful recommendations

# TRANSLATE AND DEFINE

## CHAPTER FIVE

## 5. Translate and define

In this phase, based on the information and data I collected from the research, I translated the results into a persona spectrum to identify the customers' varieties and the problems. Then by using the customer journey map, problems, and potential opportunities, design directions are defined.

### 5.1 Build a persona spectrum

Combining the results of observations and the questionnaire, I build a specific persona spectrum for the bookstore, le merle moqueur.



Figure 49. Persona spectrum.

From the observation and questionnaire results, it shows that ‘visual mismatch’ and ‘speak mismatch’ are the main mismatched interactions. Other mismatched interactions are either being solved to some extent or can be a side mismatch of the main ones. So, I choose to work on further.

## 5.2 Translate the research

To translate the research results into concepts, I used the customer journey map to validate ideas, thoughts into solid requirements and concepts. (See Fig. 50)

Firstly, I mapped the actions, touchpoints and customers’ thoughts of the current bookstore experience in an uncomplete version of customer journey map. (See Fig. ) In order to achieve a complete version of the customer journey, I did a brainstorming with myself. I put the persona spectrum on the left side, the aim of the customers on the right side. Then I tried to map what are the mismatch interactions and barriers during their experience. This step is one that connected my research and inspirations for my project. Last but not least, I brainstormed alone what could be the opportunities for the mismatches and barriers. Here, I’ve already added my design ideas to the customer journey.

The completed version of the customer journey. It is a typical customer journey with a section designed for inclusive design. I added the ‘mismatch & barrier’ section to push me to dig deeper into the excluded situations. Therefore, I could come up with ideas to decrease the exclusions.

Based on the mismatched interactions and opportunities, I developed the design question in a comprehensive way as “How might we design an inclusive guiding service to inspire customers to discover and find the books they might be interested in?”

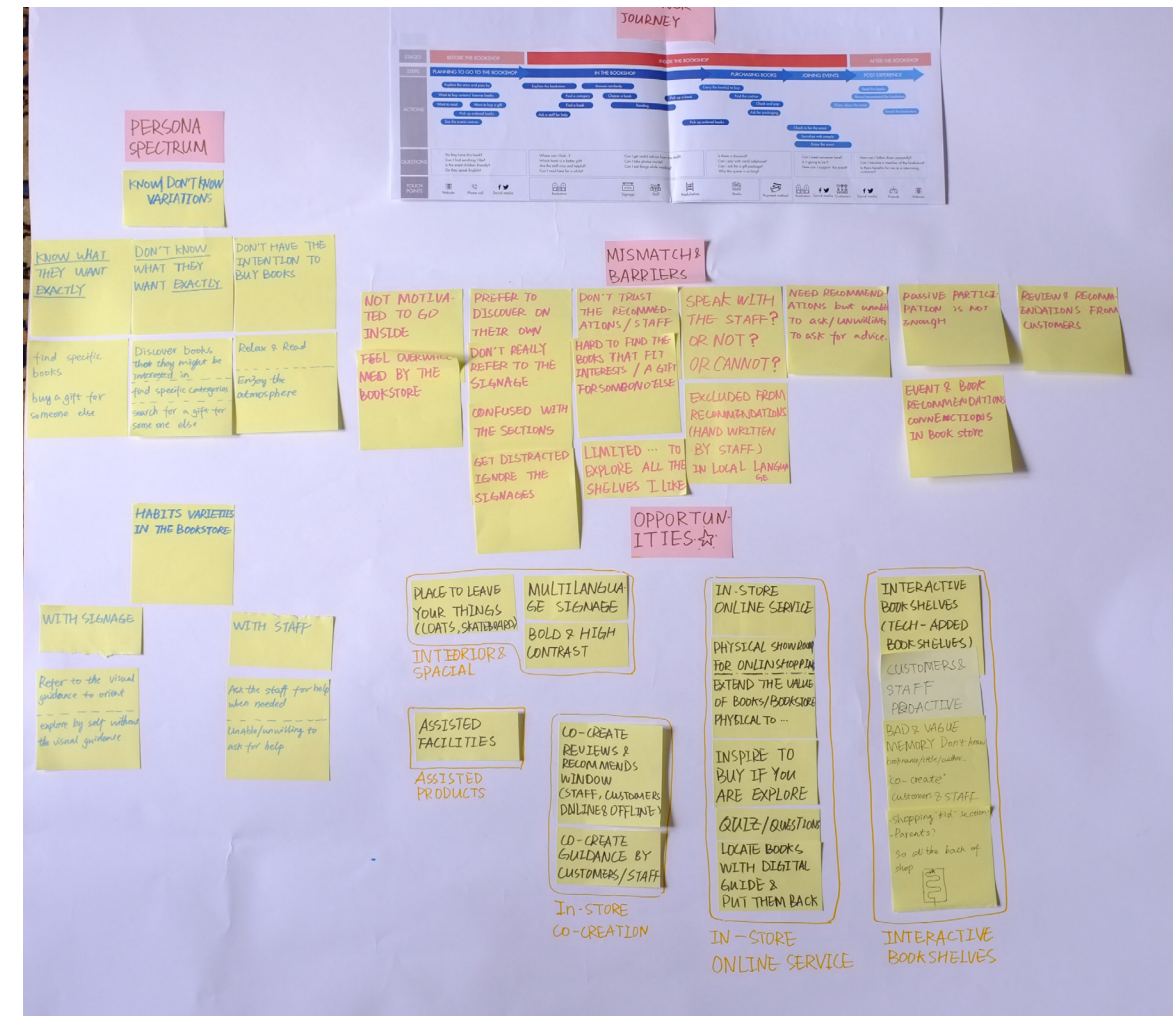


Figure 50. Translate the research.

# Customer Journey Map

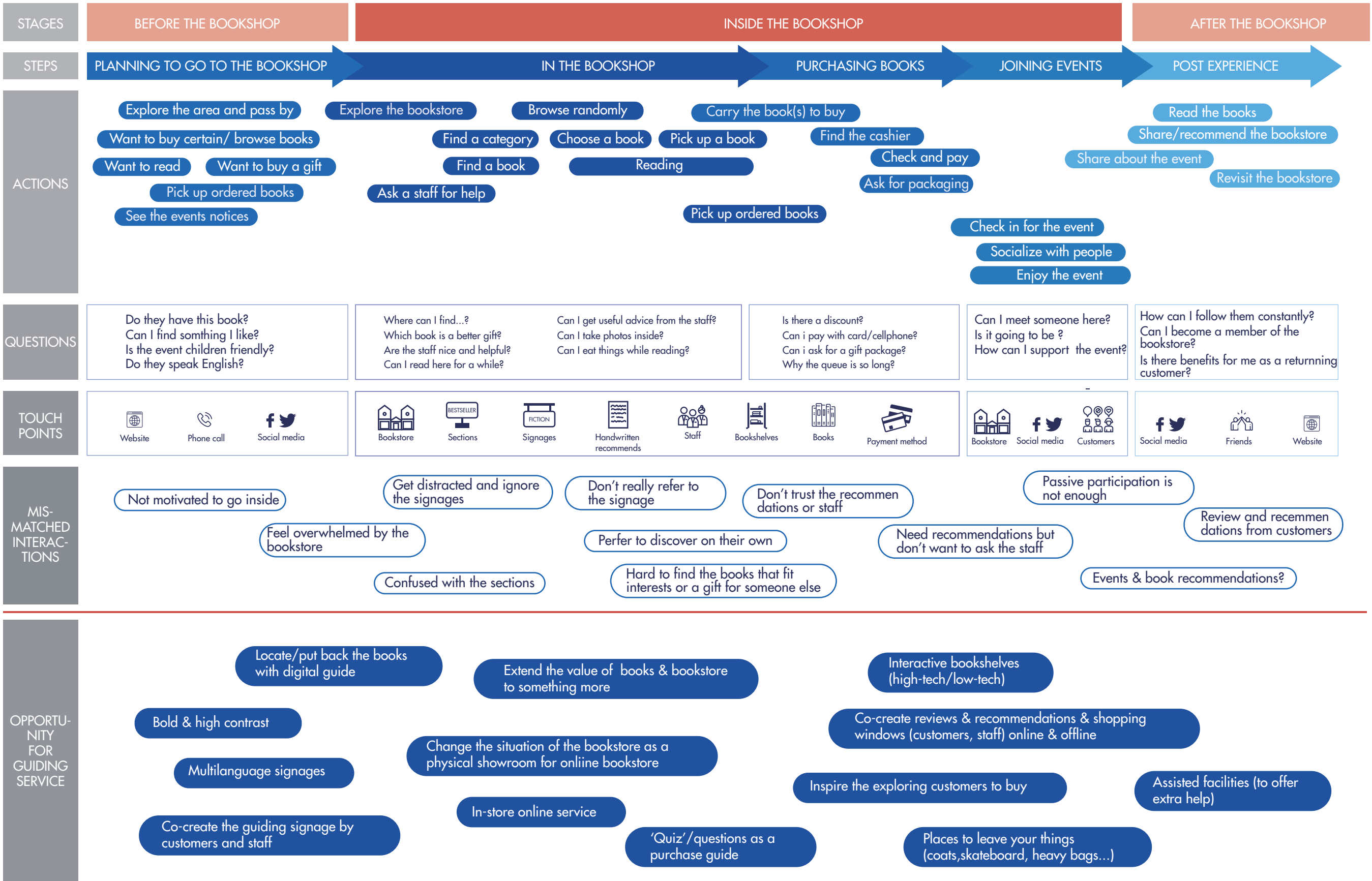


Figure 51. Customer journey map of the current bookstore service

### 5.3 Directions of design

I continued to work on the opportunities sections of the customer journey. I clustered them into similar concepts. Five directions were generated from the clusterization.

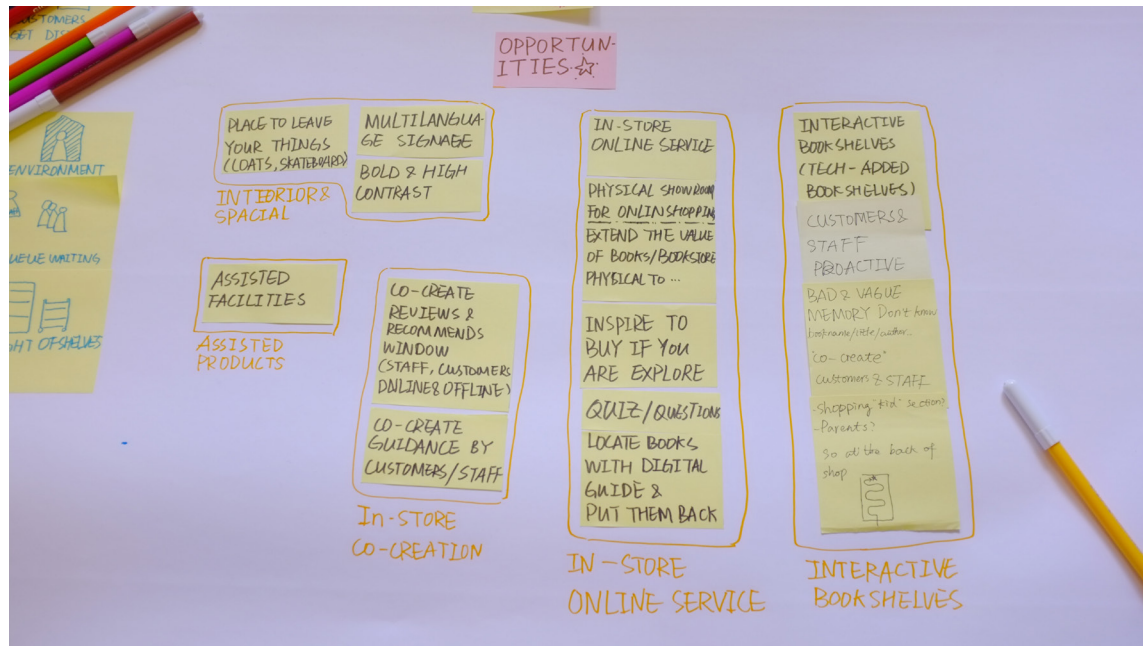


Figure 52. Directions of design.

The first direction is focusing on the interior and spacial design of the bookstore, especially in the arrangement for the space to accommodate different needs and the accessibility of the signages to reflect the mismatched interactions.

The second direction has a product-design orientation. It aims to design assistive facilities or products that could provide additional help and options to different kinds of users.

The third direction is in-store cocreation. It is a quite conceptual idea to motivate customers, staff, the publisher to co-create the guiding service during their bookstore experience online and offline. The co-creation process can be turned out to something that all the actors desired, however, it might take a long period to design an inclusive way and put it into practice to engage every actor and lead to a result.

The fourth direction is in-store online service. Aiming at extending the value of physical experience, the concept offers a new touchpoint in the physical bookstore that could synthesize several opportunities together.

The fifth concept is interactive bookshelves. The aim is engaging all kinds of customers in a more proactive way. The solution can be online and offline, but it needs to design more inspiring interactions for the experience in an inclusive way.

After analyzing the five directions, the first and second concepts focus more on physical environments and products. The third, fourth and fifth concepts focus more on ways of interactions during the experience.

### 5.4 Evaluating the potentialities of the directions

- Adaptability to flexible usage – different people can use the service in different ways
- Convenient & enjoyable for everyone to use – less effort/ capability/ skills demanding
- Barrier-free service – accommodating and welcoming diverse customers
- Digital accessibility – accessible both online and offline with multiple touchpoints
- Innovation – innovative level

To evaluate the potentialities of the directions and to work on further in-depth, I retain the 4 criteria that I used in the competitor benchmark analysis, which are dedicated to the inclusiveness of the directions. Then I add another one is 'innovative to show the innovative level of the direction.

After the evaluation, direction 1 and 2 are relatively low on every criterion. Direction 3 doesn't have an even level of each criterion. So I choose to work further on the fourth and fifth directions, which appear to have a high level on each criterion.

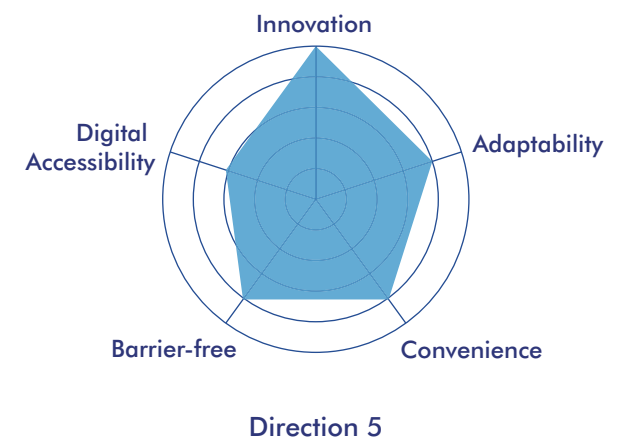
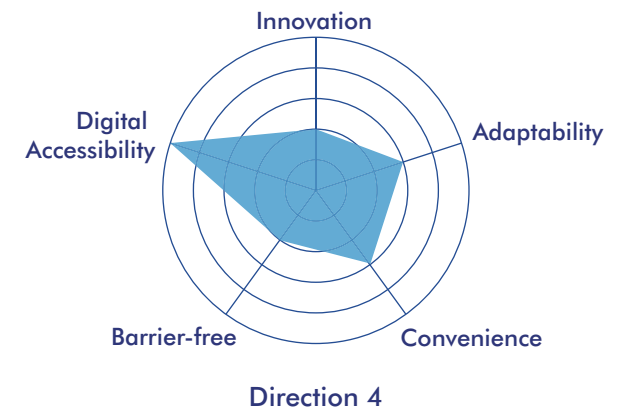
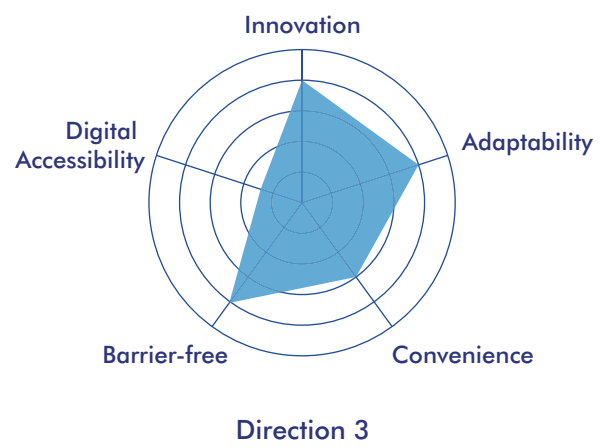
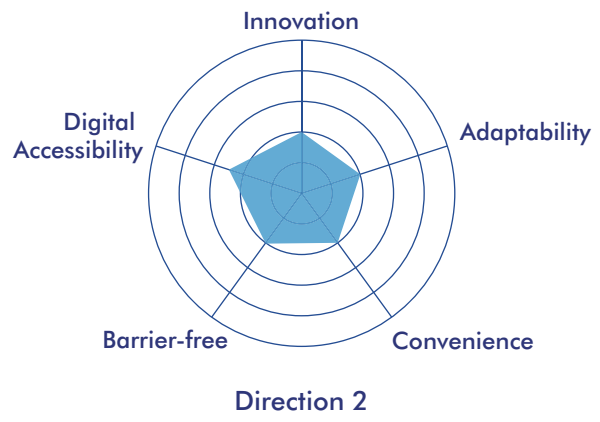
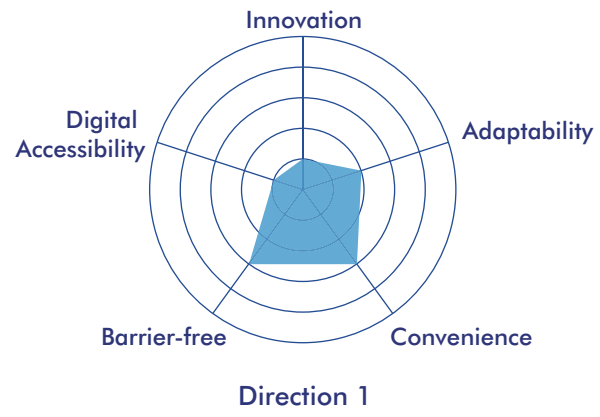


Figure 53. Evaluation of design directions.

# DESIGN PROCESS

## CHAPTER SIX

## 6. Design process

### 6.1 Service concept generation

Based on the previous directions, I worked on the concept generation further to validate the design directions. Then two detailed concepts were come up with. In the concept generation phase, I used the mind map to help me to think creatively.

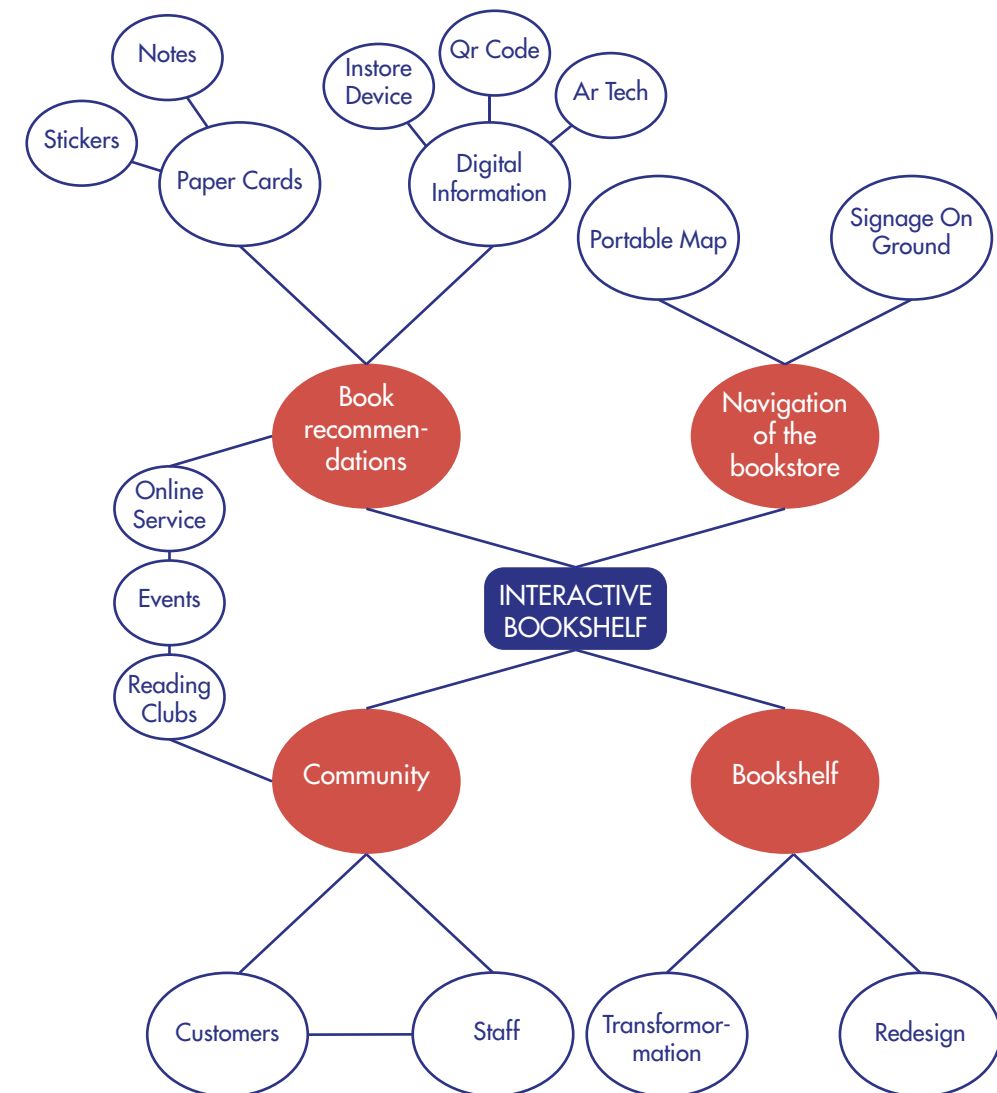


Figure 54. Mind map of concept 1.

The first concept is called ‘interactive bookshelf, guiding and creating’. (See Fig. 54) This service concept is mainly made up of two offerings to the customers and based mainly on physical touchpoints. One is a portable and accessible guiding card. The other is the freedom to write little notes. It is an input and output for the customers at the same time. So the bookstore experience is no longer only a passive and input process, but an engaging and creating process. And for the bookstore, the collective notes from the customers form a visible community connected by the notes. These notes can be displayed in the bookstore, on the reading clubs events, on the author meeting, and even on exhibitions of these creative notes from the customers.

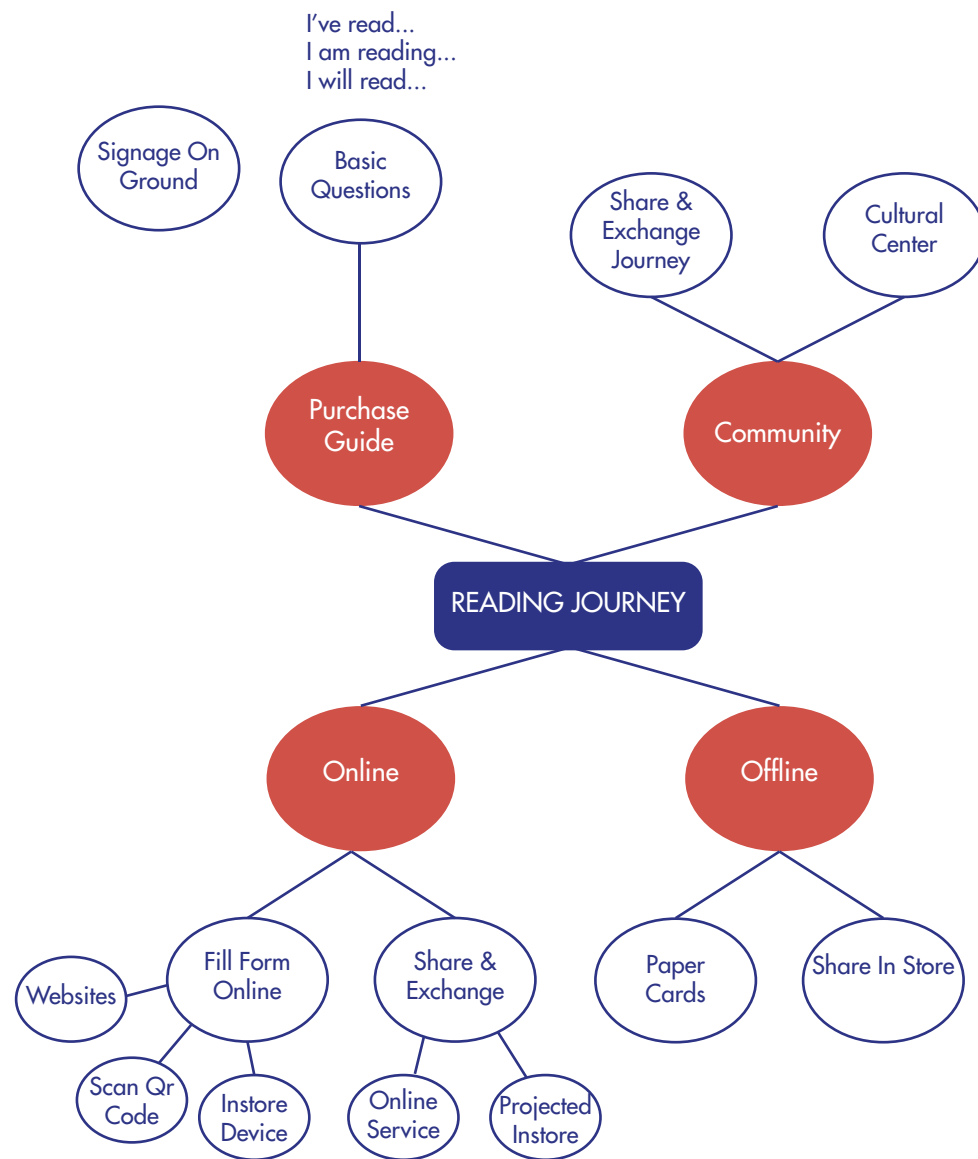


Figure 55. Mind map of concept 2.

The second concept is called ‘Your reading journey’, a service based on physical and online touchpoints. (See Fig. 55) The customers can create the reading journey online and offline centered on three questions, ‘I’ve read...’, ‘I am reading...’, ‘I will read...’. Information about your profile, like your self-portrait doodle, your own keywords, age, contact, etc. can be shared as an optional choice. The reading journey cards will be shared in the bookstore to provide inspirations, references for the customers. Consequently, an invisible community is built through the connections.

The more I worked on these two concepts, the more I can see the combination of them. The first concept has a solid touchpoint, the second concept is more about the interactions and behaviors. Consequently, the combination of the two concepts is my final service concept proposal.

### 6.2 Service concept proposal

The service concept is called ‘interactive bookshelf’. To visualize its offering to the bookstore and the customers in the service system, I created an offering map.

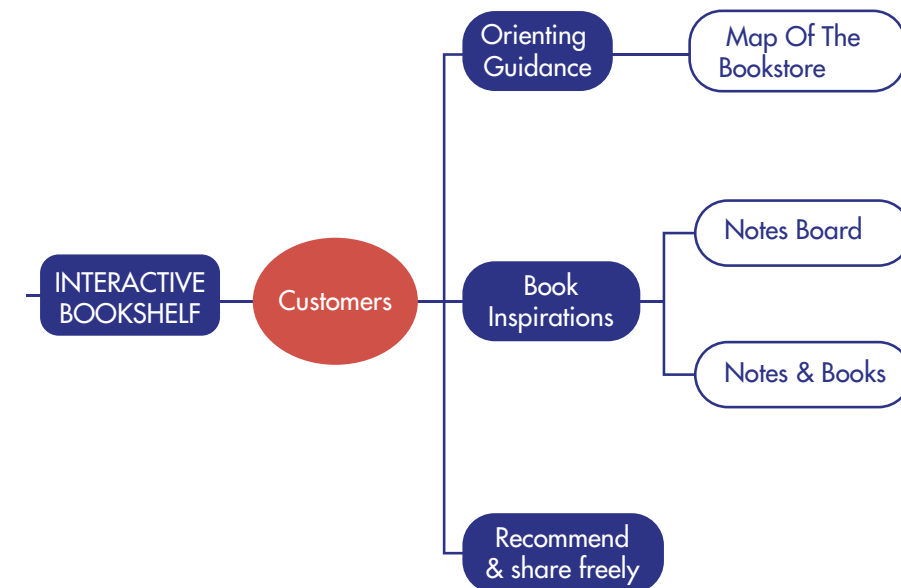


Figure 56. Offering map.

For the customers, the service has three main offerings to them. The first is the orienting guidance by a portable map of the bookstore, which shows the sections, the info points, the cashier on the map. The second offering is the book inspirations. To deliver this offering to

various of customers, the service provides new touchpoints to customers: the notes board and the book&notes shelves. These touchpoints also enable the third offering, to share and recommend freely. The service based on interactive touchpoints support and enable various of customers to create and get inspired in the bookstore.

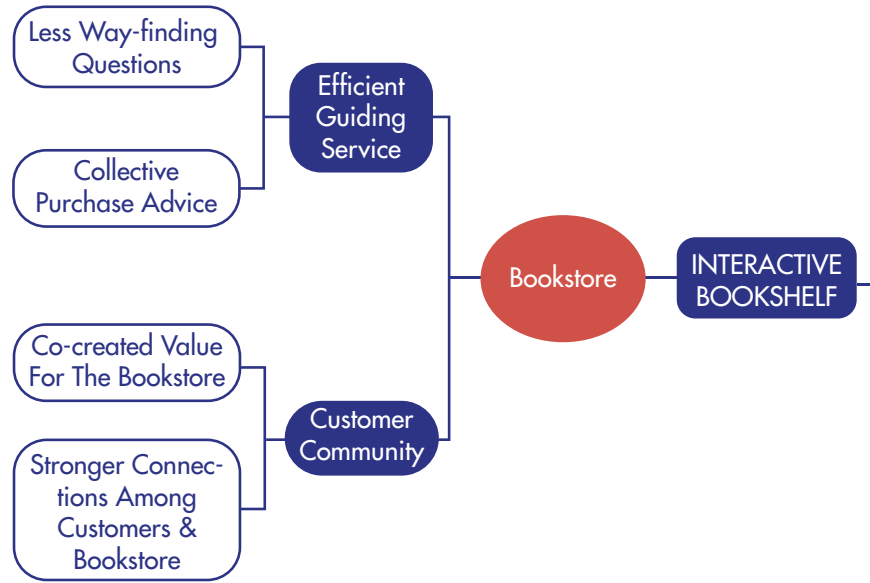


Figure 56. Offering map.

For the bookstore, the guiding service also does a favor to decrease their daily work. More importantly, it builds a customer community gradually for the bookstore with the co-created value from customers.

The service has a strong emphasis on physical aspects of the touchpoints and experience, which is more compatible with the spirit of the independent bookstore. Even though the digital trends are sweeping almost all kinds of innovations on customer experience, the independent bookstore owner still prefers to maintaining its physical characteristics as much as possible for several reasons. Firstly, the majority of the customers are going to the independent bookstore because of its atmosphere. People like the smell, touch, and feeling of the bookstore. So rather than adding advantages of the online bookstore or chain bookstore to the independent bookstore, it is more valuable to emphasize the uniqueness of independent bookstore and make it stronger. Secondly, the digital experience is definitely faster and easier, however, it is not always accessible or inclusive enough. Especially for the older customers, for the children, for the customers who prefer not to using digital devices, for the customers who want to use the device but it doesn't have much signal or battery. A physical solution is more inclusive of all kinds of customers.

### 6.3 Service system development

In this phase, to develop the service concept further, I will create an offering map and a system map. These maps are helping me to think through the service and validate the details. Here is the offering map of the service.

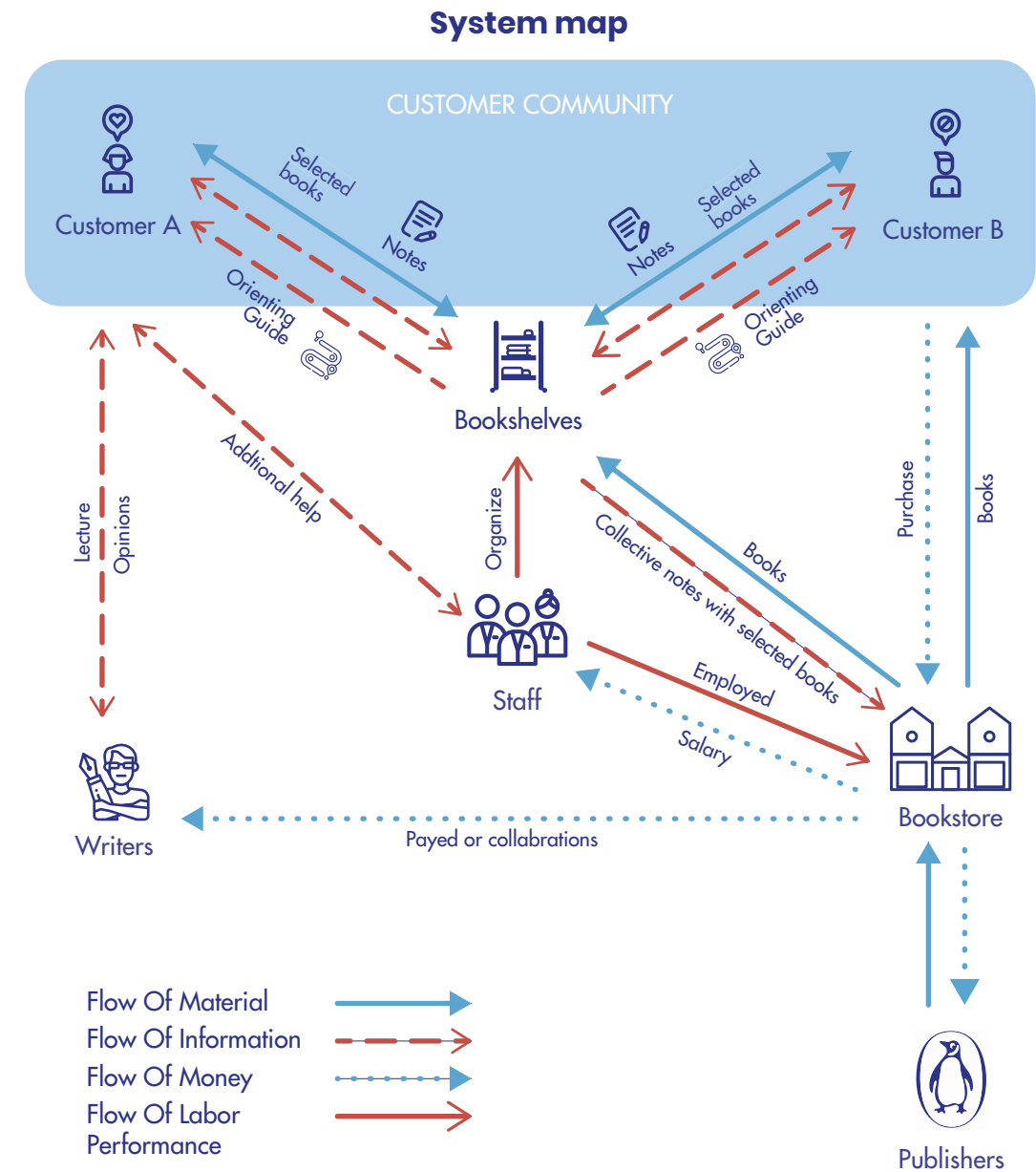


Figure 57. System map.

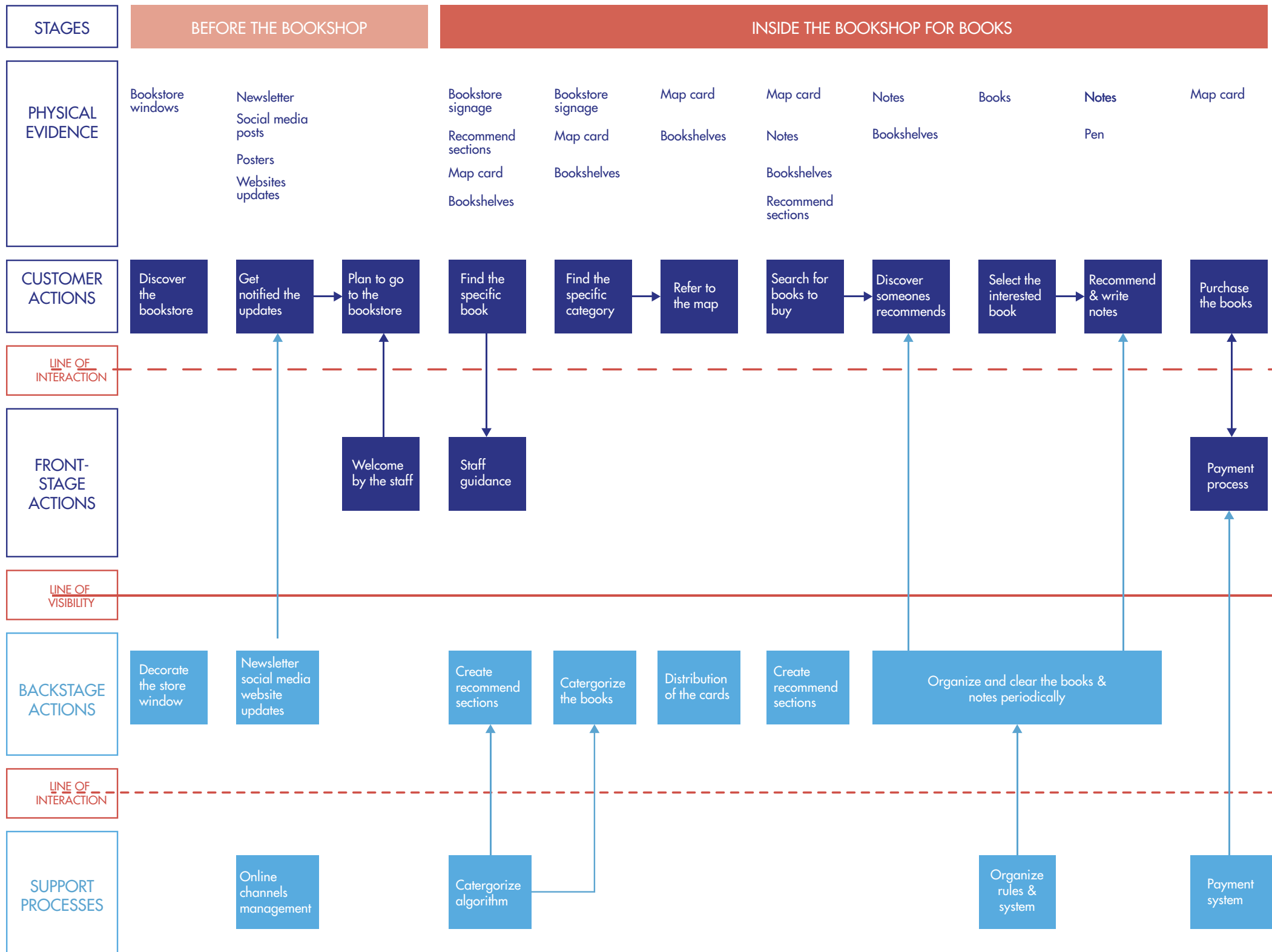
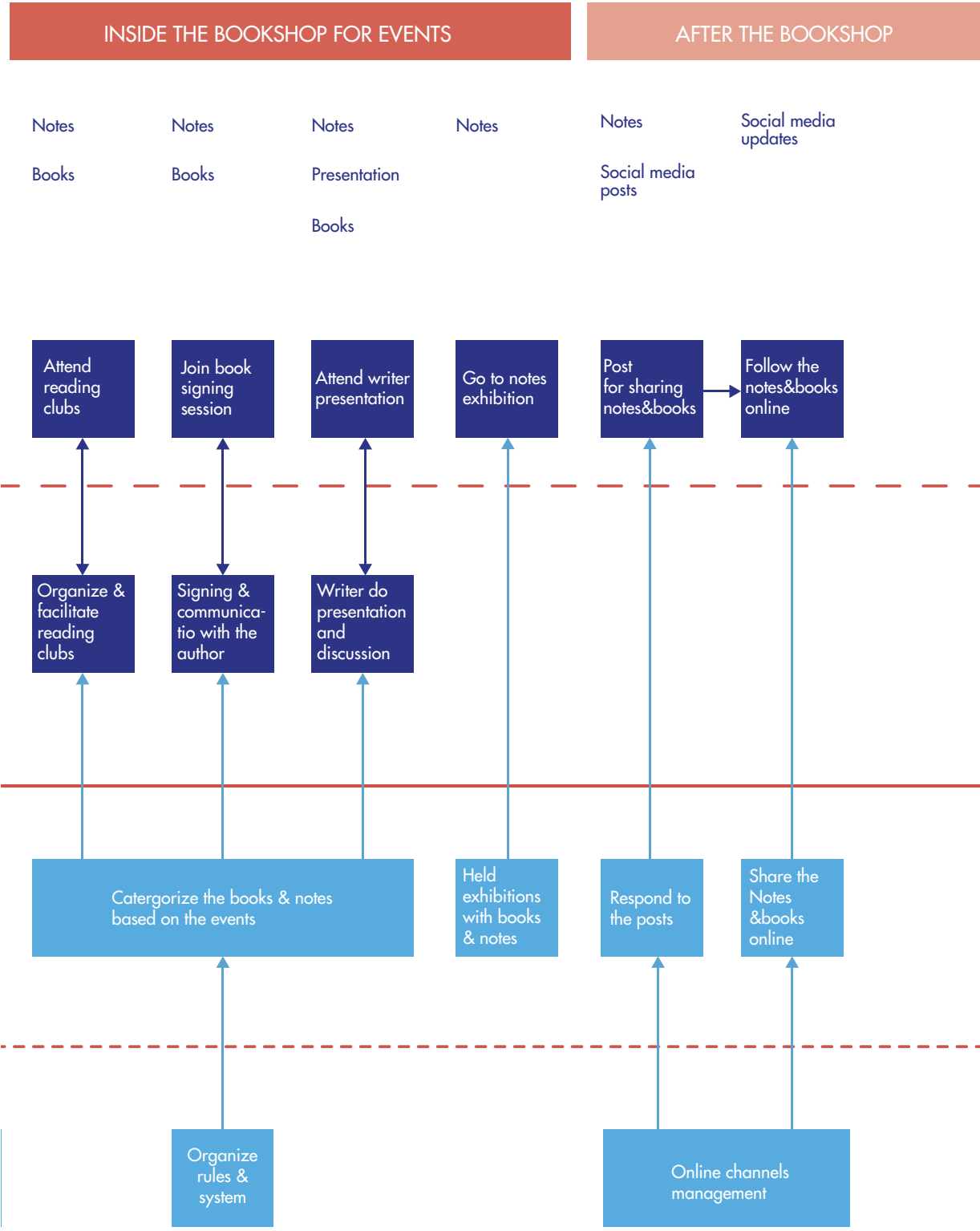


Figure 58. Service Blueprint.



### 6.4 Touchpoints and usage scenarios

To visualize the service encounter, the touchpoints and usage scenarios will be presented in this section.

#### The touchpoints

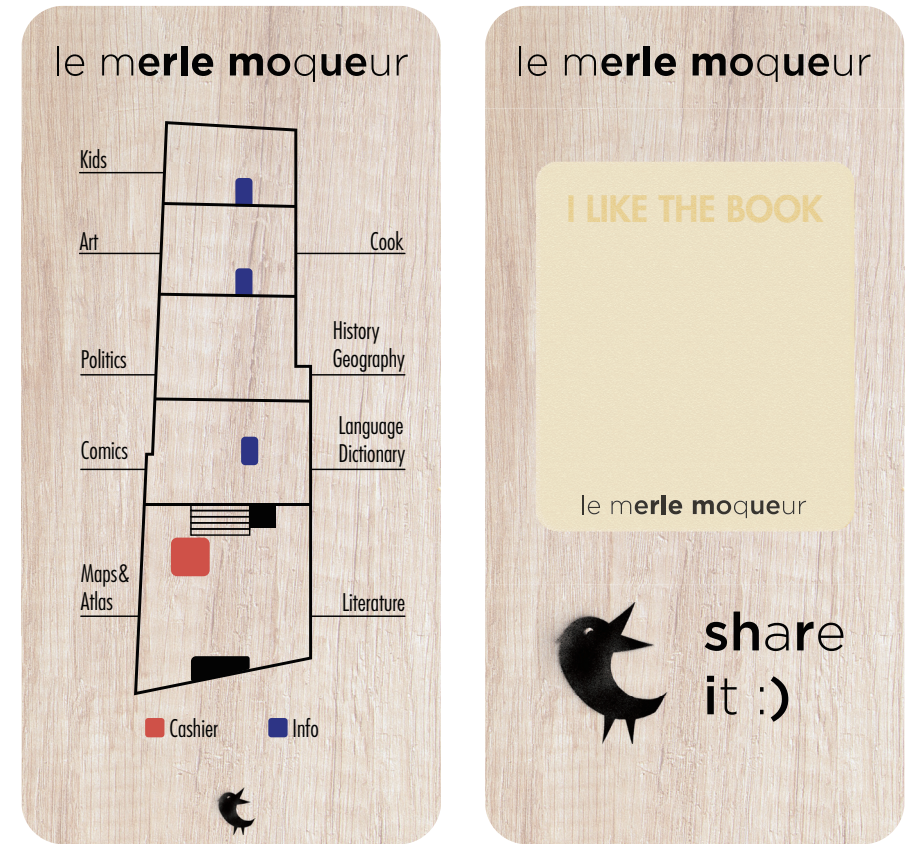
The basic touchpoint is the wooden card that distributed in the bookstore attached with sticky notes. On one side, it has a map of the bookstore showing the categories of the books, the info point, the cashier. On the other side, there is a note pad for customer to write freely.

These notes are printed with different themes:

"I like the book...", "I am reading...", "I bought the book...", "Free notes", "Doodle day", "I feel...". So customers can grab the wooden card and write on the notepad.



Figure 59. Touchpoint 1 - Wooden card.



Addition to the wooden cards, there is a notes board and shelf for customer to share freely in the bookstore in a visualized and physical way.

When customer explore and discover the bookstore, they can put the notes on the notes board to share with other customers their feelings, their creations, their reading journeys to inspire other; or they can choose the book they like and put the it in the share shelves with notes.

At the same time, when customers want to discover some books they like, they can always get inspired by others' notes, recommends, and even doodles.



Figure 60. Touchpoint 2& 3.



### Usage scenarios-Customers

The share shelves and notes board are positioned in different sections with different height.

For children area, it is low and accessible for kid to grab easily. In other sections, it can be hanged and placed on the shelves.

In the cafe area, the share shelves are placed to encourage customer to read and share.



Figure 61. Usage scenarios - Customers.

## Usage scenarios - Staff

In the service system, the staff also acts as a co-creator of the notes. To distinct the staff's notes and customer's notes, the design is using different colors and shapes. Then the staff need to upload the notes&shelves as well as the notes board periodically to their social media. In this way, the online channels are also updated with the physical bookstore. It inspire and attract online users. The staff is responsible to clear the notes and shelves periodically. The period is twice a week, on Tuesday and Friday because of the popular times. The post sequence can be once two days depending on the amount of the notes and books. The details of the frequency need to be tested in further service prototype.

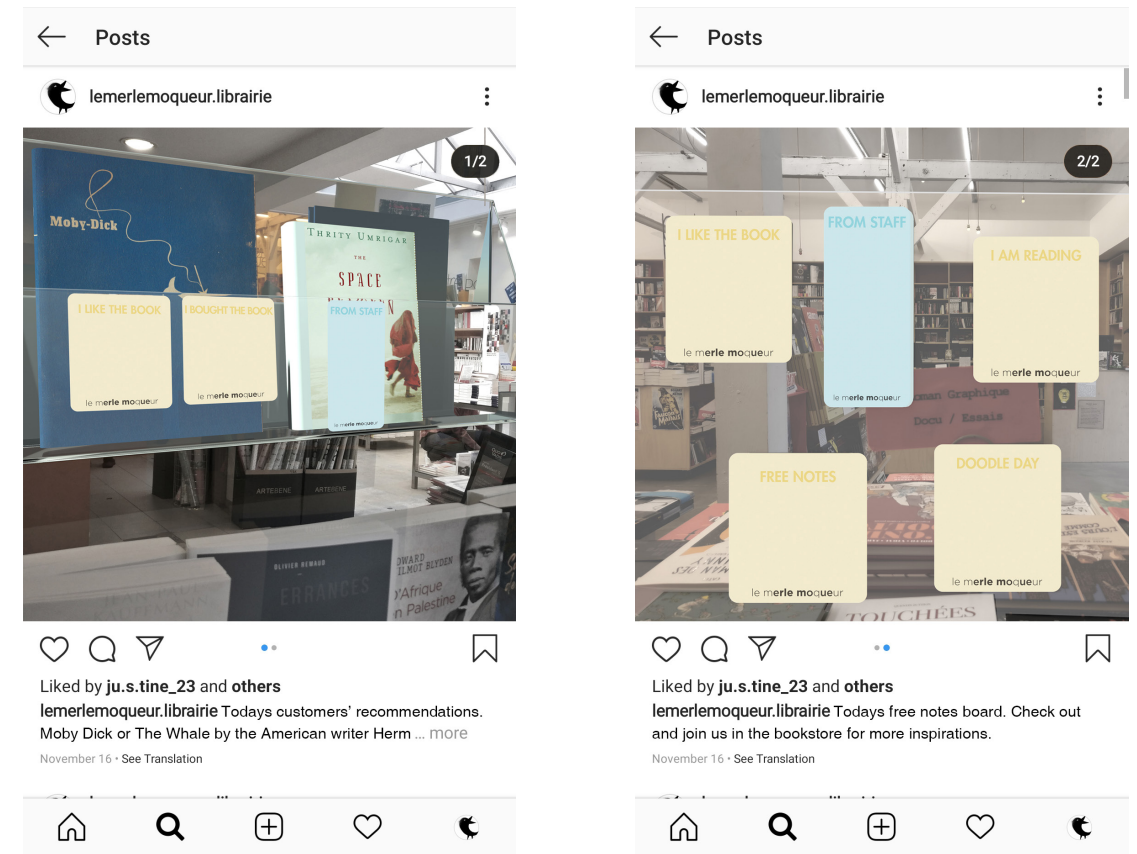


Figure 62. Usage scenarios - Staff.

# CONCLUSION

## CHAPTER SEVEN

## 7. Conclusion

### 7.1 Discussions

#### 7.1.1 Contributions

The combination of inclusive design and service design provides new perspectives, methodologies to approach the complicated service design problems, especially in the area of intervention of “Design interactions, relations, and experiences”. In particular, the tools that I used could be repeatedly tested and utilized in other inclusive service design projects.

#### **Double diamond Model & Inclusive Design Waterfall Model**

The combination of the two design models leads to an inclusive service design model by a synthesis of the main similarities and differences.

#### **Persona spectrum**

Using the tool, persona spectrum, from the Microsoft Inclusive Design Toolkit providing a new perspective to define the customers’ varieties, which can be used in other service design projects rather than building personas. Based on the research results, the persona spectrum identifies groups of people that share similar conditions.

#### **Customer journey map adaptive version**

In my thesis project, I add the ‘mismatched interactions’ section into the customer journey map. The customer journey map becomes a powerful mapping tool to map the service from the customer’s point of view, to reflects the mismatched interactions. It also leads the designers to empathize and come up with ‘opportunities’ for new or improved service.

#### 7.1.2 Improvements

#### **Service prototype and test**

The next step of the project will be prototype the concept and test it with real customers and staff. The prototype can be a week-long event in the bookstore. It is important to keep track of the problems, thoughts, comments arise in the process. And then a questionnaire could be helpful to engage users to evaluate the prototype in a broader range.

#### **Increase the engagement of customers, staff, and stakeholders**

Because of the limited resource and time, I didn’t manage to engage the actor and stakeholder in every phase of my project. For further research, it would be better to engage them in mapping the customer journey, co-create the service concept.

**Utilize other evaluation tools**

I used expert appraisal and stakeholder appraisal in the process to evaluate the decisions and concepts. Ideally, other tools like capability simulators, user involvement can be used to enrich the evaluation process comprehensively.

**7.2 Perspective**

The thesis project is a challenging and valuable journey for my design career. It was new to me to be in charge of the whole service project mainly by myself, especially in terms of managing the whole process and engage different stakeholders in the project.

The thesis project deepens my understanding of the competencies as a designer. My belief of “service design needs a multidisciplinary approach is further confirmed during my thesis”. As a service designer, we should always be ready to learn new methodologies and philosophies to deal with complicated service situations.

The inclusive design philosophy makes me realize how much responsibilities the service designers have. When we designing service solutions that deliver to a wide range of users, if we overlook the human diversity and social variations, the service inclusion would be affected seriously.

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