# Seller Market Growth Strategy for the Circular Electronics Start-up, Valyuu

**Author**

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**Client**
Valyuu BV

# Preface

**Dear reader,**

Thanks for reading my graduation report finished in November 2022, as the highlight of my two-year international master's studies in IDE, TU Delft.

Two years ago, I was admitted to TU Delft. It has been my dream school for a long time. I could still remember the excitement when I received my offer. However, taking this offer meant a huge challenge for me because Covid exactly started at the same time, but I decided to take on this challenge and came to the Netherlands, which is more than 7000km far away from my home country. Looking back on the two-year master's journey, I realized that I actually had overcome a lot of difficulties from both study and life with happiness and tears intertwined, supported by my enthusiasm to design. Studying at IDE is like opening up a new window for me to look at the design and the world. It provided me with a very solid theoretical framework that would be my lifetime benefit, and I can't wait to implement this framework in my future career as an MSc strategic designer.

Now, the two-year journey has come to an end by delivering this graduation project, and it was not possible without the support of the people contributing to it. Thus I would like to take this chance to express my gratitude to all of them.

**EJ and Pinar,**

Thanks for your supervision of my project. Your honest suggestions helped me push my work to a higher quality level. And your encouragement eased my worries and uncertainty throughout the process. It is really nice that we understood each other quite well thus every communication with you was really smooth, making the whole journey efficient and enjoyable.

**Jingwei, Ferhat, and Arvin,**

Jingwei, thanks for providing me with this assignment as my master's graduation project, and for your suggestions and support throughout the process. It is really appreciated that we keep in close contact and update each other very often even if you are extremely busy. Ferhat and Arvin, thanks for participating in my co-creation workshop and listening to my presentations. I hope my project would contribute to your business. And wish Valyuu to be a giant and successfully reach your future vision years later.

**My beloved mom and dad,**

Thanks for supporting my decision to study abroad and your support both emotionally and financially when I am in the Netherlands, I know it was a hard decision for you to let me go that far away from home under Covid, which makes you concerned so much.

**My beloved best friends and schoolmates,**

Thanks to Xiaonan, Tingwei, Sijie, Siyuan, Lidha, Kenny, and many other people I didn't nominate. Thanks for your participation in every of my activity, and your emotional support when I was under struggles. I had a great time with you when studying in the Netherlands. However, graduation also means a time to farewell, I really hope we can meet someday again.

Finally, enjoy reading! I hope you could benefit something from my project in your interested fields.

Luxin Huang
3/11/2022

# Executive Summary

Nowadays, the amount of e-waste generated globally is growing at a faster speed, due to consumers' repetitive consumption and product replacement stimulated by electronics manufacturers. This leads to severe threats to our environment. However, a large amount of e-waste is not waste at all. They could be well refurbished and then reused by the next owner because most are obsoleted before their fully functional lifetime. In addition, many consumers are willing to purchase those pre-owned electronic devices beyond their up-to-date time. Therefore, Valyuu, a Dutch-based circular electronics start-up, is one of the retailers that work in this field.

Valyuu is currently seeking to grow its seller market, by attracting more customers to sell their EOU devices to it. However, there is a big challenge that most consumers are not managing their EOU devices properly but simply storing them at home. In order to solve this challenge and achieve Valyuu's seller market growth, the research questions were derived, and this project was initiated (Chapter 1).

Firstly, the context analysis was conducted to understand the contextual elements that influence consumers' behaviors (Chapter 2). Then, Valyuu's competitive environment in its related market field was briefly scanned (Chapter 3). At the same time, the literature review formulated a theoretical foundation to progress this project further (Chapter 4). Afterward, instructed by the conclusions from the literature, consumer research was conducted, which is the core activity in the research phase of this project (Chapter 5). After that, all of the conclusions in the first 5 Chapters were integrated and taken into consideration when assessing and selecting the target group, lazy ignorers, and forming the design brief (Chapters 5 and 6).

Till then, the research phase was wrapped up and the ideation phase started. After conducting the co-creation workshop, the design opportunities and guidelines were specifically proposed, which instructed the development of initial concepts (Chapter 7). Next, after evaluating the initial concepts and combining the well-performed properties of selected initial concepts, the final concept was delivered. It is basically an influencer marketing promotion scheme, aligned with the launching of the door-to-door pick-up service, including an influencer's video and Valyuu's promotion web pages (Chapter 8). Finally, the final concept was validated by both the target group and Valyuu's co-founders, which proved its feasibility, desirability, and viability (Chapter 9). After that, a roadmap for Valyuu to further grow its seller market with expansion into other segments was briefly proposed (Chapter 10). In the end, some recommendations for further studies were given (Chapter 11).

## Glossary

**CE:** Consumer Electronics
**DfBC:** Design for Behavior Change
**EOU:** End-of-Use
**EOL:** End-of-Life
**E-waste:** Electronic Waste
**FBM:** Fogg Behavior Model
**JBTD:** Job-To-Be-Done
**LTV:** Life Time Value
**NPS:** Net Promoter Score
**ROI:** Return on Investment
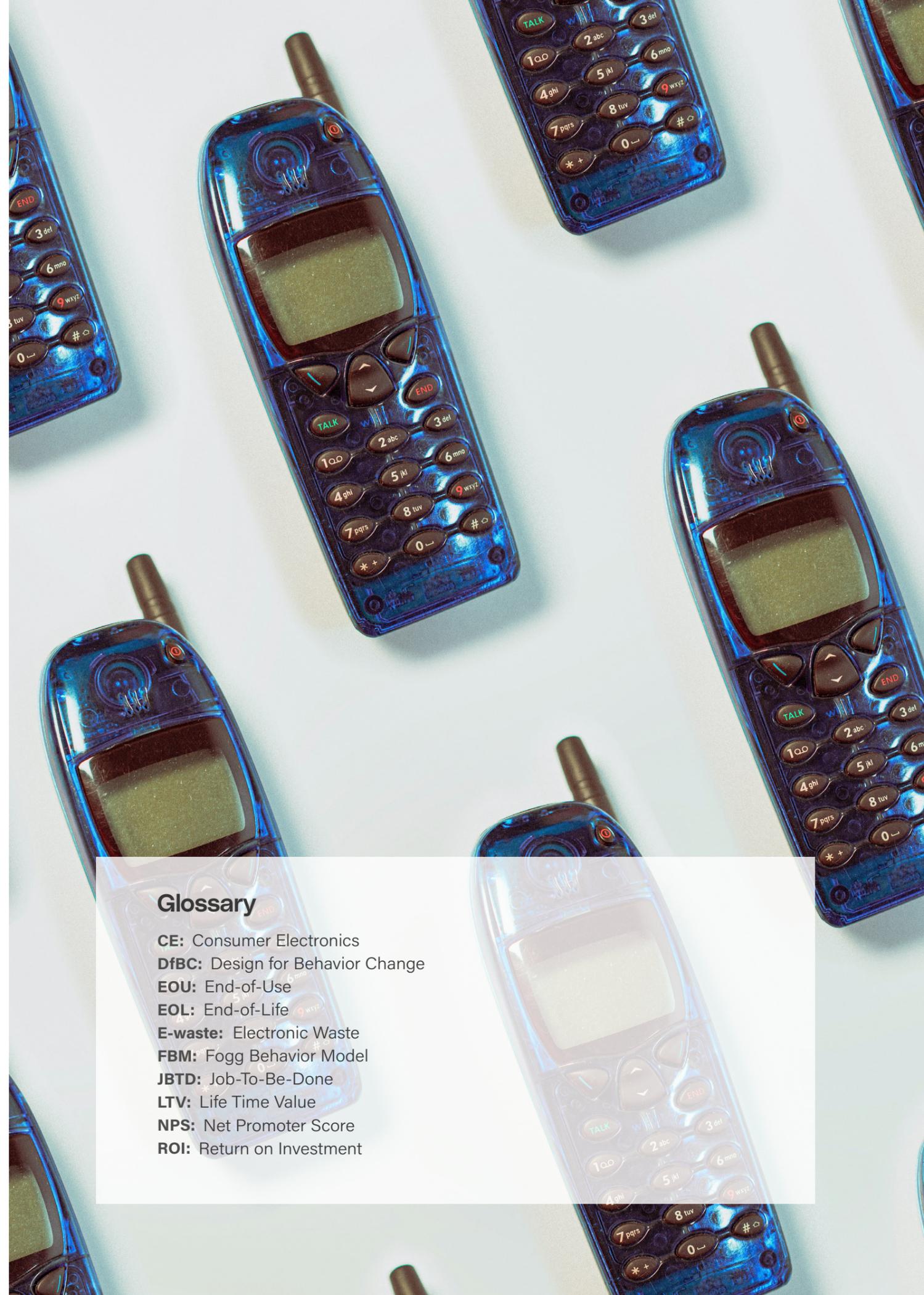
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# Chapter

# 1.

# Introduction to the Project

## A little hint for this chapter:

This chapter reveals to you the severe situation of e-waste nowadays at the beginning, and explains how the case company, Valyuu, wishes to make a difference under this circumstance. However, there is a main challenge identified on the way to growing Valyuu's seller market of electronic devices. What is the challenge? And what research questions and scopes were addressed to face the challenge? What approach and process were gone through to answer the research questions? You will know all these answers after reading this Chapter.

# 1.1

# Background

Nowadays, due to the increasing affordability of consumers, the decreasing price, and the **faster release speed** of Consumer Electronics (CE) with new features in the market, the consumption rate has been promoted continuously. In fact, **many electronics corporations reserve some already-developed technical innovations for the fast launching of a follow-up device.** In addition, "planned obsolescence" has been built into their business models by purposefully limiting the durability of the device, whose objective is to **stimulate repetitive consumption and product replacement** (Proske et al., 2016). As a consequence, today's widely-used electronic devices, such as cell phones, laptops, tablets, and smartwatches, are more replaceable than ever. Their useful lifespan has been reduced, hence **the generation of Electronic Waste (e-waste) has been boosted dramatically in recent years.**



Figure 1.1  The growth of global e-waste

According to Forti et al. (2020), **the amount of e-waste generated globally is estimated to reach 74.7 Mt by 2030. The amount is almost doubling within 16 years (Figure 1.1),** which makes it the fastest-increasing type of domestic waste in the world. The report also points out that in 2019, **Europe ranked first worldwide in the quantity of e-waste**



Figure 1.2  The amount of e-waste per capita in Eurpoe and the Netherlands

generation per capita (16.2 kg), while specifically, **the Netherlands generated 21.6 kg per capita of e-waste which exceeded the average European amount (Figure 1.2).**

Actually, **'e-waste' is not 'waste' at all.** It contains valuable raw materials that could be recycled, such as iron, copper, and gold. **The economic value of raw materials in e-waste generated worldwide is equal to approximately 50 billion Euros in 2019** (Forti et al., 2020). While the Netherlands has already reached the number of 50% recycled in compliance with regulations in 2018, however, 20% was exported to countries both within and outside the EU without further monitoring, and 30% remains undocumented (Brink et al., 2021). On the contrary, if the e-waste is not disposed of properly and finally ends up in the landfill with mixed wastes or is burnt inefficiently, it could release hazardous toxins into the environment and harm human health (Kolias et al., 2014).

So, including recycling (R8) and recovering (R9) raw materials, **a 10R hierarchy** is proposed to feature the priority of waste management and thus the level of circularity (Figure 1.3). In this hierarchy, pursuing a higher level of circularity, such as extending products' lifespan, which means less natural resource consumption, is a rule of thumb in the waste management industry. **In fact, there is a large amount of e-waste that can still be reused (R3) and refurbished (R5) because most are obsoleted before their fully functional lifetime.** At the same time, another economic opportunity is that still many consumers with less fashion consciousness or a lower purchasing power are willing to purchase and use pre-owned electronic devices beyond their up-to-date time (Ylä-Mella et al., 2022). **As a result, many retailers and manufacturers have noticed this opportunity and joined this business field**.



Economic value of raw materials in e-waste generated globally

**≈50 Billion Euros**

**(2019)**

**Rule of thumb:**

*Higher level of circularity = fewer natural resources and less environmental pressure*



| | | |
|---|---|---|
| **Smarter product use and manufacture** | R0 Refuse | Make the product redundant by abandoning its function or by offering the same function with a radically different product |
| | R1 Rethink | Make product use more intensive (e.g. through sharing products) |
| | R2 Reduce | Increase efficiency in product manufacture or use by consuming fewer natural resources and materials |
| **Extend lifespan of product and its parts** | R3 Reuse | Reuse by another consumer of a discarded product that is still in good condition and fulfills its original function |
| | R4 Repair | Repair and maintenance of a defective product so it can be used with its original function |
| | R5 Refurbish | Restore an old product and bring it up to date |
| | R6 Remanufacture | Use parts of a discarded product in a new product with the same function |
| | R7 Repurpose | Use discarded product or its parts in a new product with a different function |
| **Useful application of materials** | R8 Recycle | Process materials to obtain the same (high grade) or lower (low grade) quality |
| | R9 Recover | Incineration of materials with energy recovery |

*Increasing Circularity*

**Valyuu's focus**

*Figure 1.3  10R circular economy hierarchy as adapted from Potting et al. (2017), originated from Cramer (2014)*

# 1.2

# Introduction to Valyuu and the assignment

**Valyuu is one of the retailers that mainly work in R3, Reuse, and R5, Refurbish (see red boxes   in Figure 1.3)**. Their current business is to collect and sell pre-owned electronics to both customers (C2C) and business channels (C2B2B). **They hold a giant ambition that every single electronic device on the planet will not be wasted but be used to its full potential.** At present, their service covers 5 common categories of electronics, which are cell phones, laptops, tablets, game consoles, and smartwatches (Figure 1.4).



| Smartphone | Laptop | Tablet | Game console | Smart watch |

*Figure 1.4 Valyuu's current available 5 product categories*

In order to get closer to their ambition, **they are currently seeking to grow their seller's market**, by both absorbing more people to sell and encouraging them to sell more numbers and categories of electronic devices. In order to find out a suitable product-market combination for growth with higher opportunities, returns, and lower risks, the *Ansoff Growth Matrix* is used (Figure 3). This matrix has a two-by-two quadrant that helps to decide whether the company should market new or existing products and services in new or existing markets (van Boeijen, et al. 2020, p.141)

*Figure 1.5. The Ansoff Growth Matrix*

## 1.2.1 Valyuu's current service and market scope

Before plotting different possibilities into each quadrant in the matrix, it is important to make clear Valyuu's current service and market scope. As mentioned before, Valyuu provides end-of-use (EOU) disposal services for pre-owned electronic devices within the 5 product categories in the sellers' market. There are two dominant options for customers to sell and get money in return:

(1) **The 'best value' option (C2C):** It is similar to the 'consignment' service. Valyuu will test the product, provide a test report, take photos, conduct a minimum level of refurbishing service such as replacing the battery, and list it on their website to sell, and the seller will receive the money back within 10 days. The amount of money is usually much higher than the next option. However, **this option is only available when products have better conditions, which means the device can be switched on, and is fully functional and intact.** Once the device doesn't meet the requirement for 2C selling values or the seller wants to receive money at once, the seller can only choose the next option.

(2) **The 'fast pay' option (C2B2B):** the seller will get paid within 24 hours after Valyuu receives the package. The product is actually purchased by Valyuu and sold to professional refurbishers or other business channels. **This option allows for some tiny damage to the device,** such as a broken or loose screen, or some failures of the cameras or the backglass.

Except for the two options above, Valyuu also provides two other minor options:

(1) **Recycling:** In case the device is **too worn-out to be repaired and thus doesn't even contain many profits to be sold to business channels**, then it will be recommended to the recycling stakeholders, *Wecycle*, temporarily without monetary incentives in return.

(2) **Donation:** The seller could choose to donate all the money they might receive to a charity foundation, *Stichting Leergeld*, to support education in the Netherlands. And **the seller will get updates on the journey of his/her donation to the good cause within 15 days**.

The overview of the service options is summarized in Figure 1.6. Overall, it hasn't provided other services that consumers might need within the whole product lifespan, such as maintenance and repair.



*Figure 1.6. Valyuu's existing service processes and options*

As for the current market scope, **it currently targets those people who already have a habit of selling pre-owned electronics** and seek for selling solutions that can skip the hassle of dealing with unacquainted buyers, so it launched advertisements mainly on Marktplaats and Google. And it is also striving to retain its current customers to continuously sell their EOU electronics with the promotion of the Circular Cyber

Club (CCC) programme, which is a community of Valyuu's existing customers under construction. With focusing on the existing market, it is also continuously conducting modest iterations of its services to cater to its customers. **Therefore, at present, it is more in the** *Market Penetration* **quadrant in the** *Ansoff Growth Matrix***, which means to increase sales of existing services in existing markets so as to increase the market share.**

## 1.2.2 The best product-market combination for Valyuu to step first

In order to find out the best product-market combination in the *Ansoff Growth Matrix* for Valyuu to step first, some possible new products and markets for Valyuu to feasibly venture into were analyzed below.

### (1) The possible new products and services:

In fact, Valyuu has already planned new product and service developments in its product roadmap from the business point of view (Figure 1.7), including **launching the door-to-door pick-up service** and the **offline-store services**. Besides, other possible new products and services could also be considered later such as **expanding into more electronics categories and device status**, or **providing services that cover the whole product life-span**, such as repair and maintenance.



*Figure 1.7  Valyuu's planned product roadmap, which is the basis of the implementation roadmap proposed after the final concept in Chapter 10*

### (2) The possible new markets:

**This is where the most information is lacking.** But according to Valyuu's previous research, it noticed **a large number of people who have never sold their devices before, who might be the most potential new markets to be explored**. And through consumer research and market segmentation, Valyuu could identify those previously unexplored market segments.

After plotting the possible new products and markets on the matrix, comparisons between different combinations could be conducted. Compared to investing in developing new products and services, trying to attract more sellers in advance is estimated to **require less investment and also have a considerable return at the same time.** Although Valyuu is developing and planning to launch the above-mentioned new products and services in the near future, **especially the door-to-door pick-up service in the next couple of months,** it still has ambitions to **firstly leverage most of its current services as much as possible to cover previously unexplored groups of sellers, in order to make the most use of its existing capabilities and resources.**

**Thus, the** *Market Development* **strategy**, which means boosting sales of existing services in previously uncovered markets through consumer research and market segmentation, **would be a good starting point for Valyuu to step first into growing its seller market (Figure 1.8).** As it could enable Valyuu to understand, segment, and cover customers comprehensively and set up a solid foundation of seller groups, **which is an indispensable part before developing its new products and services.** However, if the outcome of the consumer research and segmentation conducted later in this project implies that Valyuu's existing products and services cannot suit the new segments' expectations very well, then Valyuu's planned products and services could be considered to be combined and then, new products and services still have the potential to be developed later in the process to best satisfy new target segments if necessary.
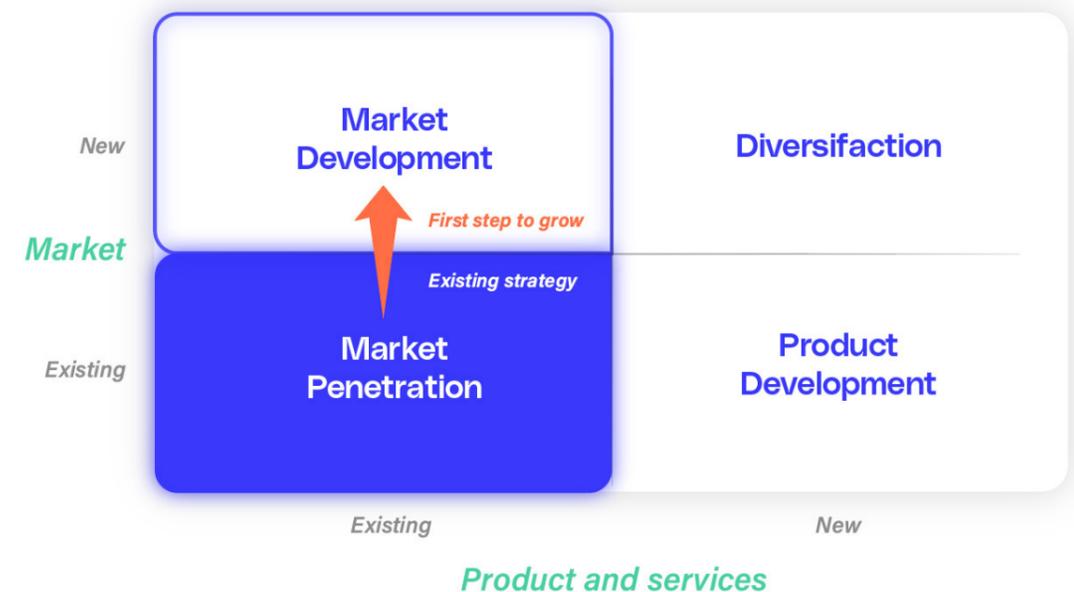


*Figure 1.8.  The first-step for Valyuu to grow its seller market*

**To conclude, providing design solutions to achieve the seller's market growth by stepping first into the Market Development strategy through conducting market segmentation is the main assignment of this project.**

# 1.3

# The main challenge



*Do you have this kind of box that stores all of your obsoleted electronic devices in your home?*

As mentioned above, in order to grow Valyuu's seller market, the first step is to explore new markets that include a large number of customers who have never sold their devices before. But there exists **a main challenge** on the road:

> *The reason why the number of people who are aware or willing to sell (at a right time) is limited is that most consumers are not managing their e-waste properly*
> *but simply store them at home, making the current pre-owned electronics market in short supply.*

This situation is supported by scientific sources. Ylä-Mella et al. (2022) integrated **several surveys conducted across the world and identified clearly that a majority of customers are less likely to hand over their used cell phones for reuse or recycling, but tend to store them in their homes.** This is not uncommon to be seen in any other portable electronic device category. According to Baldé et al. (2017), there are over 100 million used devices

stored in homes globally. The storage behavior should be perceived as an 'anti-green' behavior **because the product will depreciate quickly over time due to the acceleration of new product development,** and it could cause a lower possibility of the product being reused, and thus lower profitability for retailers to collect and sell. As a metaphor from Ylä-Mella et al. research (2022, p.10), **the consumer's storage decision is a "death sentence" that renders it wasteful.** So very often it might reach the worst situation (fate 3 in Figure 1.9): consumers store their devices so long that they are hard to be resold or reused to the next customer directly without any professional support (e.g. refurbishing, repair), finally, they have no choice but to dispose directly into the recycling or recovering systems with a lower circularity that costs more energy resources, or even worse, end up in landfills directly. Even so, there are still 23% of discarded e-waste economically viable for resale, either in its current condition or with moderate refurbishing or repair (WRAP, 2011).

On the contrary, A Swiss study conducted by Thiébaud et al. (2017) proves that, if consumers deliver their devices for reuse without delay, the reuse of electronics prolongs their lifetime by at least 30%. And the environmental benefits of extending the products' lifespan are prominent: **once the average lifespan of several common categories of electronics, including smartphones, gets extended in the EU by one year would save 4 Mt of carbon dioxide annually by 2030, which is equivalent to taking 2 million cars off the roads each year,** as European Environmental Bureau proposes (EEB, 2019). In general, the sooner a used device is processed for reuse, the higher value it would be recovered (Sabbaghi et al., 2015). **Hence, the ultimate goal is to motivate more people to behave in the best case (fate 1 in Figure 1.9) every time when any of their devices reach the EOU point with the help of Valyuu's services.** It is not only the best contribution to the environment, but also enables Valyuu to continuously collect more EOU CE with a higher level of profitability and circularity and grow its seller's market accordingly.
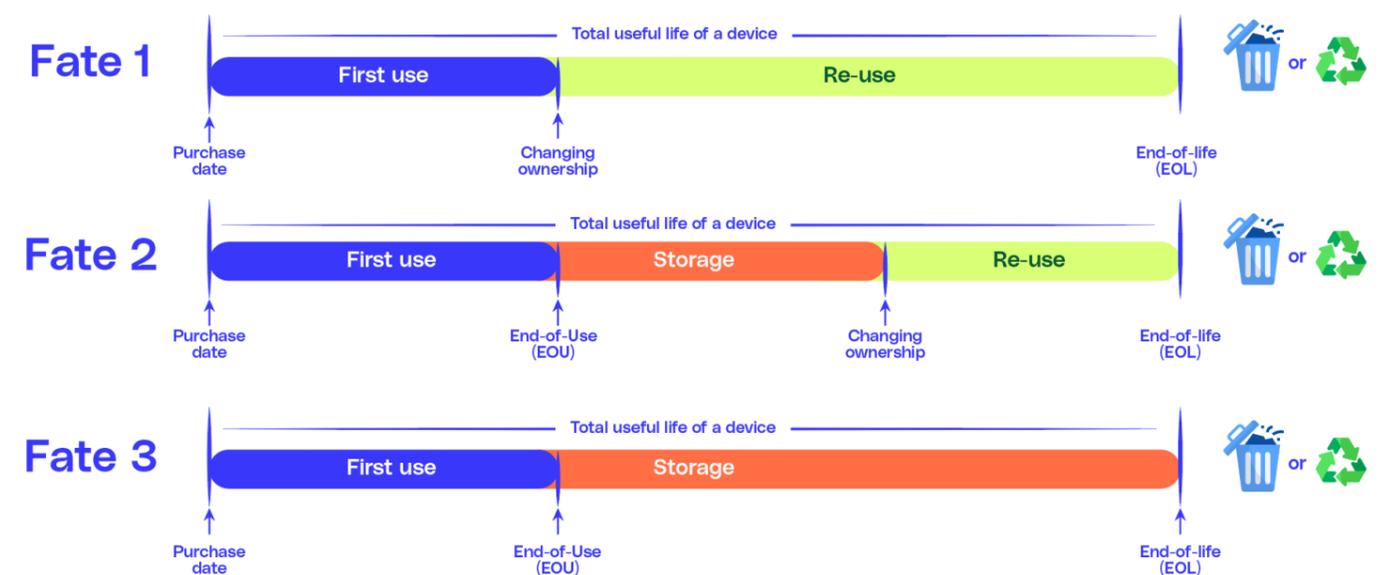


*Figure 1.9  Different fates of a device according to different storage and re-use time, as adapted from Ylä-Mella et al. (2022)*

# 1.4

## The research question and scope

### 1.4.1 The research question

Based on the above analysis, the **main research question (RQ)** is established as follows:

> *How might we grow Valyuu's seller market by identifying potential sellers (customers) who usually store\* their consumer electronics (CE) when the use ends and motivating them to hand over their End-of-Use (EOU) CE after the use ends for reuse through Valyuu's service?*

Then, the main research question was divided into several **sub-questions (SQ)** below:

    **SQ1:** What are the reasons behind customers' selling and storage behavior?

    **SQ2:** How should Valyuu identify different segments of potential sellers and which segments should be targeted first?

    **SQ3:** How should Valyuu adapt marketing materials and/or current services in order to motivate those target segments of potential sellers to hand over their EOU CE for reuse after the use ends through Valyuu's services?

    **SQ4:** In what ways can Valyuu approach those target groups of potential sellers?

    **SQ5:** How should Valyuu further grow its seller market in the long run?

### 1.4.2 The project scope

**The main scope of this project** lies within the Netherlands. As Market Development is the chosen growth strategy to start with, after conducting market segmentation and deciding on the main target groups (SQ3), the marketing and service adaptation (SQ4) should **start within Valyuu's current service scope** as mentioned before. But according to the outcome of consumer research generated later, Valyuu's planned products and services could be considered to be combined, also, completely new products and services still have the potential to be developed later in the process if they are necessary to best satisfy new target segments. When comes to the further development strategy (SQ6), it will be demonstrated in the roadmap, **the boundary will be expanded in order to bridge the future vision.**

*\*Note: The explanation of "usually store": from a general perspective of an individual customer using all his or her electronic products, when the customer normally stores most of his EOU CE in homes, even if he or she has very occasional experiences of selling, the consumer behavior is perceived to belong to "usually store".*

# 1.5

# The project approach

This project leveraged the Double Diamond design approach (Design Council, 2019), and touched upon **four main themes of activities**. Accordingly, **different outcomes were generated, which were the basis to draw interim and final conclusions of this project**.



**Discover** **Define** **Develop** **Deliver**

introduction

Understand the context, market and consumer behaviors

Define market segments, target groups, and the design brief

Ideation and evaluation for design solutions

Envision the future and reflection

**Activities**

*background investigation*

*context research*
*market research*
*literature research*

*consumer research (interviews)*

*consumer analysis*
*define market segments and the target group*
*define the design brief*
*synthesize insights*

*co-creation workshop*
*look for design analogies*
*initial concept development*
*final concept delivery*
*stakeholder validation*

*roadmap plotting*
*reach final conclusion*
*reflection*

**Outcomes**

The main assignment and main challenge

The research questions

Mapping of 10 important future scenarios

Competition circle

Company's strengths and weaknesses

Insights from academic literatures

Insights from consumer research

4 market segments

The target group: lazy ignorers

The design brief

Insight synthesis (empathy map)

Co-creation workshop

Design opportunities

Design guidelines

Design analogies

9 initial concepts

Final concept

Recommendation for improvements of the final concept

roadmap for further market growth

??? Final conclusions and recommendations

FINISH

# 1.6

# Conclusion

## The fact of e-waste :

**The amount of e-waste generated globally is growing at a faster speed**

**In the 10R circular economy hierarchy, the higher the greener**

**A large number of CE can still be reused (R3) and refurbished (R5)**

## What has been defined in thic chapter?

**The best product-market combination for Valyuu to step first:**
The Market Development strategy in the Ansoff Matrix.

**The main challenge:**
Consumers are not managing their e-waste properly but simply storing them at home.

**The main RQs and 5 SQs**

**Chapter**

# 2.

# Dive into the Context

This Chapter helps you understand the rooted reasons behind consumer behaviors. And it also provides a basis for the contextual elements considered in the subsequent targeting process in Chapter 5, and implications for later design interventions and implementation to deal with these external opportunities and threats, which is thus integrated into the list of design requirements in Chapter 6.

# 2.1
# The analysis procedure

Context factors such as trends, developments, states, and principles play an impactful role to shape people's behaviors and the company's external environment, which is the basis of answering the SQs from 1 to 3. In order to know it well, a context analysis was conducted. Here the DESTEP method has been used to collect relevant context factors from six essential topics that construct our society, which are *Demographic, Economic, Sociocultural, Technological, Ecological, and Political*.

Firstly, I divided two directions that need to be touched upon as they are the two themes of this project, including the direction of **electronic consumption behaviors** and **EOU storage behaviors**. After collecting enough relevant factors, I revised and prioritized the collected factors according to their relevance, happening momentum, and impact. Then I clustered those important factors across the DESTEP categories into several integrated scenarios. All of these clusters and sources can be found in Appendix B.

Finally, I categorized scenarios into opportunities and threats to Valyuu, and the detailed explanation of each integrated scenario, what is its meaning to this project, and a preliminary requirement for Valyuu to handle the scenario are as follows.

**Procedure of the context analysis**



| Context | Electronic consumption behaviors | | |
| EOU storage behavior |

**Divided three directions**　　　**Revised and prioritized**　　　**Clustered**
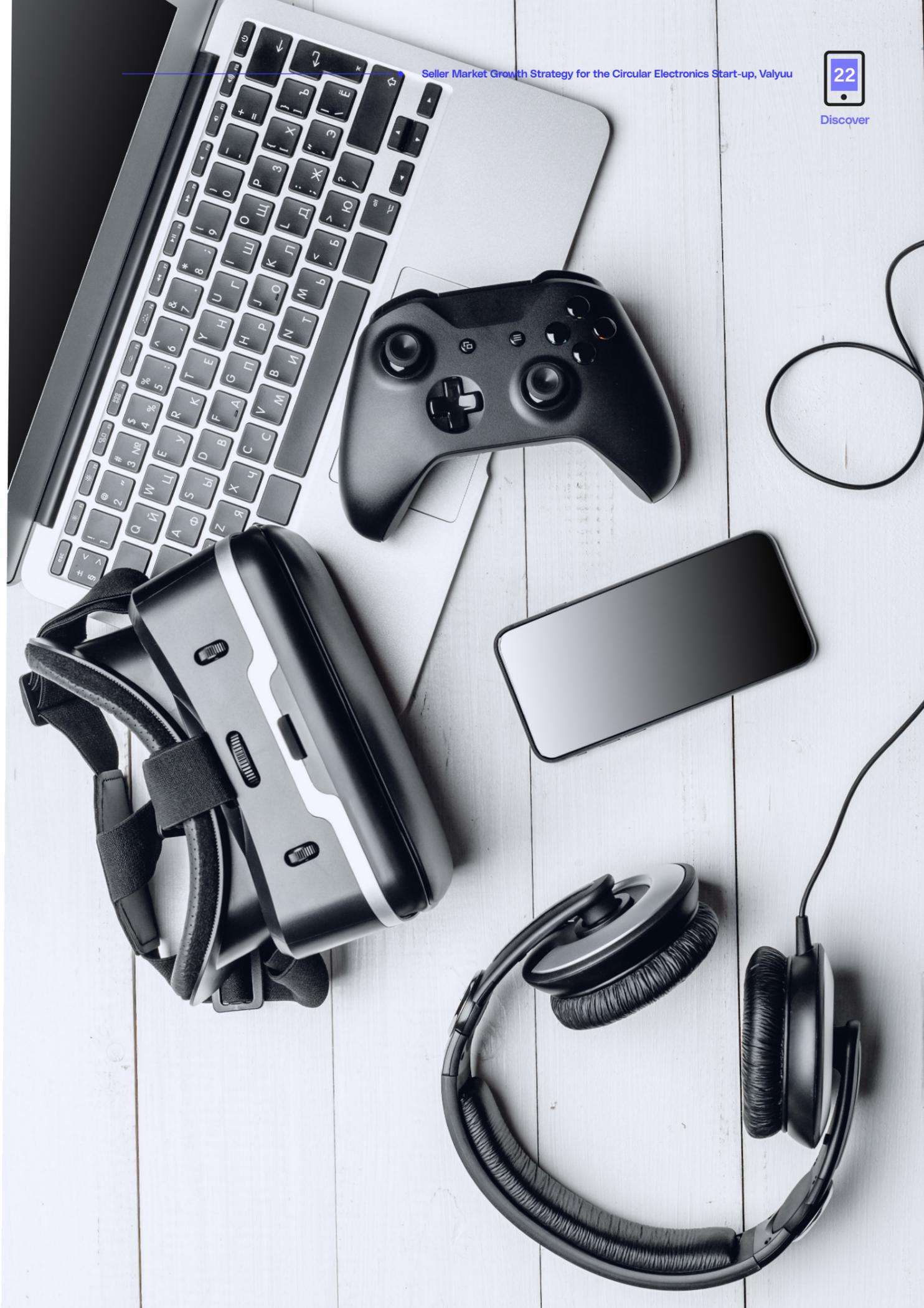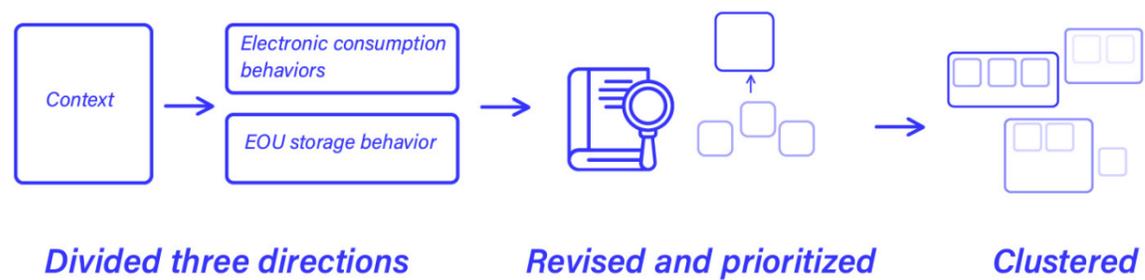
# 2.2

## The opportunities and threats

### 2.2.1 Opportunities

## [Overview of the Opportunities]

**1. The Dutch thrift tradition**



**2. The global thrifting fashion**



**4. Sustainability and circularity are well-acknowledged by Dutch residents**



**3. Consumerism is still widely rendered by manufacturers**

## [Specific explanations of opportunities]

### 1. The Dutch thrift tradition

Dutch people are usually "price loyal" rather than "brand loyal", for example, they are crazy about discounts. There is less conspicuous consumption in Dutch culture. "Living with your means" is highly encouraged while showing off your wealth is less popular. They usually divide money clearly with friends or family members as they are educated to be self-reliant financially at a young age. Also, Dutch people are really good at making the best use of their resources. So there is already a good thrifting foundation in Dutch culture.

#### ▪ *What does it mean to this project?*

Aligning with the insights identified from the literature review in Chapter 4, by Inghels & Bahlmann (2021), **Dutch consumers are most willing to hand in their EOU devices because of financial stimuli such as cash-back or discounts on a new device**.

#### ▪ *How can Valyuu handle it?*

This is a very interesting opportunity that can be combined with the global thrifting trend (scenario 2), meaning that **financial stimuli could be an attractive point for customers** to sell. This is useful when designing the reward system and marketing materials later.

### 2. The global thrifting fashion

Due to the economic turbulence in not only Europe in recent years, there is a huge global trend of recommerce. The pre-owned market is expected to grow dramatically in the next few years, even exceeding the size of the "new device" market.

#### ▪ *What does it mean to this project?*

Valyuu is luckily on this huge beneficial trend of recommerce.

#### ▪ *How can Valyuu handle it?*

**Capturing this trend timely** to do something unique is a matter of priority.

### 3. Consumerism is still widely rendered by manufacturers

Because the electronics market has become saturated, manufacturers highly rely on consumers to replace old devices so as to grow. So they build in **planned obsolescence** as part of their business model. Consumers are on a big trend of consumerism, and they should continuously replace devices in order to keep pace

with their peers. And the pandemic just boosted the demand for electronics even larger.

#### ▪ *What does it mean to this project?*

**Many consumers have greater attention to purchasing and replacing to newer devices**. So Valyuu still constantly has many potential devices to be collected in the following years.

#### ▪ *How can Valyuu handle it?*

**The moment when consumers pay attention to purchasing newer devices is exactly the time when they could potentially generate EOU devices.** Can Valyuu leverage this moment to capture their attention on EOU disposal and advertise itself?

### 4. Sustainability and circularity are well-acknowledged by Dutch residents

The Dutch government invests a lot to push the circularity and sustainability level in every industry, making it become a model for sustainable commitment globally. As for individuals, the circularity and sustainability concept is also common to be seen **in daily-life consumption scenarios**, and it has already become **a popular lifestyle** among Dutch residents.

#### ▪ *What does it mean to this project?*

Although the sustainable lifestyle has been well-acknowledged by Dutch residents, however, this lifestyle is more related to consumption scenarios such as **food consumption, daily energy consumption, or clothing consumption,** but less related to electronics consumption and e-waste. Specifically, **there is less relation between selling pre-owned electronics and sustainability.**

#### ▪ *How can Valyuu handle it?*

Can Valyuu **closely relate sustainability with selling pre-owned electronics**? Or can Valyuu try to (cooperate with the government if possible) to **educate people about the bad effect of storage behaviors**? But it is worth noting that educating the public usually takes a long-term, large investment and is hard to take effect immediately. Still, the effect would be extensive in the long run.

## 2.2.2 Threats

# [Overview of the Threats]

### 5. The mainstream of easy hoarding



### 6. Minor popularity of decluttering



### 7. The persistent "throwaway" social atmosphere



### 8. The staleness in electronics pre-owned market and collecting systems



### 9. The digital era leads to people's closer relations with electronics

[Specific explanations of threats]

### 5. The mainstream of easy hoarding

People are lazy by human nature, and fewer people care about decluttering or keeping clean all the time. But hoarding is just so much easier without giving it a thought, and it is also a common way for people to protect themselves against emergencies (e.g. a spare device). Also, for some kinds of stuff that can be recycled, such as cardboard or plastic bottles, people also tend to collect a bunch and sell them together at once.

▪ *What does it mean to this project?*
Hoard is the first choice by human nature that we inherit from our ancestors, making it hard to be changed immediately.

▪ *How can Valyuu handle it?*
It truly **requires Valyuu to provide a solution to be something unique or even rare so as to disrupt the rooted behaviors.**

### 6. Minor popularity of decluttering

There is a minor trend for decluttering due to the pandemic as people got "locked" at home without anything else interesting to do, but stare at their home and feel a mess of their room, then decide to declutter and sell their old stuff. This helped grow the professional organization to teach people how to declutter.

▪ *What does it mean to this project?*
**Decluttering is an essential time for people to think of the EOU disposal of their own stuff**. But decluttering is perceived to be tiring and boring by human nature.

▪ *How can Valyuu handle it?*
By taking inspiration from the pandemic and leveraging the minor decluttering trend, **can we make decluttering more urgent or interesting to do?** In this way, dealing with EOU electronic devices would be a prior need for consumers or something attractive to be done.

### 7. The persistent "throwaway" social atmosphere

Although sustainability is not uncommonly to be noticed in the Netherlands, it usually exists in the food and nondurable goods industries, such as plastic packaging. So being influenced by the global "throwaway" atmosphere, there is less sustainable awareness in the electronics industry. For example, globally, almost nobody perceives constantly replacing electronic devices or the "storage" behavior as anti-green behavior. Also, the "throw-away" culture is rooted. We constantly throw away trash every day, which results in consumers' less awareness and responsibility for EOU disposal in not only electronics categories.

▪ *What does it mean to this project?*
Because of the rooted "throwaway" culture, **people pay less attention to EOU disposal,** and it tends to take long-term investment to change their behaviors.

▪ *How can Valyuu handle it?*
**Combining it with the trend of sustainability** is something worth thinking of.

### 8. The staleness in electronics pre-owned market and collecting systems

Nowadays, **the idea of selling pre-owned electronics inherits from the 19th century or even earlier, such as thrift stores or consignment shops.** This kind of business was run well at that time because there weren't many products that depreciate quickly like electronics, but sometimes even got appreciated over time. **So the "storage" behavior didn't really matter that much**. Also, electronics are a special category of products as many potential failures cannot be easily identified at once without professional knowledge. So this results in a question: **Is the "ancient" business model still suitable for the emerging electronics category?** Also, the current collecting system is far from complete. Furthermore, **many scandals exist** in the electronic pre-owned market due to a lack of supervision and control.

*What does it mean to this project?*
There hasn't been disruptive innovation in the electronics pre-owned market in recent years, which **results in consumers' outdated perceptions toward this market**.

*How can Valyuu handle it?*
Can Valyuu **take experiments to set up a new industry standard, become a market leader** and **form a "selling trend"** for consumers to pursue in the following years?

### 9. The digital era leads to people's closer relations with electronics

Today we are embracing a digital era. Fueled by the pandemic, electronics become even more of our indispensable life and working partners. In the future, this scenario would be even more common to be seen: People cannot live without electronics; and the relations between humans and electronic devices would be even deeper, for example, some devices could be used as an alternative or extension to our bodies.

▪ *What does it mean to this project?*
Many electronic devices are indispensable for consumers. So almost every person is Valyuu's potential seller. And electronic devices tend to become a close partner and the extension of the human body even deeply in the following years. **This makes people attached even more to their devices and becomes even harder to get rid of**.

▪ *How can Valyuu handle it?*
**Can we illustrate to consumers that selling is doing a favor for others in need**, which has a greater beneficial effect for others than keeping it yourself, just like the analogy of organ donation?

# 2.3
# Conclusion

## Specific conclusions from this Chapter :

*1. Overview of handling requirements for Valyuu, coming from opportunities and threats :*

**Opportunities and threats** ▷ **Handling requirements**

*Provide good-quality financial stimuli*

*Cooperate with others who major in the "shopping" scenarios, to Leverage purchasing moment to capture customers' attention on EOU disposal and advertise itself*

*Provide unique and disruptive solutions to take the lead and set up a new industry standard*

*Telling a story about the importance of selling, including benefits for sustainability and other people in need.*

*Contribution to other Chapters :*

▷ For Chapter 3 to be faced with the company's strengths and weaknesses so as to derive implications for design from the business perspective.

▷ For Chapter 5 to choose the target group.

▷ For Chapter 6 to build up the list of design requirements.

## Answer to the research questions

✔ **SQ1:** This chapter provides rooted contextual reasons behind consumers' behaviors.

✔ **SQ2:** The integrated context scenarios provided references to one of the criteria of assessing the target group - the criterion of *Marco trend.*

✔ **SQ3:** The handling requirements were taken into consideration when setting up the design requirements.

# Chapter

# 3.

# Scan the Competitiveness

From the perspective of the company itself and the competition in the market, this Chapter provides you with a general understanding of what capabilities and resources Valyuu has or is weak in when handling the requirements put forward by those opportunities and threats analyzed from the context analysis in Chapter 2. These insights and interim conclusions serve as a basis for the elements considered in the subsequent targeting process in Chapter 5 and were used as instructions to plot the further market growth roadmap in Chapter 10.

# 3.1

# Mapping of the competitive environment

The first step to mapping competitors is to **define the market**. Christensen (2007) proposes a Job-To-Be-Done (JBTD) framework, and the essence of this theory is that consumers 'hire' companies' products or services to get a certain job done. In this framework, the focus of the business will shift from solution-oriented, such as the product attributes that can be easily copied by competitors, to problem-oriented, and thus profoundly think of the value it can deliver to meet consumers' needs (Christensen, 2007). **This concept can be well used to define the market scope to include a wider variety of competitors.**

Then, by using the JBTD, Valyuu's scope of competitive environment can be defined as **"turning waste into valuable stuff".** Based on this, by taking Valyuu's own definition of its direct competitors into account, the competition circle with Valyuu at the center can be mapped (Figure 3.1).

**By using this circle, comparisons of prominent capabilities and resources between Valyuu and its competitors could be intuitively conducted.** For example, it is clearly noticed that there are some famous **market players** existed. Some of them are in the inner circle, which means they are direct competitors of Valyuu, because they have already provided the exactly same **product form** as Valyuu, such as *Apple, Marketplaats,* and *Facebook Marketplace*. Some others who haven't directly competed with Valyuu are in the outer circle, meaning they are in the product category competition or generic competition, such as *Coolblue, MediaMarkt,* and *Bol*. **Their most evident capabilities and resources are their brand value and reputation, as well as their highly-developed business network in the electronics field.**

On the other hand, Valyuu actually came up with an **innovative service process and business model** that other competitors rarely have. Also, Valyuu has **the fastest payment speed** among its competitors, as well as **the highest selling price** second to those online free markets, namely *Marketplaats*, and *Facebook Marketplace*.

After these brief comparisons, Valyuu's relative strengths and weaknesses emerged as follows.
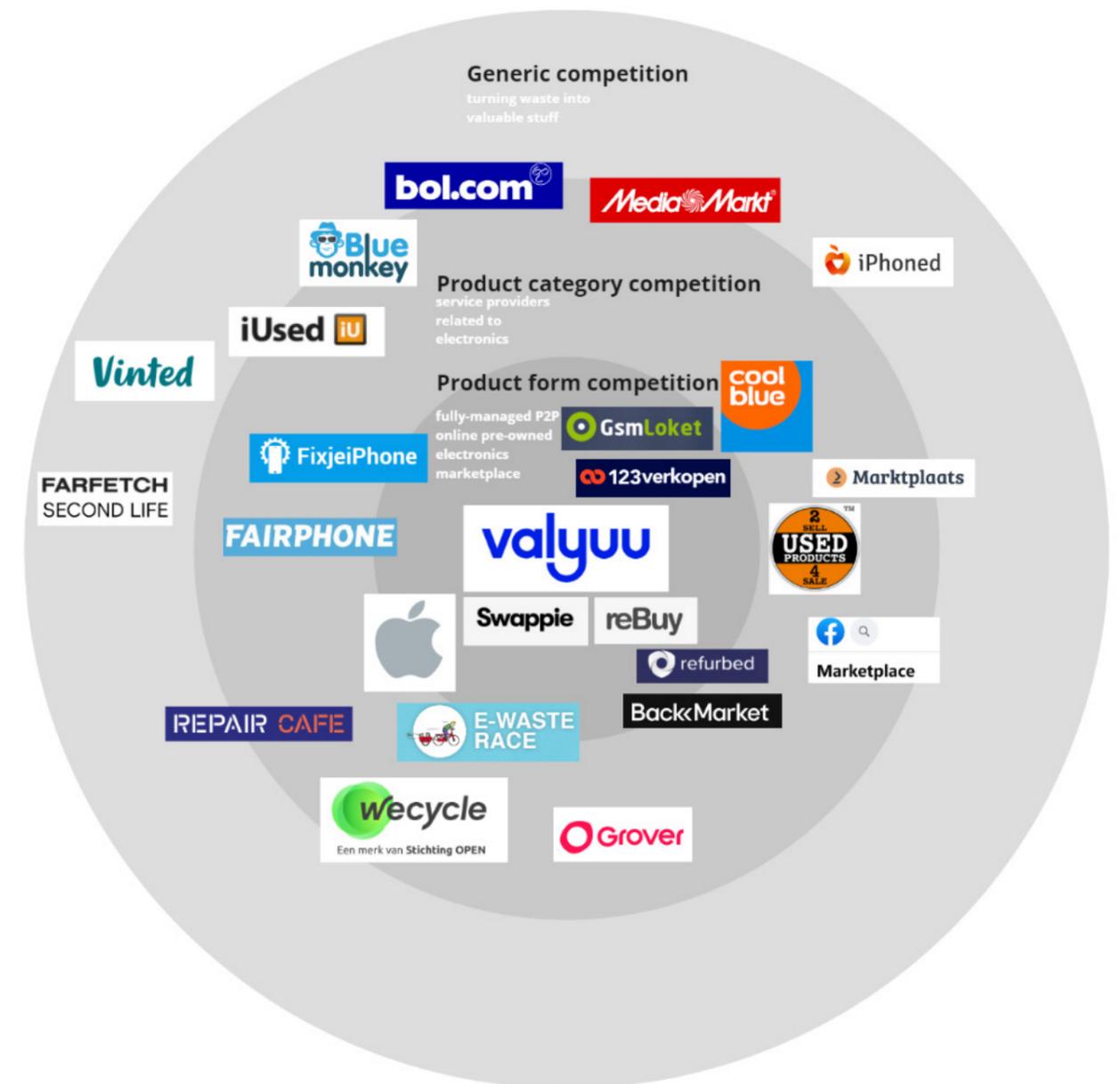


Figure 3.1  The competition circle of Valyuu

# 3.2

## Company's strengths and weaknesses

By comparing Valyuu's resources and capabilities with the identified competitors' in the competition circle above (Figure 3.1), Valyuu's relative competitive strengths can be identified by using the VRIO model, and its weaknesses also emerged accordingly (see Appendix C about how it was done and its specific result).

**(1) Some worth-noticing strengths:**

Compared to other competitors, **one of the most noteworthy strengths is its innovative C2C business model and services to link sellers directly to the buyers**, so that there are no other intermediates that drive up the commission fees in between. In this way, **sellers can get a higher amount of money in return at a faster speed, and a better selling experience with less hassle.** At the same time, buyers can purchase devices with reliable and guaranteed conditions and cheaper prices. This also adds up to the **convenience** of Valyuu's services. Especially compared to Marketplaats, and Facebook Marketplace, selling devices at Valyuu does not need to communicate with buyers or deal with any after-sale issues.  On the other hand, compared to those giants, **Valyuu as a start-up is open to and ready to iterate and innovate all the time**. Based on its already innovative service in the market, it can still constantly adapt its strategies and services according to any latest insights into both the market and consumers that are worth to be considered.

**(2) Some worth-noticing weaknesses:**

Valyuu's **existing service scope and variety are limited compared to many of its competitors**, which shuts out some customers who don't have corresponding devices. Also, **it currently has less collaboration with other organizations resulting in its weak business network**. Furthermore, Valyuu's **brand story, recognition, and reputation are also generic without memorable points**. However, Valyuu was working on improving it already at the same time as this project going, and the newer version of the brand guide (see Confidential Appendix) was integrated into the final concept later.

To summarize, **the above-mentioned strengths and weaknesses were essential to meet the requirements for leveraging opportunities or avoiding threats proposed in the last Chapter**. Please see the next page for specific conclusions.

# 3.3
# Conclusion

## Specific conclusions from this Chapter :

**1. Strengths and weaknesses VS handling requirements from opportunities and threats**
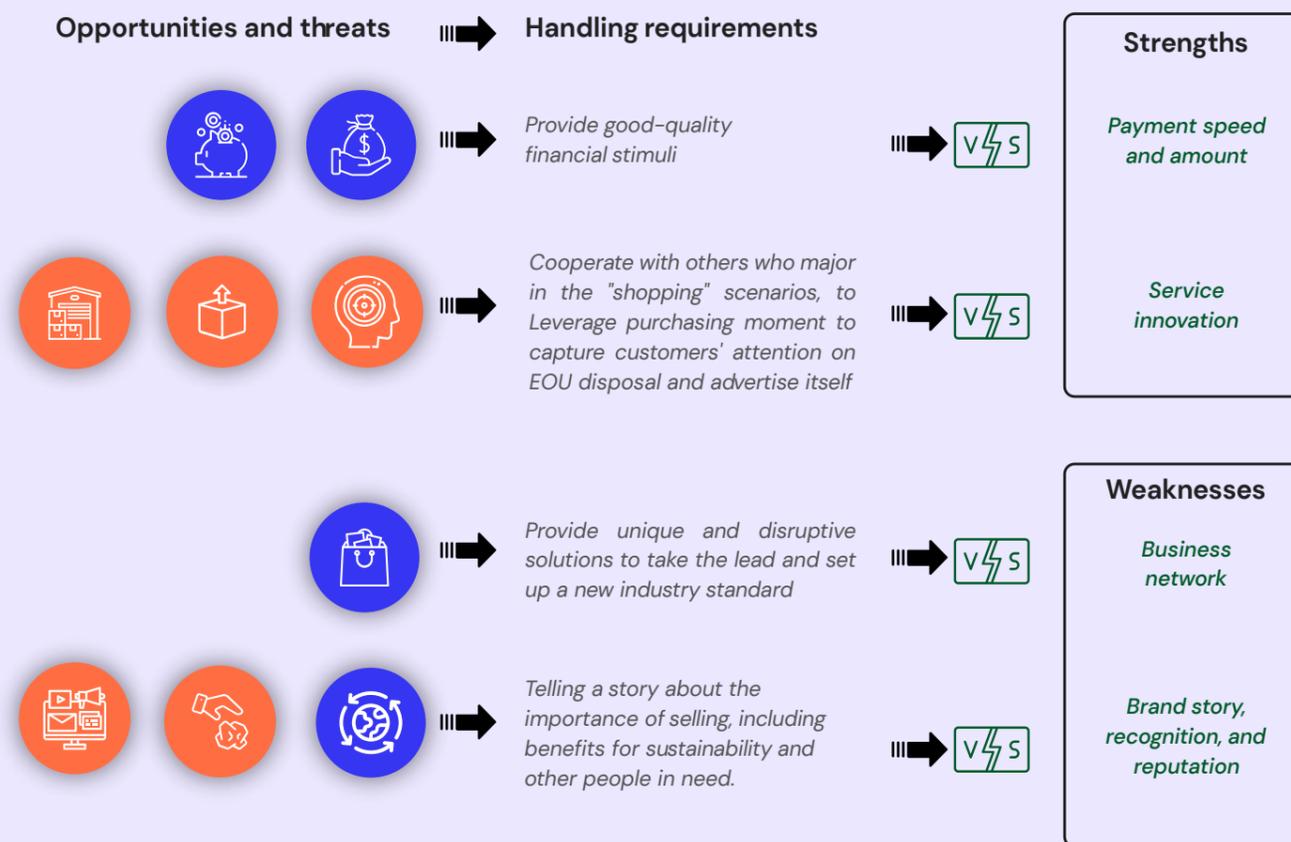


**Contribution to other Chapters :**

For Chapter 6 to build up the list of design requirements.

For Chapter 10 to be taken into consideration in each horizon when plotting the roadmap for further market growth.

*Specific suggestions for developing strengths and making up for weaknesses when growing the seller market :*

*(1) Take advantage of the following prominent strengths*
**Payment speed and amount:**
It enables Valyuu to capture the thrifting trend timely and cater to Dutch thrift tradition
**Service innovation:**
The context scenario calls for unique and disruptive solutions in the market field of pre-owned electronics.

*(2) Make up for the following weaknesses actively*
**Priority1: Expand the business network as soon as possible**
For example, advertising in some online or offline shopping stores for electronics like *Coolblue* and *MediaMarkt*. Besides, it is also important for Valyuu to try to **network with those giants in the competition circle so as to turn the rivalry into collaboration in an early stage.**

**Priority2: Set up a good brand story, recognition, and reputation**
Valyuu has already noticed this point and started to improve its brand in the meantime when this project was undergoing, and this would be paid more attention to in a later business stage.

## Answer to the research questions :

☑ **SQ2:** It **provides references to one of the dimensions of assessing the target group** - the dimension of *competitive position*, including three specific assessing criteria - *opportunities for competitive advantage, capabilities and resources, and industry attractiveness*;

☑ **SQ3:** It contributes to **building up the design requirements**;

☑ **SQ5:** It provides essential suggestions for Valyuu to consider throughout the process of growing its seller market.

**Chapter**

# 4.

# Literature Review

This Chapter gets you to know about existing answers to part of the sub-research questions, including reasons behind consumers' storing behaviors, segmenting and targeting methods, and theories and toolkits in the field of DfBC. This helps set up a theoretical foundation for the main assignment of this project. In the end, the current research blank that could be filled by this project was identified, which implies that the business and academic values could come together in this project.

# 4.1

# Market segmentation and targeting strategy

### 4.1.1 Market segmentation

Along with the Market Development strategy in the Ansoff Growth Matrix, as stated before, a core activity for Valyuu to grow its market is to conduct market segmentation. Academic literature widely covers this field, and there are different points of view regarding the definition of the market segment. The most relevant one to this project is that a market segment is a group of individuals or organizations who may share the same interests, characteristics, and needs (Camilleri, 2018). **He also summarized five groups of variables for market segmentation, which are demographic, geographic, psychographic, behavioral, and product-related factors.** As mentioned before, the main obstacle for Valyuu to grow is consumers' storage behaviors. **So, understanding which groups of consumers sell or store their devices according to which kinds of reasons could help Valyuu resolve obstacles so as to grow.** Therefore, the main segmenting variables will be the combination of consumers' behavioral and psychographic factors in the EOU stage.

On the other hand, Dibb (1998) and Camilleri (2018) stress that effective segmentation is required to be **measurable, substantial, accessible, actionable, and stable**, and knowing these success factors in advance and assessing the segments' attractiveness afterward is essential to successful segmentation. This is exactly the targeting process, as it could help the company better understand customers' expectations, and **tailor its marketing activities and/or services more accurately and responsibly to customers' liking, which allows the company to exploit its capabilities and resources efficiently** (Camilleri, 2018). Hence, in this project, in order to make consumers' behavioral and psychographic variables more measurable, a few existing behavioral models will be further implemented, which will be explained in the next part of this chapter. And the targeting strategy for how to assess and pick up the target segment will be explained as follows.

### 4.1.2 Targeting

After completing the segments, the company should set up the criteria for market targeting, which is an evaluation process of each market segment's attractiveness and

**picking up one or more segments to enter first** (Kotler & Armstrong, 2010). Finally, the company should customize its offerings in order to satisfy each of the target segment.

As for the targeting criteria, different methods and theories tend to have different angles to look at it. One widely-acknowledged and ultimate goal for targeting, as mentioned by Camilleri (2018) is to **identify the target groups that are the most lucrative, high-yield, and hold potential for growth**. Based on this, the Market Attractiveness and Competitive Position Matrix proposed by Walker & Mullins (2014) is supposed to be an appropriate guideline for the targeting process in this project, as it has a relatively strict rating system to assess essential criteria in the two most important dimensions for targeting, where Valyuu also pays great attention to (Figure 4.1). Furthermore, **its comprehensive assessment enables outcomes from different research methods involved in this project to be taken into consideration as a whole, including context, consumer, company, and competitor analysis**.

*Competitive Position*

|  | Weak | Medium | Strong |
|---|---|---|---|
| **Strong** | Possibilities | Secondary targets | Prime targets |
| **Medium** | Avoid | Possibilities | Secondary targets |
| **Weak** | Strongly avoid | Avoid | Possibilities |

*Figure 4.1  The Market Attractiveness and Competitive Position Matrix for assessing the target segment*

# 4.2
# Design for behavior change (DfBC)

In order to find out a more measurable behavioral model to conduct market segmentation, and figure out existing methods to design interventions for changing consumers' behaviors, theories, models, and toolkits in the field of design for behavior change (DfBC) are explored. Mainly according to an overview of approaches in this field provided by Niedderer et al. (2016), several models and toolkits are picked up for this project as follows.

## 4.2.1 Behavior models for segmentation

To enhance the measurability of behavioral and psychographic variables for segmentation, the Fogg Behavior Model (FBM) for persuasive design (Fogg, 2009) is used as the main model for market segmentation. It contains three essential success factors that determine whether people would achieve the defined target behavior, and provide design guidelines by manipulating the factors to enable the achievement of the target behavior (Figure 4.2). And the general **target behavior** of consumers for this project is **handing over their EOU electronic devices for reuse through the pre-owned market's services**.

To explain the three essential factors, the Motivation factor on the vertical axis means the result of the balance between different motivators and demotivators to act the target behavior. In this project, different groups have different combinations of motivators and demotivators for handing over their EOU devices, such as money incentives and data security. As for the **design guideline** for manipulating motivation, Fogg set up a framework that contains three core motivators with two sides each. They are pleasure / pain, hope / fear, and social acceptance / rejection.

On the horizontal axis is the second factor, namely Ability. It is summarized into six elements that enable people to act on the target behavior. In this project, it means the time, money, physical effort, brain cycle, routine and social deviance that consumers need to put in when handing over their devices. Fogg describes the six parts as "links in a chain"; if any single link breaks, then the chain fails. As we are fundamentally lazy by human nature, a product that requires people to learn a lot of new things is hard to win success. Therefore, when **manipulating factors in the ability dimension**, increasing people's ability is not about training people for improvements, but simplifying the behavior, which means making the target behavior easier to achieve. Add that,

ignorance, including lack of awareness and personal knowledge in the related fields, could be barriers to performing the target behavior (Gifford, 2011; Verplanken, 2018). For instance, the action of handing over EOU devices to the pre-owned market for reuse will never happen if the person does not know to whom and how they can hand them in.

The third factor is the Prompt, also named Trigger, which is something that **alerts people to perform the target behavior NOW**. It is highly **required to be designed well-timed and leverage the right channels.** An opportune moment for setting a prompt is when the motivation and ability put people above the activation threshold.

Overall, the level of the three factors in the FBM will be used as the final market segmentation variables, which will be further explored in the consumer research part of Chapter 5. While the design suggestions in the FBM for each factor will be used as one of the guidelines in the design phase.
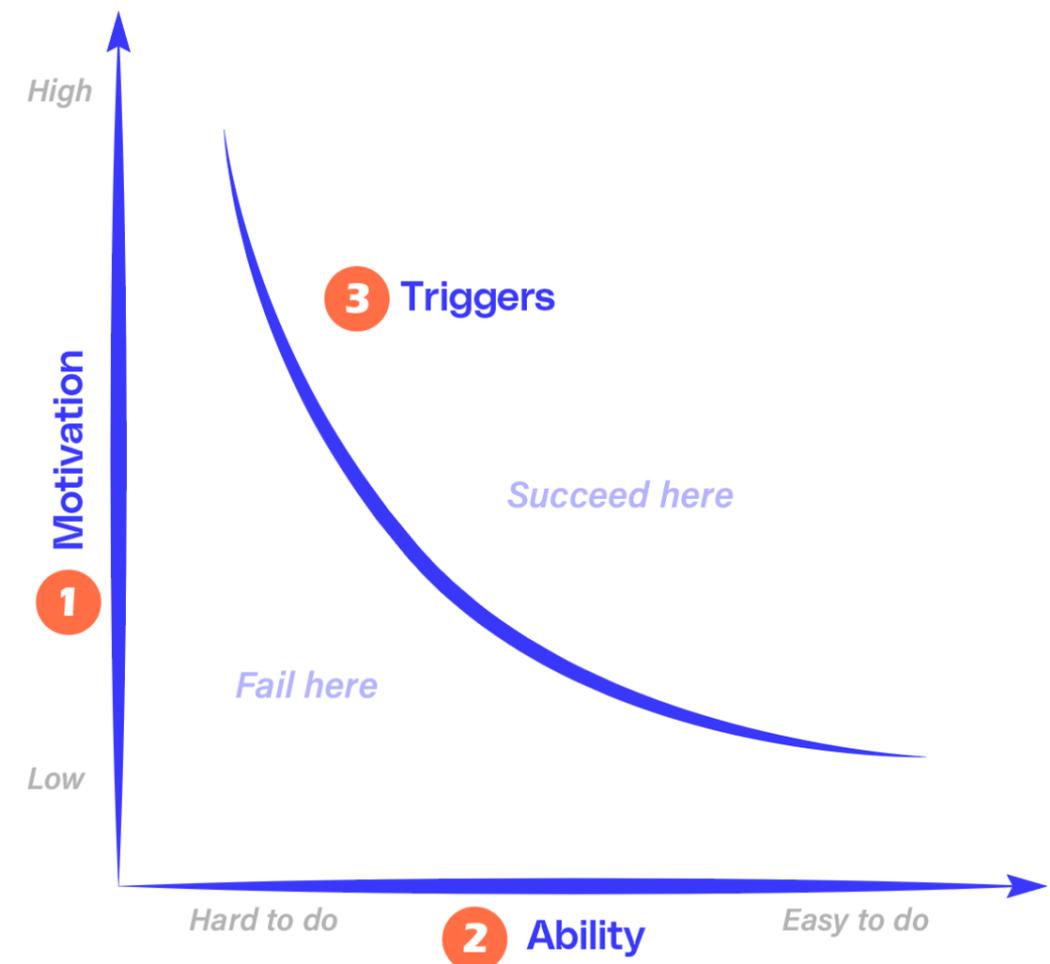


Figure 4.2  Fogg Behavior Model (FBM)

## 4.2.2 Toolkits for designing interventions

Except for the FBM will be used another time as one of the guidelines in the design phase, a toolkit that could be helpful for this project was picked up, namely **Mental Notes** (Anderson, n.d.; see Figure 4.3). It is a card deck that offers more than 50 inspirations from the psychology field, such as "loss aversion" and "need for certainty", about stimulating behavior change via pleasant and positive interactions with objects or environments (Anderson, 2011). As **psychological elements are a crucial part that can be manipulated to determine people's EOU behaviors and are also closely related to the design factors in FBM, this toolkit will be used as the main reference in the analysis phase of consumer research, and brainstorming tool in the ideation phase**.
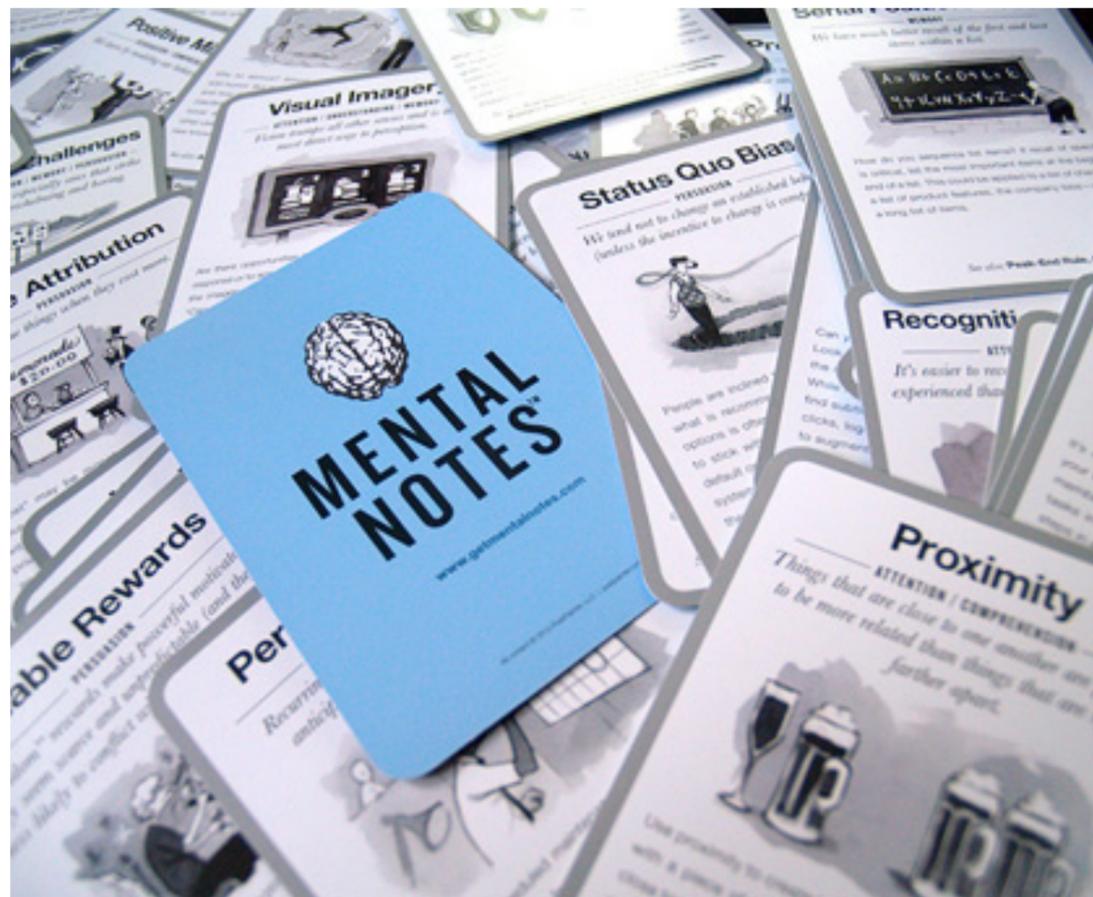


*Figure 4.3  The Mental Notes toolkit*

## 4.3.1 Electronics consumption behaviors

The **main focal scope of behaviors in this project is the part of EOU behavior**, however, Sabbaghi et al. (2015) pointed out that getting adequate information about consumers'

purchase and usage behaviors toward electronics **could increase the understanding of the used devices' quality and quantity**, also, it has the potential to increase the profitability of the collectors. Therefore, literature related to electronics consumption behaviors **was also discovered roughly as it supports understanding EOU behaviors more deeply.** Among them, some key information was summarized below, while a detailed explanation of this topic could be found in Appendix D.

To summarize the reviewed literature on this topic, there are two main reasons for consumers to replace their electronic devices according to Proske et al. (2016) and Sabbaghi et al. (2015):

(1) Replacement due to the desire for the "new";
(2) Replacement due to technical failures.

Therefore, a lot of consumers replace their devices before they have any failure, which means most of the EOU devices generated by them are in relatively good status. As for those devices that have technical failures, a broken display accounts for 52% of the most common damage, while a weak or broken battery accounts for 40% (Proske et al., 2016). These could be easily fixed by Valyuu itself or its refurbishing partners at a low cost. **Overall, this kinds of information support the feasibility of Valyuu's service, because most EOU devices generated by consumers could be directly reused or reused after a tiny refurbishing process.**

However, it is noticed that **some more information about consumers' attention and preference levels towards electronics is lacking, which is essential for Valyuu to look for appropriate communication channels with customers later. So this topic would be further discovered in the consumer research part of Chapter 5**.

## 4.3.2 Reasons behind storage behaviors

As mentioned before, a large population of consumers stores their devices for a long time after the EOU point, which is t**he main challenge** for Valyuu to grow its market. And the storage behavior is not a positive behavior that supports circularity and sustainability. By contrast, the behavior of handing it over for reuse is perceived as a greener behavior. **In fact, researching consumers' storage behavior, the actual reasons behind it, and how to eliminate this behavior has become a popular topic in the academic world in recent years.** Here are some important facts pointed out by the literature as follows.

**(1) The incompleteness of existing collecting systems and infrastructures**
The **lack of incentives** (Borthakur & Govind, 2017; Inghels & Bahlmann, 2021), **the incompleteness, and the inconvenience of the current systems and infrastructures** (Ibanescu et al., 2018; Wilkinson & Williams, 2020) are actual flaws to be blamed for. Also, less communication about collecting was conducted between the current systems and consumers. **Several sources point out the lack of information provided to consumers,**

**which results in their lack of knowledge and awareness**. For example, consumers have little knowledge about reuse channels for electronics, or they **even don't know whether these products are wanted by others** (Brook Lyndhurst, 2009, 2011). Ylä-Mella et al. (2022) and Cooper (2004) consistently reveal that **consumers do not always know how to deliver for reuse when they no longer want the device.**

### (2) Consumers have less willingness and sense of responsibility of returning devices for reuse

Beyond the flaws in existing collecting systems, **consumers do not appear to want to take responsibility for reuse** is another essential barrier that shouldn't be ignored (Cox et al., 2013).

There is much research across the world focused especially on the storage behavior of smartphones. For example, more than 50% of participants around the world mention that they store their devices because they **want to keep them as an emergency spare**, and another majority of people just **have no idea how to deal with them** (Ongondo & Williams, 2011; Ylä-Mella et al, 2015; Wieser & Tröger, 2018). And a very minor group of people want to keep using the spare part of the device or collect the device **because the old gadget has collective values** (Ongondo & Williams, 2011; Wilson et al. 2017) Furthermore, a piece of Japanese data reported by Murakami et al. (2010) shows that in 1996, more than half of mobile phones were immediately handed in for recycling while only 20% were kept at home, but nowadays, the situation is completely reversed. Murakami et al. (2010) explain this situation as **mobile phones are no longer merely phones to us, but also have multiple extra functions, such as storing data, taking photos, and getting connected with others.** Therefore, **data security, second-hand selling price** (Sabbaghi et al., 2015), **personal attachment and memory, and the high initial purchase price** (Ylä-Mella et al., 2022) are also factors that influence consumers' storage behavior. This can also be seen in other categories of electronic devices nowadays. Especially under the pandemic in recent years, we highly rely on them every day, so they are gradually attached to additional meanings by us. This was already pointed out by the context analysis in Chapter 2 (The digital era).

**Specifically, regarding smartphone storage in the Netherlands**, the situation is almost the same as researched by Inghels & Bahlmann (2021). While it is noteworthy in this study that **financial stimuli** such as cash-back or discounts on a new device have the **highest potential to motivate Dutch users to hand over their devices for reuse, as already mentioned in the context analysis of Chapter 2.** And **the second highest stimulus is by providing services that facilitate the takeback process;** however, the pro-environmental stimuli, such as the demonstration of ecological contribution or what is done with the collected devices, do increase their motivations, but not as high as the previous ones (Inghels & Bahlmann, 2021).

To summarize, although all of the research results above have a specific focal scope of

the category of electronic devices, especially smartphones, most of them have scalability into other categories that we commonly use. So these can be references and the basis for studying the storage behavior in other electronics categories and would be referred to in the consumer research part of Chapter 5.

## 4.3.3 The research blank

Among all of the research mentioned above, Sabbaghi et al. (2015) suggest a direction for further research is to explore **some deeper reasons behind storage behavior and figure out how to accordingly control the storage time and optimize the EOU system for the sake of a higher level of profitability and sustainability.** Similarly, Ylä-Mella et al. (2022) suggest **a gap for future research** is to explore **what conditions could encourage people's willingness to hand over their devices for reuse.** And these research blanks will be explored further in this project and be filled by research insights and design solutions. Also, it is noteworthy that the research blank is aligning with what Valyuu wishes the answer for as stated in Chapter 1, so this is where the academic and business values come together.

# 4.4
# Conclusion

## Specific conclusions from this Chapter

1. The **FBM** as market segmentation model.
2. The **Mental Notes** would be used as references and inspirational sources later for consumer analysis and ideation;
3. The **Market Attractiveness and Competitive Position Matrix** as an assessment guideline for selecting the target group;
4. **Reasons behind storage behaviors** from existing literature (the Figure below)
   The scope of the literature: across the world, including the Netherlands.

**The research blank :**
Explore deeper reasons behind storage behavior;

Optimize EOU services to encourage people's willingness to hand over their devices for reuse with as less storage time as possible.

**The research blank is aligning with what Valyuu wishes the answer for, so this is where the academic and business values of this project come together.**

| The incompleteness of current collecting systems and infrastructures | Consumers have less willingness and sense of responsibility of returning devices for reuse | |
|---|---|---|
| | **Majority** | **Minority** |

| lack of information provided | Incompleteness and inconvenience of current systems and infrastructures | lack of returning incentives | *Reasons why they do not return for reuse* | lack of awareness | lack of responsibility | lack of knowledge | concern about data security | keep to use the spare part | old technology/ gadget is collective |
|---|---|---|---|---|---|---|---|---|---|
| | | | *Reasons why they want to store* | want to keep as an (emergency) spare device | the high initial purchasing price | personal attachment and memory | | | |

*Note: the majority and minority clusters were mapped according to quantitative results from the literature.*

### Contribution to other Chapters :

▷ For Chapter 5 to further build on and know clearly the contribution of the consumer research.

## Answer to the research questions :

✓ **SQ1:** Several reasons concluded from the existing literature provide answers to the question of **why customers tend to store their electronic devices**;

✓ **SQ2:** Several theories and toolkits from the literature **provide guidelines for the market segmentation and targeting process**.

# Chapter

# 5.

# Explore Consumer Behaviors and Market Segmentation

This Chapter brings you eye-opening reasons for selling and storing electronic devices among Dutch consumers and their corresponding market segments. And give you a clear illustration of who would be the target group and why for the later design stage.

# 5.1
# Consumer interviews

## 5.1.1 The purpose, focus, and goal

The **purpose** of the consumer research is also to answer the research questions from 1 to 3. Much previous academic research reviewed in the last Chapter was conducted by using surveys, while this project would be conducted through in-depth interviews, which could help elicit deeper levels of understanding of consumer behaviors and fill in the research blank. And **the main focus** would be the behaviors and thoughts in the EOU period, but as stated in the literature review that understanding purchase and usage behaviors towards electronics support the understanding of EOU behaviors, and as concluded that there should be some more information about consumers' attention and preference levels toward electronics, which could help Valyuu to **look for appropriate communication channels of marketing with customers later. So this topic was also touched upon as a minor focus as well.**

Accordingly, there are **three main goals** for the interviews:

(1) understand the deep **reasons behind consumers' selling and storing behaviors**;

(2) understand consumers' **ownership, attention, and preference situation toward electronics.**

(3) based on the Fogg behavior model (FBM) and the target behavior that is defined before, to understand what kind of people have what kind of **homogenous characteristics** of ability, motivations, and triggers that result in their similar EOU behaviors of storage or selling, which **indicates the possibility of categorizing them into the same segment**.

## 5.1.2 Setup of the interviews

In order to have a basic understanding of consumers' behaviors, and find out accurate topics and sampling strategies for the s**emi-structured interview**, a round of **unstructured interviews** with around ten people was conducted beforehand. After that, I noticed current frequent sellers mostly have a great preference for electronics, while people who seldom sell but usually store pay less attention to electronics. T**hen I temporarily named people who relatively have more preference and attention for electronics as electronics enthusiasts, while the other group as average people.**

However, I noticed that not every seller is an electronics enthusiast, and not every electronics enthusiast sells their devices frequently. Hence, I set up a **criterion-based sampling** (Palinkas et al., 2015) for the semi-structured interview (see Table 5.1). First of all, they should currently live in the Netherlands, and another two criteria are :

(1) whether they have (usually) sold their devices
(2) whether they have preference and attention to electronics.

And the quota of participants in each group is divided equally. Besides, a human-centered perspective will make the result more beneficial, and exploring their ownership situation of electronics is also one of the minor goals of the interview. So it is not necessary to sample participants within the scope of Valyuu's current electronics

| Criterion 1: Whether they would sell | People who (usually) sell | | People who seldom sell (but usually/sometimes store) | |
|---|---|---|---|---|
| Criterion 2: Whether they prefer electronics | Digital enthusiast | Average people | Digital enthusiast | Average people |
| **Quota** | 4 | 4 | 4 | 4 |

*Table 5.1  Sampling criteria and quota for the semi-structured interview*

Therefore, based on the directions and theoretical foundation derived from the literature review in the last Chapter, two versions of **the semi-structured interview guides** were prepared: **one for the seller, to know why they sell as benchmarking; the other for the non-seller, who is the main researchable group for this project, to know why they don't sell.** (see Appendix E). Finally, by combining the **convenience and snowball sampling methods with the sampling criteria**, 16 participants were successfully recruited (see Table 5.2). Among them, two sellers (P7 and P8) come from Valyuu's current frequent seller group invited by email, the rest of the six sellers come from other platforms such as *Facebook Marketplace* and *Marktplaats*. The interview lasted 45mins each on average and was conducted via *Zoom* or *Teams* with the audio record. During the interview, some notes were taken as well.

| Criterion 1: Whether they will sell | People who usually sell | | People who seldom sell (but usually store) | |
|---|---|---|---|---|
| Criterion 2: Whether they prefer electronics | Digital enthusiast | Average people | Digital enthusiast | Average people |
| Quota | 4 | 4 | 4 | 4 |
| Participants | P1 | P5 | P9 | P13 |
| | P2 | P6 | P10 | P14 |
| | P3 | P7 | P11 | P15 |
| | P4 | P8 | P12 | P16 |

*Table 5.2  Sampling results of interviewees*

### 5.1.3 Data analysis

During the analysis phase, the **qualitative content analysis** (Gläser & Laudel, 2013) method was used. So the analysis was conducted through the following four steps: Firstly, I listened back to the recorded audio of the interviews, extracted quotes, and made comments on the quotes; Secondly, quotes are clustered into categories. Then the categories were revisited and modified by being broken down or integrated if necessary. Finally, the relationships between categories were revealed by visual maps. All the materials in the process can be found in Appendix F.

# 5.2
# Preliminary segmentation and highlights of insights

After analysis. It is surprising to find out that **consumers' attention and preference levels toward electronics are not closely related to their EOU behaviors.** This means an individual who doesn't have particular attention or preference for electronics, can also sell his devices most of the time when they are obsoleted; while an electronics fanatic or amateur can usually store his devices due to various reasons, although the percentage is estimated to be not that high. Therefore, **the criteria (2) in Table 5.1** would not be one of the variables for market segmentation but became a general principle for Valyuu to access its sellers, which will be explained later. Then, only **the criteria (1) in Table 5.1** would be taken into consideration as one of the main variables for market segmentation.



**Current Sellers**       **Current Hoarders**
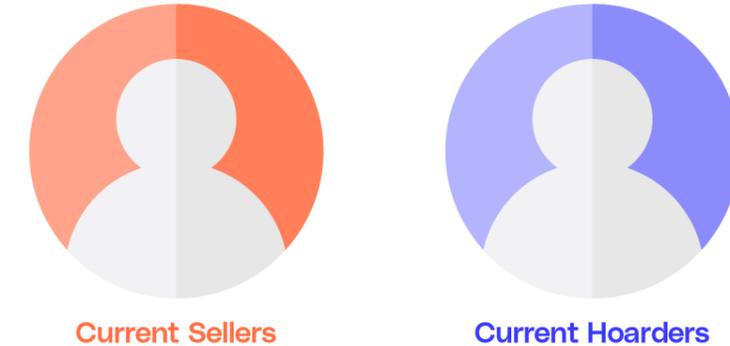
*Figure 5.1  The preliminary segmentation*

So far, I named people who usually sell as the **current sellers**, while people who seldom sell but usually store as the **current hoarders** (Figure 5.1). And the highlighted insights below were explained respectively according to these two groups, some of which got inspired by the Mental Notes card deck. Likewise, **the "current sellers" are the benchmarking group, while the "current hoarders" are the main focused group.** Afterward, these insights were used as a basis for the final version of the more fine-grained market segmentation.

## 5.2.1 Reasons and efforts of selling among the current sellers

Overall, **the current sellers perceive selling for them as necessary and sometimes joyful.** Hence, they are willing to invest a higher level of effort in selling, and this results in their good knowledge of EOU disposal and selling. All of these insights from the current sellers serve as **benchmarking and inspiration sources** for designing solutions for those current hoarders.

### ● They feel a sense of gain toward selling

The current sellers feel a sense of gain and perceive selling as necessary and joyful due to the following reasons:

#### (1) Personal financial management habits with electronics

Every interviewee even including some of those current hoarders mentioned that their first and foremost consideration for selling is the money. But for the current sellers, the special point is that they are more conscious of what the money will possibly be used for, such as for traveling expenses or purchasing a newer device. This is mainly because they conduct either casual or strict personal money management in their free time. Hence, they are mindful of financial investment, their income, expenses, and assets, which in turn leads to their great sensitivity to the remaining value of the items they purchased and how to handle them if use ends without losing too much money. As *P5* stated, *"electronics is a kind of 'currency' that can 'flow' very well, so you can easily sell an old one and purchase a newer one. So I won't feel reluctant to sell."* Similarly, *P1* mentioned that *"I perceive owning electronics in a different way: if you buy it, use it and quickly sell it, you pay less during the year you use it. So I have already started thinking of selling scenarios before purchasing."* Also, they are all aware of the fact of quick depreciation of electronics in the market, so this is one of the triggers that urges them to sell without too much hesitation. Besides, some of them are even experienced in picking up the best time to sell the device at a good price. For example, *P4* has bought limited editions of some devices and sold them quickly at higher prices. Furthermore, some of them are fanatics of electronics, they replace devices quickly so they generate EOU devices at a faster speed, and most of them are in quite a good status. So these trigger them to think of *"getting back some money"* from the e-waste as well.

#### (2) Attaching importance to the reuse value

The second popular reason for selling is the pro-environmental contribution. Many of them feel good when their EOU devices are going to be reused. They are not necessarily eco-activist, but are everymen who try to make small contributions in their daily life, such as saving energy to their best in their homes. This situation is also aligned with one of the scenarios summarized in the context analysis in Chapter 2, which is sustainable lifestyle is popular among Dutch citizens.

#### (3) High demands on cleaning the (electronic) waste

Several interviewees in the group of current sellers mentioned that they prefer tidiness, or couldn't bear any stuff they do not like or want anymore to appear in their rooms. So they really need someone who takes away their e-waste as soon as possible, which is one of the essential triggers to remind and push their selling. For instance, *"One of the reasons for my selling is because I prefer tidiness. I won't feel comfortable if my tiny room has something unwanted. I need to declutter my place to make it feel comfortable to me. So I really need someone else to take my e-waste away, and of course, receive some money at the same time." (P6)*.

#### (4) Joy from helping and making friends with the buyers

Another interesting motivator from this segment is that a few of them even perceive they can make friends with and help buyers who have the same interest in selling processes. But this is most valid within those electronic categories that are highly related to individuals' hobbies, such as gaming, music, and photography, or some collectible gadgets like iPod, as classic designs.

To summarize, they feel a sense of gain in personal finance, environmental protection, and helping others, which could be summarized as their perceptual values of selling later.

### ● Their changes in mindset

**A very surprising finding is that not every one of them is "born" aware to sell electronics.** One of the interviewees *(P5)* mentioned that she used to hoard things very often, but *"In around 2018, I graduated from university and prepared for work. Before my job started, I got a bit addicted to browsing videos on Youtube every day and I found I got influenced by some of them about the idea of how to manage your money and consumption well, and to sell and purchase pre-owned goods. I think I got inspired very much and suddenly started to reflect on my own goods and my consumption behavior, and decided to never hoard any unwanted products in my home and engage in a simplified lifestyle".*

Coincidentally, another interviewee *(P1)* also pointed out that *"When I traveled back home or moved to a new apartment, I found myself viewing my belongings in a different mindset, and this triggered me to reconsider whether a certain item should still be kept by me or not."* This is highly related to what Verplanken (2018) proposes as "habit discontinuity". This means when people are going through "life course changes", such as changing jobs and moving house, their previous behaviors have to be reconsidered, and they might seek for more information about newly available options. As such, people are "in the mood for change", which opens up a "window of opportunity" for effective behavioral interventions. However, according to Verplanken and Roy (2016)'s study, this "window" only lasts up to three months, after

which the "habit discontinuity" effect disappears.

**This indicates the feasibility of design intervention, because of the fact that some current sellers used to be hoarders before.** And many information channels, like Youtube videos that most consumers are commonly paying attention to, could have the potential to be leveraged as communication means with consumers about selling.

● **Their effort toward selling**

Due to several reasons summarized above, they are willing to invest a higher level of effort in selling than those current hoarders. They will spend some time researching the average selling price of the same device with the same quality in the pre-owned market and picking up reliable platforms that could offer a higher price. Some of them even upload the same device to different platforms and try to sell it at the same time, in order to make a deal efficiently and fast. Besides, some of them even strive for a better experience from the buyers' point of view. For example, *P4 "kept the initial packaging and put the device back into it before delivery"*, while *P6* would *"find out every peripheral stuff and deliver it together. Just try to make the experience as decent as possible."* In addition, some of them are even willing to help others who don't know how or don't have the time to sell their devices, like their friends or family members, and finally, divide the money they receive.

This implies that the current sellers could be key players to bridge the platform and the current hoarders.

## 5.2.2 Reasons behind storage among the current hoarders

● **Reason 1. less awareness and effort level towards EOU disposal that leads to ignorance**

**(1) Less attention and effort level toward EOU disposal**
Clearly, the current hoarders invest much less attention and effort in EOU disposal than the current sellers do.

Almost every interviewee who belongs to the current hoarders does not care about EOU disposal very much and does not actively seek information related to this field. Therefore, they don't have much knowledge, thus are ignorant about selling. However, their interest lies in other fields related to their hobbies, such as cooking, traveling, or fashion. In addition, there are interviewees whose hobbies are related to electronics, such as gaming, music, photography, or playing the electronic device itself. But their attention mostly comes to consumption rather than EOU disposal, which was elaborated on below.

**(2) Higher attention and effort level toward purchasing**
When comes to purchasing, almost every consumer, including both the current sellers and hoarders, no matter whether the person has hobbies in electronics or not, is willing to spend a period of time researching the devices they intend to buy, either by researching it online, browsing the reviews, watching Youtube evaluation videos, or asking friends who are currently using the device or have more knowledge of electronics for consultation.

And once an individual has a preference for some categories of electronics, or his or her hobbies are highly related to a certain type of electronics, such as cameras for the hobby of photography and the game console for the hobby of gaming, they will pay attention to them not only before purchasing but also during free time in their daily lives. Some fanatics or amateurs may highly pay attention to new product launching moments, and even join online forums and communicate with people who have the same interests very often. And thus they have various categories and more numbers of devices and replace them at a faster speed.

To conclude, preliminary suggestions for Valyuu to conduct marketing campaigns were derived: It is better to attract potential sellers within their consumption period, especially before and during purchasing, as it is where the public awareness lies; rather than during the EOU period, as the majority of the current hoarders wouldn't really care about the EOU disposal. Some detailed explanation about this can be found in the conclusion part of this chapter (sub-title 5.5)

● **Reason 2. Stigmatized stereotypes of the electronics pre-owned market**

One of the most essential demotivators widely shared among the current hoarders for selling is the stigmatized stereotypes of the electronics pre-owned market, which is summarized in Figure 5.2.
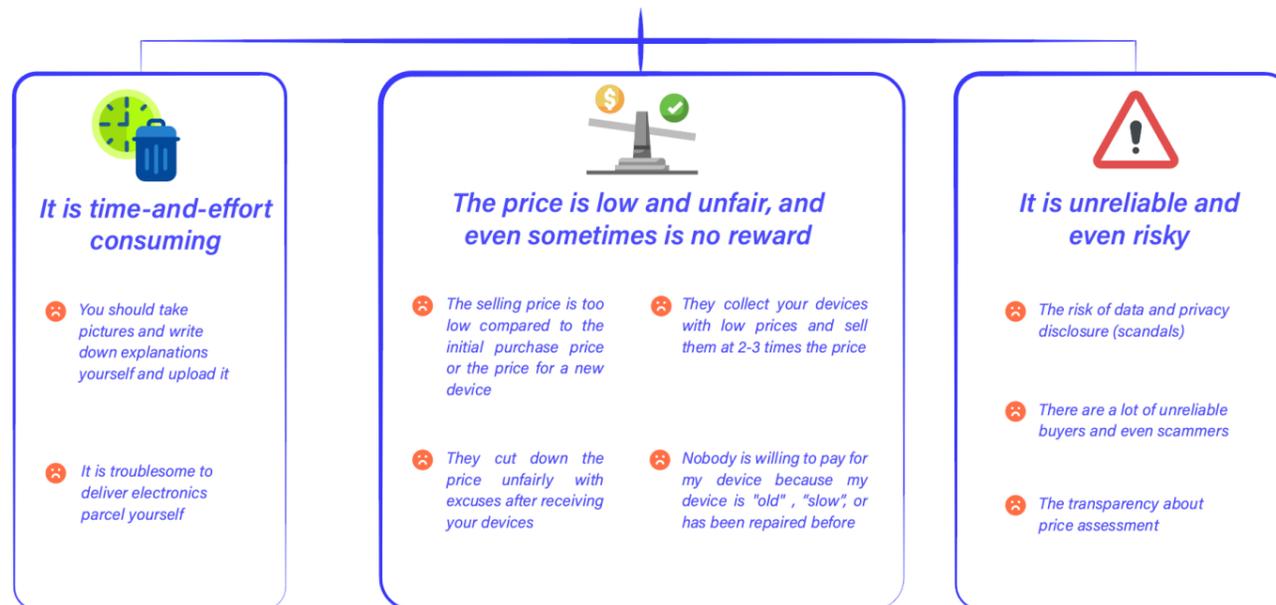


*Figure 5.2 Consumers' stereotypes of the electronics pre-owned market*

Due to their lack of awareness and effort level, they are kind of ignorant towards selling, so their cognition towards this market is oversimplified and even stigmatized either by the performance of the famous market players, by their previous bad experience, or by hearsay, rumors, or scandals. Among them, most importantly, those famous market players, such as Marktplaats and Apple, play an essential role in setting up examples in current hoarders' minds.

**(1) "it is time-and-effort consuming"**

For instance, some of them, when it comes to online selling, can only think of a similar business model as the Marktplaats. For instance, *"I have never known something like that (the standard selling platform) existed. But Marktplaats is really big and famous. So like, when you want to sell something, it immediately comes into your head. It's like a lot of brand value" (P12).* Also, *P15* stated that

*"When I think of selling electronics online, it seems a big hassle for me. You need to take pictures, upload them, and communicate with those strangers. Also, you need to deliver the parcel yourself."* So, these could be summarized into the first piece of stereotype in Figure 5.2, which is "it is time-and-effort consuming".

> *Valyuu's facts:* As stated in the strengths and weaknesses part in Chapter 3, Valyuu is already very hassle-free and time-saving compared to some of its competitors, as you don't need to deal with the buyers or after-sales issues yourself. You simply need to deliver a parcel of your device. However, delivering the parcel is still a hassle for many current hoarders. Then the door-to-door pick-up service that Valyuu plans to launch soon could basically solve this problem nicely, making the process even easier and more convenient.

**(2) "the price is low and unfair, and even sometimes is no reward"**

Also, almost every interviewee mentioned the **Apple trade-in service**. *"My iPhone 7 worked totally fine at that time. I checked Apple's official website to evaluate the price for trading in, and they just gave me 30 euros, which is ridiculous! So I don't think any other pre-owned market platforms would give me a fair price either" (P13). "They will cut down the price after they receive your device due to several excuses, which makes me feel unfair" (P14).* So these were summarized into the second piece of stereotype in Figure 5.2, which is "the price is low and unfair, and even sometimes is no reward".

> *Valyuu's facts:* it already provides very fair and good prices, which are usually 20%-50% more than its competitors. And almost 98% of its customers receive the same prices as stated on its website.

**(3) "it is unreliable and even risky"**

Lastly, some of them also doubt the transparency about how this platform is going to assess the value and how they truly reuse the devices. Another concern is the risk of data privacy and disclosure because some of the interviewees have heard some scandals about this before. So these belong to the last piece of stereotype in Figure 5.2, which is "it is unreliable and even risky".

Valyuu's facts: it is very reliable and honest, and never cheats on you. 100% of its customers' personal data and privacy hasn't been disclosed to this day. The transparency of the price assessment and the devices' destination is a common challenge in the pre-owned market, and Valyuu is striving for it now.

● **Reason 3. Uncertainty throughout the whole selling process**

Most of the current hoarders don't have a clear picture in their mind of the whole selling and reuse process. This leads to their uncertainty and less control over the whole process, which is the result of ignorance and deepened by the aforementioned stereotypes. All of their possible uncertainty throughout the process is demonstrated in

Figure 5.3, and clustered according to the timeframe.

Before selling, especially those nostalgic people, are uncertain about where to reserve their personal attachments and memory, which will be explained in the next piece of reason. Also, they don't have a neutral assessment of the remaining value of the device, or a clear picture of the market demand, so they are not confident about whether the device is still valuable and wanted by others, and thus are uncertain about the selling price.

During selling, they are unsure about what steps to truly go through and how much time and effort they need to spend. Specifically for online selling via express delivery, they are worried about whether the parcel will get lost or damaged.

After selling, mainly due to the stereotype, they doubt how much money could they truly receive, are worried about the data and privacy security, and are unsure about the "fate" of the device.

Overall, all of the uncertainty is based on their doubt about the reliability of the platform.

**Before Selling**       **During Selling**       **After Selling**

? Uncertain about where to reserve the personal attachments and memories

? Uncertain about what steps to truly go through

? Uncertain about how much money can be truly received

? Uncertain about whether the device is wanted by others

? Uncertain about the cost of time and effort

? Uncertain about data and privacy security

? Uncertain about the selling price

? Uncertain about whether the parcel will get lost or damaged

? Uncertain about the "fate" of the device: how the platform or the next user will truly reuse the devices afterwards

**Uncertain about whether the platform will cheat you**

*Figure 5.3. possible uncertainty throughout the whole selling process*

## ● Reason 4. Loss aversion of emotion, memories, assets, time, and efforts

It seems hard for the current hoarders to perceive selling as a "gain" but they would rather feel a sense of "loss" more. And the stigmatized stereotype and uncertainty render their feeling of loss even harder. Here it is appropriate to borrow the concept from the psychology field, loss aversion, to explain this piece of the reason for inaction, which is exactly inspired by the Mental Notes.

### (1) Loss aversion of emotion and memories

Many current hoarders invest emotions into their devices during use, especially those nostalgic people. It is rather hard for them to get rid of some memory and emotions attached to their devices. For example, $P_{12}$ mentioned that *"I did my whole bachelor's degree on that old laptop. And many 3d models made by me are still there. And maybe like, when I'm old, I would like to review them again."* Similarly, $P_{13}$ stated that *"My old mobile phones contain so many old messages between me and my old friends, so I don't want to lose that memory-my Macbook accompanied me to several different countries during the past four years, I want to keep it for memory"* Overall, these kinds of people feel emotionally uncomfortable when they "lose" their devices, but tend to feel safe and joyful when keeping them.

### (2) Loss aversion of assets

Although the price of electronic devices has decreased these years, when purchasing a device, it still means a rather considerable "financial investment" to most average consumers. So before selling, they will **naturally compare the selling price with the initial purchase price and the price for purchasing a newer device.** But **the depreciation rate is rather high in the electronics field. Usually, the selling price drops shockingly after several years, which is lower than their expectation**. Furthermore, enhanced by the stereotypes, the selling seems a trade at a loss for those current hoarders.

### (3) Loss aversion of time and effort

Enhanced by the stereotype, the selling process seems to contain so much hassle and even scams. Thus, it is unreliable, unattractive, and even risky for the current hoarders. They cannot see so much gain when doing it. So it does not seem worthwhile for them to invest time and effort into selling. As P14 stated, "I do have many other more important or interesting things to do in my life, then why should I waste my time selling?"

### Integration of the reasons
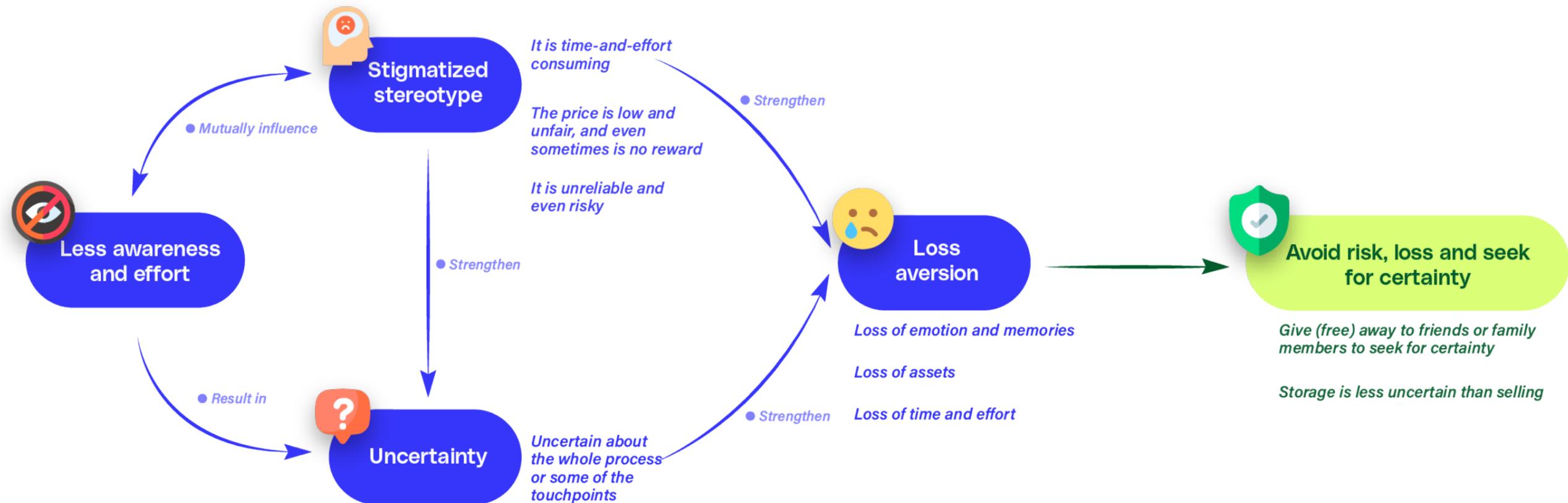


*Figure 5.4  The integration of the reasons behind storage behaviors*

# 5.3

# The final result of the market segmentation
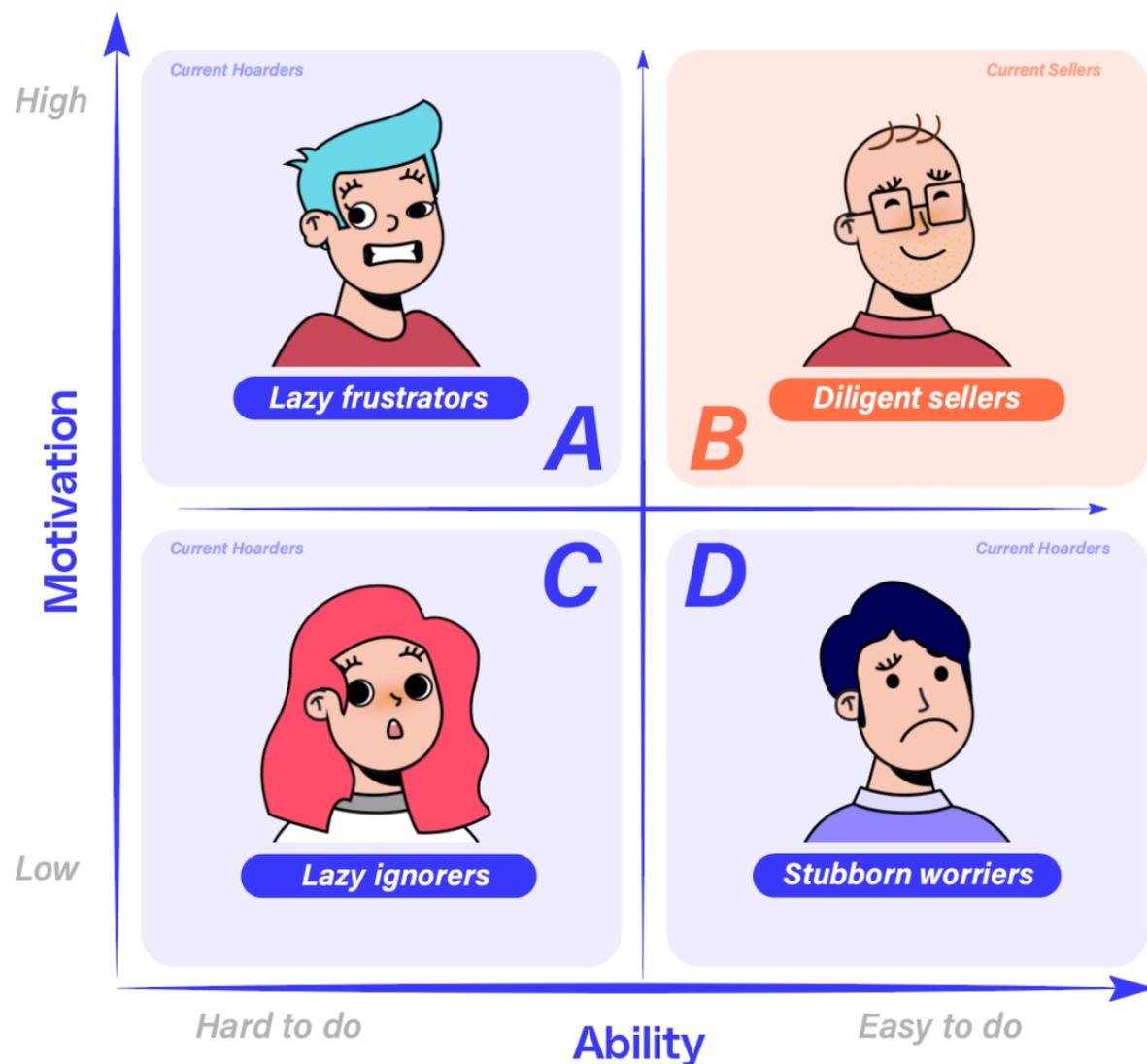


Figure 5.5. The overview of the market segmentation based on FBM

The market segmentation result according to the FBM had been mapped out in Figure 5.5. **The aforementioned "current sellers" are equal to Segment B without further division, as the function of this group is merely benchmarking. While the aforementioned "current hoarders" were further divided into three groups, Segments A, C, and D, as they are the main focus of this project that truly need fine-grained segmentation** (Figure 5.6). Therefore, they have shared reasons for not selling as the current hoarders, but were segmented by the different combinations and priority of those reasons based on the FBM. As for which interviewee belongs to which segment, it can be found in Appendix F.
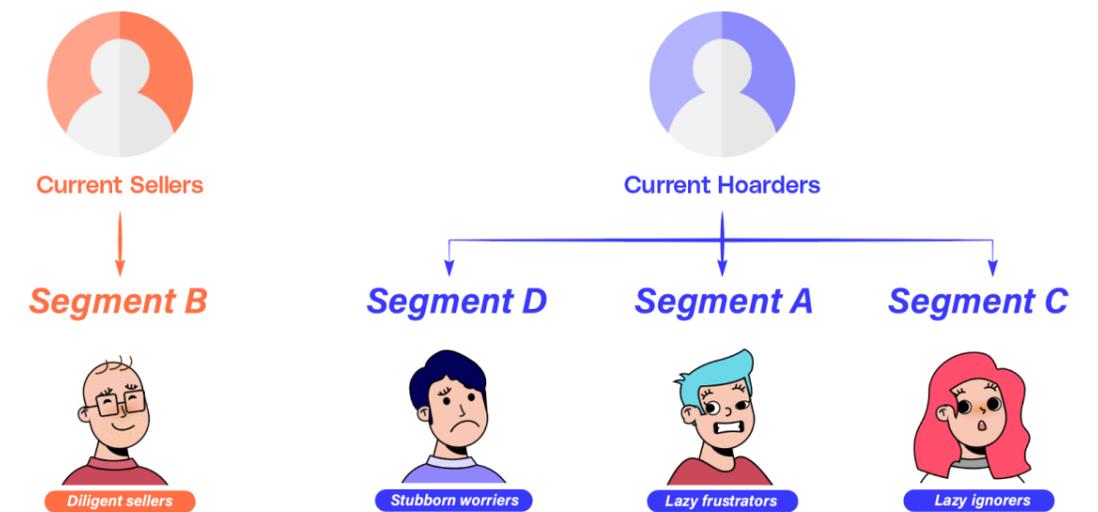


Figure 5.6  The logic behind the more fine-grained segmentation

Below, the specific illustration of each segment will be explained according to the FBM and also by aligning the simplified customer journey. This customer journey with only the "stage" demonstrated was used as a tool to visualize **the main pain points** of inaction for different segments, **showing which specific stage they stop along the ideal "selling" journey.**

As for the method to divide the "stage", there is much freedom according to the specific situation of a certain project. While it is widely used today that different stages of the customer journey are mapped according to different phases of the marketing funnel. And the marketing funnel does have many variations originating from the classic AIDA model by Elias St. Elmo Lewis. Among them, **the ACCRA variant (Figure 5.7) is considered to be a suitable one to be combined into the customer journey** (Customer Journey, 2022). And it is the most appropriate one to be used in this project because it includes the complete and ideal stages that Valyuu wants its customers to go through but is not too complicated with too many stages to be considered as well.

## THE AIDA MODEL



A — AWARENESS
I — INTEREST
D — DESIRE
A — ACTION

awareness → consideration → conversion → retention → advocacy
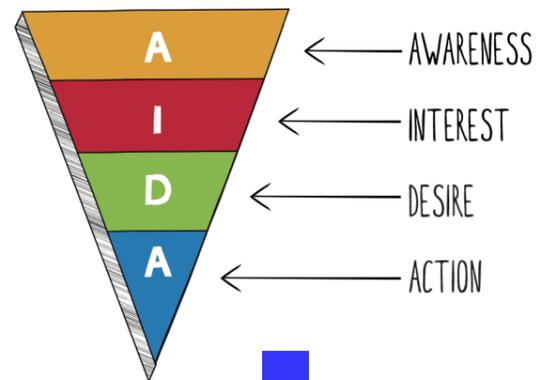
*Figure 5.7 AIDA Model and ACCRA variant*

Besides, it also has a close relation to the FBM. As explained in the literature review, the awareness stage is related to consumers' ignorance, which belongs to the "ability" level of the target segment in the FBM. Then, when entering the consideration stage, it can touch upon several "ability" elements in the "links in a chain" metaphor as stated above, and then reflect in the "motivation" level. So, the result of the FBM can be transformed into this customer journey with specific design focuses, which **helps set up a good foundation and framework for customer-centric service and/or marketing development later in this project**.

## 5.3.1 The current sellers (Segment B)

### Segment B
### The diligent sellers



**B**

*Electronics is a kind of 'currency' that can 'flow' very well. If you buy it, use it and quickly sell it, you pay less during the year you use it. So I have already started thinking of selling before purchasing.*

**Diligent sellers**

**Triggers**
⭐ **Needs of clean and tidiness**
⭐ **Be aware of the quick depreciation rate**

**Motivators**
✅ **Money incentives**
✅ **Contribution to the environment**
✅ **Help others who need the device**

awareness → consideration → conversion → retention → advocacy → *Sell most of ther EOU devices*

It is clear to identify that Segment B, the diligent sellers, has the least demotivators, the most motivators, and several triggers. **They don't perceive a big hassle in online selling and can observe a lot of motivators that other segments are not conscious of,** including managing personal finance well, contributing to environmental protection and sustainability, and helping others. All of these had been explained above in the part of "current sellers", making this group successfully go through the whole journey from the beginning to the end (Figure 18). However, they also would first consider whether there are friends or family members who might need the device before selling it, as it is convenient and can bring joy and emotional value to them when giving the device (free) away to their friends or family members. These inspiring insights coming from their motivators and triggers were essential sources for developing design solutions.

## 5.3.2 The current hoarders (Segment A, C, and D)

### Segment D
### The stubborn worriers



**D**

*I did my whole bachelor's degree on that old laptop. And many 3d models made by me are still there. And maybe like, when I'm old, I would like to review them again.*

**Stubborn worriers**

**Demotivators**
⏻ **Loss aversion** loss of emotion and memories
⏻ **Stereotype** Data and privacy disclosure
⏻ **Uncertainty** About the consequences after selling

**Motivators** ✅ **Money incentives**

awareness → consideration → conversion → retention → advocacy

*The main pain points:*
*Concern of data security and losing personal attachment and memories*

Another group that has almost the same level of ability as diligent sellers are Segment D, the stubborn worriers. **Their awareness is not that high**, but their struggles lie in the consideration stage. **Although they can overcome most existing hassles in online selling even if it does cost some time and effort, however, they seem very reluctant to sell, as they do have some demotivators that are rooted**: the most important one is the loss aversion of their personal attachment and memory. Secondly, enhanced by the stereotype, they are **extremely worried about data and privacy security.** These are co-related to their uncertainty about the consequences after selling. All of these demotivators cannot be easily eliminated by increasing monetary incentives. However, sometimes they are able to give the device (free) away to friends or family members they trust as it is more worry-free.

## Segment A
### The lazy frustrators

**A**

*I have ever tried online selling before, but the process is really troublesome. Also, those selling platforms always cut down the price of your devices with excuses, didn't they?*

*Lazy frustrators*

**Demotivators**

- **Loss aversion** — *Loss of assets, time and effort*
- **Stereotype** — *Price and reliability*
- **Uncertainty** — *Some of the touchpoints*

**Motivators**
- ✓ Money incentives
- ✓ Environmental incentives

awareness → consideration → conversion → retention → advocacy

**The main pain points:**
- Stereotypes
- Convenience in the process
- Selling prices
- Touchpoints in the selling experience

Besides, the other two groups with lower ability levels are Segments A and C. As for Segment A, the lazy frustrators, the good point of this group is that they are conscious of the reuse value of the device. Nevertheless, **they usually are hard to overcome existing hassles in online selling, and prefer extreme convenience.** In most cases, t**hey have ever tried selling themselves before** not only in the electronics category, such as assessing the price on online platforms, taking pictures, and uploading. **But they usually get frustrated by, for example, troublesome processes or the low money incentives compared to the initial purchase price or a new device they intend to buy**. So the stereotype forms accordingly, which plays an impactful role to hinder their following selling behaviors. Except for the stereotype, they also feel loss aversion of their time, effort, and assets with a slight uncertainty of the process. As a result, they frequently give those EOU devices in good condition (free) away to friends or family members for reuse as a compromise because it is more reliable and convenient.

## Segment C
### The lazy ignorers

**C**

*I have never considered selling before. I just feel a lot of hassle if I sell my device. Either I cannot get good money from my old devices.*

*Lazy ignorers*

**Demotivators**

- **Loss aversion** — *Every loss aversion included*
- **Stereotype** — *Every stereotype included*
- **Uncertainty** — *The whole process*

**Motivators**
- ✓ Money incentives

awareness → consideration → conversion → retention → advocacy

**The main pain points 1:**
- Don't have any awareness to sell

**The main pain points 2:**
- Huge uncertainty
- Stereotypes
- Convenience in the process

Then comes the last segment, which is Segment C, the lazy ignorers. **They usually ignore dealing with the EOU devices themselves, so they lack EOU disposal knowledge,** such as the consequences of storage behavior, the remaining market value of the EOU device, and the EOU collecting service providers. When they think or imagine selling electronics, **the stigmatized stereotype they heard from various channels about online selling plays an impactful role in hindering their actions without even having a try.** And they are also the group of people who prefer extreme convenience. Except for the convenience and the amount of money back, they also worry about other stuff similar to "stubborn worriers", **but those worries are not that hard to be eliminated compared to "stubborn worriers", in other words, they are easy to be persuaded especially by people they trust.** Occasionally, they will also just give it free away casually to friends or family members if they know someone needs it.

## 5.3.3 Comparisons between the current hoarders and corresponding preliminary strategies

### (1) Persuasion easiness

Because their awareness of selling is generally weak, so they have not heard of Valyuu before. So I presented Valyuu's existing or planned services to them and asked them whether they want to try it someday in the future, so as to briefly test whether they are easy to be persuaded to sell. According to their answers, their persuasion easiness could be indicated (see Figure 5.9).

In general, **Segment D** might be the hardest to be persuaded to achieve the selling behaviors. As interviewees who belong to this group were reluctant to have a try because they were still not very open to Valyuu's existing or even planned services. In other words, their main pain points are hard to be removed. While interviewees who belong to **Segment A** were a bit picky and even critically judged Valyuu's existing and planned solutions due to their being more experienced and having more knowledge in this field. Therefore, the standard to solve their main pain points and satisfy them is a bit higher than Segment C. Then, **Segment C** is like a piece of "blank paper" that has almost no previous experience or knowledge in this field. Interviewees who belong to this group all become interested in Valyuu's existing solutions and even look forward to its planned solutions. Thus they have the highest potential to be easily persuaded to achieve selling behaviors.

### (2) Preliminary Strategies for each segment

From both the product and service and the marketing perspective, the preliminary strategies for each segment, aiming at solving their main pain points were derived (see Figure 5.9).

In general, all of the segments of the current hoarders' **awareness are weak** or even none. So no matter which segment to target at first, it all requires **marketing campaigns** to improve or raise their awareness of selling and let them be familiar with Valyuu, but the content of the marketing material varies between different segments, which should convey key messages about "the solution could solve their main pain points".

When comes to the **consideration phase**, different segments require different directions of service improvement. However, Valyuu's existing services cannot satisfy any of the segments of the current hoarders to the best. Therefore, sticking to the Market Development strategy to launch existing services to any of the segments may not be helpful to take good effects.

In addition, according to the preliminary strategies for **Segment D**, it is a bit **deviating** from Valyuu's planned service developments (see Figure 1.7). Hence, in order to minimize the risk, it is probably not a good idea to develop new products or services that Valyuu has not planned for the time being, but to **select the most feasible and effective services from Valyuu's planning and try to combine them into the final solution with marketing campaigns**.

Then, according to Valyuu's planned roadmap in Figure 1.7, the door-to-door pick-up service will be launched in the next few months. After that, **the core part of the main pain points of both Segment A and C could be solved**. At this point, the biggest pain point of **Segment C** regarding the service improvement in the consideration stage has been solved. When corresponding to FBM, their ability levels could be well-improved, and the rest could be solved by marketing campaigns. However, **Segment A** has a bit more critical requirements for various touchpoints in the user experience of the service, so the door-to-door pick-up has not completely solved the pain points of Segment A, and they also require the selling incentives to be more satisfying to them by providing practical rewards. So targeting Segment A would require more resources than Segment C.
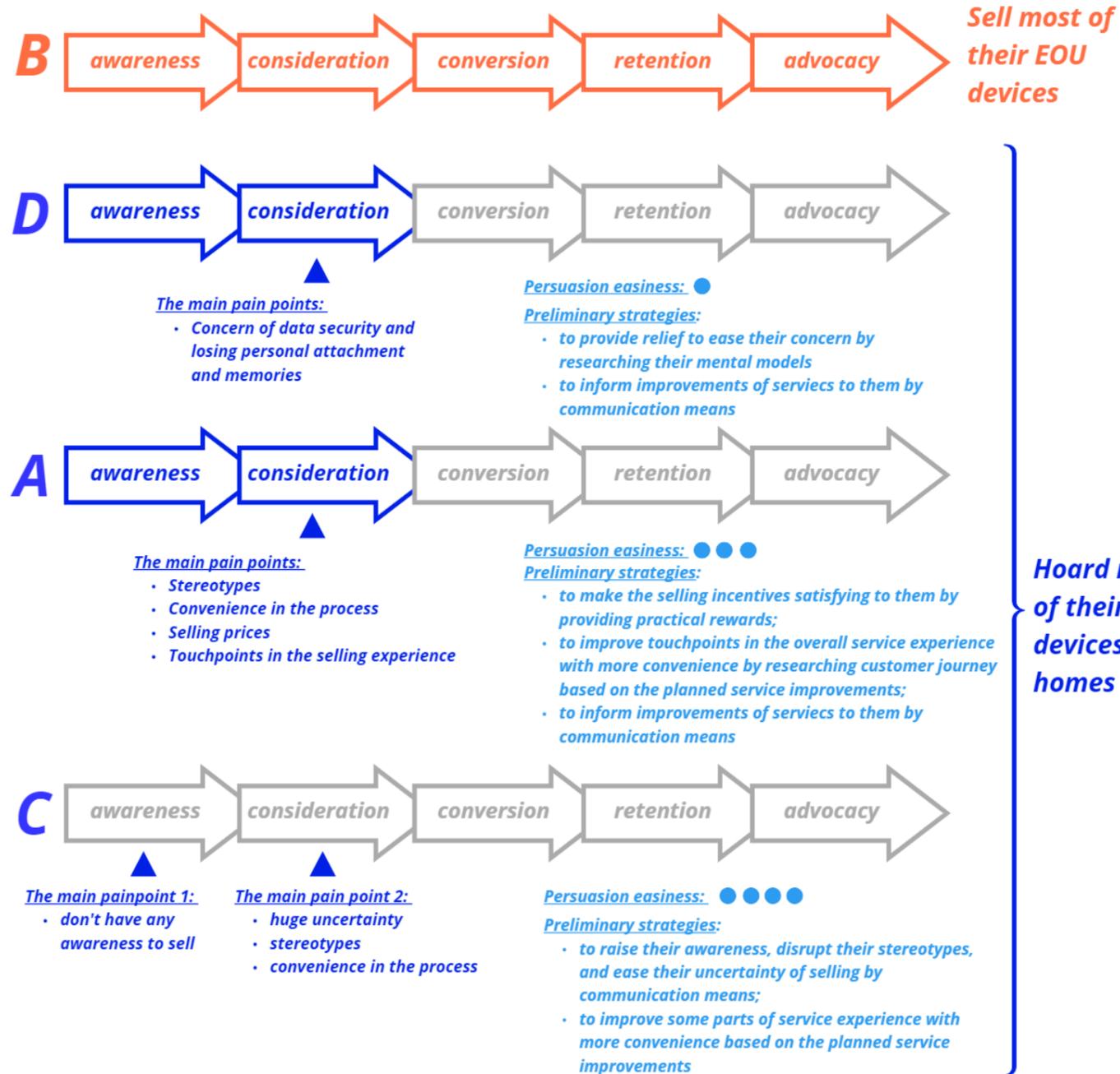
*Figure 5.9. An overview of the main pain points, persuasion easiness, and preliminary strategies of each segment*

# 5.4
# Selecting the target group

Based on the analysis and comparison of each segment above, by using the Market Attractiveness & Competitive Position Matrix (Walker & Mullins, 2014), Segments A, C, and D were assessed respectively according to several criteria in each of the two dimensions of this matrix.

## 5.4.1 Assessing market attractiveness

### (1) For the criterion of Customer needs and behavior

**Which aspects does it assess?:** it assesses whether a segment has unmet or underserved needs that can be satisfied
**Decision sources:** consumer analysis (Chapter 5: the main pain points)

**Segment A** has the most obvious underserved needs, as they want a more convenient, reliable, and transparent selling experience with better rewards. But many current service providers do not fulfill their expectations so they feel frustrated and resulting in not selling. While **Segment B** also has a certain unmet need which is to remove their concerns, such as to protect their data security for sure or preserve some emotions and memories of the device. As for **Segment C**, due to their ignorance in this field, they are the group that is not aware of any needs to be satisfied, so they have the lowest score in this criterion.

### (2) For the criterion of Segment size and growth rate

**Which aspects does it assess?:** it assesses the population and the potential to grow later of a segment
**Decision sources:** consumer analysis (Chapter 5: a rough estimation of the population of each segment)

By combining the result of both the unstructured and semi-structured interviews and my past experience, **Segment C** is roughly estimated to have the largest population and thus the highest growth rate according to the segmentation result of interviewees (see Appendix F), following **Segments A and D**. However, it is recommended for Valyuu to conduct quantitative research itself, such as by questionnaire, to validate this assumption later. Due to the time limit, quantitative validation had not been conducted in this project,

but some suggestions of how to do it were provided in the Recommendation part in Chapter 11.

**(3) For the criterion of Marco trend**

> **Which aspects does it assess?:** it assesses if a segment is favorable to the Marco trend.
> **Decision sources:** Consumer analysis (Chapter 5: main pain points and preliminary strategies of each segment); Context analysis (Chapter 2)

In general, only **Segment D** is a special group that might have uncommon worries compared to the majority, in addition, they are too stubborn to be easily influenced by their surrounding environments. In the conclusion of the context analysis, it points out a scenario that the relation between consumers and electronic devices is getting closer and closer, and segment D may be the closest group among the crowd, making it harder to be changed in the future. So it ranks the lowest in this criterion. Else, especially **Segment C** is the most favorable to the Marco trend. Because within the field of this project, **they are the group of people who usually follow the crowd with less critical thinking.** But as for **Segment A**, they are basically favorable to the Marco trend but tend to have more critical thoughts than Segment C.

## 5.4.2 Assessing competitive position

**(1) For the criterion of Opportunity for competitive advantage**

> **Which aspects does it assess?:** it assesses the potential to differentiate the company in the market when targeting a certain segment.
> **Decision sources:** Consumer analysis (Chapter 5: the preliminary strategies); Company and competitor analysis (Chapter 3)

Targeting **Segment D** might lead to an unusual road that other competitors might not think of. In order to provide relief to them, it possibly contains some unique design opportunities that could result in uncommon solutions. For example, some special gifts or media to memorize their sold devices might be an interesting relief to them. **Segment A and C leads to the regular road that other competitors might also notice**. But **Segment C** might contain unique opportunities in the design of marketing campaigns that can help Valyuu stand out immediately, while **Segment A** has more practical wishes for an updated user experience and selling rewards which might result in an ordinary design solution. **Hence, Segment C contains the most potential to help Valyuu stand out.**

**(2) For the criterion of Capabilities and resources**

> **Which aspects does it assess?:** it assesses what kinds of company's capabilities and resources are required when targeting a certain segment
> **Decision sources:** Consumer analysis (Chapter 5: the preliminary strategies); Company analysis (Chapter 3)

As mentioned above, **the door-to-door pick-up service should be at least included in the design solution later.** Because it is what Valyuu exactly plans to do next and can satisfy Segment C completely and Segment A nicely from the perspective of service development. And all three segments require marketing campaigns with different content. As for **Segment C**, except for the door-to-door pick-up service, the rest could be done by marketing campaigns, so it has the highest score. As for **Segment A**, besides the door-to-door pick-up service, it still requires more resources to truly improve the selling incentives and touchpoints in the overall service experience together with marketing campaigns, so its score is in between. However, the door-to-door pick-up service cannot satisfy the main pain points of **Segment D**, but it requires a long-term investment in researching their mental and behavioral models so as to remove their worries which is a bit deviating from Valyuu's planning, so it has the lowest score.

**(3) For the criterion of Industry attractiveness**

> **Which aspects does it assess?:** it assesses rivalry forces when targeting a segment
> **Decision sources:** Consumer analysis (Chapter 5: the preliminary strategies); Company and competitor analysis (Chapter 3: the competition circle)

The industry capacity is generally low among each segment because currently there aren't any competitors who notice this niche market, the current hoarders. As for **Segment A**: it has the highest bargain power, because of its requirements for selling incentives, and the solution is easy to be imitated and replaced because of its practicality. As for **Segment D**: due to the solution could being really unique, it is not easy to be replaced and imitated by other potential entrants. As for **Segment C:** The bargain power is the lowest because of its ignorance in this field, but because the solution for them heavily relies on marketing materials, so it is the one that has the highest risk to be imitated.

## 5.4.3 The target group

To conclude, the specific rating result of each segment can be found in Appendix G. And the position of each segment in the matrix is demonstrated in Figure 5.10. Therefore, Segment C, the lazy ignorers, would be the most promising group to target first at the moment. As it requires the lowest resources to be persuaded by solving its main pain points via marketing campaigns. And it has the estimated largest population, and various nice potential to design marketing activities that help Valyuu differentiate quickly. Moreover, it can also help Valyuu win more time to accumulate more resources to truly improve its services and incentive during the time of its marketing campaigns, and then expand into other segments afterward.

**Competitive Position**

| | Weak | Medium | Strong |
|---|---|---|---|
| **Strong** | Possibilities | Secondary targets **A** | **C** Prime targets |
| **Medium** | Avoid | Possibilities | Secondary targets |
| **Weak** | Strongly avoid | Avoid | **D** Possibilities |

*Market Attractiveness*

*Figure 5.10. The position of each segment in the Market Attractiveness & Competitive Position Matrix*

# 5.5
# Conclusion

## Specific conclusions of this Chapter

### 1.   Comparisons of the conclusions between consumer research in this Chapter and the literature review in Chapter 4

#### (1) Overlap
There is a lot of overlap in the reasons for not selling between them, such as lack of awareness (Reason 1 in Chapter 5), and not wanting to lose personal attachment and memories (part of the Reason 4 in Chapter 5).

#### (2) New insights
　　a. The reasons for selling of the current sellers.
　　b. The reasons for not selling of the current hoarders: The stigmatized stereotype, uncertainty and loss aversion.
　　c. Current hoarders were segmented according to their different combinations and priority of reasons for not selling based on the FBM.
　　d. Consumers' preference and attention level toward electronics among the current hoarders

### 2.   Suggestions for Valyuu's marketing channels:
There would be two possible options:
　　**(1)To embed the marketing campaign into activities related to electronics consumption:** This could help Valyuu to capture accurately those people who have the most possibility to have an available device to be sold right away, making a potentially higher conversion rate. For example, when a consumer is paying attention to some online content about the latest iPhone, then he probably wants to replace his smartphone recently, and then he will have an old EOU smartphone available to be sold.
　　**(2) To not restrict the marketing scope within the electronics field: Finding a way to combine selling with other consumption fields, such as fashion or travel:** Because this could capture a larger number of people who have different interests. However, the drawback is that audiences who browse this kind of information might not have available devices to be sold at the moment.

### 3.   People who have a higher customers' LTV
People who have hobbies in electronics have much more awareness toward electronics, and thus replace their devices at a faster speed. Then, they tend to have various categories and more numbers of potential devices to be sold constantly and frequently. Therefore they are estimated to have a higher customer's Life Time Value (LTV).

## What has been defined in thic chapter?

✅   *The market segments*

✅   *The target group*: **Segment C, the lazy ignorers**

## Answer to the research questions :

✅   **SQ1:** By using the interview techniques, deeper reasons for consumers' selling and storing behaviors were discovered;

✅   **SQ2:** A market segmentation was derived according to the different combinations and priority of reasons for selling or not selling based on the FBM and the target group was defined.

✅   **SQ3:** A lot of insights from consumer research in this Chapter contributed to coming up with the design proposal.

# Chapter

# 6.

# The Design Brief and Insight Synthesis

This Chapter explains to you the design brief and an empathy map including the target group and benchmarking group as the synthesis of insights. And you will be clear that what requirements framed the subsequent concepts after reading this Chapter.

# 6.1

# The design brief

## 6.1.1 The form of the design proposal

Based on the analysis and preliminary strategies for the target segment stated in the last Chapter, the form of the design proposal would be the scheme of the marketing campaigns as a means for Valyuu to communicate with the target group, aiming to convey information that could solve their main pain points covering the awareness and consideration stage in the simplified customer journey. The marketing campaigns should align with the door-to-door pick-up service, which makes the process even more convenient, reliable, and simplified.

## 6.1.2 The design goal and focus
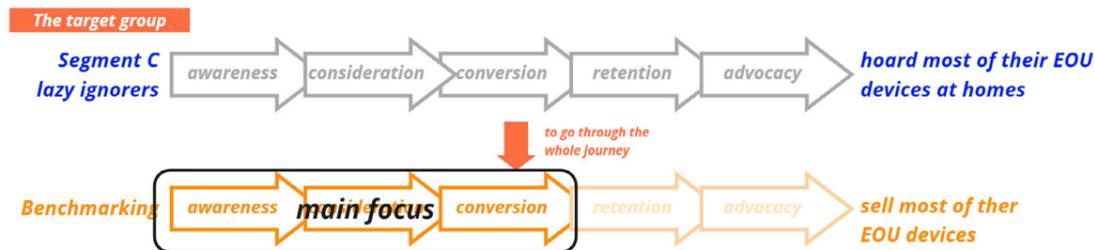


### The main design goal

> *To design marketing campaigns aligned with Valyuu's planned door-to-door pick-up service, in order to let more lazy ignorers have a first try at handing over their EOU devices for reuse through Valyuu's service.*

### The main design focus

The main design focus lies in the first three stages of the customer journey, which are awareness, consideration, and conversion.

### The sub-design goal

(1) Raise awareness: to raise their awareness of "selling" as a considerable EOU option;

(2) Ease uncertainty: to provide them with a sense of certainty, safety, and reliability when "selling";

(3) Disrupt stereotype: to disrupt their stereotypical thoughts and refresh their cognition of "selling";

## 6.1.3 The list of design requirements

By taking the conclusions from all the Chapters above together with Valyuu's wishes into account, the list of design requirement was specified. And it had been improved and iterated into this final version below after the co-creation workshop that would be explained in the next Chapter.

### [Required Attributes]

1. conform to the context and trend;
2. be simple and efficient;
3. be innovative and unique;
4. be foresighted to bridge the future vision;
5. be viable, feasible, and aligned with Valyuu's own business planning;
6. be as honest as possible;
7. fit for the brand story and personality;

### [Required Impact]

1. push their intrinsic motivation to choose "selling" to Valyuu;
2. increase Valyuu's reputation and popularity in an impactful way;
3. increase the potential of their retention and advocacy behaviors.

# 6.2 The empathy map

## Consumption
A higher level of attention goes into (sustainable) consumption;

## The Context

## EOU disposal
Less decluttering, more hoarding and throwing away

Less attention and an out-of-date mindset

## Selling rewards
Financial stimuli are a wonderful attractive point for dutch customers to sell;

## The same things they see

Online review

New product launching information

Online shopping platforms

Other people have what kinds of devices

Messages about updates of technology or devices

## Selling obstacles
One obstacle for customers to sell is their closer relations with their electronic devices, which might become even harder in the future

### THINK

What are existing selling platforms?

How my devices will be treated by others?

How much free time and effort do I need to put into selling?

If my devices are wanted by others?

How much money can I get back?

If my data and privacy will be disclosed after selling?

Where to reserve my memory and attachment?

I don't know why, it is just so easy to store the devices without any further thinkings

I know if I throw away e-waste randomly, it is not good for the environment and also I will be fined

I want newer devices and updated functions

### THINK

Selling is not a big hassle

It is important to reuse the device

I think of selling before purchasing

Electronics depreciate really fast

Electronics is a kind of assest that helps me manage my personal finance

I don't want any waste to be in my home

I won't lose much money on a device if I sell it

The money I get from selling can help me save budgets for purchasing a newer devices or my vacation expenses

I have different mindset towards my belongings when I travel back home or move to a new house

I can even make friends with the buyers

## What do they SEE?

Do not pay attention to the electronics pre-owned market

Almost neither of the people around me had ever sold devices before

Marktplaats       Apple

## What do they SEE?

I see different electronics selling platforms with different service processes and prices

I see I spend much money on electronics

I see some of my obsoleted devices are in good status

I see I have many electronic devices and replace fast

### lazy Ignorers

**I am uncertain about everything in selling**

**FEEL**
Boring    Tiring
lost    Troublesome
Excited    Uncertain
Fresh

### Diligent Sellers

**I can see a lot of benefits in selling**

**FEEL**
Feel good when the device is going to be reused

Feel good when I can get some money back from the old stuff

Feel uncomfortable when there is something I don't want anymore to appear in my room

## What do they HEAR?
From friends, relatives, online news, reviews or videos

Complaints about the selling experience (e.g. annoying and unreliable buyers, troublesome process)

XX is on sale / have discounts

XX device is recommended to purchase because it is handy to be used

Complaints about the lower selling price

Someone's private data got disclosed after selling

## What do they SAY?

"I have never thought about selling my devices before"

"I might be a bit lazy to do that"

"Online selling sounds like a lot of hassle to me"

"I have never heard about a platform like Valyuu"

"I think the selling price is too low (compared to the initial purchase price or a new device I intend to buy)"

"Maybe I could rather keep the device so as to keep some memory and emotion"

## What do they SAY?

"I never feel attached to objects, so I won't be reluctant to get rid of them"

"Electronics always depreciate really quickly so I should sell my used devices as soon as possible"

"Electronics is a kind of 'currency' that can 'flow' very well, so I can easily sell an old one and purchase a newer one; and I pay less during the year I use the old one"

"Electronics always depreciate really quickly so I should sell my used devices as soon as possible"

"I can even earn more money by selling some limited edition of deivces"

"I prefer tidiness so I really need someone to take away my e-waste"

**Target Group**

**Benchmarking**

## The same things they do

## What do they DO?

Store devices in the drawers at homes

Do tiny research before purchasing (e.g. search online, ask friends or relatives)

Browse electronics related information

Give some of the devices with good status (free) away to friends or relatives

Often purchase and replace devices

## What do they DO?

Put effort into selling (e.g. search online for different platforms and compare price)

Buy limited editions of some devices and sell them quickly at higher prices.

Help others to sell

Do personal money management in the free time

Often declutter

*Figure 6.1. The empathy map*

## 6.2.1 Brief explanation of the empathy map

Based on the design brief, the insights that mainly come from the literature review, context, and consumer research stated in the above chapters are synthesized into the empathy map (Figure 6.1), as the transition from the research phase to the design phase.

The main attention of this map should be given to the **"THINK"** part. It articulates explicitly what the target and benchmarking group think in their head, and all of the other parts reflect on the reasons and results of their thinking. The "THINK" part mainly demonstrates the pain points of the target group, which are the lack of awareness, stigmatized stereotypes, and full of uncertainty toward selling. While the benchmarking group concludes their perceptions of the value of selling, including financial, environmental, and positive emotional values.

The next part that is worth attending to is the **"FEEL"** part, which demonstrates what are the target group's negative feelings about selling, which are boring, tiring, lost, troublesome, and uncertain. in contrast with the positive feelings of the benchmarking group.

The **"SEE"** and **"HEAR"** parts imply their information channels and contents. They turn out to have huge potential to be influenced by marketing campaigns.

Then, the **"DO"** part states their behaviors again. Finally, the "SAY" part could bring them to life and help to understand their thoughts, feelings, and behaviors clearly.

Next, by comparing these two groups in this infographic, there are four points of worth-noticing contrasts between these two groups summarized below.

## 6.2.2 The contrast between the two groups

### Contrast 1. attractive VS unattractive

Explanation: Purchasing is attractive while selling is unattractive to most people

Shopping always brings positive feelings to human beings. In the electronics field, updates in technology bring freshness and excitement to people. People always have excuses and impulses to replace a new device, making consumerism spread. Electronics fanatics and amateurs enjoy browsing related information every day, and everyone spends time and effort before purchasing new electronic devices. They tend to research it online, browse reviews, watch Youtube videos, or ask friends for consultation. However, the situation for selling is totally different, especially for the current hoarders: it is hard for them to notice any attractiveness for selling.

### Contrast 2. certainty VS uncertainty

Explanation: People avoid selling so as to avoid uncertainty, and seek certainty from their own social networks

The electronics market, especially the pre-owned market, is often perceived as not transparent or even kind of "dirty" or "full of traps" due to stereotypes. Therefore, the target group tends to feel an overwhelming uncertainty when it comes to selling: "How much money can I get in the end?", "How much time and effort do I need to spend?", "Will my data and privacy get disclosed after selling?" "Will the platform or the buyer play tricks on me?" etc. As human beings always prefer certainty and avoid uncertainty, they refuse to sell so as to refuse uncertainty. In the end, they seek support from friends or relatives, and they give away their used devices to them as a compromise solution, because they are much more reliable than strangers, thus bringing the most certainty.

### Contrast 3. necessary and joyful VS dispensable and painful

Explanation: the benchmarking group tends to perceive selling as necessary and joyful, while the target group tends to perceive selling as a dispensable and painful business

The benchmarking group actually has demand for selling: they need to clean the e-waste so as to stay tidy, they have a money management habit that urges them to manage their belongings and assets well, and they attach importance to the reusing value of the device. So selling is a necessary issue for them and can bring joy at the same time. While the target group never perceives selling as demand for them, they think it is dispensable and even painful, and they have many more important or interesting things to deal with every day rather than wasting time in selling.

**All these contrasts mentioned above are hints for participants to compare the two groups when conducting the co-creation workshop in the next Chapter.**

# 6.3
# Conclusion

### Answer to the research questions :

✓ **SQ3:** It provides the framework for coming up with design proposals to motivate the target group.

Chapter

# 7.

# Design Conceptualization

With the design brief and the insight synthesis framed by the last Chapter, the design conceptualization phase could be initiated. By reading this Chapter, you will know the ideation and evaluation process as the basis of how the final concept was gradually developed: Among activities done in this phase, the co-creation workshop with Valyuu's co-founders and designers contributed a lot to proposing the design opportunities and guidelines. In the end, with the help of an evaluation session of the initial concepts with co-founders, some well-performed properties that could be combined into the final concept were identified.

# 7.1
# Co-creation workshop

## 7.1.1 Planning

### The aim of the workshop

(1) To gain innovative ideas for letting the target group sell, which would be one of the **inspirational sources for the concept development** in the next step;
(2) To **find out the sweet spot** of further concept development;
(3) To further improve and specify the list of design requirements;

### Participants

Except for myself, there were 6 participants in total, including 3 co-founders from Valyuu and 3 designers from different tracks of IDE faculty, TU Delft.

### The main task for participants

The task for the workshop participants was derived from the design brief above. But it had been simplified with fewer restrictions to allow their generation of wilder and more creative ideas in the workshop.

### The main goal

*How might we let more lazy ignorers have a first try at handing over their EOU devices for reuse through Valyuu's services?*

### Basic requirements

(1) To raise their awareness of selling;
(2) To ease their uncertainty;
(3) To disrupt their stereotypical thoughts;

## Tools and materials
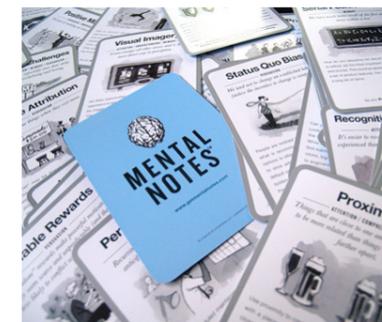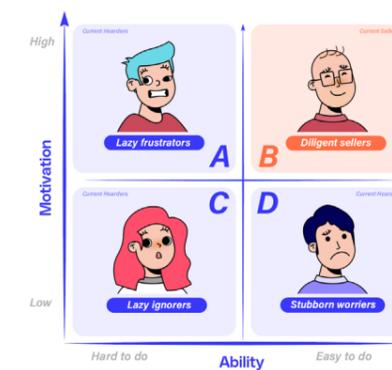


**Customer segmentation with FBM:**
this is the overview of the segmentation result from the research phase, and this was used to let participants be familiar with the general attributes of each segment and their relative position in the FBM;



**Empathy map:**
this is the integration of insights from the research phase about the target and benchmarking segment, and this was used to let participants truly stand in the target segment's shoes with a deeper understanding of the reasons for their behaviors;



**Mental notes card deck:**
this is a card-deck toolkit combined with psychological principles for DfBC, which is a very nice tool to be used for brainstorming activities in the How-to session.

## 7.1.2 Method and procedure

**Round 1:  Initiation session for myself**

Because I would be responsible as the facilitator for the workshop, I would mainly spend time instructing and facilitating participants rather than coming up with ideas. Then, in order to have good control over the procedure of the workshop, I first conducted a round of the initiation session myself to go through the four sub-steps of the How-tos session, and generate several pieces of How-to questions and ideas in advance.

In this way, it helped me
   (1) be familiar with the procedure of the workshop;
   (2) have more consciousness of how to instruct and facilitate participants' train of thoughts
   (3) have a great sense of which post-its bring me unique thoughts that I haven't thought of before.

Afterward, I brought those ideas to the workshop in order to develop them further or let others build on them on the spot.

**Round 2:  Co-creation session with designers and co-founders**

A simplified overview of the procedure of the workshop was shown in Figure 7. 1 below: with brief explanations of the main activities of each step and the outcomes it generated. Before the workshop, participants were asked to prepare a brief introduction about their preferences and previous EOU behaviors toward electronics in advance.

- **Ice breaking**

- **Bias dump**

- **Task announcement**

- **Digest**

- **How-tos session**

- **How-tos session**

    *Diverge*

    *Reverge*

    *Converge*

    *Diverge*

- **Idea sampling and appraisal**

- **Ending**

*Figure 7.1  The workshop procedure*

I also prepared two versions of the schedule of the workshop, one is for myself to organize, and the other is for participants to read and have a clear mind during the workshop. The overview of these two schedules can be found in Appendix H.
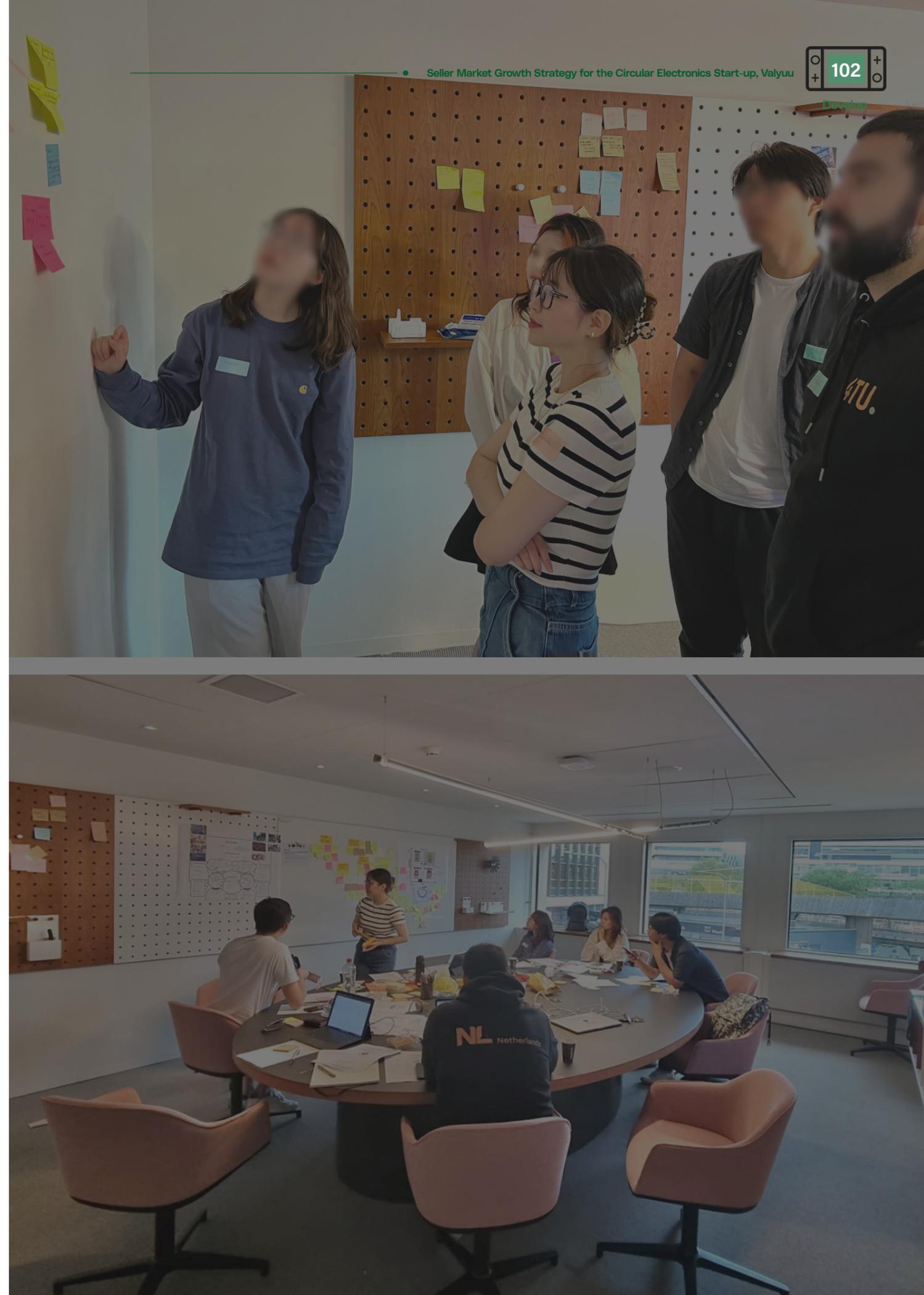
## 7.1.3 Summary of results

There are three main parts of the result of the workshop, and they became the main sources to be integrated into the design opportunities for concept development in the next step.

**(1) Their biases toward selling**



*Figure 7. 2  Summary of the biases*

It was not surprising to find out that there were a lot of negative feelings surrounding "selling", such as unfamiliar, uncertain, doubting, and hesitating. While very few people mentioned they feel excited about selling because they can receive money back. On the contrary, participants' feelings about "purchasing" are much more positive than "selling". Some words like enrichment, joy, excited, curious, and explorative were used.

This also aligned with the conclusions from the consumer research in Chapter 5, and became the inspiration for design opportunity 3 below.

**(2) Highest votes of the clusters of the How-to questions**

By taking the voting result of the cluster in How-to questions, 4 pieces of promising directions were selected based on the design brief.



This direction basically aims to solve the "uncertainty" of the target audience. It is mainly

about communication and support between consumers, such as passing on a good selling experience to the target audience by referral.



During the workshop, we discussed **that the "money" in return might be too "abstract" to many customers**. It **requires customers to be more farseeing like diligent sellers who can imagine the "value" of that "small" amount of money,** such as being accumulated as travel expenses for vacation. But the lazy ignorers are not as clear as those diligent sellers about this so it seems **dispensable** for them to receive that "small" amount of money around or more than yearly. Then we are considering how to tangible the "value" of selling in return, including financial rewards, the environmental value, and the kindness of helping others in need, in order to let them feel they get the "best" value by selling.



This direction mainly aims to disrupt the stereotype of selling, especially the one, "effort-and time-consuming". Because Valyuu already has great performance in simplifying the selling process and will become even better after launching the door-to-door pick-up service. **But the target group just does not know anything about it.** So it is a good direction to constantly inform them about the easiness of the selling process provided by Valyuu.



By taking the contrast between selling and purchasing into account. If we can make selling as attractive and interesting as purchasing, then it has good potential to let more

people "pursue" selling as a trend.

### (3) Generation of ideas
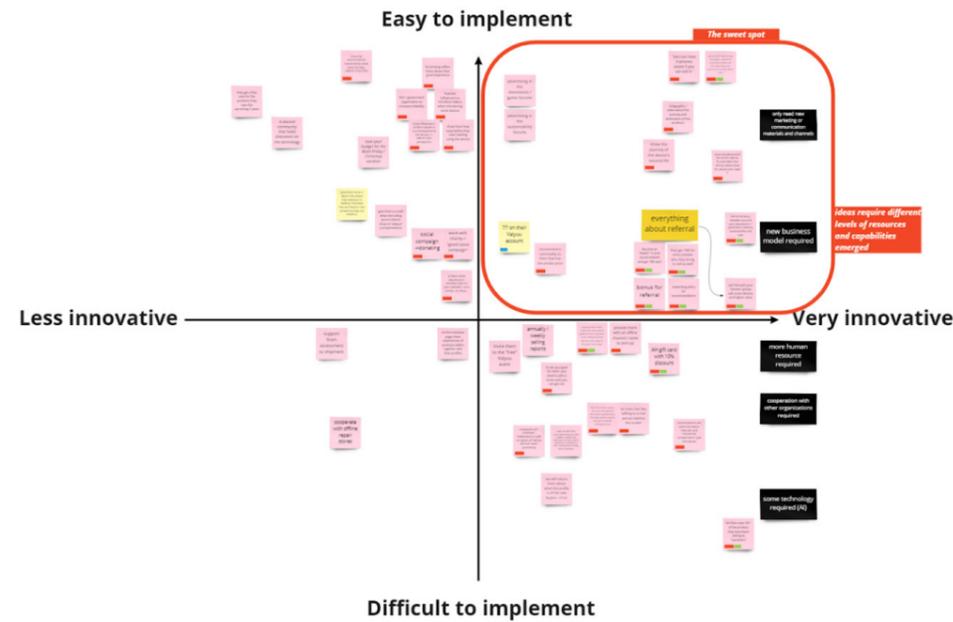


Figure 7.3  The C-Box Matrix of the ideas

In the C-Box matrix (Figure 7.3), **the first quadrant was identified as the sweet spot of the idea**. And ideas requiring different levels of resources and capabilities emerged, giving a hint for plotting the roadmap later.

To conclude, by taking the three main parts of the results from the workshop above, I summarized three main design opportunities and then combined them into the design guidelines below to kick off the concept development phase.

# 7.2
# Design opportunities and guidelines

## 7.2.1 Design opportunities

Based on the result from the co-creation workshop, the design opportunities are translated as follows by using the "How might we (HMW)" questions (Rosala, 2021). This method was used because it is a great way to frame the insights and challenges into design opportunities. And the question offers chances to answer them in a variety of ways, leaving room for creative thinking. Besides, each design opportunity is matched with one or two most relevant principles coming from the Mental Notes. As for the term, "selling", below, it means in a broader sense -- "handing over for reuse, and getting something in return".

### Design opportunity 1

*How might we provide social proof of "selling" to the target segment?*

positive mimicry

sub design goal 1: raise awareness

sub design goal 2: ease uncertainty

sub design goal 3: disrupt stereotype: unreliable

fit the brand personality most

## Social Proof
— PERSUASION —

*We tend to follow the patterns of similar others in new or unfamiliar situations.*

## Positive Mimicry
— COMPREHENSION / PERSUASION —

*We learn by modeling our behavior after others.*

### 6 Types of Social Proof

1 **Family and friends**
2 **Expert social proof**
3 **Celebrity social proof**
4 **Customers and users**
5 **Wisdom of the crowd**
6 **Certification**

*Figure 7. 4  6 types of social proof (Social Proof, 2022)*

This opportunity was derived from two of the popular directions from the workshop– "community support" and "Change perceptions and inform easiness". Here, inspired by the Mental notes, a famous term related to informational social influence, social proof, was fairly appropriate to be used. Written by Cialdini (1984) in his famous book, Influence, talked about the application scenario and the power of social proof. The main idea is that, when people are under uncertainty, they are more likely to look around and observe others' actions to help them decide how they themselves should act. **The people they look around contain either of the three attributes, similarity, expertise, and number. It belongs to a kind of positive mimicry behavior.** Then it can be translated into six possible directions for marketing (Social Proof, 2022), as shown in Figure 7.4.

Hence, it reflects in this design opportunity that if we can set up "examples" for them to mimic, their certainty for selling would be increased. In this way, selling seems easier to them and it nicely solves the sub-design goal (2). Also, it contributes part of the sub-design goal (3), to increase the reliability of the platform so as to disrupt the stereotypes. Besides, most of the forms to set up "examples", such as "celebrity social proof", can also have the potential to raise the audience's attention and thus awareness of selling at the same time, which helps to meet the sub-design goal (1).

### Design opportunity 2

*How might we visualize the value of "selling" to be more tangible, attractive and get the target audience accepted and pursued?*

**anchoring**

sub design goal 1: raise awareness

sub design goal 3: disrupt stereotype: the price is low and unfair

## Anchoring & Adjustment
— PERSUASION —

*When making decisions, we rely too heavily—or anchor—on one trait or piece of information.*

As mentioned before, people will intuitively place an "anchor" for comparison of the money in return between either the initial purchase price or the price for purchasing a newer device. If we can "alter" their anchor of comparison, and visualize the "value" of selling in return to be more tangible, it can make the target group easily imagine what "gain" they can receive rather than the "loss" they will suffer. Or on the contrary, we can visualize the value they might lose if not selling as early as possible due to depreciation. And it contributes to removing one of their stereotypes about "the price is low and unfair" (sub-design goal 3). In this way, it potentially gives a sense of getting the "best" value by selling that meets their satisfaction.

According to the insights from the benchmarking group, the possible values that can be visualized were summarized below, and the hierarchy was ranked based on the suggestions from literature research. Besides, if the "value" can be really attractive, it can also have the potential to raise their attention and thus awareness of selling (sub-design goal 1).

**(1) Financial value**, such as cash, goods, and living expenses;
**(2) Environmental value**, such as saving materials, and reducing carbon dioxide;
**(3) Positive emotional value**: do good and feel good, such as helping others in

need of a device with less budget, getting the room clean, and get life simplified.

**Design opportunity 3**

How might we make the "selling" process more playful and enjoyable?

the inspiration from the contrast between "purchasing" and "selling"

duration effects (from mental notes): offer a fun distraction--people who are mentally engaged in a task don't notice how long it takes

sub design goal 1: raise awareness

sub design goal 3: disrupt stereotype: time-consuming

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**Duration Effects**

PERSUASION

*Perception of time is subjective.*

Coming from the inspiration from the workshop, this opportunity is also matched with one point from the Mental notes, which is the "duration effect". It means if we can offer a **fun distraction** to the target audience, they will be mentally engaged in a task and do not notice the amount of time it takes. This could powerfully disrupt their stereotype about the "time-and-effort consuming" of selling (sub-design goal 3). Besides, if the form is playful and eye-catching enough, their attention and thus awareness would also be raised (sub-design goal 1).

As such, by playing with the combination of the design opportunities above corresponding with solving each sub-design goal, the specific **guidelines** for concept design can be made next.

## 7.2.2 Design guidelines
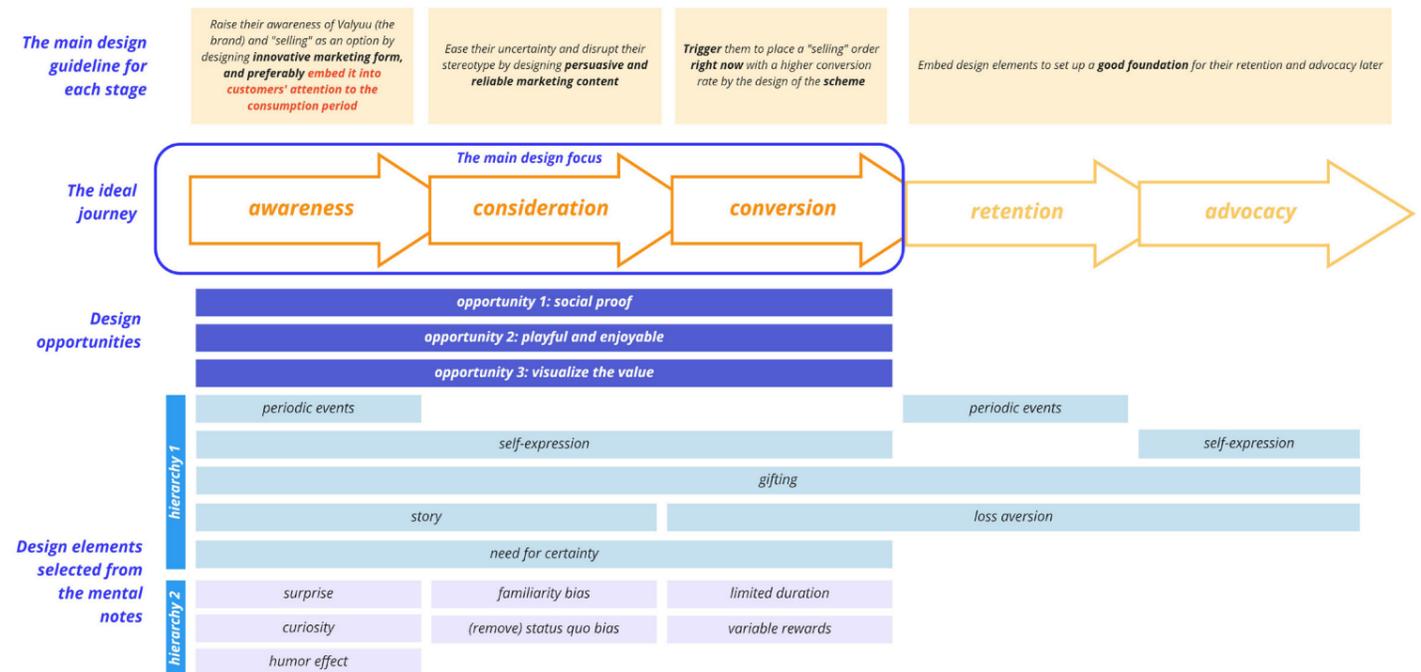


*Figure 7. 5  Mapping of the design guidelines*

The design guideline kept using the ACCRA model mentioned above, **with the first line explaining the main design guideline for each stage**. Except for the three main design opportunities explained above, several promising principles coming from the Mental Notes were selected again based on the list of design requirements. They became inspirational design elements and were mapped together with the design opportunities into the design guidelines.

Those elements from the Mental Notes were divided into two hierarchies. The element in the higher hierarchy means it:
(1) has a possibility of covering more stages;
(2) is more closely aligned with the three design opportunities;
(3) has a higher potential to increase the retention and advocacy rate.

Specific explanations for the inspirational design elements could be found in Appendix I:

**To conclude, the equation for coming up with the initial concepts is:**
**design opportunity 1  and/or 2 and/or 3 + several appropriate design elements = initial concepts**

# 7.3

# Design Analogies

Except for the above design guidelines, I also **looked for the existing solutions from other brands that successfully caught people's attention of "returning" or "recycling".** This could help me come up with some truly unexpected marketing forms in the concept design. Among them, there are two really inspiring analogies explained below, which were used in the construction of some of the initial concepts.

## Analogy 1. The surprise catwalk



*Figure 7. 6  Surprise catwalk*

A Norwegian second-hand clothing brand, *Fretex*, held a surprise catwalk during the 2012 Oslo Fashion Week (Figure 7.6). The runway was installed outside the exit of a high-traffic subway station. And the unsuspecting passengers became the model on the runway when they got out of the station. By doing so, *Fretex* proposed that "our next season's 'new' clothing are the ones that you are wearing today", so as to motivate more people to recycle their unwanted clothes to *Fretex*. The event created a big buzz in the fashion world, with a lot of people sharing it on social media.

**Extracted attributes:**

**Refresh the concept of "old " with "new"**
**Surprising, unexpecting, playful, and interesting**

## Analogy 2. Saturnbird coffee package return programme



*Figure 7. 7  Saturnbird's coffee package and its brand peripheral products*

A Chinese instant coffee brand, *Saturnbird*, launched a coffee packaging return programme in around 2018. Its coffee package is a small and adorable plastic cup (Figure 7.7). Due to environmental protection, they planned to recycle those plastic cups. In order to trigger customers to join the return programme, they provided many daily necessities or office supplies, like shopping bags, phone cases, and pens, as rewards to be redeemed. Those brand peripherals were well-designed, had clear brand recognition, and were frequently used in customers' daily lives, which became a powerful medium for brand marketing. It widely raised the popularity of this return programme, and of course, the reputation of *Saturnbird* itself. Later, drinking *Saturnbird* coffee and returning the packages overall became a fashionable lifestyle among Chinese youngsters, and using the brand's peripheral products is a way for them to express themselves as cool and modern. Gradually, a kind of community of brand followers had been formed, which truly provided customers with a sense of belonging.

**Extracted attributes:**

**Brand peripherals as a medium for brand marketing**
**lifestyle, self-expression, playful, attractive**

# 7.4

## Initial concept development and evaluation

Along with the design guidelines and inspirations from analogies, the initial concepts were developed as follows.
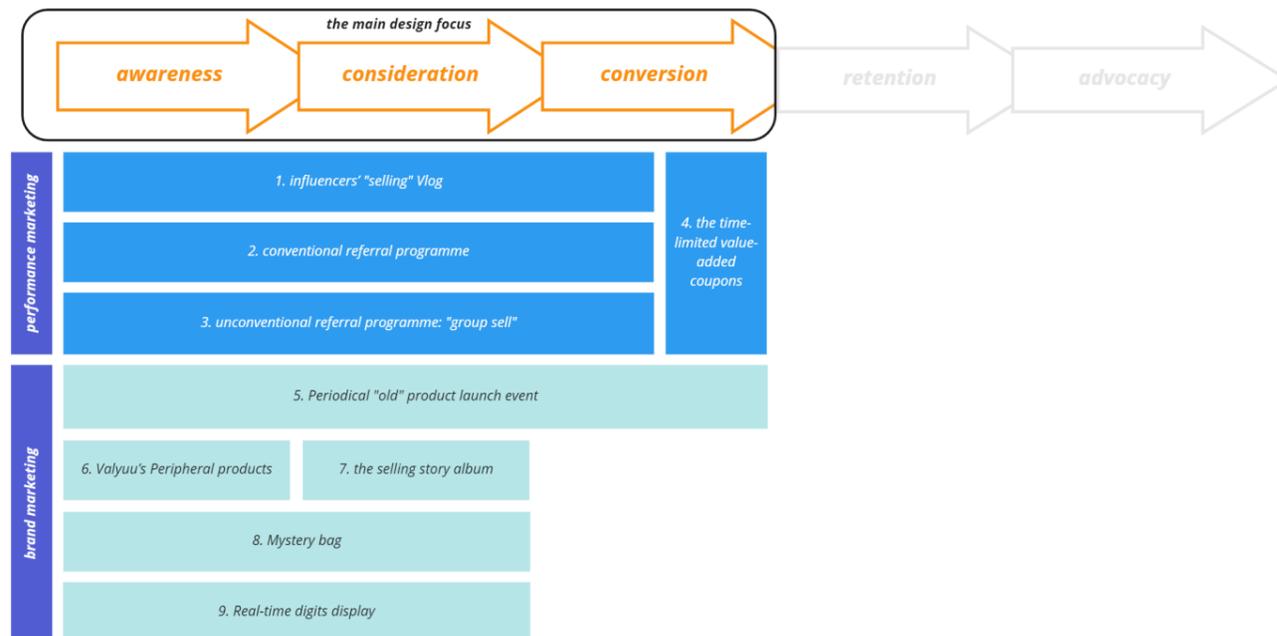


*Figure 7. 8. Initial concept mapping*

All of the initial concepts below are also mapped into the ACCRA customer journey (Figure 7.8). **By taking Valyuu's own planning of the marketing period into consideration, the concepts can be divided into "performance marketing" and "brand marketing".**

Each initial concept below was provided with a brief evaluation from co-founders, and a more comprehensive evaluation result will be demonstrated at the end of this chapter. Besides, the related services in each concept might include Valyuu's current service and its planned services: the door-to-door pick-up or offline store service.

### 7.4.1 Detailed explanation of the chosen initial concept

There were 9 initial concepts developed, and after the evaluation session, the following 4 concepts (concepts 1, 4, 5, 7) were chosen to be combined into the final concept. The rest of the unchosen concept could be found in Appendix J.

**Overview of the chosen 4 concepts**
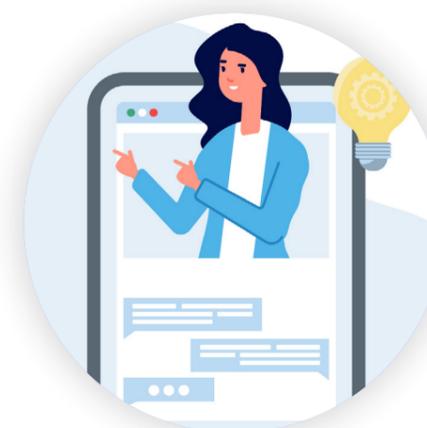


**Concept 1:  Influencers' "selling" Vlog**
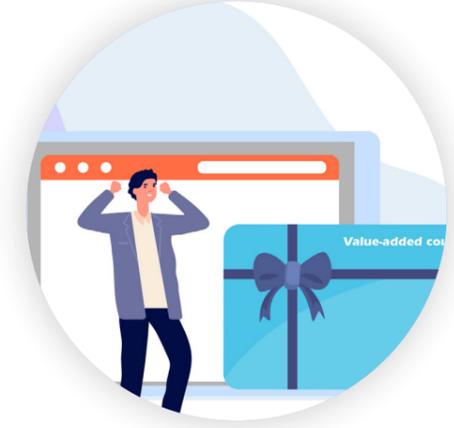


**Concept 4: The time-limited value-added coupons**



**Concept 5: Periodical "old" product launch event**



**Concept 7: The selling story album**

## Concept 1:  Influencers' "selling" Vlog
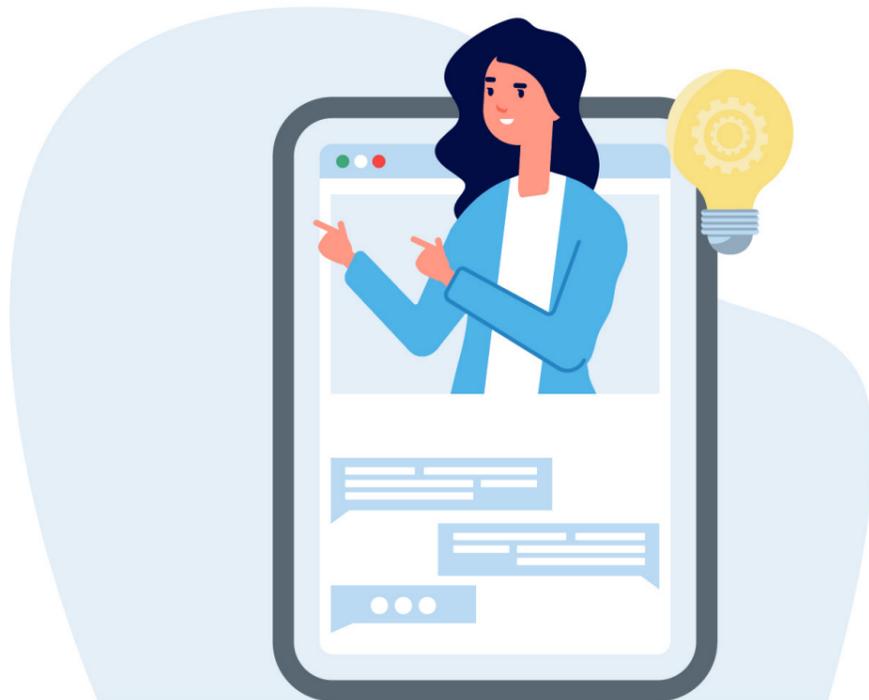


**Marketing channels:**

online social media marketing, e.g. on Youtube, Instagram

**Scenario:**
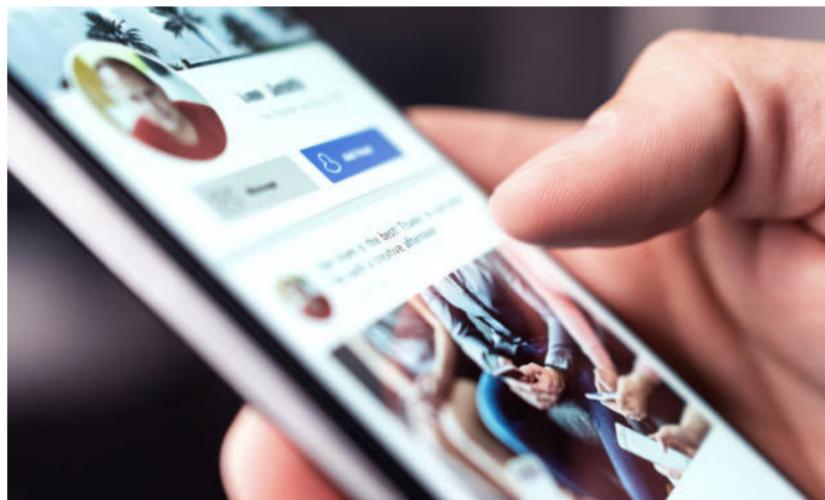


When the target group browses casual information on social media in their free time, they would get acquainted with this video either by their own followed influencers or by personalized recommendation via big data.

**How it works:**

Online influencers, such as lifestyle vloggers or experts in sustainability or electronics, are invited to become Valyuu's customers to sell some of their devices. Along the way, they are asked to take Vlogs to demonstrate the whole selling process to Valyuu. It includes how they place orders online, how they deliver their parcel or choose the door-to-door pick-up service, and how they finally receive money as a reward. They can at the end talk about the easiness and good experience of the whole process, or give advice on how to leverage the money to create more value. And in the introduction of this video, the influencer could put the link to Valyuu's official website as a clear recommendation.

**Criterion used:**

| |
|---|
| *opportunity 1: social proof: celebrity & expert; customers and users* |
| *opportunity 3: visualize value* |
| *need for certainty: information support* |
| *story* |

1-The campaign invites online celebrities or experts in the related fields as Valyuu's users, to set up examples and pass on good selling experiences and feedback to the audiences
2-The influencer articulates the value of selling
3-The video is information-rich to provide certainty and reliability to the audiences
4-The video leverages the narration techniques to demonstrate the whole process

**Brief evaluation:**

**Advantages:**
The video could make the selling process more imaginable and reliable to the target audience;
The video format is easy to be implemented right away;

**Limitations:**
The conversion rate might be low.

**Uniquenesses:**
The influencer could be selected as a kind of ambassador of Valyuu's brand, who could have a similar personality to Valyuu's brand personality (see Confidential Appendix).

## Concept 4: The time-limited value-added coupons
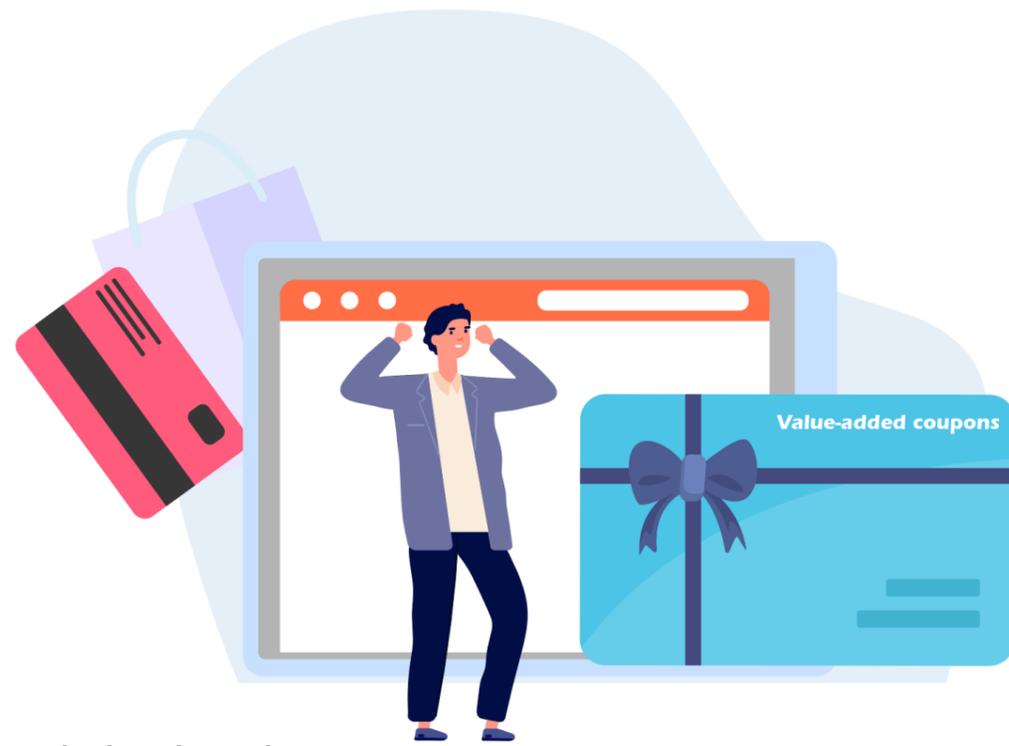


**Marketing channels:**
online marketing

**Scenario:**



The target audience receives the coupons on their mobile phones.

**How it works:**
When the target group gets the coupon from a certain channel, then it is activated automatically on the spot. And it contains a live countdown. The coupon could add 10%* extra value of a device within 24h*; then the added value drop into 5%* after 24h before one week; then the added value drop into 3%* after one week before 2 weeks; after two weeks, the coupon expires.

**Criterion used:**

| opportunity 3: visualize value: depreciation |
| --- |
| *loss aversion* |
| *limited duration* |

1-the value drop scheme dramatizes the "depreciation" rate of electronics
2 & 3-the value drops and the coupon expires after a limited time-frame

**Brief evaluation:**

**Advantages:**
It brings the target audience a kind of excitement of selling;
the limited-time effect with loss aversion could push them to make a decision at once, which might increase the conversion rate;

**Limitations:**
It could be a double-edged sword: it could sound insincere and look like a push to some people, making them feel a sense of being controlled.

**Uniquenesses:**
The value drop scheme is original and innovative

## Concept 5: Periodical "old" product launch event
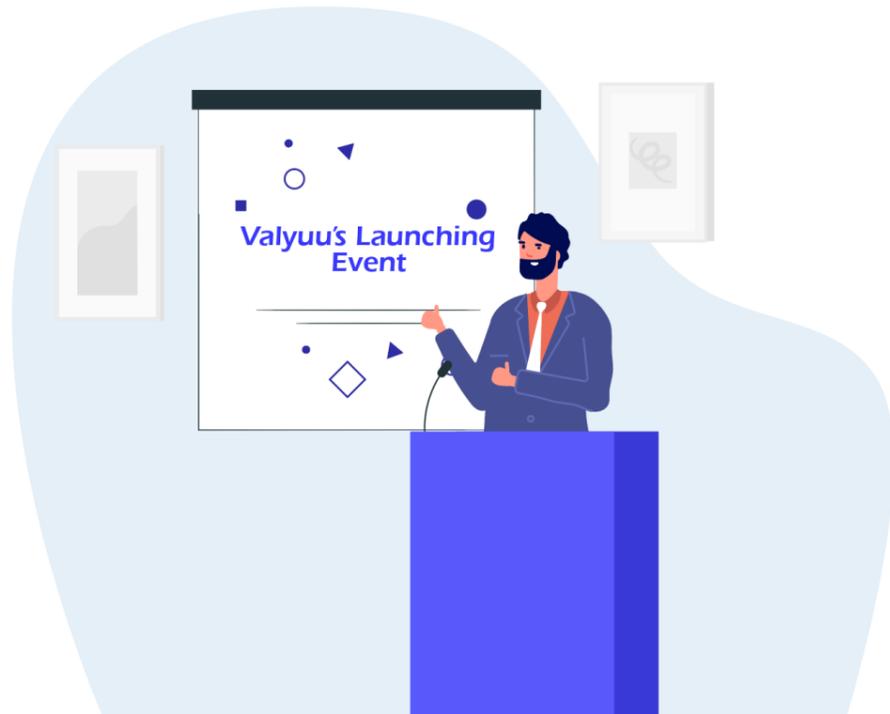


### Marketing channels:

online and offline live show

### Scenario:
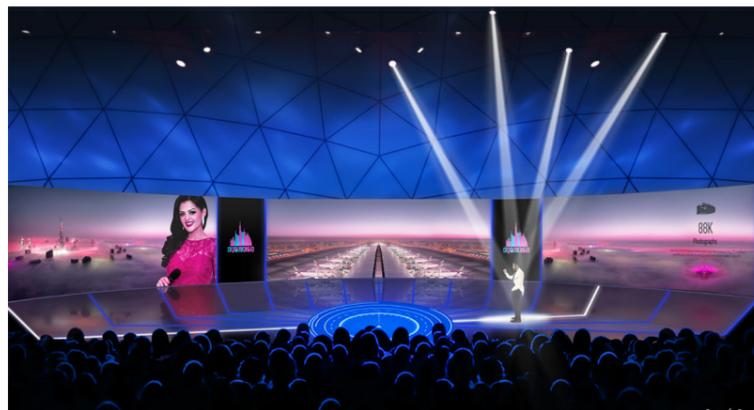


Customers watch the launch event either via online live channels or in an offline conference hall.

### How it works:

We are overwhelmed by new product launch information from various brands nowadays, but we almost never pay attention to those old products that are slowly being outdated as time goes by. This event appropriates the format of the "new product launch event" that we are already familiar with, to the old product, inspired by Design Analogy 1. It

provides an opportunity to bring those so-called outdated products again to public attention. The main idea it wants to convey is that "Valyuu's next new product is the product you're using right now".

This event could entail various contents depending on its themes. For example, during the event, Valyuu will pick up the most popular products it receives to introduce to the public, about the technology it used, what happened during the year it launched, and so on. It arouses the public's memory and lets customers know the demands of these "old" devices. Besides, Valyuu could also educate the public about the harm of inaction and the value of selling.

### Criterion used:

| opportunity 1: social proof: celebrity & expert | familarity bias |
|---|---|
| opportunity 3: visualize value | surprise |
| opportunity 2: playful and enjoyable | curiosity |
| periodic event | story |
| | (remove) status quo bias |

1-the speaker of the launch event could be celebrities or experts from the sustainability or electronics-related fields;
2-the content of the event could entail
3-it offers a fun distraction for the public to view the pre-owned market and the action of selling
4-it is a periodic event that could be held yearly
5,6,7-it embed the unfamiliar content about selling into the familiar format of new product launching, which surprises the public and raises their curiosity
8-narration techniques were used throughout the event
9-the potential harm of inaction will be stated

### Brief evaluation:

**Advantages:**

It can entail good potentials to conduct customer education;
It can merge Valyuu's marketing activities of both seller-end and buyer-end together nicely.

**Limitations:**

It requires more resources to do it.

**Uniquenesses:**

It is a nice chance for Valyuu to do something unique that nobody has done before so as to stand out;
It uniquely leverages the public's existing attention to consumption so as to raise awareness of the EOU disposal.

# Concept 7: The selling story album



## Marketing channels:
online content marketing: article or Valyuu's official website

## Scenario:



The target audience browse stories of current Valyuu's customers from its official website.

## How it works:
Valyuu could invite its loyal customers to co-create a story about their changes of mindset toward selling. These stories should be carefully picked up so as to truly eliminate the target audience's pain points. For example, the story about how they think differently compared to storing before, and how they make up their mind to sell.

## Criterion used:

| opportunity 1: social proof: users and customers |
| :---: |
| opportunity 2: visualize value |
| need for certainty |
| story |

1 & 3: more information and customers feedback are provided
2-the selling value gets visualized by each different "story"
4-different narration or monologue of the customer's own mental journey

## Brief evaluation:

**Advantages:**
Various stories enrich Valyuu's brand image and increase the persuasiveness of selling;

**Limitations:**
It requires the deep engagement of Valyuu's current customers. They might not be willing to cooperate due to their awareness of protecting personal privacy;
It is hard to balance the authenticity and the attractiveness of the story;

**Uniquenesses:**
By demonstrating the real stories of customers, it helps bring Valyuu's service to life.

*(*Note: All of the numbers in the initial concept above are just for illustration without further considering the cost and conversion rate)*

## 7.4.2 Evaluation session and the result

By wrapping up the conceptualization phase, an evaluation session was conducted with the three co-founders.

**The aim:**

The aim is to articulate which design alternative has what kinds of pros and cons with respect to the predefined lists of design requirements. In this way, some "best" alternatives could emerge, and a final concept design could be made by taking well-performed properties into consideration.

**The arrangement:**

After I presented the brief ideas of the nine initial concepts to the co-founders, they gave their comments each according to the "Advantage, Limitation, and Uniqueness" framework based on their first impressions, which was already stated at the end of each concept above. After that, they are invited to conduct a comprehensive evaluation of all of the initial concepts according to the list of design requirements by using the *Harris Profile* matrix (see Appendix K).

Then, based on their feedback, the nine initial concepts have different levels of resources required, and can be accordingly matched into Valyuu's initial product roadmap (Figure 1.7), which would be elaborated on in Chapter 10. **Among them, four design alternatives emerge to have better performance in the Harris Profile, where the first one, the influencers' selling vlog has the best feasibility and viability to be implemented in the next few months according to co-founders' reactions.** This means it could be matched well as a marketing campaign to launch the "door-to-door" pick-up service. **So the final concept would take advantage of the format of influencers' selling vlogs and combine well-performed properties from the four "best" initial concepts after eliminating their limitations.**

**The well-performed properties and improvements for limitations**

Among the four "best" design alternatives, the well-performed properties that make them rate higher scores in the Harris Profile and nominate them the advantages and uniquenesses were identified. And the most important and relevant ones that have good potential to be combined are analyzed below. Furthermore, after eliminating or improving some properties that lead to their limitations, all of the most suitable well-performed properties would be combined into the construction of the final concept.

### Initial concept 1. influencers' "selling" Vlog
*Well-performed properties and their advantages and uniquenesses:*

1. The video demonstration format-->simple with fewer resources required;
2. The personality of the influencers could be a representation of Valyuu's brand personality-->fit for the brand;

3. The influencers lead the audience through the whole selling process-->looks honest and transparent, and fit for the brand;
4. Recommendation for Valyuu's brand at the end of the video-->increase Valyuu's reputation and popularity.

*Improvements for limitations and its advantages and uniquenesses:*
(X) The link to Valyuu's official website-->The redirecting page should not only be Valyuu's official website but should be carefully designed with a higher conversion rate. This will be improved by the well-performed properties from initial concept 4 below.

### Initial concept  4. the time-limited value-added coupons
*Well-performed properties and their advantages and uniquenesses:*

1. The limited duration of the coupon-->trigger customers' intrinsic motivation of loss aversion, thus improving the conversion rate;
2. The "value-added" format-->it is unique in the current market.

*Improvements for limitations:*
(X) The countdown together with the quick drop of value make it tricky and not honest-->Making the format more mild and honest.

### Initial concept 5. Periodical "old" product launch event
*Well-performed properties and their advantages and uniquenesses:*

1. Educate the public about the harm of inaction and the value of selling-->a good form to conduct customer education;
2. Embed contents into customers' attention to the consumption-->leverage customers' existing attention field.

*Improvements for limitations:*
(X) Too many resources required-->This could be eliminated by using the recorded video format in the initial concept 1.

### Initial concept 7. the selling story album
*Well-performed properties and their advantages and uniquenesses:*

1. Various stories-->enrich Valyuu's brand image and increase the persuasiveness of selling;
2. The real and touching stories-->making the brand feel authentic and honest;
3. The format to show the stories-->it is unique in the market;

*Improvements for limitations:*
(X) The lack of protection of the privacy of customers-->this will be eliminated by inviting the influencers to join rather than the real customers.

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• Seller Market Growth Strategy for the Circular Electronics Start-up, Valyuu

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**Chapter**

# 8.

# Final Concept Delivery

This Chapter delivers the final concept to you. It was developed by combining the well-performed properties mentioned at the end of the last Chapter. The final concept is basically an influencer marketing promotion scheme, aligned with Valyuu's already planned door-to-door pick-up service, including the influencer's video and Valyuu's promotion web pages.

# 8.1

# The criteria for selecting influencers

In the consumer research in Chapter 5, there were two options to conduct marketing campaigns derived. The conversion rate of these two options **truly needs quantitative research to be clear**. But this was not done in this project due to the time limit, and there were some further recommendations about this provided in Chapter 11.  Here, **the second option was selecte**d, which is "To not restrict the marketing scope within the electronics field". Because **this option caters better to some pieces of design requirements, which means it caters to Valyuu's latest brand materials about its brand personality** (see Confidential Appendix). and can **enable the solution to be more unique and special.** Therefore, the selection criteria of influencers were derived below:

1. *They should have a similar personality to Valyuu's brand personality*
   **Reasons:** to enhance Valyuu's brand image.
2. *The influencers should aim at the Dutch audiences and also belong to the target group themselves*
   Reasons: it helps to arouse empathic feelings among audiences better.
3. *Their keywords should include most of the five: lifestyle, fashion, shopping, amusement, and electronics*
   **Reasons:** The conventional idea may be to find influencers who specialize in sharing information on electronic devices. But what is unique here is to expand into fields that are related to other aspects, such as lifestyle and shopping. This aligns with insights from consumer research about the current hoarders' attention and preference, giving the audience the feeling of a lower threshold and aligning with Valyuu's "everyman" brand personality.
4. *The number of followers: 30k-50k; the invited numbers of influencers in total: around 4-5 influencers*
   **Reasons:** save the budget per video, start from small to have the first attempt, and go deep into different public attention fields through multiple micro-influencers.

# 8.2

# The template of the story arc for videos

<u>The main idea of the video:</u>

**To demonstrate influencers' own stories about changes of mindset and their first-time good selling experience.** It could help to arouse empathic feelings and self-reflection in the audiences, and transparentizes the selling procedures to leave them with a great first impression of Valyuu's services.

<u>The function and purpose of the story arc template:</u>

The plotting of the template of the story arc (Figure 8.1) explains **what kinds of basic design principles derived from the previous analysis, the design goal, and guidelines have been used to construct the story template.** This can be used a**s material for Valyuu to cooperate and communicate with relevant influencers about what it wishes for the key elements in the video.** However, it doesn't mean the influencer should stay fixed to this template, but it is a reference for different kinds of influencers to plot their videos themselves. **They have the most flexibility to adapt this template to suit their own styles, by manipulating or rearranging the elements.** At the same time, both the invited influencers and Valyuu could have clear thoughts about what kinds of content in the video originate from what kinds of elements in the template and could generate what kinds of possible impacts. This, in turn, helps Valyuu to manage video deliverables from different influencers. Also, **some elements that turn out to have better performance are easy to be extracted and transferred to other forms of videos for Valyuu later.**

<u>Display of the story arc template:</u>

**Title:** Unboxing_____ and how to budget and save
**Theme and form of the video:** the influencer's monologue about his change of mindset and his first journey with Valyuu
**The main actor:** the lifestyle influencer
**Keywords of the video:** lifestyle, amusement, unboxing new commodities, financial management, environmental protection
**Time duration:** 6-8 mins
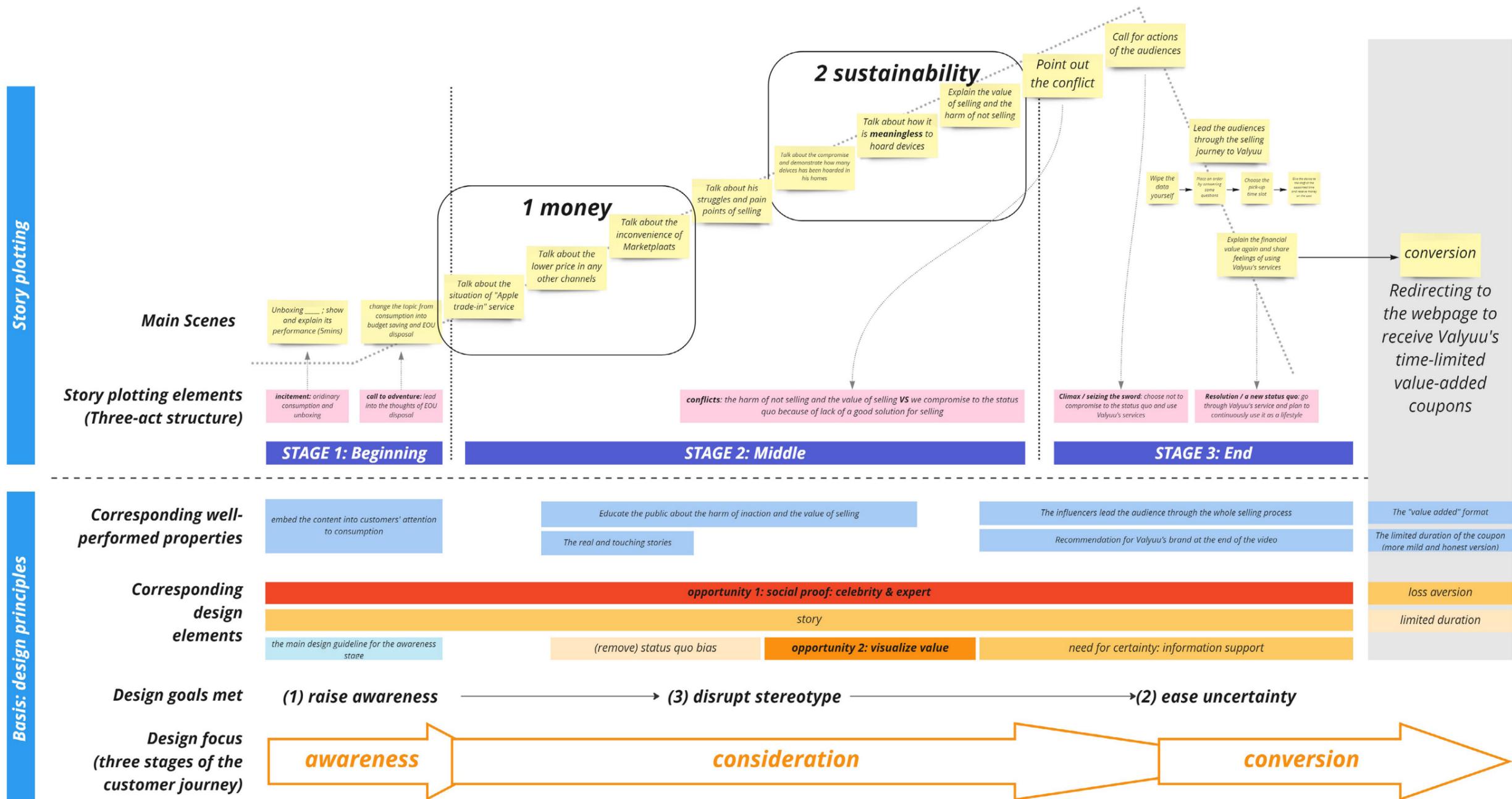
*Figure 8.1. The story arc template*

The plotting of the template of the story arc (Figure 8.1) complies with the *Three-act Structure* (see Appendix L) of storytelling. The beginning of the video opens up by unboxing some latest popular commodities, to leverage the public's common attention to consumption. After briefly introducing the unboxing experience and the performance of the commodities, the speaker then naturally **transfers the topic to budgeting and saving and points out a possible way of getting money back from EOU electronic devices.** The speaker then talks about the inconvenience and pain points of the current solutions, including mentioning the widely-acknowledged Apple trade-in service, and Marktplaats. And he also explains how his stereotype of the pre-owned market formed accordingly. Then he talks about his hoarding behaviors before and articulates **how meaningless it is to hoard electronic devices at home.** Till here, his own story aims to resonate with the audience of similar experiences and arouse their self-reflection.

Along the way, the story arc rises accordingly and reaches the Climax of the arc, which is the influencer pointing out the conflict and calling for action from the audience. Then, the arc falls down with the influencer leading the audience along his whole journey with Valyuu and his stating the resolution of selling. This helps provide informational support of the selling process to the audience, and can thus ease their uncertainty through transparency. Throughout the story, **the financial, environmental, and emotional value of selling has been revealed**. Finally, the whole story ends up recommending Valyuu's services and leads the audience to convert to Valyuu's promotion website, which would be displayed below.

# 8.3

# User flow of the promotion web pages

The user flow of the promotion web pages was shown in Figure 8.2. It demonstrates the complete user's path of browsing the website. The ultimate goal is to let them collect the value-added coupon and then register an account, as a basis for them to have a first try selling to Valyuu.
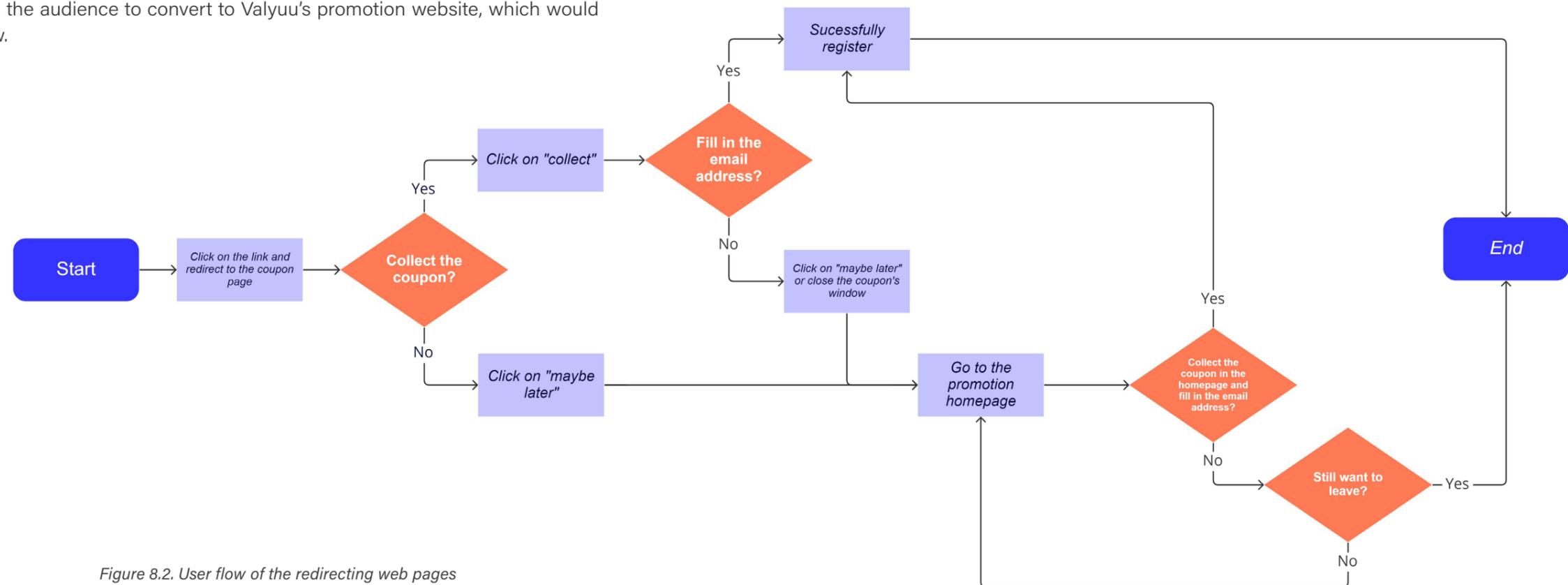


Figure 8.2. User flow of the redirecting web pages

# 8.4

# Display of the final concept

Below shows the final high-fidelity version of the final concept.

## 8.4.1 The storyboard script of the influencer's video

The storyboard script of the video demonstrated here is an example video derived from the story arc template.

**The main character:**
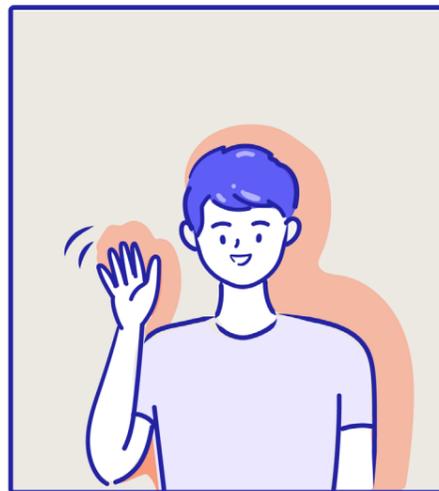


· **Ken, 27 years old;**
· **local Dutch person; part-time Youtuber**
· **Focusing fields: lifestyle and fashion fields.**

He often unboxes some fashionable items including the latest popular electronics. Here, he takes **unboxing iPhone 14 as the incitement at the beginning of the video**, because it is the most suitable for his video style. Then he tells a story about his changes of mindset and his selling experience to Valyuu based on the story arc template above (Figure 8.1).

## 8.4.2 Valyuu's promotion web pages



Value-added coupon

Promotion homepage

Collect and register

Assess the device now

Visualize sustainable value

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**Chapter**

# 9.

# Stakeholder Validation

This Chapter proves the feasibility, viability, and desirability of the final concept to you, through two rounds of validation sessions with stakeholders, including a round with the target group (main) and a round with Valyuu's co-founders (minor). Finally, some recommendations for improving the final concept were derived.

# 9.1

# Validation with the target group

### 9.1.1 The goal, hypothesis, and success criteria

The **objective** is to evaluate to what extent the final concept meets the design goal – "to let the target group have a first try at handing over their EOU devices for reuse through Valyuu's service"; and how much they acknowledge the information conveyed through the concept about solving their main pain points, which is related to the desirability dimension. Accordingly, the **hypothesis** of this round of the validation session is that after watching the influencers' videos, participants' willingness to sell will improve, and they would like to try selling to Valyuu soon.

But whether the participants could sell soon is also dependent on whether they have obsoleted devices available at hand. For example, even if their willingness of selling is improved by the video, if they don't have available devices to be sold at the moment, then they cannot achieve the target behavior soon. Therefore, based on this practical consideration related to the conversion rate, **the hypothesis could be broken down into two levels of success criteria:**

**The minimum success criteria :**
(1) Most of the participants' willingness of selling get improved after watching the video;
(2) Most of the participants are curious and want to click on the link to have a look at the website.

**The ultimate success criteria :**
(1) Some of the participants are willing to collect the value-added coupon;
(2) Some of the participants would like to try selling to Valyuu soon.

### 9.1.2 Set up

In order to simulate the online video browsing environment without spending too much time editing the video, **the role-playing technique** could be used efficiently in this case. Participants were invited to an online *Zoom* meeting, where I performed the *Youtuber* myself according to the storyboard script above and they pretended they were audiences browsing *Youtube* videos in their free time (Figure 9.1). And there were three moments to collect their feedback throughout the session, including filling in a brief

questionnaire and having a small discussion together (Figure 9.2).



*Figure 9.1  The screen shot of the online role-playing validation session on Zoom, with me performing the influencer*



**Three moments to ask for feedback from participants**

| | Before the role-playing | After the role-playing | After browsing the website |
|---|---|---|---|
| **Design of the questionnaire** | · Rate their willingness of selling electronic devices<br>· briefly fill in reasons why | · Rate their willingness of clicking on the link<br>· briefly fill in reasons why | · Rate their willingness of selling electronic devices<br>· Rate their willingness of collecting the coupon<br>· Rate their willingness of using the coupon to have a try of selling soon<br>· briefly fill in reasons why of each rating |
| **Brief discussion** | · Brief discussion together about their reasons of not selling | · Brief discussion together about their feeling after watching the "video" | · Brief discussion together about their feeling of browsing the website |

*Figure 9.2 The moments and forms to ask for feedback from participants*

The design and answers of the questionnaire could be found in Appendix M.

### 9.1.3 Participants

Based on the convenience sampling strategy, I had small chats with potential participants around me and selected several of them who have the closest attributes to the defined target group - lazy ignorers. In the end, there were in total 6 participants who joined the live session of the validation.

### 9.1.4 Result

Overall, the minimum success criteria have been met perfectly, while the ultimate success criteria were also met nicely. **The hypothesis has been basically proven to be true and the customers' desirability and the design goal are met at a good level.**

**Before watching the video** ⭕━━━━━ 4.2 ━━━━━●

**After watching the video** ⭕━━━━━━━━━ 7 ━━●
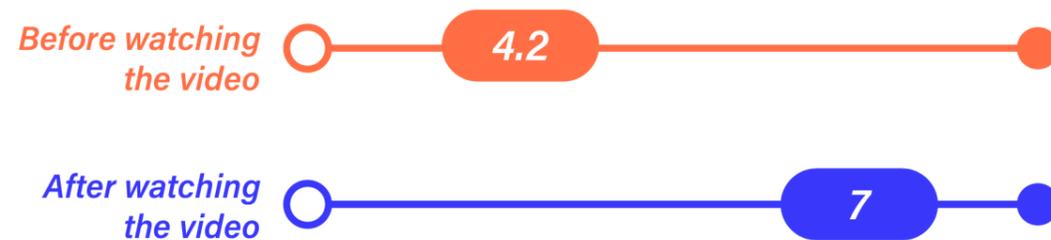
*Figure 9.3. The increase in the average rating score of the willingness of selling after wahting the "video"*

Before watching the video, their reasons for not selling are generally the same as the defined target group, such as *"because replacing the device less frequently, so the awareness of disposal is really low".* And almost every participant mentioned *"the troublesome process and the lower selling price".* In general, it is dispensable and they don't perceive selling as a business with a higher priority in their daily lives, which also aligns with the conclusions from the consumer research in Chapter 5.

However, participants' willingness to sell after watching the "video" has been improved a lot: The one with the highest improved rating increased from 0 to 7. And **the average rating score among the six participants got increased from 4.2 to 7**, while the average rating after browsing the website is 7.2, which remains almost the same as after watching the video (Figure 9.3). According to the discussion and their answers filled in the questionnaire, **their interests and curiosity were also raised and they became aware of the benefits of selling for the environment. Besides, they felt the selling price is fair and reasonable, the platform looks professional, and the process looks easy and convenient.**

A detailed validation result including specific recommendations could be found in Appendix N.

After validating with the target group, another round of validation was conducted with

co-founders briefly via discussion group so as to evaluate the final concept from the business perspective, mainly about the feasibility and viability dimensions. Accordingly, the advantages, limitations, and suggestions for further improvements were summarized below.

# 9.2
# Validation with co-founders

**Advantages:**

The whole proposal **reveals the uniqueness and advantages of Valyuu very well**, and **the feasibility and viability of the concept are nice**. Because it aligns closely with the company's existing capabilities, resources, and planning of business developments. And **the plotting of the story arc template articulates essential design elements**, which are good resources to be transferable for other videos of Valyuu later. Besides, the explanation of green values is really inspiring, which is rarely known by the public. And **the combination of influencers from different fields but not merely focusing on the electronics-related field is an interesting and unique choice**.

**Limitations:**

Due to the time limit, **research in the influencer's market hasn't been conducted beforehand**. Some information such as related to **the specific cost of influencers or the best length of the video hasn't been considered thoroughly**. Also, what other competitors, such as Swappie, are doing in the influencer's marketing channels hasn't been explored and referred to.

As mentioned before, after launching the video, there is a possibility that a number of people who might be interested do not have available devices to be sold. So the validity period of the coupon has been set to 2 years. Although this setting further promotes user registration, it relies heavily on retaining these users in various ways and reminding them to sell in the future. Nevertheless, the cost of retaining customers, in the long run, might be a bit high, and also in order to be able to fulfill them in the following 2 years, **it is likely to be a long-term burden of financial management.**

**Suggestions for further improvements:**
*(Detailed explanation of the suggestions could be found in Appendix M)*
(1) To make the combination of inviting micro-and-macro-influencers:
(2) To cut down and select the most suitable elements for the specific field of one video:
(3) To make the launching time of the video more accurate:

# 9.3
# Conclusion

## The validity of the final concept is in a good level :

☑ The hypothesis of the validation session was proved to be true.

☑ Both the minimum and ultimate success criteria were met nicely.

## Recommendations for improving the final concept :

### (1) For the Video:

📊 Further research about the situation of influencer marketing in the Netherlands should be done.

📊 Making the combination of inviting micro-and-macro-influencers to cooperate.

📊 Making the recommendation of Valyuu in the video more mildly and naturally.

📊 Cutting down and selecting the most suitable elements for one video.

📊 Picking up accurate timing when publicizing the video.

### (2) For the promotion web pages:

📊 The form of the pop-up window could be adjusted more mildly or the pop-up time should be well designed.

📊 Removing the countdown of the coupon.

## Answer to the research questions :

☑ **SQs 3 and 4 :** the outcomes from this Chapter **prove the feasibility, desirability, and viability of the final concept** for answering SQs 3 and 4.

# Chapter

# 10.

# Further Market Growth Scheme

This Chapter uses a roadmap to provide you with implications about the further market growth scheme building on top of Valyuu's existing product roadmap, and mainly taking the suggestions in the conclusion part of the company and competitor analysis in Chapter 3. And all of the initial concepts were also mapped onto the roadmap, as a reference of marketing forms corresponding to different horizons.

# 10.1
## The roadmap
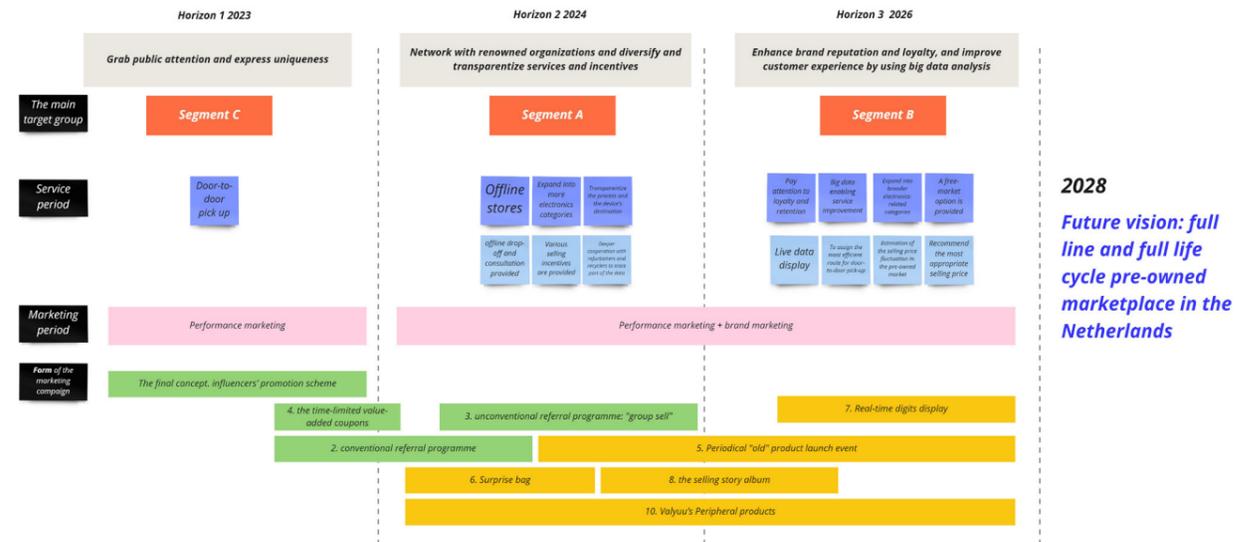


Figure 10.1  The implementation roadmap

Including the final concept, the rest unchosen initial concepts for marketing campaigns were mapped into the implementation roadmap, corresponding with Valyuu's planned service improvements (Figure 10.1). The main idea of mapping those initial ideas into the roadmap is to serve as inspirations of marketing forms for Valyuu to refer to later, and the specific content of the marketing should be adjusted based on the corresponding service period and the target group. This roadmap only demonstrates the "seller" side of Valyuu's business. Due to the above-mentioned difficulties of persuading Segment D and its deviation from Valyuu's own planning, this segment temporarily won't be included in the overall growth scheme.

Valyuu's future vision is to become a full line and full life cycle pre-owned marketplace in the Netherlands by 2028. So, in **Horizon 1,** by the end of 2023, they will launch the door-to-door pick-up service accompanied by the final concept--the influencer's promotion scheme. This horizon aims to **attract Segment C**. And Valyuu should focus on grabbing the public attention by selling and expressing the uniqueness of Valyuu's services, which is the fast payment speed and great payment amount, as pointed out in the conclusion part of Chapter 3. And the two priorities of suggestions for improving its weaknesses were combined respectively into the following horizons.

When entering **Horizon 2**, some **brand marketing activities** will start. This horizon aims to expand into **networking** with renowned organizations and diversify and transparentize services and incentives, which could mainly **attract Segment A**. The service improvements include expanding into various electronics categories, and **varying incentives by cooperation with other organizations were also added**. And the corresponding forms of marketing activities, such as group sell, story albums, and Valyuu's peripheral products, could help raise both Segment C and A's awareness to a higher level.

**Horizon 3** is to **enhance the brand reputation and loyalty**, and improve existing services further by using big data analysis. In this horizon, a channel for customers to conduct trading like free-market was set up by Valyuu itself. While this could **retain Segment B very well**, as they have a higher ability and motivation to find buyers themselves and strive to seek the best price. And along with the expansion of the seller's group, Valyuu could generate data from customers. **Leveraging big data analysis techniques could enable Valyuu to launch its marketing campaigns to more accurate audiences at more accurate times.** Besides, some functions to increase the service's efficiency and convenience could be provided. For example, a live data display of the selling price fluctuation, or the recommendation of the most appropriate selling price in parallel with the estimated time to sell could be provided. So, the form of the marketing activities could also contain some tech elements, such as the concept of the "real-time digit display". Besides, till then, a good recognition of Valyuu's brand should have been established among the public, and would be a great time to conduct the periodical "old" product launch event.

# 10.2
## Conclusion

### Answer to the research questions :

☑  **SQ5:** This Chapter answers the SQ5 about how should Valyuu further grow its seller market by expanding into other segments corresponding with its own business planning and relevant insights from this project.

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# Chapter

# 11.

# Conclusion and Discussion

This Chapter explains the final conclusion of this project to you, and provides recommendations for any reader who wants to develop further designs or studies on top of this project. In the end, some insightful personal reflections were recorded regarding the design methods and communication with clients.

# 11.1
# Conclusion

The project aims to provide strategic solutions for Valyuu to grow its seller market. The overall process can be divided into the research part and the design part, each of which corresponds with one diamond in the Double Diamond design approach used in this project. The research part in the first half provides the basis for answering each of the sub-research questions (SQs). And all of the conclusions from the research phase closely contribute to the design development part in the second half. Finally, the influencer marketing promotion scheme, aligned with the launching of the door-to-door pick-up service, including an influencer's video and Valyuu's promotion web pages was delivered as the final concept, which proves to be valid to reach the design goal and ultimately answer the main research question (RQ).

## Highlighted contributions for both the business and academic world

Specifically for the academic contribution, this project fills in the research blank identified from the literature review to a great extent:

1. **Deeper reasons behind storage behavior had been mapped, corresponding with different segments of customers who do not sell;**
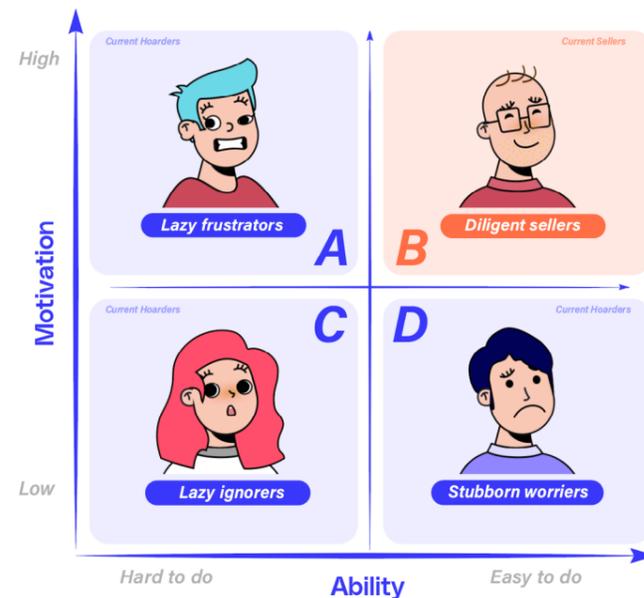


2. **A marketing scheme combined with Valyuu's planned door-to-door pick-up service was provided to encourage the target audience's willingness to hand over their devices for reuse was proposed, which proved to be effective through validation sessions.**



As mentioned before, the research blank is aligning with what Valyuu wishes the answer for as stated in Chapter 1. Therefore, by filling in the research blank, Valyuu's expectation of this project was met nicely as well.

However, **a small part of the research blank had not been addressed completely, which is how to minimize the storage time as much as possible**. Besides this limitation, in order for Valyuu to have a better understanding of how to **implement and improve** the research insights and design solutions to develop its business further, and for readers who are interested to develop further research or design in the related fields on top of this project, **some recommendations were proposed as follows**.

# 11.2
# Recommendation for further studies

<u>**How to further develop the market segmentation result?**</u>

*1. The attributes of the market segmentation result proposed by this project were discussed below:*

**a. Generality of the segmentation:**
The market segmentation proposed in this project is **a general overview** measured by **a person's long-term use of most of their electronic devices within the 2-3 years timeframe**. It does not include short-term changes or special cases for certain types of devices.

**b. Particularity could be taken into consideration further:**
When conducting the consumer analysis, it was surprising to find out that, an individual could behave closer to a segment within a certain device category, but behave closer to another segment in another device category. Take the most evident case as an example, a customer who generally behaves similarly to Segment A regarding most of its devices might behave similarly to Segment D in some devices that have the function of data storage, such as smartphones or laptops. Therefore, **the specificity of those devices that contain data storage functions might be a trigger to push a person to be Segment D within this kind of product category.** So further research attention could be given to those devices with data storage functions, to know how to remove consumers' reluctance of selling these kinds of devices.

*2. It is necessary to plan to segment the seller group further:*
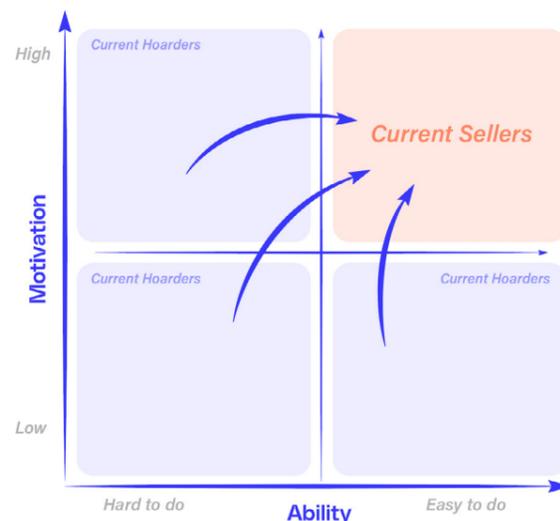


This project merely segmented current hoarders into three groups, without further segmenting the current sellers. However, because Valyuu has been working on expanding the seller group, **which results in more and more people becoming sellers, then the group of current sellers will gradually increase**. Then, it is necessary to segment the current sellers again **according to, for example, their different selling frequencies, and preference for rewards, so as to better meet their needs and retain them in the long run**.

*3. It is suggested to conduct quantitative validation of the segmentation:*
This project didn't include a quantitative validation of the market segmentation due to the limited timeframe. The assumption was given that the lazy ignorers are the group with the largest population based on analysis from the qualitative consumer research together with my own observations. However, it is highly recommended for Valyuu to conduct a quantitative validation by questionnaire, to have a more accurate estimation of the relative population of each segment. This will help bring more quantitative insights for Valyuu to further expand its seller group and conduct risk management better in the meantime. Also, this can help to check if there are still unexplored segments that are not included well in the proposed segmentation and identify groups who might need a more fine-grained segmentation further.

*4. It is beneficial to capture and retain customers who have a higher Life Time Value (LTV):*
The topic of customer retention was out of the scope of the design focus. However, in order to let customers sell their EOU devices almost every time when obsoleted with minimized storing time, for the sake of business profits and environmental benefits, recommendations for further studies on this point were given here. According to the conclusion from Chapter 5, **the more love individuals have for a certain type of electronic product, the more likely they are to spend more free time and money on electronics.** Thus, most importantly, they have more possibilities to own more numbers and categories of electronic devices. Therefore, this kind of customer has a higher LTV than others. Based on this, **it is suggested to use a questionnaire to estimate** how much proportion of customers in each of the Segments A, B, C, and D respectively have a higher LTV, and then to target this group of people more accurately, as well as using different strategies to retain them, such as providing the community or VIP services.

# 11.3
# Personal reflection

From my four-year bachelor's to my two-year master, it has already been six years for me to "travel" in the playground of Industrial Design. Every project I was involved in was a valuable learning opportunity for me and always provided me with new insights into Design. Throughout this graduation project, I have harvested a lot regarding my personal learning ambitions, the implementation of design methods, and cooperation with clients.

In the project brief, I formulated **two personal learning ambitions**: (1) learn to segment customer groups rigorously; (2) acquire more experience in the field of designing for behavior change (DfBC). After completing this project, I met these two learning ambitions nicely. I segment the market according to consumers' behaviors by using the FBMI. This makes the segmenting variable more measurable and valid. However, due to the time limit of this project, I couldn't arrange a quantitative validation of the market segmentation. But quantitative research is always my weakness, then this might be the next learning point for my career after graduation. In addition, I truly learned many interesting theories, models, and toolkits in the field of DfBC, and I found it is a really fascinating research area. It enriched me with a new perspective to approach design and its impact.

Furthermore, during the process, I also continuously reflected on what I have done and recorded several insights into the implementation of design methods and communication with clients. I wish these insights could contribute to my decision-making of the design projects in my future design career, and also give inspiration to readers who might use similar design methods or go through similar processes as this project.

**1.  Insights into using the design methods:**
   **(1) The difficulty in this project: "to create needs for people who might not have or be aware of the needs"**
In my previous internship or school projects, I often provide design solutions to satisfy customers' unmet needs. The **"wicked problem"** in this project is that the target group currently might not have or is not aware of the need of selling electronics. Some of them don't even pay much attention to electronics. Then, "creating" the need for them is a previously inexperienced difficulty in this project. This is the reason why I found using various design tools or methods in this project more challenging than before.

**(2) Insights into conducting the semi-structured interview:**
**It is always beneficial to practice the interview guide several times by pilot testing before the formal interview started**: During the process, I noticed one weakness when conducting interviews is my improvising skills. Because some of my interviewees reflected that my style of interviewing was similar to a Q&A session. Besides, there were one or two questions I asked a bit hard to understand for some interviewees. So, I reflected that I should have spent some more time conducting more pilot tests based on the interview guide for practicing and iterating before the formal interview started. In this way, the interview process will become more of a natural conversation, and the result of the interview will be even more neutral and accurate.

**(3) Insights into facilitating the co-creation workshop:**
• **A co-creation workshop doesn't mean "stealing" ideas from others**. Therefore, having an initiation session to ideate myself before the workshop enabled me to have good control over the progress of the workshop and understand what kinds of others' ideas overlapped with mine and what kinds of ideas could bring me fresh inspiration.
• **When reporting results from the research phase to the participants, it is worthwhile to strive to simplify and visualize the information as much as possible**. This could help make it easier to digest by participants in a short time. Otherwise, participants will get lost and distracted and their creativity might even decrease during the workshop if every detail is included and presented to them.
• **I should have arranged more time for the discussion parts in the workshop**. But I actually arranged more time for participants to ideate individually. However, in the discussion parts, a lot of nice conversions were sparked. And they turned out to be one of the most inspirational and beneficial sources for my concept development.

**2.  Insights into communication with clients:**
   **(1) When cooperation with start-ups, it is necessary to have a flexible mindset and always keep pace with their iteration:**
During the time this project was conducted, Valyuu has been iterating its services, websites, and brand several times. Some already proposed analyses or proposals at the beginning or halfway of this project should be adjusted at the end according to its updates. So it is very essential to stay connected with the client so as to keep pace with their progress.

   **(2) Never wait until the client proposes their wishes to progress further, but we designers should be the lead to try stepping a bit further in advance.**
I found this is always the case when cooperating with company cases. It was hard for clients to articulate specifically what they expected or rejected in advance. Until I proposed some directions or several initial concepts, they became much clearer about what would be their expectation and wishes for the solution. Then I could adjust and iterate my concepts to be closer to their anticipation.

# Closing remarks

It was my first time stepping into the field of Design for Behavior Change (DfBC) with a strategic mindset. I realized that designers play an impactful role in shaping people's behaviors, which is quite beneficial to be used in the sustainability field. In fact, designing for sustainability has been my ideal for a long time, and DfBC brought me new perspectives to approach this topic in an impactful way. Furthermore, this project also made me realize the severe problem of e-waste. However, it is indeed a challenging social problem that might not be solved completely at once but requires long-term investment and attention. But I'm happy that I could make a small contribution to it by doing this project, and probably, in the future as well.

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# [The End.]

**Seller Market Growth Strategy for the Circular Electronics Start-up, Valyuu**

**Master Thesis**

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**Author**

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