by Mendel de Kok

Designing for product presentation

Improving amateur secondhand product presentation on Marktplaats

master thesis

Designing for product presentation

IMPROVING AMATEUR PRODUCT PRESENTATION ON MARKTPLAATS

master thesis

Colophon

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IMPROVING AMATEUR PRODUCT PRESENTATION ON MARKTPLAATS

master thesis

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Acknowledgements

In front of you is my Master thesis on which I have been working for the last six months. It is a thesis describing the process of designing for improved product presentation on Marktplaats. The thesis has allowed me learn astonishing much on the subject of my interest: product presentation. With the help of with Jeroen Mulder, Maarten Wijntjes and Barend Klitsie, I realised to translate this newly gained knowledge into this thesis and to show my competence as a designer.

Writing this thesis would have been inconceivable if it were not for the help and support I received along the way. Therefore, I would like to thank those people in advance for supporting me and helping me expand my knowledge.

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Marktplaats

Secondly, I would like to thank Jeroen Mulder; the company coach and project owner. Jeroen, thank you for giving me the opportunity to graduate in collaboration with Marktplaats. I loved our meetings and conversations. Your enthusiasm inspired and exited me anytime I felt a bit stranded. I highly appreciate the unlimited amount of knowledge you shared with me, and your readiness in helping me throughout the project. I would also like to thank Rochelle Carr (Product Manager) and Leon Groot Obbink (Product Designer). Thank you for your time and feedback on the project.

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About this Thesis

This is a thesis on the improvement of amateur product-presentation on Marktplaats, a classified advertising service. In a broader sense; this thesis is about online product presentation. The thesis provides research on product presentation, a tool for communicating product information, and it demonstrates a design process for improved product presentation on Marktplaats.

Improvement of product presentation

A good product presentation is like a good story, with an important message that is told by a storyteller. Through the means of speech, text or image, the message is conveyed. However important the message may be, it is only conveyed if the intended receiver fully understands the story and believes the storyteller. 'The story' is the message containing all explicit and implicit information; that what is told and that what has been left out. Thus, a good story equals a good presentation of information, and vice versa.

In product presentation, the 'message' to be conveyed is the physical product. Explicitly its function, use and looks, implicitly its symbolic value. If the 'receiver' - the intended buyer - trusts the seller and understands the information, the product has been successfully presented.

From literature, there are no known exact guidelines for presenting a product online. In a face-to-face situation, one may know how to sell his product. Within the framework of current technology however, things start to change. In contrast to a face-to-face situation, services such as Marktplaats mediate between sellers and buyers. In this mediation, interfaces and defined interactions limit the seller in their means of 'storytelling' and therefore limit the quality of the message to be brought across. How can Marktplaats remove these limitations and equip the amateur seller in communicating his or her product more clearly and vividly? And how is it determined whether the story has been told well?

This thesis presents a framework for virtually presenting products and for measuring product understanding. The presented guidelines are applicable to any online product presentation, but are developed specifically for second-hand amateur resale on Marktplaats.

Approach

This thesis is comprised of seven sections that each describe a step in the process. The figure on the right page illustrates the followed approach to the end result.

Introduction

Gives context to the assignment

Literature research

Presents research on product presentation and implications for Marktplaats

Summarising research

The literature research findings are summarised into a framework model

Service research & Ideation

Analysis of Marktplaats and brainstorm sessions that lead to ideas

Clustering

Ideas are clustered into concept directions

Concept choice*

The final concept is chosen and elaborated on

Validation

Qualitative and quantitative testing leading to a final roadmap

* note, throughout the process, imput has been received from project owner and lead UX designer Jeroen Mulder. In this specific phase, the UX designer and manager of the listings designteam provided additional feedback.

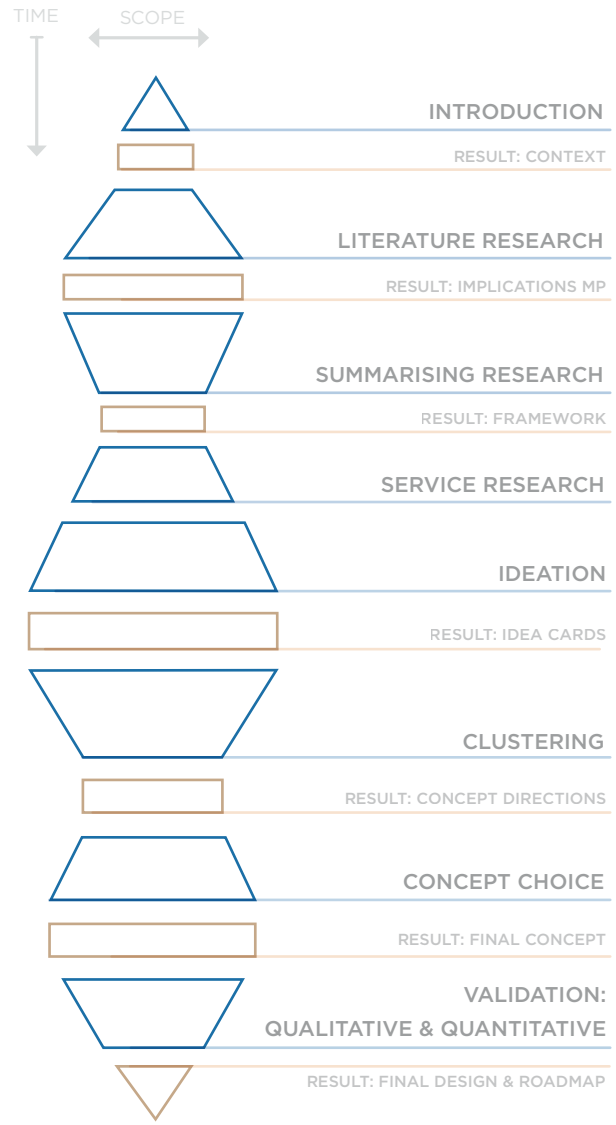


Figure 0.1 approach showing the diverging and converging steps, leading to the end result

Executive summary

This thesis report describes the process and the result of a graduation project for the master programme Integrated Product Design at the Delft University of Technology. The project is carried out in collaboration with Marktplaats, a classified advertising service. This project aims to improve amateur product presentation on Marktplaats.

Marktplaats is an online resale service that allows consumers to buy and sell second-hand products. Marktplaats connects buyers and sellers for stimulating a sustainable use of products. However, the way in which users can present their products on Marktplaats' often generates low quality product presentation and fosters miscommunications of the presented product.

Therefore the goal of this thesis is: Improving the online product presentation of users on Marktplaats: to design for improved visual communication of product aesthetics (appearance), semantics (function) and symbolics (meaning).

Online shopping is linked to high levels of perceived risk because of its intangible nature. Shopping on Marktplaats can be considered even more 'risky', since information on these products is often incomplete, and the presentation is usually less salient compared to professional webshops. Consumers respond to a high perceived risk by developing a purchase strategy which is is dependent on the perception and liability of presented product information. .

Due to the absence of a framework in literature, a framework has been created to design for- and measure product understanding. In this model six instruments are presented that help in designing for improved product understanding either through helping the consumer create a better mental model of the product, or by increasing its vividness (medium).

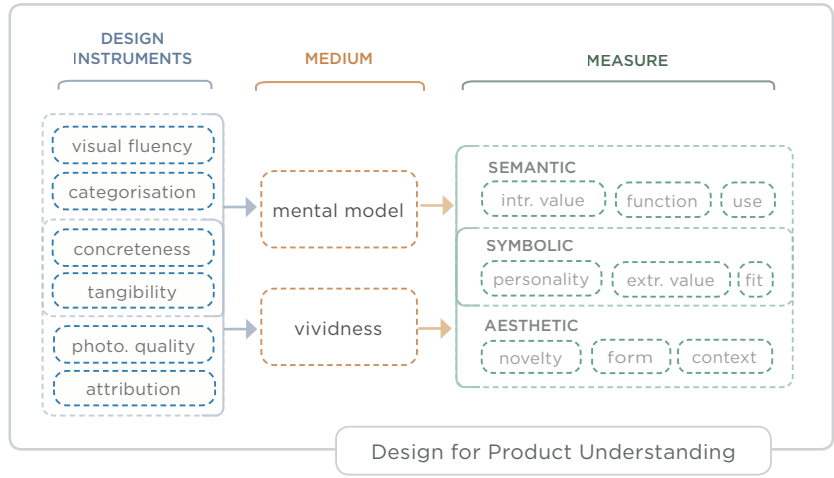


Figure 0.2 a framework for designing for product understanding: instruments improve product understanding through vividness or mental model, and can be assesed on three levels by their measurements.

Depending on the nature of the product, a high quality product presentation is one that accurately represents the product at semantic, aesthetic and symbolic level (measure).

With the help of this framework, ideas have been developed and a final concepts have been presented. Validated by qualitative testing, a final concept is presented that more concretely presents semantic, symbolic and aesthetic information, thus increasing the overall quality of product presentations on Marktplaats. The final concept also assists consumers in deciding what valuable information is missing from the listing.

A quantitative study has shown that providing a list of information that is provided and left out by the seller, makes consumers more aware of missing information in a listing. This knowledge influences consumers perception and liability of a listing, aiding them in forming a risk assessment and developing a purchase strategy. This will likely decrease miscommunictions amongst users and lower negative outcomes of Marktplaats service interaction.

This thesis is concluded with and aesthetic representation of the final design, and a roadmap suggesting further improvements on the short- and long term.

Final design

An aesthetic representation of the final design shown on this spread. This final design represents eight elements, designed to convey the different kinds of information that are of value to the consumer. The full design is shown in phase 10 page 188.

Table of Contents

1 INTRODUCTION

In this section, an introduction to the project is given. Context to the assignment is provided and the project problem/opportunity is described.

Result: project scope and context

Context

Marktplaats is a classified advertising service based in the Netherlands and founded in 1999. The word ‘Marktplaats’ means ‘market place’ in Dutch and refers to the main use of their [web- and app based] service; connecting sellers and buyers of (used) products and services through classified ads. Also referred to as ‘listings’. The products of individual users are often presented by (amateur) photographs combined with listed features and a short description by the seller. The goal of this thesis is to improve the digital communication of product presentation.

User Experience of Marktplaats

In the past few years, Marktplaats’ has shifted their vision from being a passive and functional website towards being more actively involved in facilitating a positive user experience. Through qualitative testing and interviews, they examined their current advertisement service. This lead to the development of their so called BHAG: Big Hairy Outrageous Goal of enabling users to “buy and sell their products within 5 minutes with a smile”. Marktplaats believes that design improvements in the domain of product presentation and communication will improve the user experience and help Marktplaats reach their goal.

Marktplaats strategic organisation

Marktplaats’ shift in vision and approach also lead to a shift in their internal strategy and organisation. From representing a ‘classic’ organisation in which various departments work towards assigned goals, Marktplaats’ has embraced the so-called Conways Law strategy. According to this law,

*Information and numbers in this chapter were provided by Marktplaats orally and through shared documents. Interviews and other qualitative data could not be shared

“organizations (...) are constrained to produce designs which are copies of the communication structures of these organizations”.[1] Their shift towards a user experience based service has therefore set into motion a new internal structure that is based on the customer journey illustrated below.

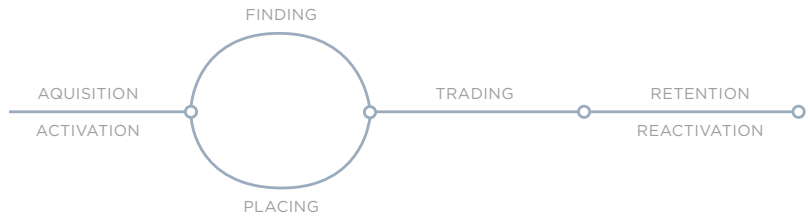


Figure 1.1 above: Freepik.com mockup created by tomasz_tuz and edited by Mendel de Kok

1. Technopedia. (n.d.). Conway’s Law. Retrieved July 13, 2019, from https://www.techopedia.com/definition/31927/conways-law

Figure 1.2 left: customer journey Marktplaats Provided by Jeroen Mulder

For a more detailed customer journey by Marktplaats view appendix 1. In this simplified illustration, each line in the customer journey represents a (design)team within Marktplaats, working together to create a smooth journey. For improving product presentation on Marktplaats, this thesis focusses on the finding/placing part of the customer journey.

Developing user needs

Research indicates that consumers are relying increasingly more on online visual information[2 3 4] . In this developing society of so-called 'Visual Consumption', users' goals and needs are shifting from mainly textual based product descriptions into fully visual and immersive product presentations. Moreover, users value their online experience now more than ever and want to spend limited time and effort to reach their goal. If Marktplaats does not sufficiently adapt these developments, other services will soon arise to attend to these user needs.

Competing for user experience

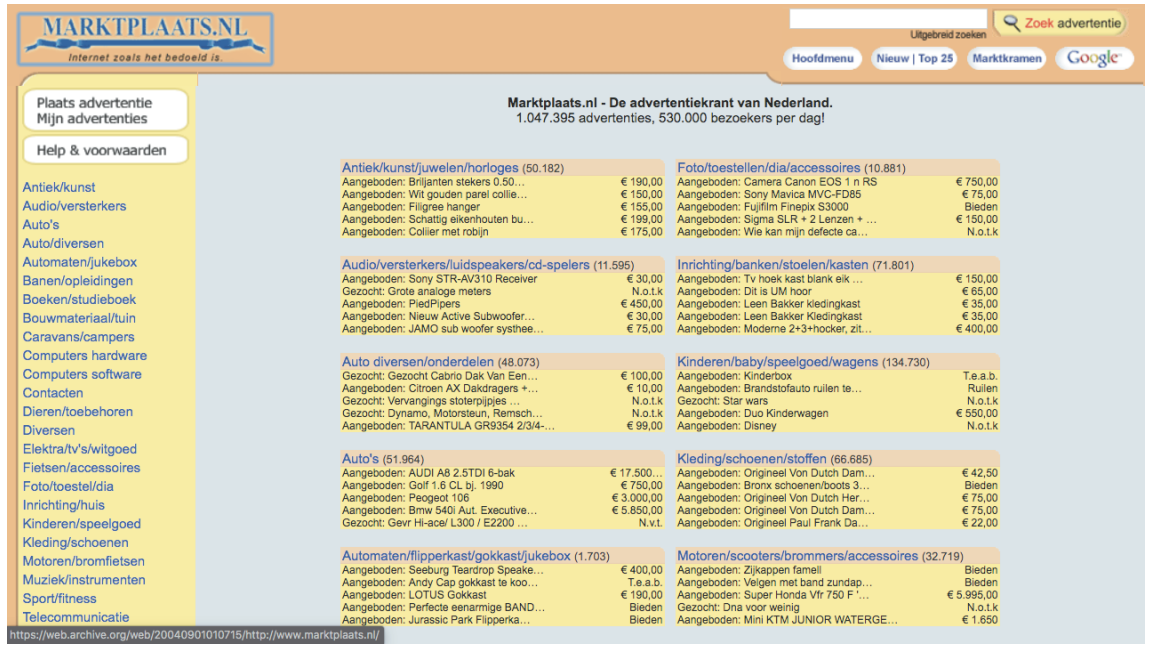
There are two kind of competitors to Marktplaats; generic (horizontal) and niche (vertical) resale services. The horizontals are focussed on a wide range products. Marktplaats is a horizontal service. Verticals are focussed on niche markets, such as cars only, antiques only or clothing.

While most niche markets often provide better (more indepth) services, they do not benefit from the so-called cross-pollination of horizontals. In horizontal services, consumers may visit the service for selling clothes, and end up buying different kinds of products through this same service. Likely for this reason, Marktplaats has the second largest amount of

2. Schroeder, J. E. (2007). Visual Consumption. The Blackwell Encyclopedia of Sociology.

3. Spence, C., Okajima, K., Cheok, A. D., Petit, O., & Michel, C. (2016). Eating with our eyes: From visual hunger to digital satiation. Brain and Cognition, 110, 53-63.

4. Kane, G. C., & Pear, A. (2016). The Rise of Visual Content Online. Retrieved March 1, 2019, from https://sloanreview.mit.edu/article/the-rise-of-visual-content-online/



visitors and subscribed users in the Netherlands (Facebook marketplace being the largest). In 2016, Marktplaats averaged in 8,200,000 unique visitors per month, of which 84% are logged into their account*.

In order stay one of the largest, Marktplaats aims to distinguish oneself from smaller services through improved user experience. Hence, their BHAG of allowing users to 'sell and buy within 5 minutes with a smile'. For more context on Marktplaats' vision, view the SWOT analysis in appendix 2.

Figure 1.3 above: Marktplaats webpage 2004 retrieved from https://web.archive.org/web/20040901043033/http://marktplaats.nl/

Societal importance

Designing for an improved service of Marktplaats implies designing for improved circular economy. Being one of the largest Dutch second-hand resale service, sustainability remains a key value to their brand, and towards societal interest**.

*Information provided by Marktplaats.

** Statement has been endorsed by Jeroen Mulder, lead User Experience designer of Marktplaats

The targetgroup

The design improvements of this thesis should fit any user of Marktplaats. ‘User’ implying both consumers (buyers) and resellers. In this thesis, specifically the needs of ‘consumers’ are considered, granted that ‘resellers’ are directly linked to this process. Users with limitations such as computer-illiteracy (Dutch: digibeet) or visual impairments are excluded from this targetgroup.

Consumer resellers

In this thesis, “consumer resale” is distinguished from “professional resale”. Consumer resale is defined as products which are, prior to resale, purchased mainly for self-use, not for reselling. This definition is adopted from Chu and Liao (2008), who state that in a professional resale, sellers often repetitively sell the same products with a constant supply, and manage items and inventory to maximize profit. Self-use is not a sourcing criteria for a professional reseller. On the contrary, in a consumer resale, sellers do not source for resale and their resale products are limited to personal use items, both in variety and quantity.

Thus resale is not categorized by the seller’s resale experience or frequency, but by the motivation of sourcing in each resale. It should also be clarified that by this definition consumer resellers are distributors, not manufacturers. Therefore, sellers offering home-made products on Marktplaats are defined as professional sellers and are left out of the definition.

Need for improvement

An introduction

Based on a large amount of small qualitative researches, Marktplaats’ R&D and User Experience team judges that the design of their online advertisement service has shortcomings.

These design shortcomings are evident from the diverging - and often negative - results of use and the subsequent user emotions. Outside of the Netherlands, resale services similar to Marktplaats seem to encounter increasing difficulties in sustaining their existence, while larger websites such as Amazon and Facebook are thriving. Though Marktplaats does not (yet) experience similar troubles, they foresee a similar cloudy future if they don’t follow societal and economical developments*.

Design interaction

It seems that people are expecting more and more from Marktplaats in their online interaction. Moreover, inadequate use of their service seems to counteract the users desire for optimal results. One might say that the people are not using the service properly. However, design research suggest that this is a wrong conclusion. In his book “The Design of Everyday Things”, Don Norman argues that this blame can only be put on the design[5] . For in a perfect world, wouldn’t all design be easy to use, pleasant to use and leave ideal results?

“People ignore design that ignores people.”
- Frank Chimero, product designer

Don Norman explains how design is concerned with the nature of the interaction between people and technology.

* Information on design shortcomings and service competition provided by Marktplaats.

5. Norman, D. A. (2013). The Design of everyday things. New York: Basic Books.

How things work and how they are controlled. When designed well, the results are brilliant and pleasurable products and services. When designed badly, its usage leads to undesired experiences or results. Technology may ‘force’ us to behave the way the product wishes, rather than as we wish. Most products and services are pretty limited. They do not maintain the same kind of rich experiences that people have when interacting directly with each-other. Experiences that enable us to interact because of a shared understanding. Instead, simple and rigid rules of behaviour are laid upon users when using these products and services.

Design context

In the context of Marktplaats, one could compare Marktplaats’ online advertisement service with a real life flee market. Walking past the stands, interaction is not limited through buttons, window frames, image quality, technological understanding and so on. We experience the products in broad day light, with the light reflecting on the different materials as we touch the products and feel the material properties. We notice the care or carelessness with which the products are presented. We feel the pressure of other potential buyers lurking around, we care about the stories behind our new purchases and of their previous owners. With no machine between buyer and seller, interaction is natural and integral.

Technologies, when they are used, help to shape the relations between humans and technologies. Relations that are part of a larger relation; between human beings and their world, in which technologies play a mediating role[6]. Designing for product communication on Marktplaats therefore does not only imply designing a technological interaction, but also designing the reflection of a human-world relation.

6. Verbeek, P.P. (2016). ‘Toward a Theory of Technological Mediation: A Program for Postphenomenological Research’. In: J.K. Berg O. Friis and Robert C. Crease, Technoscience and Postphenomenology: The Manhattan Papers. London: Lexington Books. ISBN 978-0-7391-8961-0, pp. 189-204

Figure 1.4: flee market
Photo by Artificial Photography on Unsplash

A design opportunity

People are imaginative and creative, filled with common sense; that is, a lot of valuable knowledge built up over years of experience. Interaction services could capitalize on these strengths, not merely requiring us to act within frameworks; to be precise and accurate. Because this does not reflect human world relations, but are things we are not naturally good at. When looking at the offer-listings placed though Marktplaats’ service, it would likely not take a long time for one to notice a listing with particular ambiguous descriptions, inadequate photographs or impersonal user interactions. Though most listings may convey the proper information for deciding on purchase, Marktplaats seems to harbour great opportunities for improvements on product presentation and user experience.

The project

This graduation project will involve the product presentation component of design opportunity. Through improved product presentation, Marktplaats online resell service may be improved and communicate the product more successfully. This will consequently improve user experience. The main questions concerning this 'improvement' are: How can Marktplaats equip the amateur seller in creating a clear, complete and meaningful product presentation? And how can we decide whether this goal has been reached?

The current problem

The way in which users can present their products on Marktplaats' often generates low quality product presentation and fosters miscommunications of the presented product.

Marktplaats' current online resale service should render a complete and correct communication of objective and subjective information.

Modern visual communication techniques such as interactive display and AI offer additional opportunity for improvement. Design communication shortcomings and opportunities in the visual area will be studied and designed for.

The assignment

Improving the online product presentation of users on Marktplaats: Designing for improved visual communication of product aesthetics (appearance), semantics (function) and symbolics (meaning).

Definitions

A list of interpretations

The visual presentation of products is a critical determinant of consumer response and product success[7]. How a product is perceived, is based how it looks (aesthetics), works (semantics) and its meaning (symbolics).

When discussing product presentation, it is important to establish precise definitions, as the language used by designers, marketing analysts and researches can be inconsistent. Below, some most used terms are defined. Other terms are specified in the text as they are introduced.

Language and defintions

In this paper, '**Product presentation**' refers to the (digital) representation of a product. In this definition, intrinsic and extrinsic cues concerning aesthetics, semantics and symbolics are conveyed through different kinds of instruments and media.

When referring to **'Products'**, only Search goods and Identity goods are implied. *Search goods* are products with attributes that can be evaluated prior to purchase (electronics and utility products). *Identity goods* are goods that relate to a certain fashion or style, and can usually only be successfully evaluated on certain (functional) aspects prior to purchase. Experience goods are left out of the scope. These are products that can only be accurately evaluated after purchase and experience (e.g. restaurant, hairdresser, beauty salon, theme park, travel)[8] .

The term '**aesthetics**' is commonly used to refer to two different concepts[9] . Firstly, in the context of product aesthetics it may relate to what the product presents to the senses (especially vision)[10] . Secondly, in the context of aesthetic experience it may relate to one particular aspect of cognitive response: the perception of how pleasing the process of regarding an object is[11]. In this report, the term aesthetic is used to refer to aesthetic response and not product appearance in general.

'**Semantics**' is defined as what a product is seen to say about its function, mode-of-use and intrinsic qualities[9].

'**Symbolic**' association may be defined as the perception of what a product says about its owner or user: the personal and social significance attached to the design[9].

The term '**buyer**' is used throughout this report as a synonym for 'consumer' and does not only to refer to those involved in purchase decisions but also to includes those involved in the ongoing process of visual consumption.

'**Sellers**' refer to those who offer 'consumer resale products'. Consumer resale products are defined as "products which, prior to reselling, are purchased mainly for self-use, not for resale. This is to distinguish consumer resale from professional resale. Consumer resellers are distributors, not manufacturers[12]. Sellers offering home-made products are professional sellers by this definition.

The term '**user**' concerns both buyers and sellers, or any individual using Marktplaat's online service.

7. Bloch, P. H. (1995). Seeking the Ideal Form: Product Design and Consumer Response. Journal of Marketing, 59(3), 16.

8. Mitra, K., Reiss, M.C. and Capella, L.M. (1999) "An Examination of Perceived risk, Information Search and Behavioral Intentions in Search, Experience and Credence Services", Journal of Services Marketing, Vol. 13, no.: 3, pp 208-228

9. Crilly, N., Moultrie, J., & Clarkson, P. (2004). Seeing things: Consumer response to the visual domain in product design. Design Studies, 25(6), p549.

10. Lewalski, Z. M. (1988). Product esthetics an interpretation for designers. Carson City, NV: Design & Development Engineering Press.

11. Villeneuve, P., Csikszentmihalyi, M., & Robinson, R. E. (1993). The Art of Seeing: An Interpretation of the Aesthetic Encounter. Journal of Aesthetic Education, 27(1), 120.

12. Chu , H., & S, L. (2008). The Definition and Determinants of Consumer Online Resale Behavior: An Exploratory Study. International Business and Tourism Society.

Layout of the research

Literature scope

The research part of this project is performed within, and around the framework of Crilly, Moultrie, & Clarkson (2004). This framework partly defines the scope of this research and has formed a tool for searching for and organizing research findings within this project. The framework of Crilly et al. is adopted because it is based on a large and well performed analysis that combines frameworks of multiple studies relevant to product presentation & communication. The basic principle of the framework is explained and illustrated on this spread. During this thesis, the basic framework is expanded though addition of different topics relevant to the project.

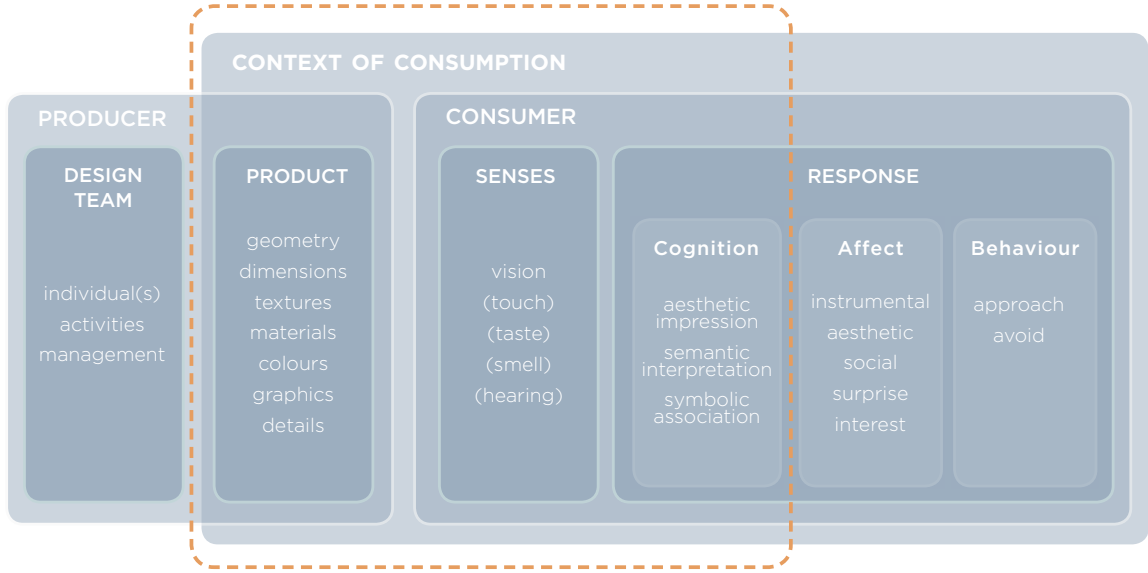
Framework

Consumer response to product presentation is based on the visual communication of product attributes and cognitive interpretation by the consumer[6]. It is therefore useful to consider product presentation as a step in the basic process of communication.

In communication theories, a basic system of communication can be described as comprising five elements: source, transmitter, channel, receiver and destination[13] . Figure ... on the right illustrates and applies this basic system of communication to the process op product communication:

Here, the source is the product designer, the transmitter is the product, the channel is the environment in which the product is perceived, the receiver is the consumer and their response may be seen as the destination. This general view on communication lays a groundwork to designing for product presentation.

13. Shannon, C. E. (1948). A Mathematical Theory of Communication. Bell System Technical Journal ,27(3), 379-423.



Framework scope

Not al steps in the communication process are relevant this project. The orange line in the image encircles the main research area on which will be focussed: The product presentation and the consumer response in the cognitive area.

Aesthetic, semantic and symbolic association will be regarded when designing a solution. In particular; ways of transferring product information to users cognitive understanding. Cognitive understanding of the presented information is the main goal, the buying behaviour of consumers are of lower consideration. Thus, the other responses (affect & behaviour) and contextual factors will be considered during the process, but are excluded from the main area of research to keep the project feasible within the set time-span.

Figure 1.5: Framework scope. Applying the basic process of product communication to product presentation by Crilly et al. The orange dotted square encircles the scope of this thesis.

2 RESEARCH

In this section, research on product presentation, online second-hand retail, and consumer response is provided. Each chapter in this section is summarised into implications for Marktplaats, and into graphic models.

Result: implications for Marktplaats and models

Figure 2.1: Ebay office. Image found on www.ebayinc.com

Introduction

The development of internet shopping

Since the dawn of internet, online shopping has been on the rise, and has been so more rapidly than offline shopping commerce. For the second hand market, this creates new resale opportunities for sellers and consumers.

Unlike other offline retail formats such as catalogs and pin-up boards, online retail provides an interactive environment in which various technology tools can facilitate shopping. It can enhance shopping experience, reduce cognitive effort and save time[14] . For example, Web-site designs that use fast presentations, uncluttered screens, and easy search paths provide a pleasurable and effective shopping experience by reducing shopping time and the cognitive effort of shopping[15].

Because of these new online opportunities, a growing amount of consumers are acting the role of resellers by taking advantage of online transactions[16] . In 2005, Paden and Stell[17] already found new formats for product redistribution emerging and evolving; as consumers have more options to dispose unwanted possessions. Probably the most important emerging disposition channel is online auctions.

Consumer-to-consumer (C2C) online auctions are successful models of Internet commerce. eBay, the largest and most popular C2C online auction, had 179 million global active buyers and 1.2 billion listings in 2018. Its Marketplace revenue growth that year was as high as 7%[18] .

14. Park, Jihye, et al. (2005) "On-Line Product Presentation: Effects on Mood, Perceived Risk, and Purchase Intention." Psychology and Marketing, vol. 22, no. 9, pp. 695–719.

15. Then, N. K., & DeLong, M. R. (1999). Apparel shopping on the Web. Journal of Family and Consumer Sciences, 91, 65–68.

16. Chu, H., and Liao, S. (2008) "Toward A Conceptual Model of Consumer Online Resale Behavior: An Exploratory Study in Taiwan." Journal of Internet Commerce, vol. 7, no. 2, pp. 220–252.

17. Paden, N. and Stell, R. (2005). Consumer product redistribution: Disposition decisions and channel options, Journal of Marketing Channels, 12(3), 105-123

18. Ebay Inc. (2019) "Reports Fourth Quarter and Full Year 2018 Results and Announces Capital Structure Evolution" www.ebayinc.com/stories/news/ebay-q4-2018-results/.

Product intangibility

Risk in online shopping

Accompanying al these developments and possibilities, high levels of perceived risk are found to have an adverse effect on online resale behavior[13 14 19]. Therefore, consideration of risk is important in understanding resale behaviour. Perceived risk is found to be especially high because of the intangible nature of online shopping[20]. Product tangibility refers to the sensational prediction of material properties and commonly implies the real or actual aspects of a product rather than imaginary[21].

Consumers respond to a high perceived risk by developing a purchase strategy, designed to reduce the perceived negative consequences of a sell or purchase[22]. If consumers' buying strategy depend on their perceived risk, webshops should be designed to accommodate these strategies through lowering cognitive effort and improving overall user experience. Consumers' buying strategy is dependent on the perception and liability of presented product information. Consumers may perceive less risk in purchasing second-hand products if they are equipped with the skills to assess them via online auctions and resell them when needed[13].

Perceived product intangibility

Because of the intangible nature of online shopping (i.e. inability to touch or interact with the product), there are quite some limitations in consumer experience when shopping online[23]. This is especially the case for identity goods such as apparel and (home)accessories. In the latter category, style and appearance is often most important and the full information on dominant attributes can usually not be fully known without

19. Park, J., Lennon, S. J., & Stoel, L. (2005). On-line product presentation: Effects on mood, perceived risk, and purchase intention. Psychology and Marketing, 22(9), 695-719.719.

20. Song, S. S., & Kim, M. (2012). Does More Mean Better? An Exemption of Visual Product Presentation in E-retailing. Journal of Electronic Commerce Research, 13(4), 345-355

21. Tangibility. (n.d.). Retrieved from https://www.merriam-webster.com/dictionary/tangible, March 2019.

22. Chu, H., & Liao, S. (2007). The Definition and Determinants of Consumer Online Resale Behavior: An Exploratory Study. International Business and Tourism Society.

23. Featherman, M., and J.D. Wells. (2010) "The Intangibility of E-services: Effects on Perceived Risk and Acceptance," Data Base, Vol. 41, No. 2: 110-131.

24. Klein, L.R., (1998) "Evaluating the Potential of Interactive Media through a New Lens: Search versus Experience Goods," Journal of Business Research, Vol. 41, No. 3: 195–203.

Figures 2.2a (left) & 2.2b (right): visualisation of material haptics. Example of an interactive gif first called "ShoogleIt" by Padilla and Chantler (2011) Image found www.xiehowe.github.io

direct experience[24]. In online retailing, effective product presentation not only attracts consumers to a website, but also facilitates consumer purchase decision making in the absence of directly tangible product experiences[17].

Haptic experience (touch)

When examining literature research on visual presentation of sensory experiences in retail, haptic experience is found to be an important matter. When consumers imagine photographically displayed products materials to have a certain haptic feel, the products are perceived as more tangible. To better convey product haptics, dynamic images (gifs/videos) can be presented or AI can be used to predict material properties such as stiffness, weight and feeling of touch[25 26 27].

25. Bouman, K. L., Xiao, B., Battaglia, P., & Freeman, W. T. (2013). Estimating the material properties of fabric from video. Proceedings of the IEEE International Conference on Computer Vision, 1984–1991

26. Yang, S., Liang, J., & Lin, M. C. (2017). Learning-based cloth material recovery from video. Proceedings of the IEEE International Conference on Computer Vision, 201 7 (October), 4393–4403

27. Bi, W., Jin, P., Nienborg, H., & Xiao, B. (2018). Estimating mechanical properties of cloth from videos using dense motion trajectories: Human psychophysics and machine learning. Journal of Vision, 18 (5): 12, 1–20

28. Verhagen, T., Vonkeman, C., & Dolen, W. V. (2016). Making Online Products More Tangible: The Effect of Product Presentation Formats on Product Evaluations. Cyberpsychology, Behavior, and Social Networking, 19(7), 460-464

29. Ballantine, P. W. (2005). Effects of interactivity and product information on consumer satisfaction in an online retail setting. International Journal of Retail & Distribution Management, 33(6), 461-471

Return rates

Intangibility of products in online webshops is linked to high return rates[28]. In the case of Marktplaats, where returns are usually not an option, it may lead to undesired product purchase or refusal of transaction at the seller's door. These risks can be reduced specifically by using more effective online product presentation methods[20 28 29].

Implications for Marktplaats

Consumers generally perceive online shopping as risky, because of the intangible nature of online shopping. When consumers are unable to physically touch or interact with a product prior to purchase, a low tangibility is perceived. Shopping on Marktplaats can be considered even more 'risky', since information on these products is often incomplete, and the presentation is usually less salient compared to professional webshops. This may lead to undesired product purchase or refusal of transaction at the seller's door. These risks can be reduced specifically by using a more effective online product presentation method, creating clear understanding and liability of the auctioned and avoid misconceptions.

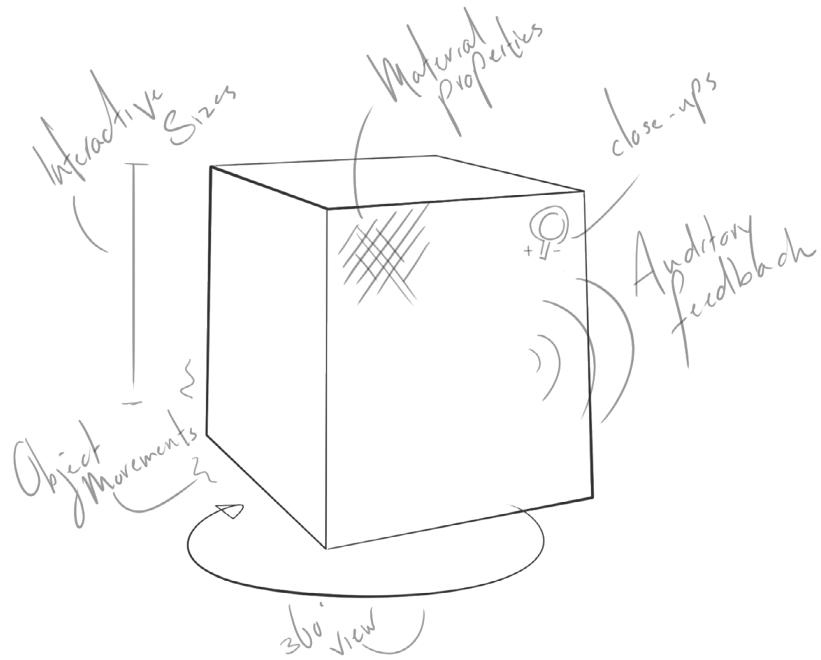
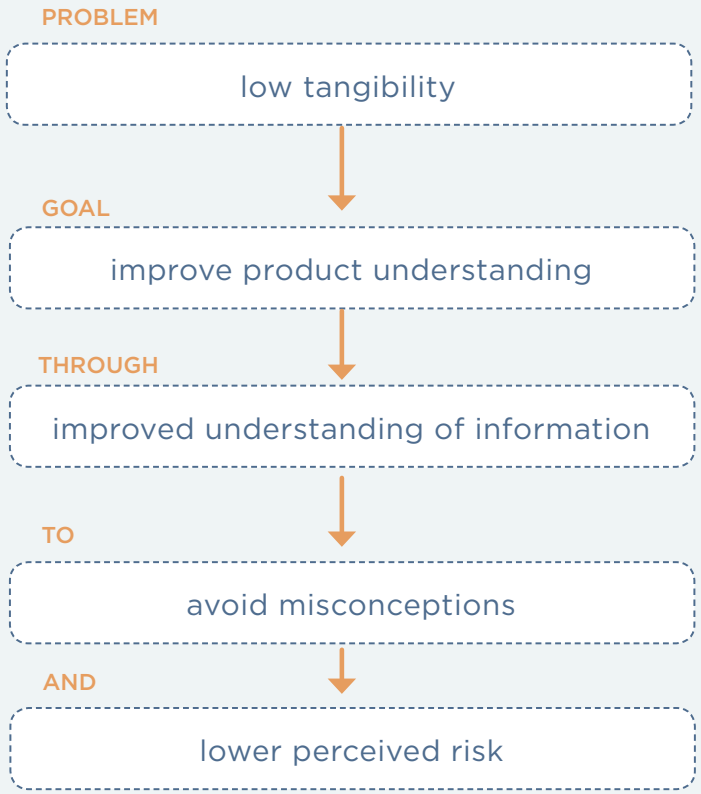


Figure. 2.3: Idea sketch on improving product tangibility, Interactivity and conveying sensational information

Model development 1



Imaginative aspects of product presentation

Mentally imagining

When shopping online for goods like apparel and (home) accessories, haptic information is an important factor for understanding the product. However, when tangible information is inadequate, consumers tend to engage in sensory experience through 'mental imagery' to figure out how the product looks or fits[30] .

Prior research provides empirical support that for successful product presentation, the process of mental imagery is an important factor. Mental imagery is also referred to as "visualizing," "seeing in the mind's eye," "hearing in the head," and "imagining the feel of" [31].

The mental image people engage in is unique for every individual. It reflects the process by which sensory or perceptual experience is represented in an individual's working memory in terms of ideas, feelings, and memories[32] .

> *"Seeing" is a reading, a decoding, in which we begin with interpretive gestures so apparently simple and natural that we think of them as "seeing" but we end by becoming more aware of our own share in constructing this visual text, as we bring more and more information from our other reading, from our experience of art, from our lives, to bear upon the process"*
>
> *Scholes (1989)*

Mental model

Similar to mental imagery, In his book 'The Design of Everyday Things' [5], Don Norman explains the corresponding term of mental models; implying models people have of themselves, others, their environment, and the things they interact with. The mental model of a device is formed by interpreting its perceived actions and its visible structure. When the product is absent in the physical environment, people evaluate a product using their mental imagination of consumption experience, and engage in 'seeing with the mind's eye'.

30. Bebko, C. P. (2000). Service intangibility and its impact on consumer expectations of service quality. Journal of Services Marketing, 14(1), 9-26

31. Thomas, N. J. (2014, September 12). Mental Imagery. Retrieved April, 2019, from https://plato.stanford.edu/entries/mental-imagery/

32. Macinnis, D. J., & Price, L. L. (1987). The Role of Imagery in Information Processing: Review and Extensions. Journal of Consumer Research, 13(4), 473.

Figure 2.4 above: car seat controls by Mercedes Benz. Found on www.blog.prototypr.io

Designing for Mental Models

To illustrate how to design for mental images, an example by Norman is used (see figure 2.4). Here, an electric car-seat-control-panel is shown where the buttons that are linked to the different seat movements, are arranged so as to represent the seat itself; purely from visual inspection, the mode-of-operation may be understood. In this design, a product functionality is visually presented to assists consumers in understanding how a product may be operated.

Consumers grasping the product in their minds can increase perceived product understanding[33 34 35]. It engages consumers emotionally and alleviates perceived risk. This is true for both search goods, identity goods and experience goods.

33. Babin, L. A., & Burns, A. C. (1997). Effects of Print Ad Pictures and Copy Containing Instructions to Imagine on Mental Imagery That Mediates Attitudes. Journal of Advertising, 26(3), 33-44

34. Lee, W., & Gretzel, U. (2012). Designing persuasive destination websites: A mental imagery processing perspective. Tourism Management, 33(5), 1270-1280.

35. Bone, P. F., & Ellen, P. S. (1990). The Effect of Imagery Processing and Imagery Content on Behavioural Intentions. Association for Consumer R search, 17, 449-454.

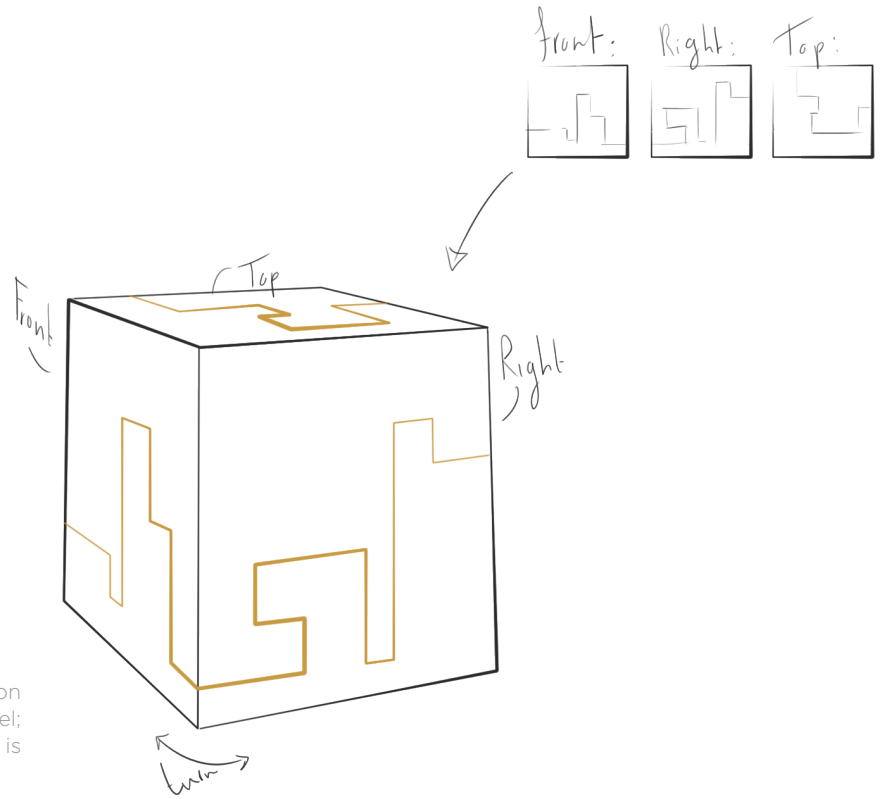


Figure 2.5: Idea sketch on improving mental model; visualising which side is photographed

Implications for Marktplaats

When the product is absent in the physical environment, consumers tend to engage in sensory experience through 'mental imagery' to figure out how the product looks, works or fits. It is an imaginary and simplified model of the reality. A correct mental model can increase product understanding, it engages consumers emotionally and alleviates perceived risk. When designing for mental models, clear product communication is essential. Mental models mainly concern semantics, but help in assessing aesthetics and symbolics too.

Concreteness

In psycholinguistic studies, the degree of ease or difficulty of evoking a mental image, is called 'concreteness' [36]. Concrete words such as 'apple' have tangible referents that effortlessly evoke a mental image. More abstract words such as 'religion' lack tangible referents, making it more difficult to evoke a mental image. For some abstract words, related concrete words with tangible referents, such as church, help to evoke a mental image of religion indirectly[37] . This explains why most people process concrete words more quickly and accurately than abstract words[38].

Visual fluency

Another example of presenting to assist in forming mental models is given by Kim et al[39]. In their empirical research, they initially found that people who viewed small thumbnails with minimum texts perceived more product information than those who viewed large thumbnails with the same texts. After performing additional research on this counter-intuitive finding, they explained that this may be explained by the concept of 'visual fluency'. They postulated that when large thumbnails were used, consumers were unable to see all images in one page and had to scroll down to see them all. This makes visual processing of information harder, leading to less perceived amount of information.

36. Paivio, A., Yuille, J. C., & Madigan, S. A. (1968). Concreteness, imagery, and meaningfulness values for 925 nouns. Journal of Experimental Psychology, 76(1), 1-25. Found in Kim, M. and Yoo, J. (2014)

37. Yoo, J., & Kim, M. (2014). The effects of online product presentation on consumer responses: A mental imagery perspective. Journal of Business Research, 67(11), 2464-2472.

38. Connell, L., & Lynott, D. (2012). Strength of perceptual experience predicts word processing performance better than concreteness or imageability. Cognition, 125(3), 452-465.

39. Kim, M., Malkewitz, K., & Orth, U. (2009). The Effects of Thumbnail Page Design on Consumer Response in E-retailing. International Textiles and Apparel Association Annual Meeting.

Categorization

The formation of a mental model is assisted by allowing the viewer to categorise the product with greater ease and compare it to artefacts or concepts with which they are already familiar[9] [40]. Making visual references, consumers compare product cue's with products they deem similar. Through reflecting generic designs, consumers make sense of the information which the product presents[41].

Generic representations of a product class (stereotypes or prototypes[42]) are used as a base mental model[9]. They present constant forms of a product category that suggests the familiar usage associated with it[42]. For example, a stereotypical chair may be thought of as having four legs, a flat base and a straight back (which affords sitting)[5]. Stereotypes may typify many designs without necessarily being similar to any of them.

Coates proposes that when a specific design example is observed it is implicitly compared to the stereotype[41]. If there is a high degree of conformity the design will appear to make sense[9]. On the other hand, if the design varies considerably from the stereotype it may increase subjective information and be perceived as novel. Thus, the perception of novelty, is influenced by stereotypes. Products utilising shapes and lines that are a radically different from common shapes arouse interest. Whereas typicality assists the consumer in categorising the product and understanding its form[41].

40. McCoy, M. (1984). Defining a new functionalism in design. Innovation: The Journal of the Industrial Designers Society of America, 3(2), 16-19.

41. Coates, D. (2003). Watches tell more than time: Product design, information, and the quest for elegance. New York, UK: McGraw-Hill.

42. Muller, W. (2001). Order and meaning in design. Utrecht, NL: LEMMA. Found in Crilly et al. (2004)

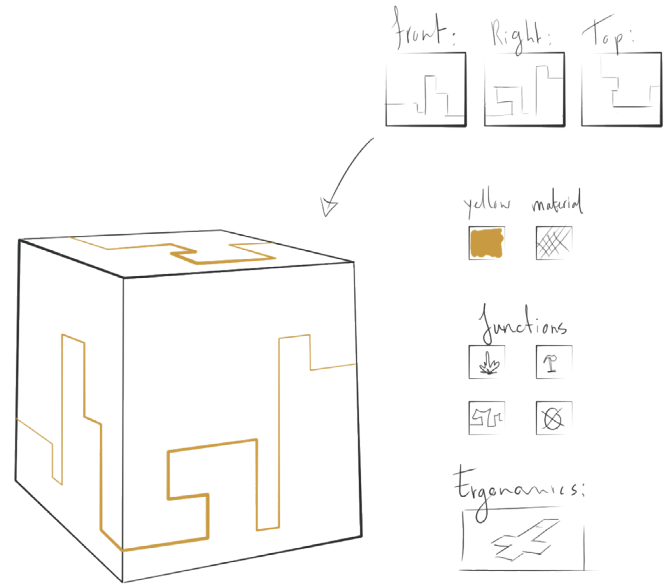


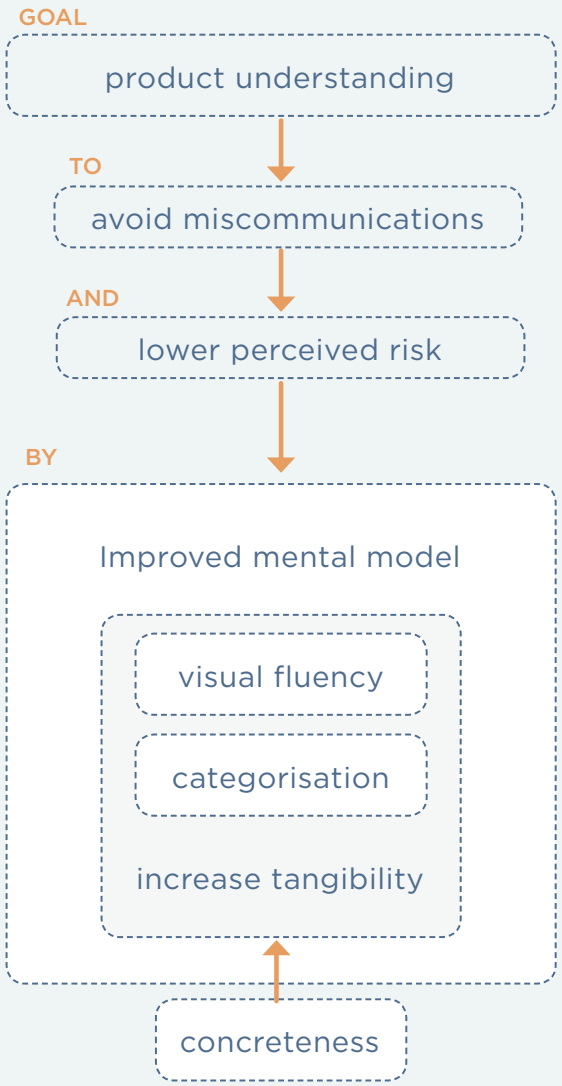
Figure 2.6: Idea sketches on making sense of the product: increasing mental image and showing semantic information

Implications for Marktplaats

Categorization of products helps consumers to make sense of the information which the product presents and increases the ease of forming a mental image. If there is a strong resemblance to a stereotype, the design will appear to make sense. When it is visible to the consumer if and how a design differs from a stereotype, it may increase the consumers perceived objective and subjective information.

On Marktplaats some consumers may be looking for a high degree of novelty, some for typicality. This may concern the product as a whole, or only some product attributes.

Model development 2



Vividness of a presentation

Vividness

Relevant to mental imagery is the vividness of the presented information. Vividness is the extend to which information attracts and holds our attention and to excite the imagination to the extent that it is (a) emotionally interesting, (b) concrete and imagery provoking, and (c) proximate in a sensory, way"[43]. Vividness thus includes concreteness, tangibility and emotional stimulation.

In the context of designing online product presentations, vividness refers to the representational quality of product demonstrations. A vivid product presentation exposes consumers to more information cues about a product and stimulates more sensory channels than a pallid product presentation[44] . A vivid presentation is a lively presentation that 'speaks to the imagination'. In previous paragraph it was concluded that Mental Imagery concerns the mental construction of a product in terms of aesthetics and semantics. Vividness affects the and clarity and meaning of this construction. Vivid product presentations are lively and engage consumers in processing information, which will likely improve consumers' product understanding[44].

Context and photographic quality

Jeong et al. (2009) found that rich and more complex images (e.g., a model situated in an elaborate setting depicting a relevant lifestyle) are perceived as being more vivid and lead to greater sensory and cognitive values than basic images (e.g., front views on a plain backdrop) because complex images are more effective in stimulating various emotional and cognitive experiences, resulting in more engaging shopping experiences[45].

> *"Photographs do not 'show how things look,' since there is no one way that anything looks. What a photograph shows us is how a particular thing could be seen, or could be made to look – at a specific moment, in a specific context, by a specific photographer employing specific tools".*
>
> *Coleman (1998)*

While many online retailers commonly use solid backgrounds to display products[37], it is believed that pictures with relevant consumption backgrounds help consumers elaborate on mental imagery of future consumption of the product.

If the background is irrelevant, it may distract from the product and undermine the mental image. Since the environment (channel) within which the product is to be perceived, is characterized by the context of interaction[9]. When considering the visual perception of products, good illumination is an important factor[46]. A lack of illumination neglects the product in its environment and reduces the perceived vividness.

43. Nisbett, R., Ross, L. (1980). Assigning weights to data: The "vividness criterion." Human Inference: Strategies and Shortcomings of Social Judgment. Prentice-Hall, Inc., Engle wood Cliffs, NJ. p.45

44. Jiang, Z., & Benbasat, I. (2007). Research Note—Investigating the Influence of the Functional Mechanisms of Online Product Presentations. Information Systems Research, 18(4), 454-470.

45. Jeong, S. W., Fiore, A. M., Niehm, L. S., & Lorenz, F. O. (2009). The role of experiential value in online shopping. Internet Research,19(1), 105-124.

46. Mayall, W. H. (1967). Industrial design for engineers. London: Iliffe Books. Found in Crilly et al. (2004)

Product attribution

The way in which a product is presented ultimately influences perceived vividness. The context, background, illumination and composition of the image excites the imagination and increases symbolic understanding. It enlarges perceived product understanding through inferring external cues on the product. The richer the product presentation, the more external cues are presented (e.g. product age, context and usage), the more vivid a product presentation becomes. In cognitive psychology, this process of attributing information to a product based on or extrinsic data is named the fundamental attribution heuristic[47] . It is a mental process of making sense of objective and subjective information that increases the vividness of a product presentation. Later this thesis (page...) the concept and its use is clarified more elaborately.

47. Burnkrant, R E. (1975) "Attribution Theory in Marketing Research: Problems and Prospects." Advances in Consumer Research, vol. 2, pp. 465-470.

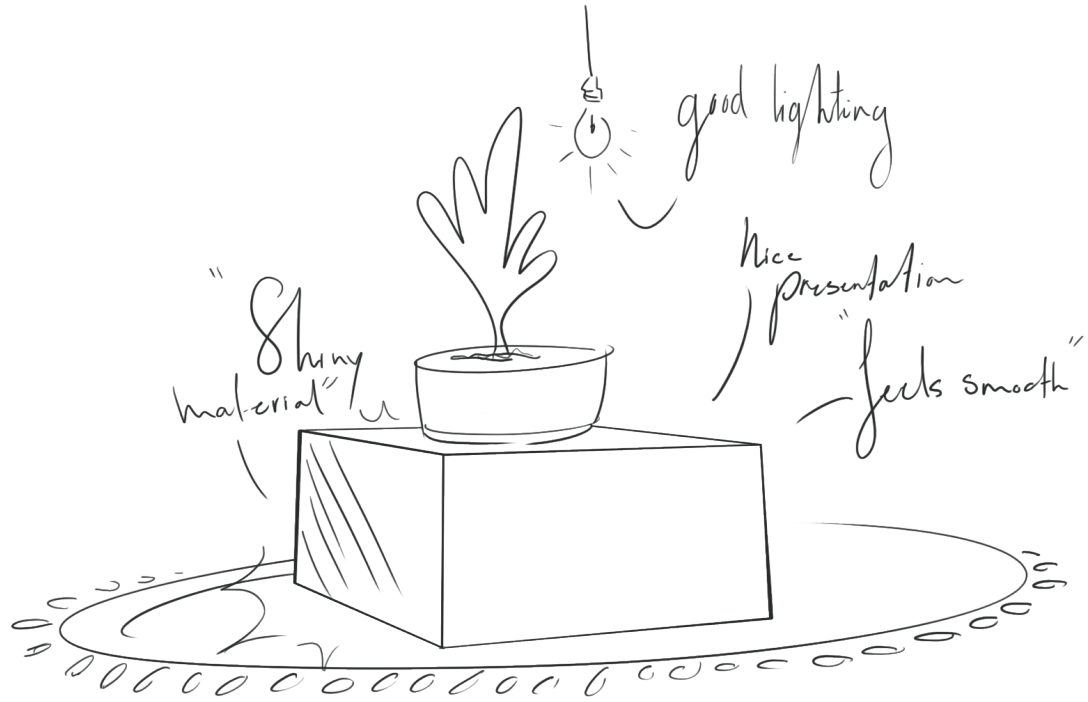
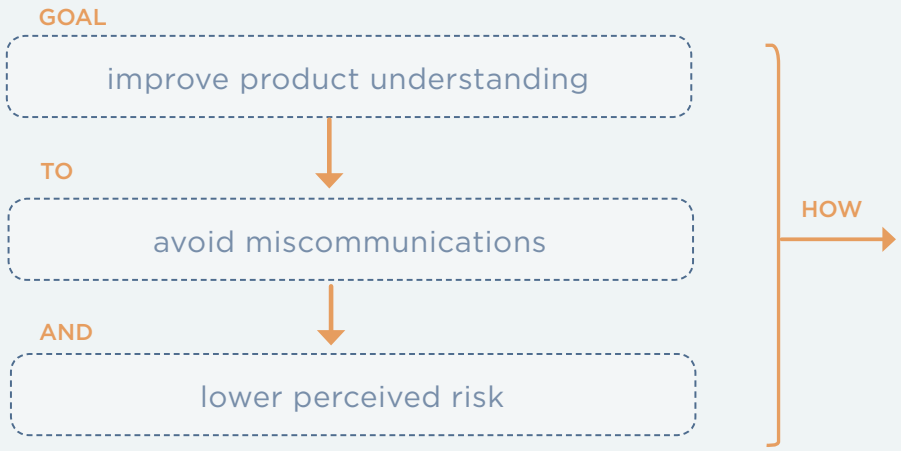


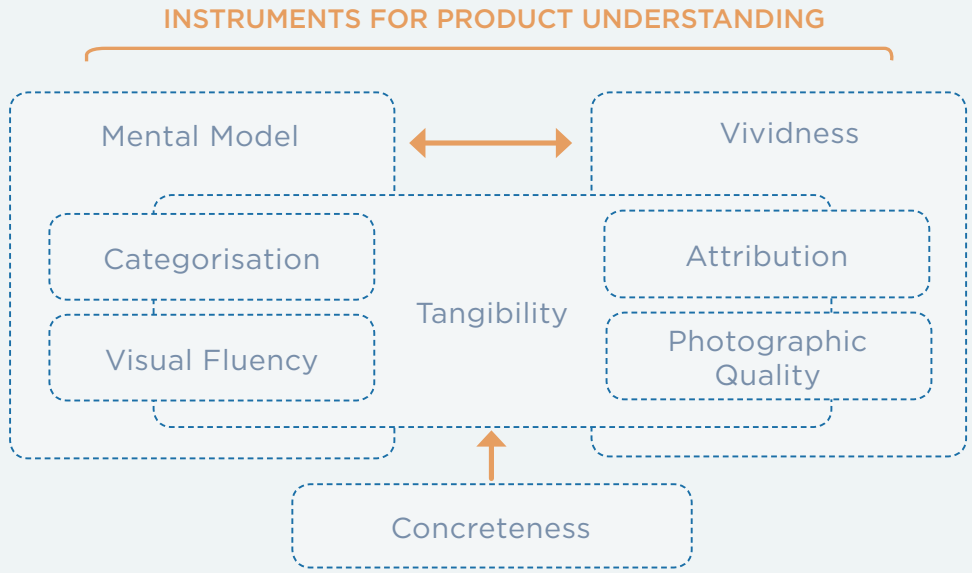
Figure 2.7: Idea sketches on improving vividness: increasing concreteness, mental imagery, light and sensory information

Implications for Marktplaats

Vivid presentations increase consumer understanding of the product by making it more lively. Vividness of product presentations can be improved by increasing the concreteness of product information, stimulating more sensory channels, ensure good photographic quality, making sure products have relevant consumption backgrounds and providing rich presentation that present external and symbolic product cues. If the visible background is not a relevant or image provoking consumption background, a solid background may be preferred after all. On Marktplaats, increasing vividness should only strengthen positive product attributes and not distract the buyer from potential negative information.

Model development 3





Product understanding

In the previous paragraphs, the different instruments for succesful product presentation have been discussed in terms of Mental image and Vividness. In order to achive the project 'goal' of improving product presentation, this paragraph considers the the cognitive process of making sense of product information.

Product information

In the 'About this thesis' chapter, it was explained that "a good product presentation is like a good story " and that "a good story is a good presentation of information". To reach the goal of improved product communication, understanding of product information should be improved.

A product consists of Semantic, Aesthetic and Symbolic information. While Aesthetics is defined as the perception of how pleasing the process of regarding an object is and Symbolics as the perception of what a product says about its owner, Semantics involve the function, mode-of-use and intrinsic characteristics[9]. Semantic aspects are seemingly difficult to present in amateur product presentation because it often implies being clear, concise, concrete and complete.

Product characteristics

The product function and utility are derived from the product characteristics[9]. In the framework of this thesis, Crilly et al. describe the physical product as being characterized by its geometry, dimensions, textures, materials, colours, graphics and detailing[48] [49] [50]. In literature, semantic and aesthetic characteristics often contain overlap. The product

48. Hannah, G. G. (2002). Elements of Design. New York, NY: Princeton Architectural Press. Found in Crilly et al. (2004)

49. Sausmarez, M. D. (1983). Basic Design: The Dynamics Of Visual Form. London, UK: Herbert Press. Found in Crilly et al. (2004)

50. Scott R.G. (1951) Design Fundamentals. New York, NY: McGraw-Hill Book Company. Found in Crilly et al. (2004).

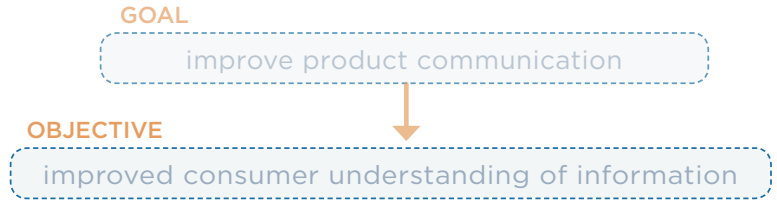


Figure 2.8: project goal and objective. Improving product communication and understanding.

characteristics by Crilly et al. are presented as semantic information, but in this thesis are differentiated between 'visual form' and 'ergonomics'. Geometry, dimensions and materials are part of the semantic ergonomics, but influence aesthetic interpretation. Colours, shapes, graphics and textures are linked to aesthetics. Aspects such as the perceived novelty, style (fit) and personality of products are not considered to be characteristics of the product because they are not objective qualities of the design. Instead they are linked to product Symbolics.

Semantic interpretation

Products sold on Marktplaats are often of utilitarian nature. Utilitarian objects are functional devices that operate in some way to perform the task for which they are used[51]. Function, performance, efficiency and ergonomics can be conveyed to some extent by the visual form of the product. The evaluation of a design's apparent utility and perceived qualities is described as 'semantic interpretation'.

Kippendorf (2006) states that "product semantics involve knowledge on how people attribute meanings to [visible] product artefacts and interact with them accordingly"[52] In this thesis, knowledge on how people Mentally Imagine this product interaction is found to be part of this process and thereby added to this statement.

51. Cupchik, G. C., & László, J. (2008). Emerging visions of the aesthetic process: Psychology, semiology, and philosophy. Cambridge: Cambridge University Press. Found in Crilly et al. (2004).

52. Krippendorff, K. (2006). The semantic turn: A new foundation for design. Boca Raton, FL: CRC.

Making sense of things

In his book 'Watches Tell More Than Time'[41], Coates explains that information (novelty) and concinnity (order) perceived in a product stem from not only the objective qualities of the product itself, but also from the subjective experiences of the consumer. In addition to the combination of lines, colours, textures and details that comprise the product's visual form, the consumer's familiarity (from memory) with other products, entities and concepts also influence product perception[9]. As mentioned earlier this thesis, categorisation is part of this mental comparison process. Subjective and objective information collectively help the consumer building a mental image and aid in forming a semantic interpretation. But whilst aesthetic impressions may be formed almost immediately, semantic interpretations are more likely to be made when an extended observation time is available[53] .

Designing a presentation

A semantic approach to design looks at ways for consumers to interpret a product's utility and associated qualities[9]. Krippendorff (2006) proposes that 'design is making sense of things' and that designers should help the user in correctly interpreting the product. To assist designers in this task, a sequence of activities are suggested that integrate semantic considerations into the design process[54]. The key stages of the process are: (1) establish the overall semantic character that the product should communicate; (2) list the desired attributes which should be expressed; and (3) search for tangible manifestations capable of projecting the desired attributes through the use of shape, material, texture and colour. This statement concerns the designers task when designing the product. However, it may provide a good handhold for designing a sensible presentation.

53. Govers, P., & Schoormans, J. (2005). Product personality and its influence on consumer preference. Journal of Consumer Marketing, 22(4), 189-197.

54. Butter, R. (1989) The practical side of a theory - an approach to the application of product semantics, '89 Conference, University of Industrial Arts, Helsinki, Finland.

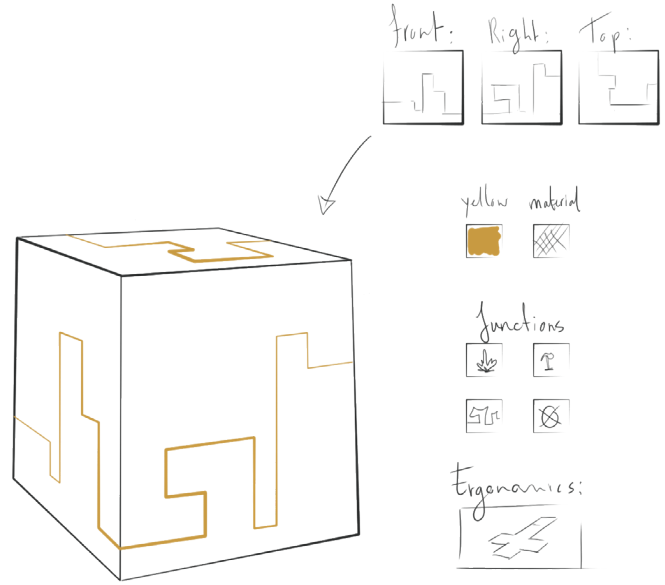


Figure 2.9 Idea sketches on making sense of the product: increasing mental image and showing semantic information

Implications for Marktplaats

Product communication is improved when consumers understanding of product information is improved. Product information is build from Aesthetic, Semantic and Symbolics information. The Semantic aspects are seemingly difficult to present in amateur product presentation, because it often implies being clear and concise. In case of Marktplaats, the establishments of the overall semantic character is mainly conveyed through the product photograph. Here, the product, its appearance and its perceived function are derived. A vivid photo presentation is therefore of importance. Secondly, the list of products attributes are currently presented as an actual list or description. These descriptions should be concrete and complete. The third key stage, where tangible manifestations should project the attributes seems to be lacking. Shape, dimensions, material, texture and colour seem to be lacking in tangibility on Marktplaats, and e-webshops in general.

Text versus the image

For presenting information, Marktplaats allows the user to employ two kinds of media: Text and image. This paragraph describes how visual and verbal information conjunctively convey semantic, symbolic and aesthetic information.

Visual superiority

Though there are differences in perceived information, advertising research shows that both visual and verbal advertising messages evoke mental imagery and convey semantic information[37]. A research of mental imagery and travel destinations, a study by Walters et al.[55] showed that both concrete pictures and textual descriptions of the destinations helped improve the elaboration and the quality of mental imagery. Which further influences cognition, affect, and intent responses[33 35 56]. However, most consumers pay attention to the dominant picture first in a print advertisement before focusing on textual information[57]. Visual information seem to be superior compared to verbal information on conveying symbolic information, evoking emotions and deducting value[37].

> *"It is all too easy, and utterly false, to imply that paintings are simply non-verbal substitutes for what might otherwise be expressed or communicated in words – ironically, the vast body of writing about art confirms nothing more than that words often fail to "account for" the communicative and expressive power of images".*
>
> *Leppert (1997)*

Aesthetic pleasure and perceived value, are attributes of things rather than words, and they are accordingly represented in and processed by a cognitive system specialized for dealing with non-verbal information[58] .

55. Walters, G., Sparks, B., & Herington, C. (2007). The Effectiveness of Print Advertising Stimuli in Evoking Elaborate Consumption Visions for Potential Travelers. Journal of Travel Research, 46(1), 24-34.

56. Fennis, B., Das, E., & Fransen, M. (2012). Print advertising: Vivid content. Journal of Business Research, 65, 861–864.

57. Kroeber-Riel, W. (1984). Effects of emotional pictorial elements in ads analyzed by means of eye movement monitoring. T. C. Kinner (Ed.) Association for Consumer Research. Vol. 11. 557–564. Found in Yoo, j., & Kim, M. (2004)

58. Paivio, A. (1978). Mental comparisons involving abstract attributes. Memory & Cognition, 6(3), 199-208.

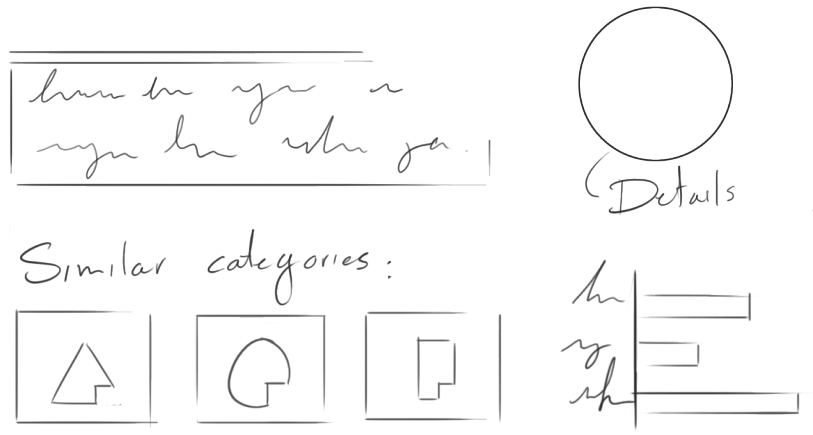
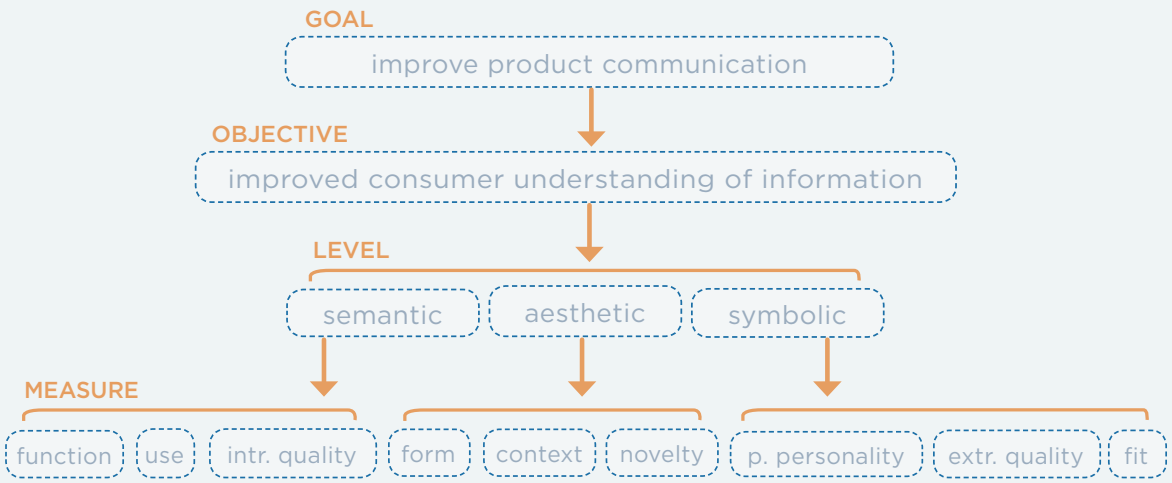


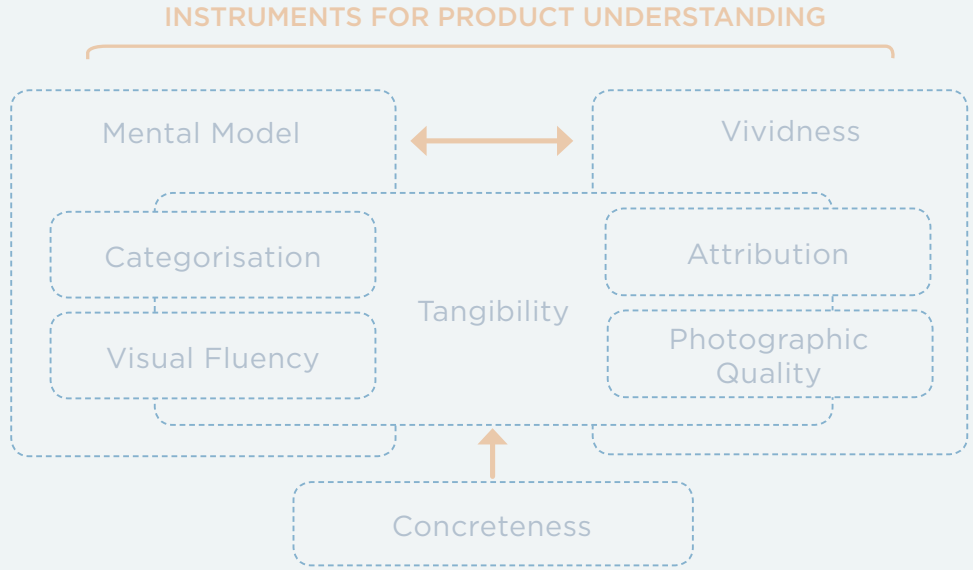
Figure 2.10 idea sketches on using graphs and icons to assist verbal information

Implications for Marktplaats

A picture tells more than a thousand words. Thus, the picture needs to convey as much information as needed. The image should be the first thing that is shown on a listing. However, images should be of proper quality and convey as much visual information as possible. The combination of rich language and visual cues can bring together the symbolic, semantic and aesthetic information transfer of various media. This implies that the textual descriptions on Marktplaats and the list of attributes strengthen the presented photographs. Textual descriptions may become more vivid if they are paired with graphs, icons and other visuals.

Model development 4





Buyers and sellers

A combination of various presentation media is favourable for presenting products. However, not al kinds of media are appropriate for every product presentation on Marktplaats. One variable that determines the appropriateness for product presentation, is the wants, needs and motivations of the consumer, which are discussed in this chapter.

Motivations and behaviour

Consumer online resale market is booming, and knowledge about their motivation is important to examine, for they can provide understanding on user intentions and desires. According to a theoretical and empirical study on online consumer-to-consumer auction sites, resale services do more than provide resale channels for consumers; it elicit new consumer behaviour and prompts new motivations and models for resale[59] .

Online and offline resale behaviour

Combining classic consumer research on offline consumer resale behaviour[60 61] with findings on online resale behaviour[17 62], six main reasons for resell are found: making a profit, cleaning the house, avoidance of waste, social reasons, informational reasons or simply for fun.

For buyers, it is found that the ability to purchase items at lower prices than from retail stores is the primary motivation, along with having access to previously unobtainable items, sustainability reasons, social reasons, informational reasons and for fun[12 17 62]. From offline and online studies, three overarching drivers are found on consumer online resale behaviour[12]:

59. Chu, H. (2013). A conceptual model of motivations for consumer resale on C2C websites. The Service Industries Journal, 33(15-16), 1527-1543.

60. Herrmann, G. M. and Soiffer, S. M. (1984). For fun and profit: an analysis of the American garage sale, Urban Life, 12(4), 397-421.

61. Herrmann, G. M. (2006). Garage sales make good neighbors: Building community through neighborhood sales, Human Organization, 65(2), 181-191.

62. Cameron, D. D., Galloway, A. (2005). Consumer motivations and concerns in online auctions: An exploratory study, International Journal of Consumer Studies, 29, 181-192.

1. INDIVIDUAL CHARACTERISTICS
2. SITUATIONAL FACTORS
3. PRODUCT FACTORS

The three groups are in line with the framework of this literature research, focussing on product, consumer and environment (figure ...). In this paragraph, the three categories are looked at from a different angle: in terms of reasons of resale behaviour.

1. Individual characteristics

Motivations for second-hand selling (and buying) behaviour are dependent of seller and buyers personal characteristics. These characteristics comply of: economic motives (value seekers), sustainability beliefs (guilt of waste, personal beliefs), knowledge/experience of online resale and second-hand purchase, emotional factors (intrinsic emotional rewards; pride, pleasure, altruism), social factors (networking for professional or personal gain) and cultural norms[12 59].

Social motivations

Second-hand buyers and sellers, especially those who trade collectible goods such coins, stamps, antique art and limited editions, may build friendships with buyers because they can meet people with the same hobby even if they are very far away [63] . To traders of collectible goods, the process of meeting people, discussing items and trading is fun and

can drive them to resell and meet new people online. When a shared interest is sensed between the buyer and the seller, research shows this to be a benefit to the buyer[59 63].

Reselling as and experience

Experience seekers prefer to spend money on activities such as vacations, recreation, entertainment or self-improvement[64]. The emphasis is on the process rather than owning the object[59]. For experience seeker, the process of buying may be part of the reason for buying. Thus, products and shopping environments may offer both hedonic (pleasant/unpleasant experience) and utilitarian values, concurrently[65].

63. Lastovicka, J., & Fernandez, K. (2006). "Extending Generalizations About the Disposition of Meaningful Possessions to Buyers With a Shared Self", Association for Consumer Research, 7, 105-107.

64. Tatzel, M. (2002). Money worlds and well-being: An integration of money dispositions, materialism and price-related behavior. Journal of Economic Psychology, 23(1), 103 –126.

65. Fiore, A. M., Jin, H., & Kim, J. (2005). For fun and profit: Hedonic value from image interactivity and responses toward an online store. Psychology and Marketing, 22(8), 669-694.

Implications for Marktplaats

Individual characteristics for buying/selling may be economic, social, sustainable or emotional (rewarding). When designing for improved product presentation, subjective information as such may conveyed to consumers to convey subjective and extrinsic product information. Next to that, different reasons for second-hand buying and selling ask for different service interactions. Marktplaats service design should bear in mind all different buyer/seller motivations. For example, sellers and buyers with economic reasons may want to minimise time and effort, while experience seekers may increase their time to retrieving symbolic information.

2. Situational factors

Next to the intrinsic individual factors, extrinsic situational factors motivate second-hand buyer and seller behaviour. For example: unexpected conditions such as moving to a new home, fashion changes or unforeseen needs of product replacement can render need for selling or buying second-hand products. So can timing changes such as seasonal change and life phase change.

Other temporary or short-term circumstances may include the situation that a product has fulfilled its designated function and is no longer of use to seller[17]. Often, unplanned resale occurs due to unexpected situations[22]. If a situation requires an solution within a short timespan, regular webshops may be used to shorten the duration between need and fulfilment. If 'enough' time is at hand, the option of second-hand purchase may have larger consideration.

Implications for Marktplaats

Temporary or short-term situational factors can motivate second-hand buyers and sellers behaviour and put time pressure on their goal of selling or buying products. Should Marktplaats take these situational factors into account, time constraints are ought to be designed for. This finding underlines Marktplaats' goal of enabling the user to buy and sell within 5 minutes [with a smile].

3. Product factors

Lastly, motivations for second-hand selling (and buying) behaviour depend inherently on factors related to the product. These factors include: product value, salvage (resale) value, preservation condition, environmental impact, brand of product, product type (e.g., identity goods, experience goods, or search goods), size of product, innovation speed of product, and difficulty of returning goods[22].

For so called 'value seekers', the higher the product's perceived value, the more motivated he/she may be to resell online, because they can recover more money. Buyers and seller who most seek value in their transaction (instead of experience or social goals), are rational and attempt to balance cost-savings and high value to get the most for their money[59 64].

Perceived product value may vary for different users. For example, those who collect certain collectible goods, may attach a much more higher value to an object than those who need the same object for utilitarian purposes. In order for buyers to make a complete value estimation, all intrinsic and extrinsic product cues should be made visible.

Implications for Marktplaats

Motivations for second-hand selling (and buying) behaviour depend on factors related to the product. Product (salvage) value is an important resale factor that is dependent on consumers individual perceived value. The users' subjective values are derived form intrinsic and extrinsic product cues, and are important for ensuring the right price for both buyers and sellers.

Assessing product value

Perceived product value is one of the largest factor of influence for consumer buying and selling behaviour. It therefore is relevant to give extra consideration and investigate the determinants of product value assessments in relation to second hand markets.

Product cues

Product value is derived from both intrinsic and extrinsic product cues[66]. The use of product cues in product evaluation is viewed as a tool for information processing. It involves a process of making inferences about products from the configuration of cues available[67].

Intrinsic product cues

Intrinsic (or objective) product cues are comprised of product attributes. Product attributes are defined by its geometry, dimensions, textures, materials, colours, graphics and detailing[9]. A product cue can comprised of a combination of attributes, or a single attribute, that create meaning through consumer access of previous relevant memories. Generally in product presentation literature, intrinsic cues are assumed to be visible and therefore reliable to the consumer.

Assessing products cues on second-hand markets, however, implies a distinctive different process than that of a 'brand-new' product. In second hand retail, product attributes are associated with the history of the product. In as much as durable products are used by different people in different circumstances, products which appear in a second-hand market can no longer be considered similar with any certainty[66]. The older the product becomes in terms of age or the number of previous owners, the more dissimilarities between products

66. Gabbott, M. (1991). The Role of Product Cues in Assessing Risk in Second-hand Markets. European Journal of Marketing, 25(9), 38-50.

67. Robert E. Burnkrant (1978) ,"Cue Utilization in Product Perception", Advances in Consumer Research: Association for Consumer Research, 5, 724-729.

are found. For example, a second hand blender may look good on the eye, but through (mis)use by previous owners it can have a run-down motor, blunt blades or cracks in the glass jug.

Extrinsic product cues

In non-second hand webshops, extrinsic cues form part of the product value and are used when intrinsic cues are unavailable or insufficient[68 69]. Extrinsic cues have no effect on the nature of the product. For example: price, brand, age and warranty can be considered extrinsic cues[69 70]. Where product information is absent, it is suggested that extrinsic cues are used to approximate the missing intrinsic information[66 69]. In the second-hand blender example, age and usage are not intrinsic product cues, but are used to assess product value.

Verifiable cues

In second-hand retail however, extrinsic cues are often over-relied upon[70]. Reliance should only be put on visible/verifiable cues which can then be used to make assumptions on the non- visible/verifiable cues. For example, an old blender of the brand Phillips, sold for a relatively high price, may be perceived of higher value than a newer blender of an unknown brand, sold for a low price.

These assumptions based on available information are also referred to as the Attribution substitution bias[71], and is generally seen as a reasoning error. A lack of verifiable cues enlarges the users' perceived risks and chance of failure[66]. Clear cues are beneficial to both buyers and sellers in the bargaining and transaction process, for arriving at the perfect price settlement. When enough clear and verifiable cues are available, non-verifiable cues are less relied upon and used for symbolic purposes mainly.

68. Szybillo, G. J., & Jacoby, J. (1974). Intrinsic versus extrinsic cues as determinants of perceived product quality. Journal of Applied Psychology, 59(1), 74-78.

69. Miyazaki, A., Grewal, D., & Goodstein, R. (2005). The Effect of Multiple Extrinsic Cues on Quality Perceptions: A Matter of Consistency. Journal of Consumer Research, 32(1), 146-153.

70. Olson, J. (1977). Price as an informational cue: Effects on product evaluations. Consumer and Industrial Buying Behaviour, 267-268. Found in Gabbott, M. (1991)

71. Kahneman, D. (2015). Thinking, fast and slow. New York: Farrar, Straus and Giroux.

Altering the perception of cues

In many resale situations, sellers are empowered to alter (the buyers perception of) product cues and strengthen associations between certain visible and invisible attributes, to enhance the prospects of a sale. This could be done by removing certain cues from a consumers' perception that may bring a negative predictive value. Though this may be beneficial for sales, it certainly is negative for the buyers experience. If a buyer is more aware of the missing product cues, he/she may be able to make a better risk assessment. The occurrence of disguising cues may for example explain why incidence of product failure in the second hand (car) market is high[72 73].

> *"Whereas convincing graphics may certainly increase sales, they do not solve the fundamental problem of actually being predictive. A product may look appealing, and the consumer may feel like having a correct impression (i.e., prediction), but when the real product does not match this prediction, the visual communication has obviously failed."*
>
> *Wijntjes, Xiao & Volcic (2018)*

Second-hand car market

To explain the balance of extrinsic versus intrinsic cues, an old but relevant study by Gabbott (1991) is used. Gabbott explored risk assessment and product cues for the second-hand car market. He found that intrinsic product cues include: the mileage, the perceived visible physical condition of the car and replaced parts.

Extrinsic product cues are not an inherent feature of the physical product. For a second-hand car, primary cues were

72. Cunningham, S. M. (1967). Perceived risk and brand loyalty. Risk Taking and Information Handling in Consumer Behaviour, 10(3), 507-523. Found in Gabbott, M. (1991)

73. Arghouth, M. N., Chelbi, A., & Ait-kadi, D. (2015). On Reliability Improvement of Second-hand Products. IFAC: International Federation of Automatic Controll, 48(3), 2158-2163.

found to be: price, brand, warranty and the history of previous owners. The new price of the car is depreciated as the age of the car increases, thus a low price may be perceived as an old/used car. Brand loyalty helps inferring product quality and risk reduction[79]. Warranty as an extrinsic product cue may be used to predict dealer confidence in the quality of the car. To provide a complete presentation of product information, all these intrinsic and extrinsic product cues should be presented to the buyer.

Implications for Marktplaats

Extrinsic cues form part of the product value and are used when intrinsic cues are unavailable or insufficient. If a buyer is more aware of the missing product cues, he/she may be able to make a better risk assessment. To avoid (mis)use of cognitive biases, as much as possible intrinsic cues should be made visible to the buyer. On Marktplaats, extrinsic inferences about the product may include: the user expertise and other products he/she is selling, the product background and perceived presentation effort, the previous owners, the age of the product and the price and brand. If both intrinsic and extrinsic cues are salient and concrete to the user, information processing will be optimized. Moreover, if the missing product cues are signalled to the buyer, the misuse of heuristics may be reduced.

Fundamental attribution error.

The fundamental attribution error address the issue of how people infer, from limited available evidence, unobservable attributes or dispositions about the objects and organisms in their environment. As such, it theorizes how people go beyond the directly observable “data” to infer further elements, that is, to complete a partial representation of some focal object[74] .

In the case of Marktplaats, the attribution error explains how consumers may make inferences about a presented product, based on information that is not directly related to the product. For example; a guitar that is sold by a professional pianist, may be perceived as being of better quality than one that is sold by a kick-boxer. And a guitar that is presented alongside an expensive vase may also be perceived as being more valuable than presented next to some empty crates of beer. The kick-boxer and beers seem to attribute to the products value or quality, even though they do not. However, attributing external information to a product does not necessarily imply wrong product valuation.

A heuristic

The fundamental attribution ‘error’ may perhaps be seen as more of a heuristic than an actual error. A heuristic is an approach to problem solving that is not guaranteed to be optimal, perfect or rational, but instead is sufficient for reaching a certain goal. They are mental shortcuts that ease the cognitive load of making a decision[75] . Literature does not state whether the use of this heuristic is ‘good’ or ‘bad’ for this is depends on numerous factors. However, it is found that people often are aware of the process and the reliability of their made attributions[76] .

74. Burnkrant, R E. (1975) “Attribution Theory in Marketing Research: Problems and Prospects.” Advances in Consumer Research, vol. 2, pp. 465–470.

75. Myers, D. G., & Twenge, J. M. (2019). Social psychology. New York, NY: McGraw-Hill Education.

76. Epstein, S., & Teraspulsky, L. (1986). Perception of cross-situational consistency. Journal of Personality and Social Psychology, 50(6), 1152-1160.

Allowing for biases

In case of Marktplaats, it could be argued whether the use of heuristics as such should be encouraged or discouraged towards consumers. On the one hand, the attribution heuristic may lower consumers perceived risk, on the other hand it may bring wrong assumptions and negative outcomes. Creating technology that allows for bias may be judged as unethical and counterproductive. Therefore, a framework could be designed that limits consumers' extrinsic (symbolic) product information and eliminates possible use of the attribution bias.

However, if we take a recap to the introduction of this thesis; 'The Need for Improvement', it was stated how interaction services are limited through their interaction; they do not maintain the same kind of rich experiences that people have when interacting directly with each-other. Technologies play a mediating role between human beings and their world. Designing for product communication on Marktplaats therefore implies not only designing a technological interaction, but also designing the reflection of a human-world relation.

One may conclude that inferring product attributions based on trivial and external product information is part of the natural consumer evaluation process. The 'flee-market experience' of being able to judge a product based on the presentation, seller and context, gives the consumer a sense of competence and proficiency. To notice unique external information that others may have missed. Granting freedom to the seller in showing both explicit and implicit information may help him position his product on the market.

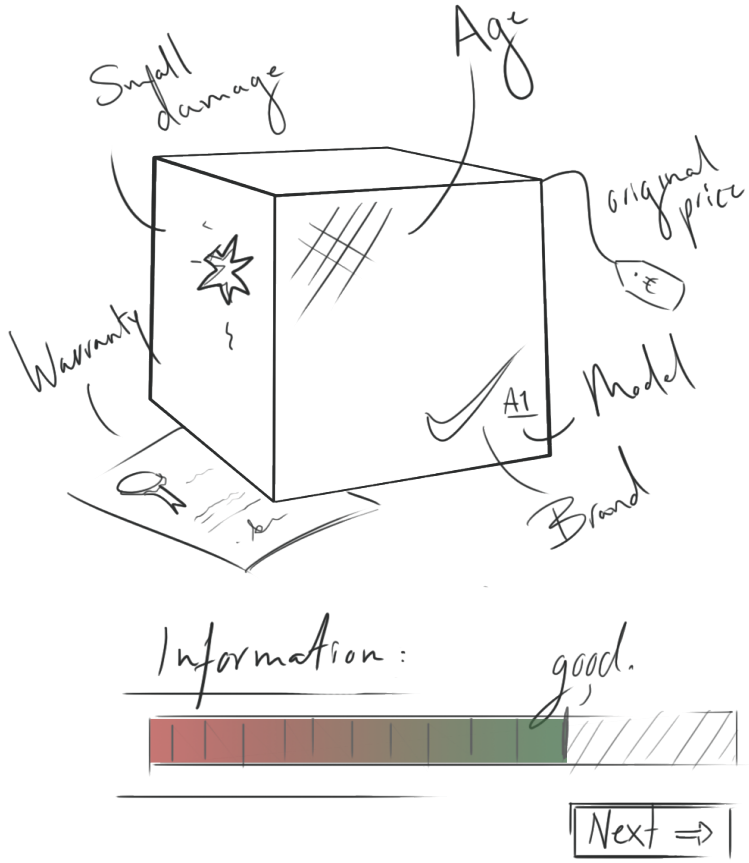


Figure 2.11 Idea schetch on making sure all information is presented to the buyer

Implications for Marktplaats

Attributing information to a product based on unobservable, trivial and/or extrinsic data increases perceived information and decreases perceived risk. If Marktplaats wants to make use of consumers' creativity, wit and imagination, it should provide the user with the freedom to give and receive all relevant, irrelevant, internal and external product information. However, awareness of missing information should be visible for preventing the bias from forming a gap between expectations and reality. Provided that the buyer is made attentive of missing information, allowing for an attribution bias will bring a product presentation that is perceived as more natural, authentic and complete.

A reflection on technology

In the introduction of this thesis is was stated that Modern visual communication technologies offer opportunity for improvements in visual communication. It has done so in the past, and will continue to do so in the future.

As Don Norman befittingly wrote: “Technology offers the potential to make life easier and more enjoyable; each new technology provides increased benefits. At the same time, added complexities increase our difficulty and frustration with technology”. The design problem posed by technological advances is almost as big as the solutions it brings. Using marktplaats’ online service instead of a second-hand offline market, endless of possibilities are added.

But with these possibilities, new problems arise: for we now have to make photos and consider lighting, composition and quality. We may know how to upload the images, but how do we know what what features and specifications are important to each and every buyer? Especially if we do not have expertise knowledge on the product. It would be hard to state missing information or additional information that could please potential buyers, buyers we can not see and can only have limited interaction with.

Marktplaats provides a fairly simple service to aid in many of these steps. An arguably well designed service, for many people are currently using it with delight. Marktplaats advertisement design is certainly is an easy to use and simple service when considering all the possible functions that could be added. However, these added function could further increase Marktplaats ease of use, user experience and success. How can these new functions be fitted without adding to Marktplaats complexity, without being time consuming and without causing irritation or confusion?

Earlier this thesis it was pointed out how people are imaginative and creative, filled with common sense; that is, a lot of valuable knowledge built up over years of experience. Marktplaats could capitalize on these strengths through the use of artificial intelligence. For AI does not requiring us to be precise and accurate anymore. We may may have a goal in our mind, such as virtually presenting our artefacts. We may know how to take a simple photo and upload it online, however if we do not have the knowledge or time for neatly composing and explaining a listing, this simple task may become a tedious chore. If AI would mimic the offline presentation experience, ‘lighting’ would be taken care of, ‘product details’ would not be an issue and the ‘product condition’ would be self-evident.

However marvellous artificial intelligence may be, many AI functions are still in their infancy. If Marktplaats wants to retain all users, caution should be taken when implementing new technologies. AI applications have been researched, but most of them have not been included in this literature research for two reasons: it would have expanded the scope too much, and a near future solution has been aimed to design for.

3

FRAMEWORK

In this section, the thesis introduction and research findings are summarised. The introduction is summed into design parameters, the models are combined into a framework for Designing for Product Understanding.

Result: the DPU framework

Goal definition

In the beginning of this thesis, the goal has been stated and explained. This paragraph gives a short recap and explains the models that have been developed in the literature section.

Problem statement recap

Design is concerned with the nature of the interaction between people and technology. The objective and subjective communication. As mentioned in the introduction, the project problem states that:

> *"Currently, the way in which users can present their products on Marktplaats' often renders a low quality product presentation and fosters miscommunications of the presented product"*
> *- page 28 -*

These two issues are intertwined with each other through their definition, for a 'presentation' entails communication. Thus, miscommunications can be solved when product presentation is improved. Therefore:

> *"The goal is to study and design for improved communication through shortcomings and opportunities in the visual area."*
> *- page 28 -*

A good product presentation avoids miscommunication and lowers the perceived risk. It was previously mentioned that consumers respond to a high perceived risk by developing a purchase strategy, designed to reduce the perceived negative consequences of a sell or purchase. Risk should be lowered to aid buyers in their purchase strategy and improve the outcome of buyer-seller interactions.

* consumer (thus buyers) understanding is designed for. However, successful information transfer is only reached when the seller provides all the needed information.

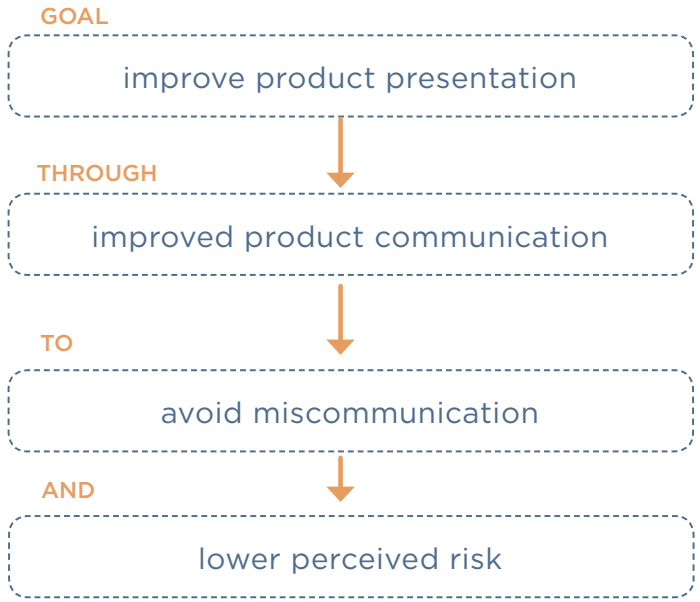


Figure 3.1: model with goal Based on 'Model development 1' page 42

Project parameters

The previous paragraph explained that for reaching the goal of improving product presentation, product communication should be improved. By doing so, the amount of miscommunication will lower together with the perceived risk.

As this paragraph will show, perceived risk is a parameter that can be used to validate any concept that is designed for improved product communication. In case of Marktplaats, a lower perceived risk may lead to a higher amount of positive outcomes, which will attract and retain more users to the service. Low cognitive effort will aid in this process and lead to their goal of decreasing time*.

Any proposed design should meet these five parameters. The parameters are explained below and illustrated by figure 3.2.

Lower perceived risk

High levels of perceived risk have a negative effect on resale behaviour. A more successful product presentation may lead to lower perceived risks.

Positive outcome

Positive outcomes imply: a satisfying process/deal/result, for both consumers and sellers. A high success rate may attract and retain more users on Marktplaats.

Attract users

In order for Marktplaats to be successful as a service, attraction of new users is crucial. The amount of newly subscribed users can be used as a parameter for success.

*Parameters have been established during discussions with Jeroen Mulder, lead User Experience on Marktplaats, through user experience research and interviews.

*Kahneman, D. (2015) Thinking, fast and slow. New York: Farrar, Straus and Giroux

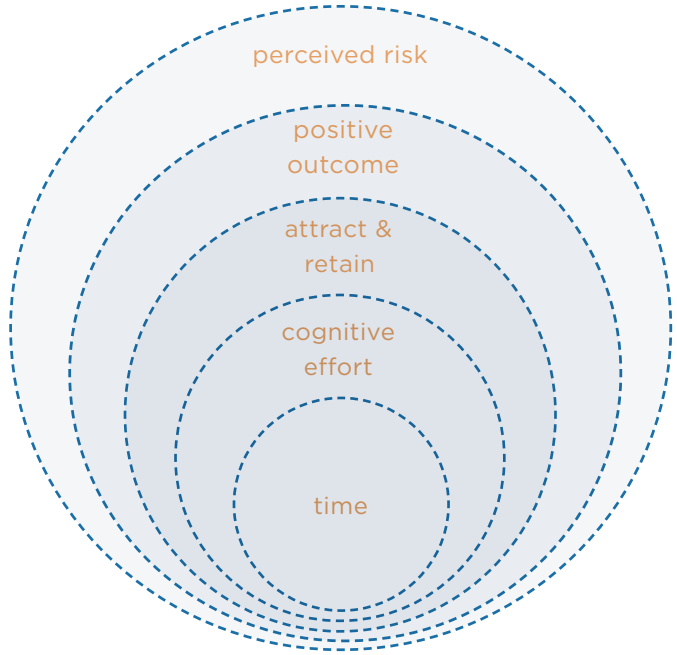


Figure 3.2: project parameters and their overlapping influence. parameters are true for both buyers and sellers (users).

Retain users

Retaining users means that all users should be satisfied with design changes. Design changes must be suited for users of all age and technological understanding (excluding users with digital literacy). All parameters above influence user attraction.

Lower cognitive effort

Cognitive effort may be described as the engagement of a proportion of a limited-capacity mind. High cognitive effort can negatively impact task performance, decision-making quality and mood*

Less time consuming

A less time consuming service interaction increases chances on positive outcomes. This parameter is focussed on time saved through increased ease of product understanding.

Research summary

In the research section of this thesis, findings were shared on product communication, understanding and factors of influence. In this chapter; the research findings are summarised, explained and illustrated.

Improved product communication

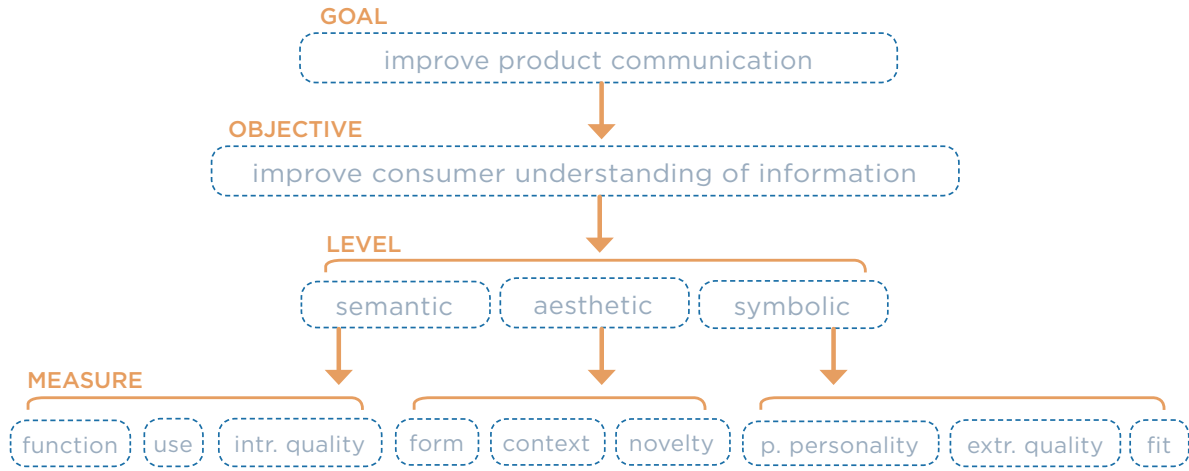
As mentioned in previous paragraph, designing for product presentation implies designing for improved product understanding by consumers. Products consists of semantic, aesthetic and symbolic information. Thus, depending on the nature of the product, a high quality product presentation is one that accurately represents the product at semantic, aesthetic and symbolic level.

Semantics

Based on literature research, semantics is defined as what a product is seen to say about its function, mode-of-use and intrinsic quality. For example: A Nespresso machine functions to make coffee, its mode of use is partly automatic and partly through manual operations and additions. Its intrinsic quality concerns its performance and efficiency.

Aesthetics

'Aesthetics is defined as the perception of how pleasing the process of regarding an object is. Thus, the visual form colour, shape and materials should be accurately presented. The context (environment) of the presented product influences perceived aesthetics, so does its perceived novelty vs. typicality (compared to the product stereotype).



Symbolics

'Symbolic' association may be defined as the perception of what a product says about its owner or user: the personal and social significance attached to the design. In this thesis, symbolics are measured by the product personality (e.g. masculine, friendly, refined), extrinsic qualities (e.g. brand, uniqueness, history, environmental impact) and fit (with consumers self- image/social value).

Figure 3.3: model with quantification of the project goal: improved product communication. the 'measure' should be provided by the seller and understood by the consumer. Based on the 'Model development 4' page 64.

Measuring product understanding

Figure 3.3 above is a model designed for measuring product understanding. The model has been created due to the absence of a framework in literature. The model is meant to provide insight in the informational reach of a product presentation. It is created for product designers in general to establish the right product communication. And is used in this thesis to improve product presentation on Marktplaats.

Measurements can contain overlap and interdependence. e.g; product personality and extrinsic quality help in determining 'fit' by their viewer.

Instruments for product understanding

Product communication can be determined by the different measurements of the previous model. In this second model, six instruments were derived from literature that help in designing for improved product communication. These instruments improve product understanding either through creating an improved mental model or vividness.

Mental model [A]

Consumers grasping the product in their minds increases perceived product understanding and decreases the perceived risk. Photographically displayed products that are easily categorised, orderly (visual fluently) displayed, concrete and perceived as tangible, help in forming a mental model of the product. The mental model of a device is formed by imagining its perceived actions and its visible structure.

Vividness [B]

A vivid product presentation exposes consumers to clear, tangible and meaningful cues about a product. It excites the imagination more than a pallid product presentation. Concreteness, photographic quality, attribution and tangible (sensory) information engages consumers in processing information, and increases the clarity and meaning of the constructed mental image.

Tangibility [C]

When consumers are unable to physically touch or interact with a product prior to purchase, a low tangibility is perceived. A tangible product presentation increases product understanding and elicits affective and cognitive responses.

Concreteness [D]

Concrete words increase perceived tangibility and through this, influence the degree of ease or difficulty of evoking a mental image, and its clarity. Words such as 'scratch' are perceived as being more tangible than 'damage'.

A. Mental model concerns the mental representation of perceived product information

B. Vividness concerns the representational quality of a product presentation.

C. Tangibility defines the sensational prediction of product properties and generally implies the real or actual aspects of a product rather than imaginary.

D. Concreteness is an aspect of communication that means being specific, definite, and vivid rather than vague and general.

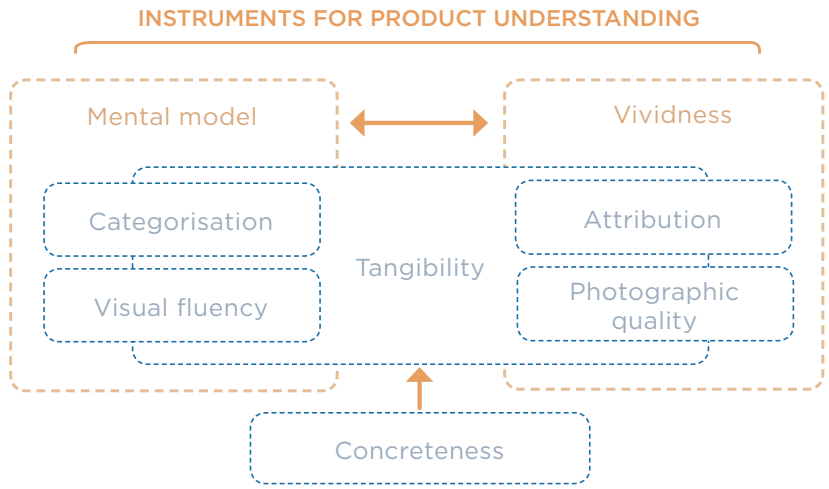


Figure 3.4: instruments for product understanding: connections between concepts from literature findings on improving visual product communication. Based on 'Model development 3', page 57. Overlap indicates internal relations, arrows indicate influence. based on model development

Visual fluency [E]

A logical order of product images facilitates a mental model and leads to less perceived amount of information.

Categorisation [F]

Easy categorisation increases the formation of a mental model. If there is a high degree of conformity, the design will appear to make sense. On the other hand, if the design varies considerably from the stereotype it may increase subjective information and be perceived as novel

Photographic quality [G]

A lack of illumination and composition neglects the product in its environment and reduces the perceived vividness.

Attribution heuristic [H]

When product information is incomplete, consumers tend to attribute extrinsic product information, such as price and seller's perceived personality, to assess the product quality or value. An increased amount of attribution cues increases perceived information and decreases perceived risk.

E. Visual fluency The process of forming a mental story from a series of images

F. Categorisation is the process of recognising and grouping objects on similarities

G. Photographic quality the subjective assessment of visually significant factors of photographical product representation.

H. Attribution heuristic attributing information to a product based on onobservable, trivial and/or extrinsic data.

The framework

Designing for Product Understanding

A combined scope of all findings

By combining the previous models of 'Instruments for Product Understanding' and 'Product Communication Measurements', a framework is created for designing and validating improved product communication*.

GOAL Product understanding: *"The goal is to study and design for communication shortcomings and opportunities in the visual area."* Which implies a full product understanding by users.

MEASURE Semantic, symbolic & aesthetic: *"A product consists of semantic aesthetic and symbolic information"* Thus, a clear product presentation is measured by one that accurately represents the product at the three levels.

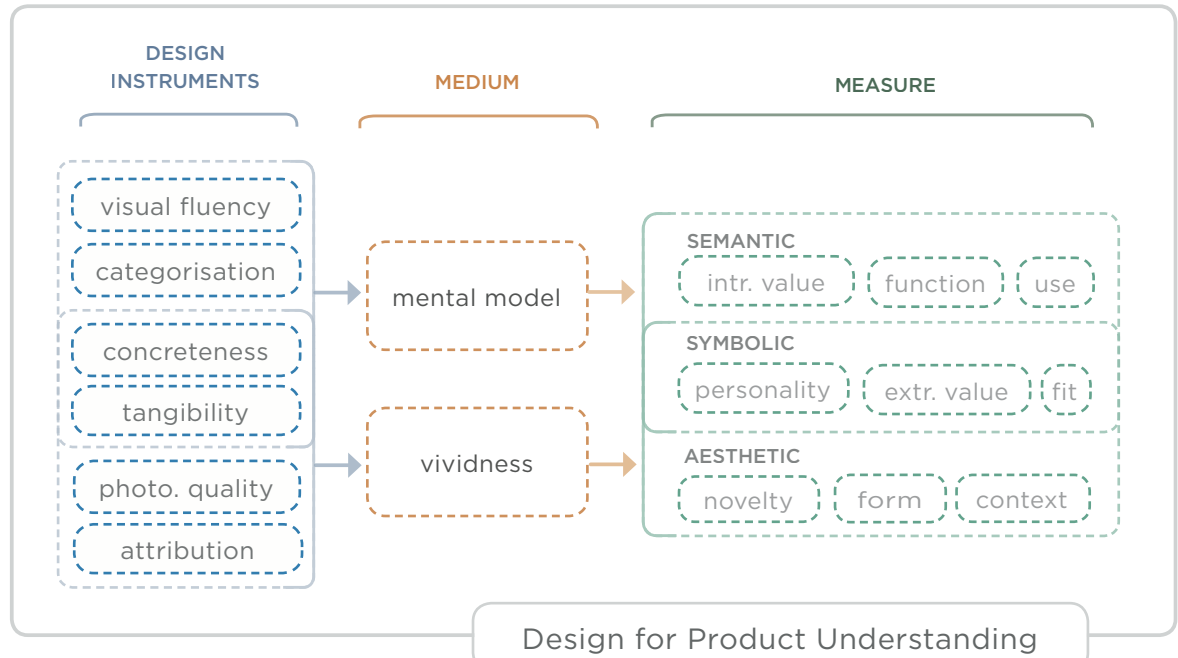
MEDIUM Product understanding is improved when information is more logical (*mental model*) and meaningful (*vividness*).

INSTRUMENTS Design instruments: literature has provided six ways for improving product representation. The upper two instruments contain stronger relations to the formation of a mental model, the lower two to vividness. Concreteness and tangibility overlap.

Connecting instruments and measurements.

Through the means of Mental model and Vividness, the instruments for product understanding can be linked to the project goal of improving semantic, aesthetic and symbolic understanding. Fig .. above illustrates these connections

* note: in appendix 3 previous versions of the Design for Product Understanding graph, and reasons for changing them can be found.



Semantics

The coherence of a mental model is directly related to semantic understanding. Indirectly a mental model may help aesthetic judgements. Semantics also form part of symbolic association. For example: a coffee machine with a sophisticated mode-of-use may bring symbolic value to the user.

Aesthetics

Vividness directly attributes to aesthetic pleasure of the product. Indirectly, vivid presentations contribute to semantic understanding. Aesthetics form part of symbolic association. For example: a coffee machine with traditional form characteristics may symbolise value to the user.

Symbolics

Both semantic and aesthetic instruments attribute to symbolic** meaning. A 'product personality' is derived from them. Together with the products extrinsic quality, consumers determine a fit with their values and self-image.

Figure 0.2 a framework for designing for product understanding: instruments improve product understanding through vividness or mental model, and can be assesed on three levels by their measurements.

4 — ANALYSIS

In this section, Marktplaats is analysed based on research findings. The different Instruments are regarded and gains are pointed out.

Result: insights on problems and opportunities

Marktplaats analysis

In this chapter, Marktplaats online resale service is explored, visualised and feed-backed to the previous research findings.

An advertisement page

On the left side of this page, an advertisement webpage* from Marktplaats of a closet is visible. This listing serves as an example to illustrate the consumer's product interface page**.

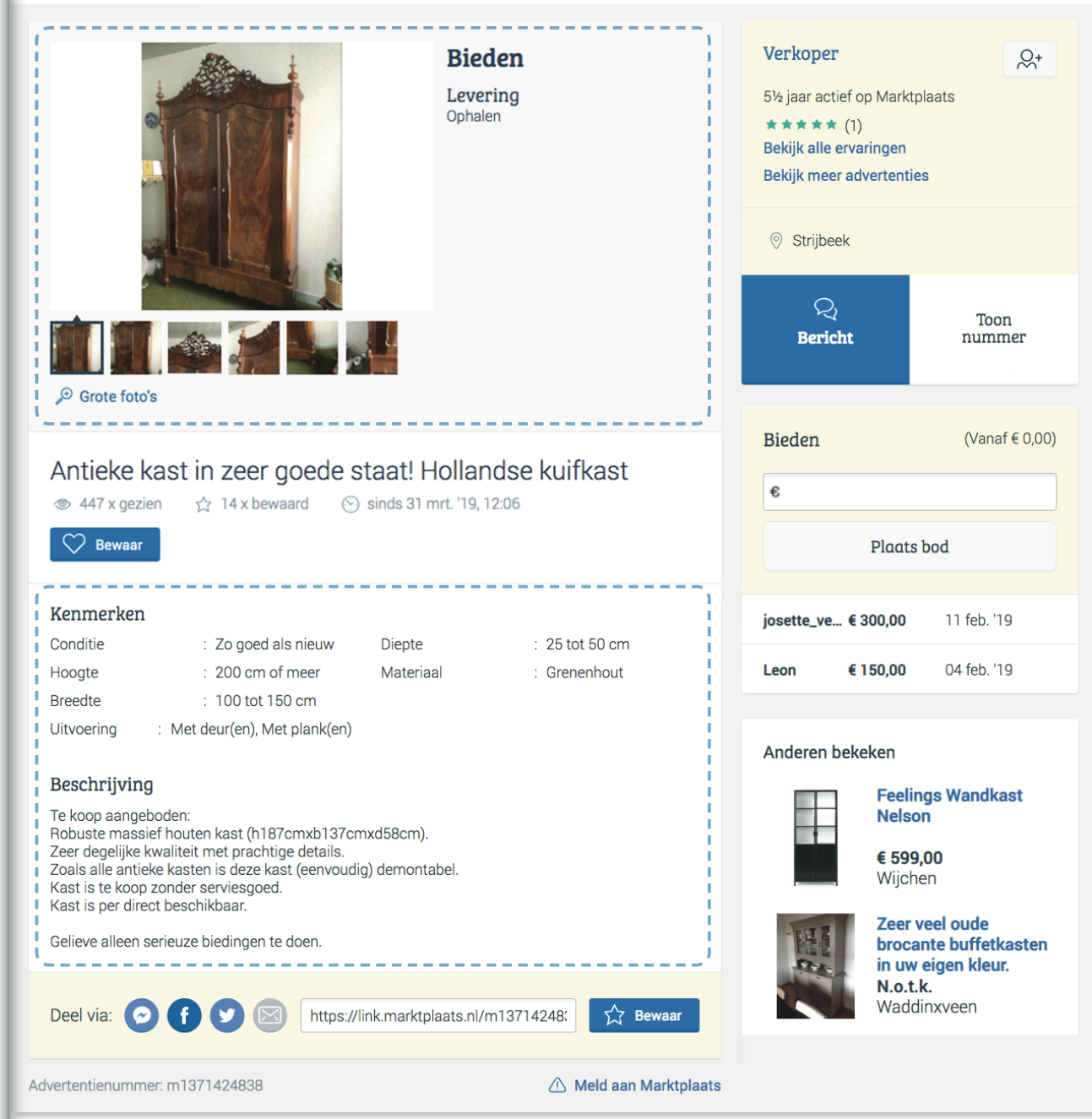
The page consists of:

- *a title*
- *the amount of views/saves*
- *the date of creation*
- *one large image preview and smaller thumbnails*
- *a list of characteristics*
- *a written description of the product*
- *share buttons*
- *information on the seller*
- *a bidding option*
- *related products*

This thesis focusses on three elements only, outlined by the blue dots: The photo + the listed characteristics + the description. The scope of this thesis is laid within these three elements because they directly relate to the presented product. The elements, and their mobile app versions, have been explored through desk research and informal interviews. The next few pages discuss some the most important findings.

* Note: the image on the right page is a relatively well filled-in listing. Few listings contain this level of information completeness. Less detailled listings are illustrated on the next pages.

** The mobile app shows a similar display, the two main differences are that the positions of the 'list of characteristics' and the 'description' are switched, and no small thumbnails are visible in the app.



The image

The image is the first information that is visible on Marktplaats listings. When creating a listing, sellers can choose to upload one, several (max 24) or no photos. Examples of amateur photo's by consumer resellers are visible on the next pages. These amateur photo's are selected on their lack in product communication on aesthetics, symbolics and/or semantics.

Feedback to research findings

From literature research, 6 insturments for improved presentation relate to the image:

- Visual fluency
- Concreteness
- Categorisation
- Tangibility
- Photographic Quality
- Attribution

Which improve product understanding through the means of:

- Mental model
- Vividness

The elements are discussed in relation to Marktplaats current presentation. Negative examples* are shown to illustrate the problem and to allow for theoretical feedback**

*Images presented as examples are all obtained from Marktplaats web-service

**Note: solutions to the discussed problems are presented in the next chapter

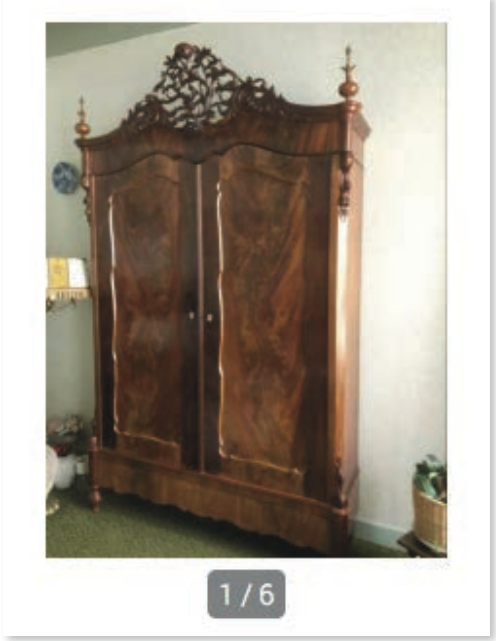


Figure 4.1 A left: Images presented on the desktop site, containing smaller thumbnails.

Figure 4.1 B right: Images presented on the mobile app, swipe through.

Figure 4.2 E to F above example of a lack of guidance in creating a mental model. an expert may find his way around these "motor parts", but even so, aid in creating a mental image of the ergonomics may be convenient and save effort.

Mental Models* and Marktplaats

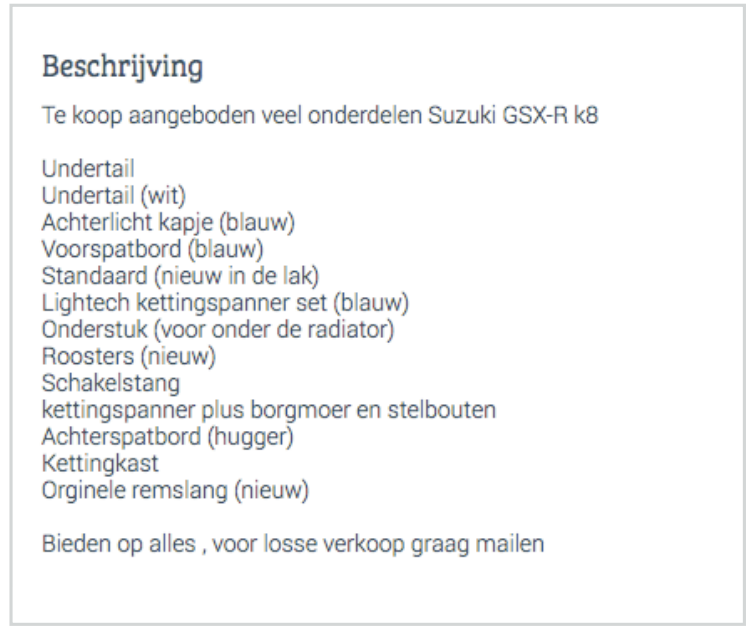
Consumers grasping the product in their minds increases perceived product understanding. In order to do so, the product presentation should allow for creating a mental model or map of the product/product use.

Figure 4.3 (A to D) shows a laptopstand where its function may be perceived as unclear. Moreover, the descriptions states how a part is broken, but the attempt of visually demonstrating it is unsuccessful. A presentation photo with laptop lacks.

A4 shows presented parts of motorcycle. To a non-expert, it is unclear which parts are presented and how they fit. An expert may find his way around each part, But a clear mapping of the product may help in understanding the ergonomics and save time and effort.

* Mental model:

the mental representation of perceived product information



Beschrijving

Te koop aangeboden veel onderdelen Suzuki GSX-R k8

Undertail
Undertail (wit)
Achterlicht kapje (blauw)
Voorspatbord (blauw)
Standaard (nieuw in de lak)
Lightech kettingspanner set (blauw)
Onderstuk (voor onder de radiator)
Roosters (nieuw)
Schakelstang
kettingspanner plus borgmoer en stelbouten
Achterspatbord (hugger)
Kettingkast
Orginele remslang (nieuw)

Bieden op alles , voor losse verkoop graag mailen

Figure 4.3 A to D above. example of a lack of guidance in creating a mental model. the presentation description stated: "there is one piece broken off (see images C&D), which causes the laptop stand to only have one available position". it is unclear what is broken, and to what extend the laptopstand works.

Figure 4.4 left: the description section of the motorcycle parts. because the seller can only use text as a medium for explanation, a list of parts is created. colours have been used as a method for referencing descriptiosn to parts.

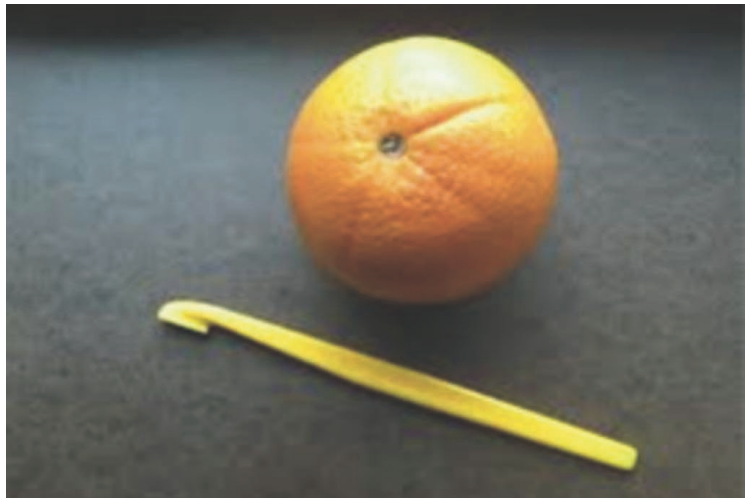


Figure 4.5 : example of increased vividness. by adding an orange to the image, the purpose of the "yellow peeling knife" becomes more vivid.

Vividness*

A vivid product presentation exposes consumers to more information cues about a product and excites the imagination, more than a pallid product presentation. For example, a relevant background increases vividness. So does good illumination, increased information cues and sensory cues.

Figure 4.5 above shows a product presentation by a reseller on Marktplaats who has tried to make a product more vivid. By adding the orange in the picture, an informational and sensory cue is added that improves perceived semantics and symbolics; the orange refers to the product use and creates meaning to the viewer by allowing for a mental image. The compositions and bright illumination make the image aesthetically pleasing.

* Vividness:

The representational quality of a product presentation.

Figure 4.6 A to D above: example of increased vividness: the red rug increases the liveliness of the mental image. Making it easier to visualise this table in use.

As noted during the research findings, increasing vividness can have a double edged effect on perceived product information. On the one hand, it can strengthen positive product attributes, on the other hand, it can distract the buyer from potential negative information.

Figure 4.6 shows an old desk that has a aesthetically unpleasing tabletop. By putting a rug on top of the desktop, the presentation was made more vivid. The visually unpleasing tabletop was not hide, the manner of presentation only suggests a display and may help the buyer in creating a mental image.

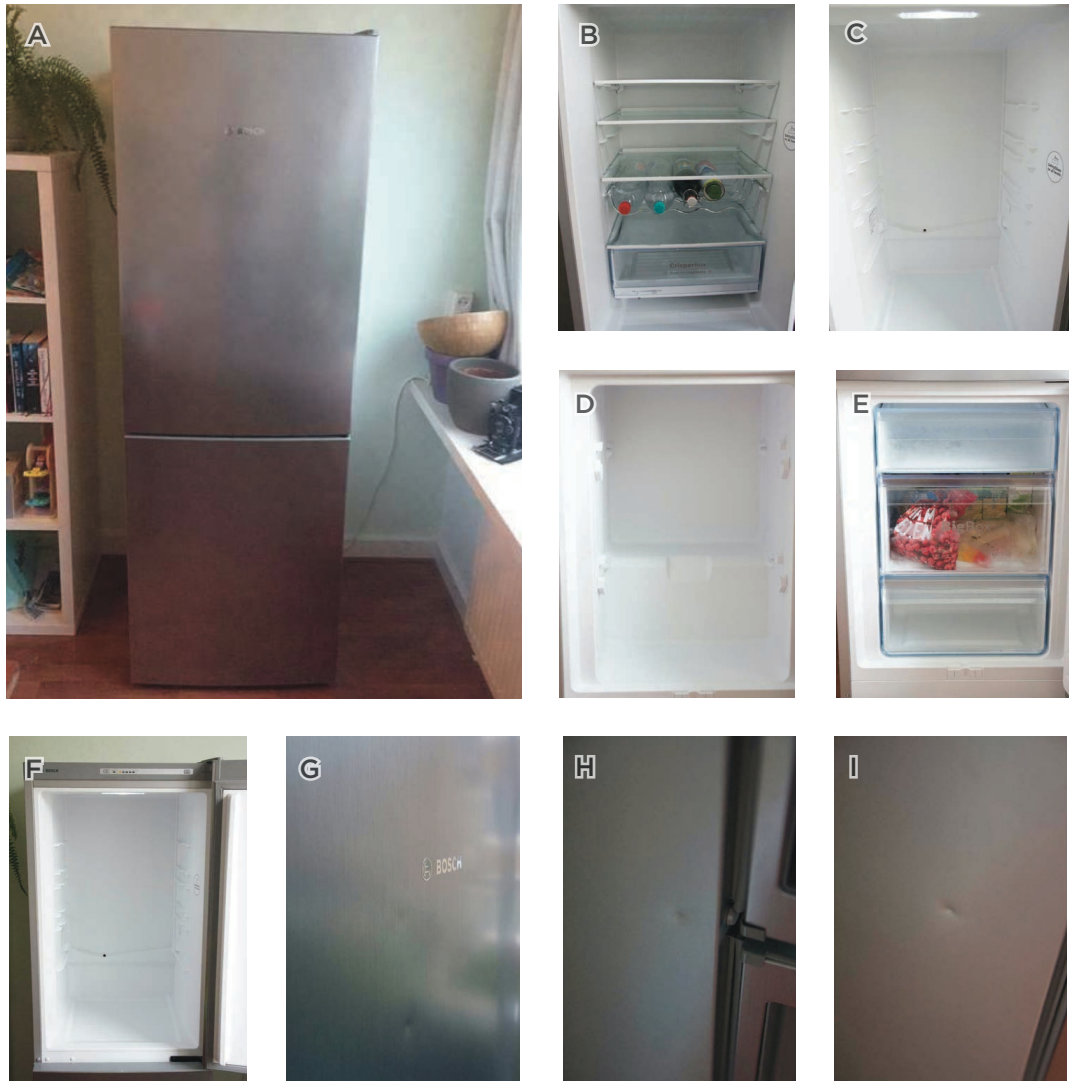


Figure 4.7 (A to I) example of a lack of visual fluency: relation of images to this "bosch fridge and freezer" interior is unclear. images were presented on marktplaats in order from A to I.

* Visual Fluency:

The process of forming a mental story from a series of images

Visual Fluency* on Marktplaats

Visual fluency is important for creating a mental image. A visually fluent presentation of images helps in creating a mental model of the product. The image compilation on the right page illustrates a lack of visual fluency: The fridge shown in figure 4.7 is photographed from different angles and close-ups, but it is unclear how these photo's relate to the fridge, and to eachother. The images are incoherent and a story is lacking.

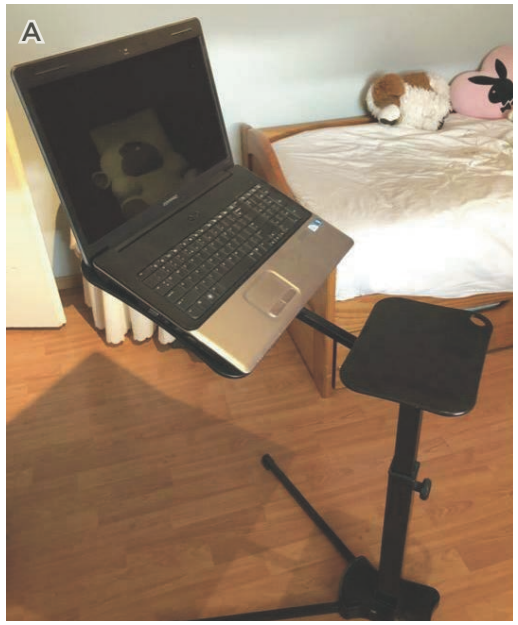


Figure 4.8 A & B: example of categorisation issues. this laptopstand is "adjustable in height and also convenient when sitting on a couch or chair". for this product, recognition from memory may not be available.

Categorisation*

Categorisation helps the consumer in forming a semantic interpretation and to mentally compare it to artefacts with which they are already familiar. If there is a high degree of conformity the design will appear to make sense.

On Marktplaats, categorisation is already used for search purposes, however when viewing the product, the category is not (clearly) visible to the user.

In figure 4.8, the visual appearance and use of a laptop stand shown. This laptop stand is far from a stereotype (such as the stand shown in figure 4.3, page 99. The stand is hard to mentally categorise and is thereby fairly unclear. Moreover, the lack of image views and underexposure do not aid in forming a mental image. For understanding this a-typical product more information seems necessary.

Figures 4.9 and 4.10 on the right too illustrate a need for product categorisation for improved understanding.

* Categorisation:

recognising and grouping objects on similarities

Figure 4.9 A, B & C above : example of categorisation issues. from image alone, one could probably not be able to tell that this is a 'speaker'. the listing title states: "speaker" and so does the description. (it actually is a car subwoofer).

Figure 4.10 A & B left: example of categorisation issues. this is a "aeg heatbrush". the only extra information on the listing is that it has been used once. categorising and comparing this brush to a hair-straightner may help increase the perceived product value and understanding.

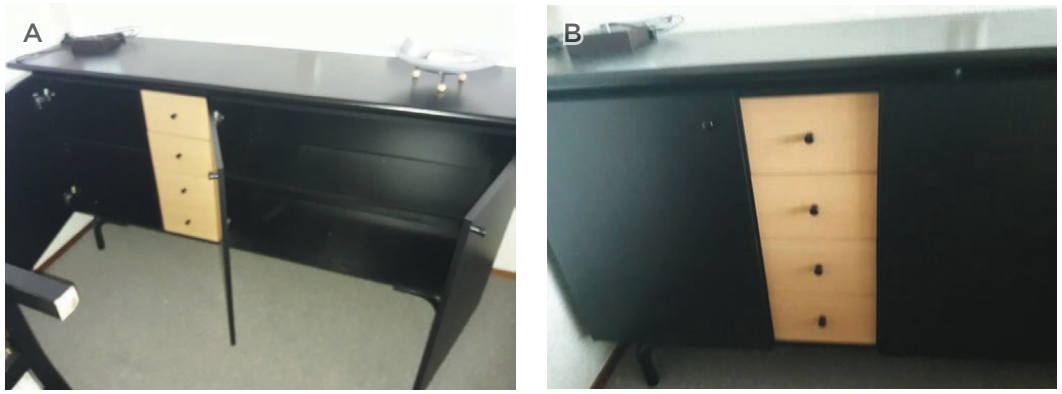


Figure 4.11 A & B above: example of image blur, bad cropping and a combination of over- and underexposure.

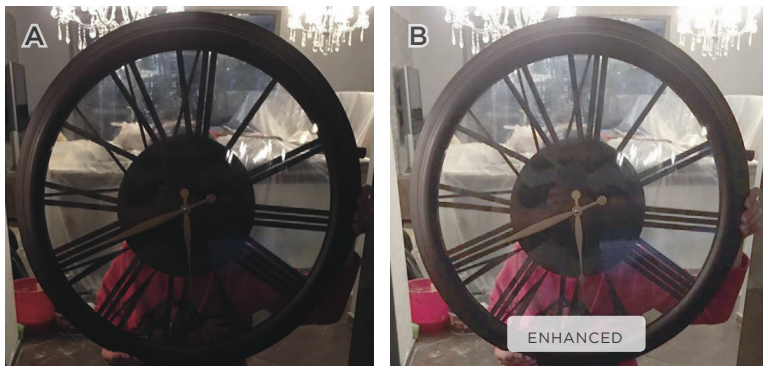


Figure 4.12 A & B right: example of backlight effect. image B is enhanced

Photographic* quality

The quality of the photo is connected to its vividness. High quality images create a more vivid product presentation. Photographic quality depends on several factors. The most important factors for Marktplaats include:

- Image quality (pixels)
- Blur/sharpness
- Cropping/composition
- Illumination (over/under exposure)
- White balance (color balance)
- Contrast

Figures 4.11 to 4.15 Illustrate the six different factors.

* Photographic quality

The subjective assessment of visually significant factors of photographical product representations.

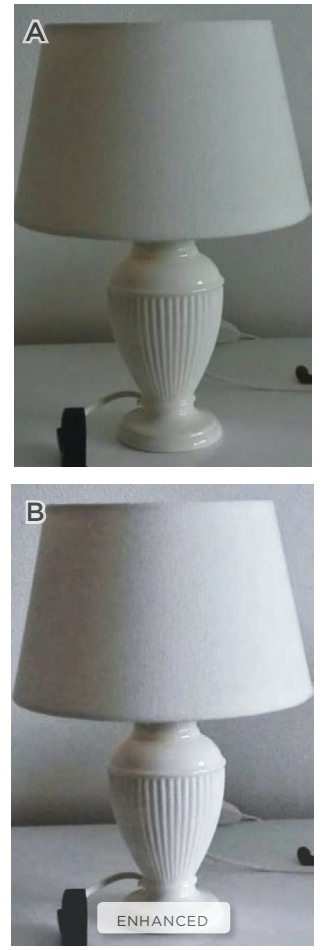


Figure 4.13 A & B above: example of low contrast. images B & D are enhanced to show the difference

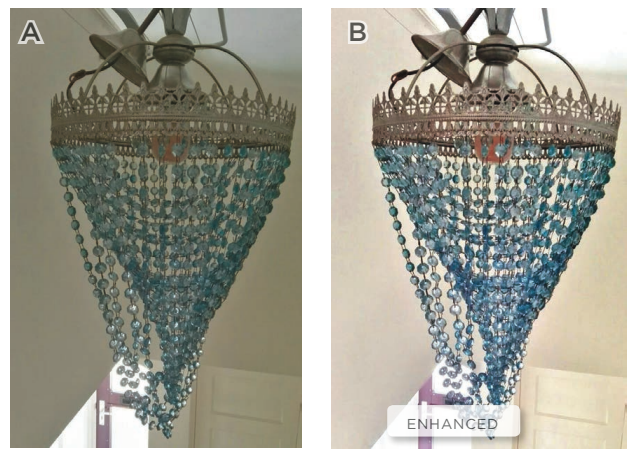


Figure 4.14 A to D top left: example of bad white balance. image B is enhanced to show the difference

Figure 4.15 A & B left: example of bad exposure. image B is enhanced to show the difference

Figure 4.16 top left: example of a non-vivid background likely negatively influencing perceived value and the mental image.

Figure 4.17 top right: example of an attempt to remove background distractions

Attribution*: Image background

The product background attributes to the vividness of the product presentation. The background is important in the composition of the image for gaining attention, emphasizing the subject of focus and conveying symbolic information.

The images on this spread show unrelated objects on the background (image A11) a non-vivid background (figure 4.16) an attempt of removing the background (figure 4.17) a background containing unrelated objects (figure 4.18) and lacking subject focus (figure 4.19).

Due to lack of time, motivation, knowlegde or resources, many badly photographed images contain backgrounds that are detrimental to product presentation, and create negative attributions.

*Attribution: environment

attributing information to a product based on trivial and/or extrinsic data.

Figure 4.18 A & B above: example of an image background containing unrelated objects. moreover, the close-up shows dust, which negatively impacts perceived value.

Figure 4.19 left: example of a lack of object focus by showing too many objects on the background. the right image has been enhanced to show the difference

Figure 4.20 A & B (top images): example of using a marker for scale.

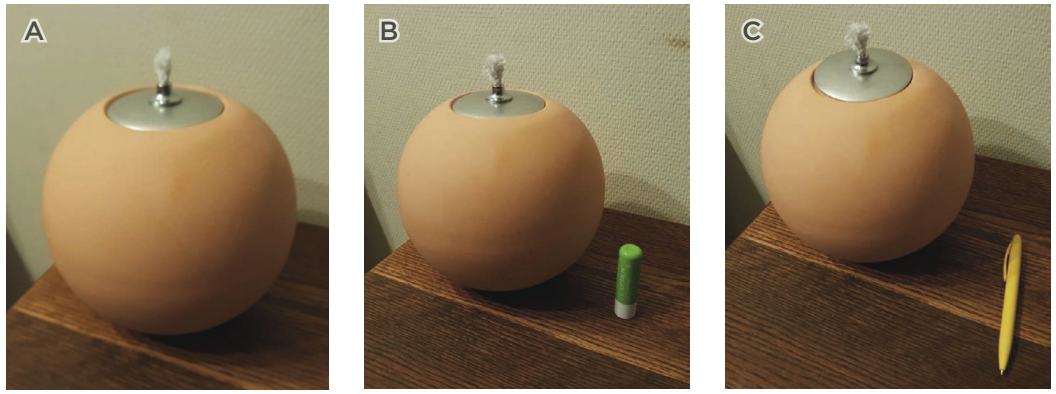


Figure 4.21 A, B & C (bottom images): example of using both a lipbalm and a pen for a more accurate scale

Tangibility* - dimensions

Knowing the dimensions of an object is often of importance for increasing product tangibility and evaluating its semantics (use, ergonomics and functions), its symbolics (value and fit) and aesthetics.

A method for providing a size estimation that is commonly used is the placement of an object of known size, such as a pencil or a ruler, next to the object of interest (see figures 4.20 and 4.21).

The method is likely used because it is the most easy/ effortless or least time consuming method. However, it renders inconcrete and often inexact information.

* Tangibility: dimensions

The real or actual aspects of a product rather than imaginary. Specifically: the product size

FIgure 4.22 A & B above: example of using a ruler for scale. the close-ups and under exposure make it harder to comprehend object the dimensions.

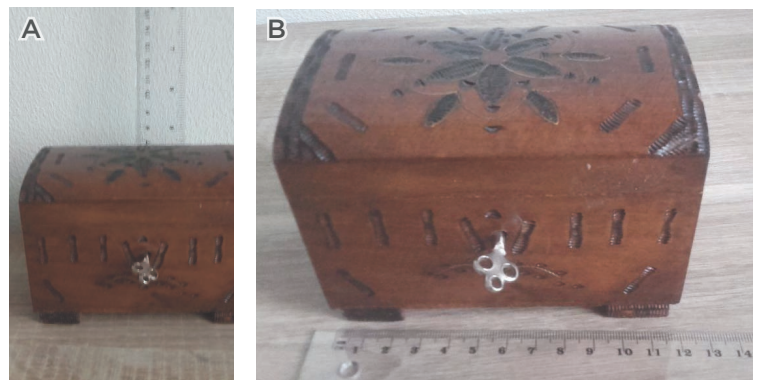


Figure 4.23 A & B left: example of using a ruler for scale. due to blur and illumination not al dimensions are clear.

Figure 4.24 A to D: example of unclear material properties from image. The material may look like metal or even wood, however, the backside looks like it is painted plastic. the description lacks material

Tangibility - Materials

Similar to the importance of knowing the dimensions of an object, knowing the material can help in evaluating product semantics (use and properties) symbolics (value and fit) and aesthetics.

Tangibility: materials

The real or actual aspects of a product rather than imaginary. Specifically: product materials

Since on Marktplaats, haptic information is almost exclusively conveyed through the image, the photographic quality is of high importance. Figures 4.24 to 4.27 show examples of photographs being unclear on material and tactile information.

Figure 4.25 top right: example of unclear material info. the listing

Figure 4.26 A & B Top left: example of unclear material properties from image. the listing states "sits great", but it seems like the back construction of the chair is coming through the fabric.

Figure 4.27 A & B left: example of unclear material properties. it could be metal and glass, or plastic.

5 IDEATION

In this section, brainstorm sessions are discussed and ideas are presented

Result: idea-cards

Ideation

During the research phase, many ideas have been formed and collected. But in order to collect as much ideas as possible, two brainstorm session were executed with TU Delft master design students. The students had different specialisation in either interaction design, integrated product design, data enabled product design or industrial ecological design. All participants are familiar with- and have used Marktplaats in the past.

Brainstorm on the six instruments

The first brainstorm was conducted with reference to the (old) six instruments of product understanding (appendix 3). On each instrument, ideas were shared and concepts were envisioned. From this session interesting (designers) insights on product presentation on marktplaats resulted. Some ideas are the result of this session. Many ideas were outside of the scope of this project, e.g.: removing advertisements from the website, and are not included in the idea cards.

The second brainstorm session was performed as a semi structured interview. Cards were created stating the different consumer motivations for resell. Each motivation was explored in a mindmap. After the session, I linked the different statements on the mindmap to the Instruments. Through this, most of the ideas were developed.

Figure 5.1 brainstorm session on consumer motivations. with Ward Hendrix and Donovan Lewis.

Figure 5.2 idea cards sorted on Instrument and Measure

Ideacards

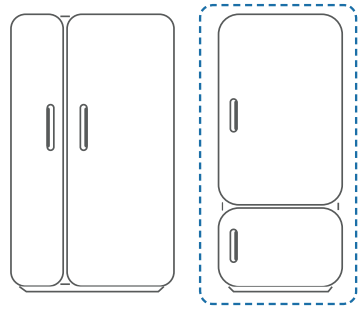
After collecting all the ideas, small idea cards were created and grouped on its instrument and measure. On the right page, three idea cards are presented as examples. On these cards, the ideas have been visualised and described. The cards are sorted by instrument, their Means, Measure and Pro's and cons are summed. Possible features are stated for creating a full understanding of the idea.

A personal preference

The choice for creating idea cards (instead of summing the ideas) has been made mainly for personal preference: as a designer, I like the freedom and fluency of working with paper. To be able to physically move and scribble on the cards. To show them to fellow designers and moreover: to present them to Marktplaats, and spark discussions.

In the next section, three idea clusters are presented and formed into concepts. On this spread and the next spread, some idea cards are presented that have been used in these clusters. Other idea cards can be found in appendix 4.

CATEGORISATION



ICON CATEGORISATION

Using icons for depicting product category

+ Mental model: Categorisation
+ Semantics/aesthetics
+/- time & effort

POSSIBLE FEATURES:

EDIT THE ICON TO MATCH YOUR PRODUCT

ATTRIBUTION

- ☑ FRONT VIEW
- ☑ TOP VIEW
- ☑ BOX / PACKAGING
- ☐ SIDE VIEW
- ☐ PHOTO OF USE
- ☐ DETAILED PHOTO
- ☐ BRAND
- ☐ MODEL
- ☐ REASON OF DISPOSING
- ☐ DEFICIENCIES/DAMAGE
- ☐ WARRANTY
- ☐ PRICE

UPLOAD FEEDBACK

A user feedback on what info the seller should upload and what is missing.

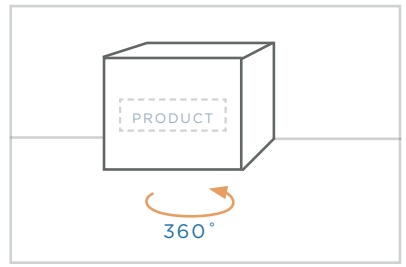
+ Vividness: attribution/concreteness
+ semantics/symbolics/aesthetics
+ outcome, retain users
-/+ effort & time seller

POSSIBLE FEATURES:

DIFFERENT LISTS FOR DIFFERENT PRODUCT CATEGORIES

THE SAME LIST PRESENTED TO BUYERS

TANGIBILITY



360 VIEW

Allow seller to upload a 360° view

+ Mental model: Tangibility/Visual fluency
+ aesthetics/semantics
+/- time/effort
- retain (all) users

POSSIBLE FEATURES:

360 GIF

CONCRETENESS

NUANCING PRODUCT CONDITION

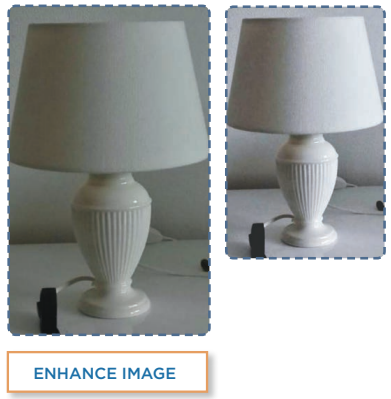
Using images for a less ambiguous scale/method of depicting the product condition

+ Vividness
+ Concreteness/Tangibility
+ aesthetics: form
+ outcome, lower risk
-/+ effort seller

POSSIBLE FEATURES:

SEARCH FOR SPECIFIC PRODUCT CONDITION

PHOTOGRAPIC QUALITY



‘ENHANCE’ FUNCTION

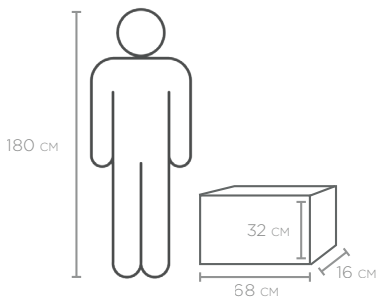
AI auto improves lighting and contrast

+ Vividness
+ aesthetics
+ cognitive effort
+ attract users
- ‘negative outcome’ if enhanced too much

POSSIBLE FEATURES:

BUYERS OPTION FOR VIEWING NON-ENHANCED IMAGE

TANGIBILITY



SIZE COMPARE

On the listing the product is represented as a box with its dimensions and an icon of a person for reference (instead of text only).

+ mental model
+ semantics
+/- time & effort

POSSIBLE FEATURES:

ICONS REPRESENTING THE PRODUCT

TANGIBILITY

PRODUCT GIFS

Sellers can upload gifs of products

+ Semantics (aesthetics/symbolics)
+ cognitive effort (buyer)
+ attract users, outcome
- time/effort (seller)

POSSIBLE FEATURES:

FINGER SWIPE/MOUSE MOVEMENT TO MOVE GIF

CATEGORISATION

TWEAKERS PRICE WATCH

How many versions are sold how often? For what minimum, maximum and average price

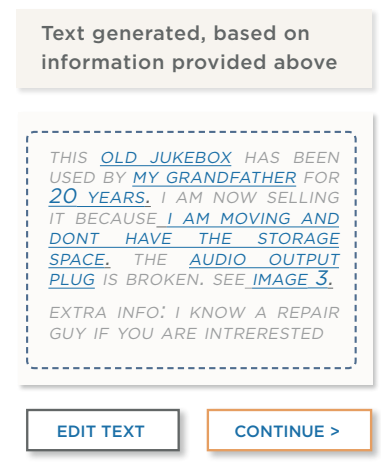
+ Mental model: attribution
+ symbolic
+ outcome
+ time & effort

POSSIBLE FEATURES:

INTERACTIVE GRAPHS

FILTER ON PRICERANGE

CONCRETENESS



‘DESCRIPTION’ TEXT GENERATOR

AI generates a tekst from sellers’ imput. seller can edit the discription or add personal text.

+ Mental model: concreteness/attribution
+ symbolics/semantics
+ effort & time seller, outcome
- authenticity of Marktplaats

POSSIBLE FEATURES:

CAN BE CHANGED TO DIFFERENT LANGUAGES

DESCRIPTION CAN BE SEARCHED FOR KEYWORDS

6

CLUSTERING

In this section, clusters of the idea-cards are presented. The clusters are presented in an iterative manner, by adding new ideas to the previous. The clusters will lead to concepts in the next chapter.

Result: three concept directions

Idea clustering

Cluster by subject

After labeling all cards, idea clusters were made that either:

- solve a specific problem
- increased a measure
- apply an instrument
- seem ‘interesting’
- or were favoured by Marktplaats

The process resulted in 15 promising clusters, of which 7 were directly related to the improvement of amateur product presentation. After some iterations the 7 clusters were combined to form the 3 final concepts.

The next few pages illustrate and discuss the three clusters.

Figure 6.1: printed clusters to present to Marktplaats

Cluster 1: Icons

GOAL: visually compare and explain unique products

The tackled problem/opportunity

Categorisation helps consumers understand unique products. Webshops use categorisation for easy product search. When related categories are presented to the viewer, he/she is more likely to find the product of need.

> *"If I want to buy a product that straightens my hair, I do not care if it is called a 'electronic brush' a 'hot comb' or 'straightener'."*
>
> *Anne - interviewee*

Products on marktplaats often contain dissimilarities from the original/stereotype. By comparing them; the similarities and dissimilarities of the presented product are visible, increasing product understanding. Inferences can more easily be made about the product use, function, ergonomics and novelty. At the moment, Marktplaats only categorises for search purposes. If these categorisations are visually presented to buyers and sellers, better categorisations and quicker comparisons and search alterations are made.

Categorisation:

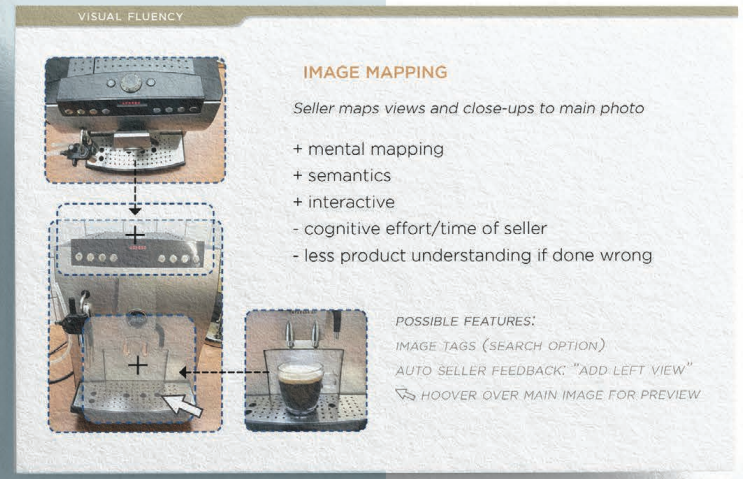
recognising and grouping objects on similarities

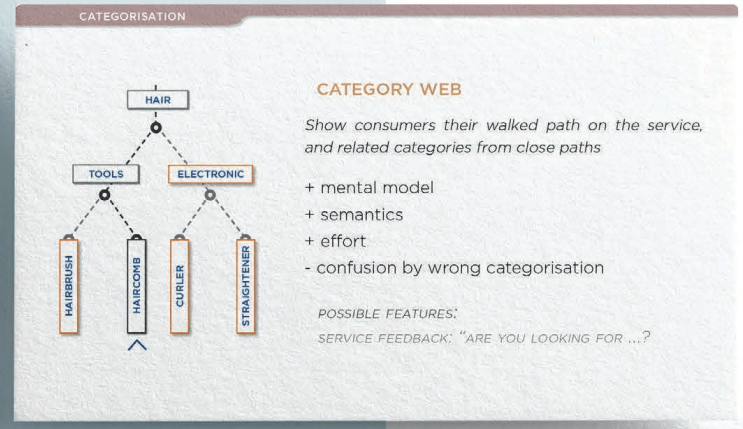
Visual Fluency:

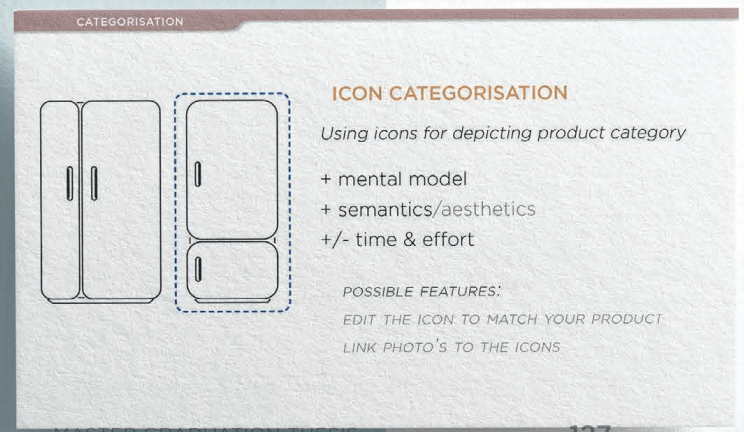
The process of forming a mental story from a series of images

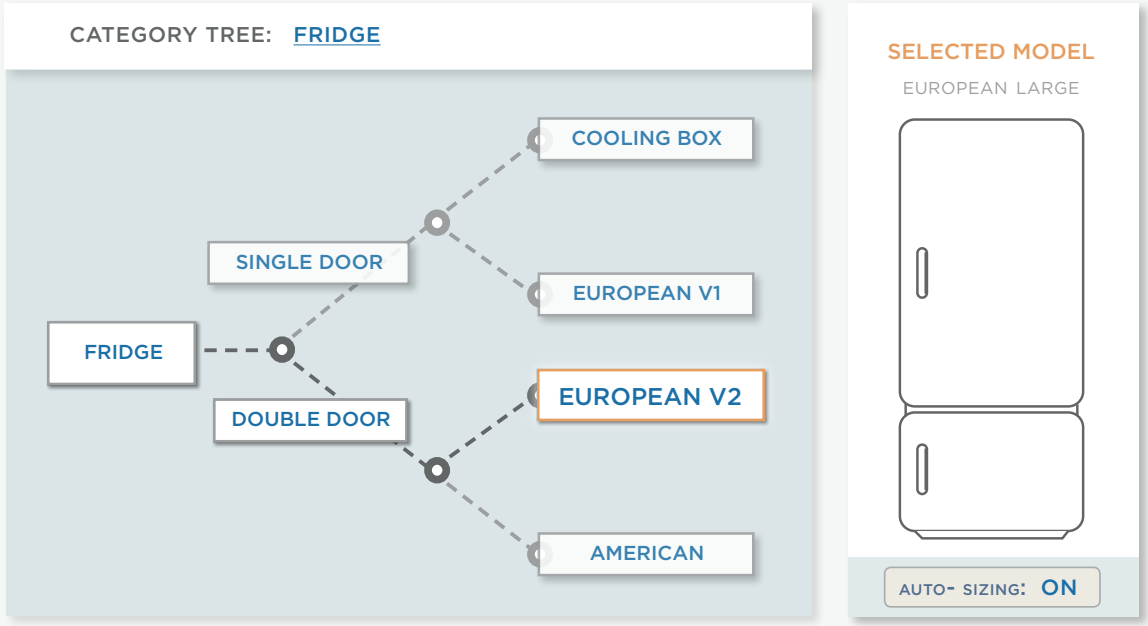
Mental mapping, uniqueness and sizing

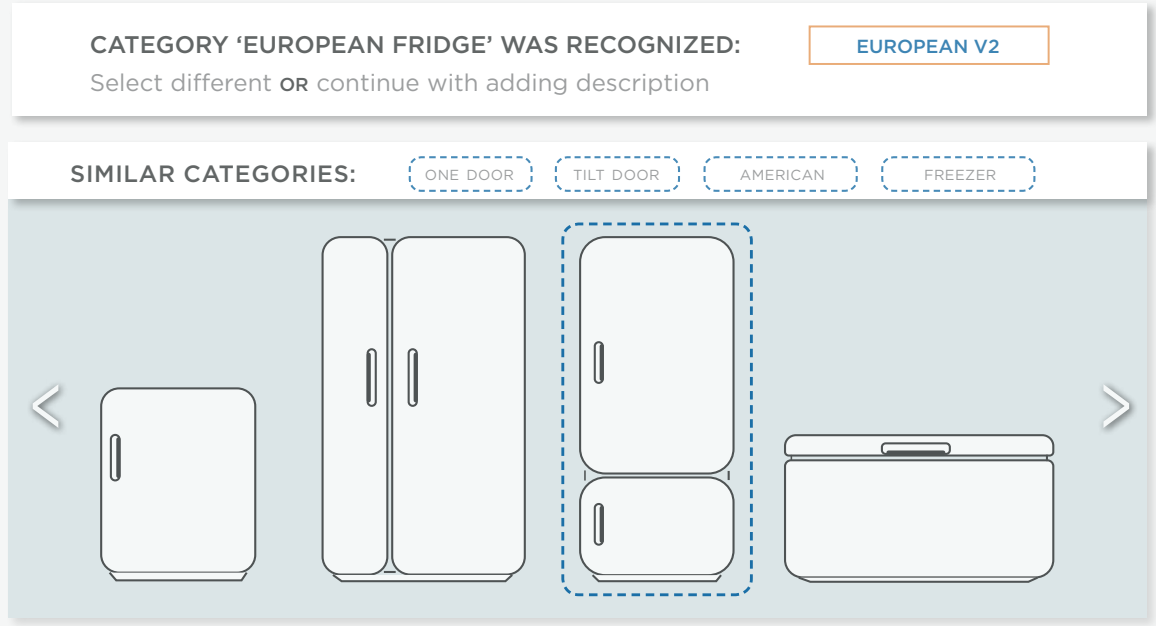
Instead of being constrained to the description section only, sellers may now visually explain their product. Buyers may more easily find and understand the product.

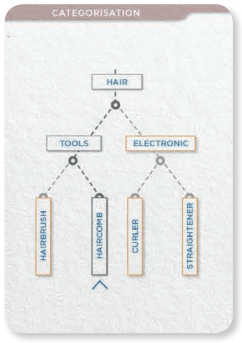












Sellers

The image above conceptualises the use of a categorisation web by sellers. When uploading their images, sellers select their product category through this method.

The use

By clicking through the sub-categories in the web, the right visualisation is chosen. The difference with the current categorisation method is that it visually displays the chosen ‘path and an icon of the product, with related categories. This provides a more clear and fluent overview of product options.

Automatic measurements

Sizes may be added to the icons for clear information transfer. Considering technological developments of object-size recognition such as Google’s AR ‘Measure’ (a mobile application that auto measures sizes), automatic sizes may be added to the icons in future use.

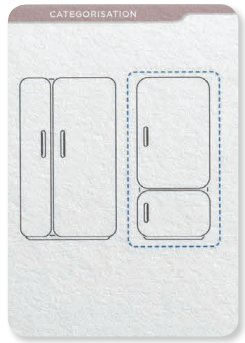
Object recognition technology

AI developments in object recognition such as Google Vision and Amazon Rekognition allow for object detection and labelling. Developments like these can soon provide auto-select assistance for depicting the right category.

Basis

Two idea-cards -‘category web’ and ‘icon categorisation’- form the basis of the concept cluster and allow for a variety of expansions and iterations of the concept.

On the next page the ‘image mapping’ card is added to the cluster and visualised from a buyers perspective.




3.

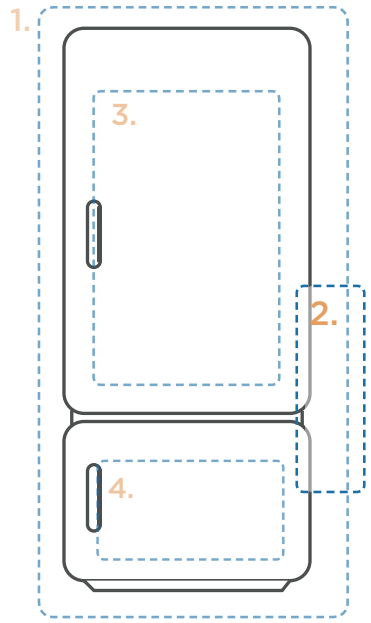

3.


4.

2. COMMENT: "ONLY ONE SMALL DENT ON THE SIDE, HAPPENED WHEN MOVING"

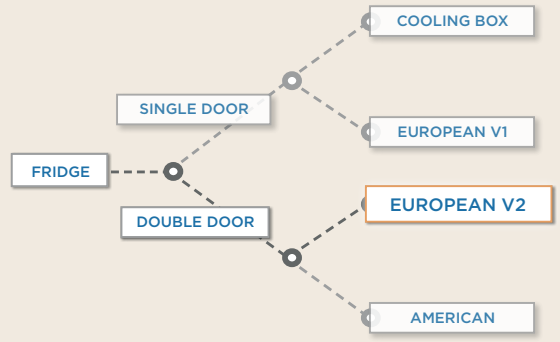
MODEL:

EUROPEAN V2 FRIDGE



SHOW MEASUREMENTS

CHOOSE A CATEGORY:



PRODUCT SCORE: UNIQUE

8% MATCH THIS CATEGORY

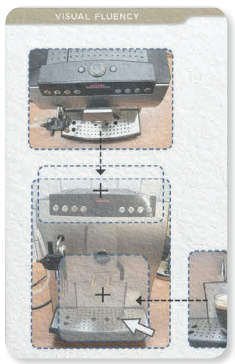
92% SOLD WITHIN 10 DAYS

42 VIEWS

6 TIMES SAVED TO FAVORITES

Buyer

On this spread the use of categorisation for presenting a product to the buyer is conceptualised.



Linked images

By adding the 'image mapping' card, product images may be linked to the category icon for linking and comparing shapes or for showing deficiencies. Important to this process will be the minimisation of sellers' time and effort.

Uniqueness

The next page adds the uniqueness card to the cluster. By concretely categorising products, information on the uniqueness and scarcity of the product can be gathered and presented towards the buyer.

The ultimate idea

As mentioned before; "Semantic interpretation may be assisted by allowing the viewer to categorise the product with greater ease and compare it to artefacts or concepts with which they are already familiar" .

The ultimate idea of this concept is that every product and every product category will be linked to an icon of the stereotype. There are five main benefits to implementing the icon system on Marktplaats. The first two benefits are that of categorisation and mapping images . The third is for showing sizes and comparing sizes. The fourth for creating specific sales information to Marktplaats.

The final reason is that it may equip Marktplaats with a unique system that allows for distinction from similar services. I may create a one-of-a-kind trademark that allows for design branding.

Drawbacks

Creating icons of any and every possible product is an ambitious goal and a bold investment. Assumed benefits should weight up to the expense. However, it surely is a possible task when compared to Google's once audacious plan of imaging every square meter of the world.

Cluster 2: Feedback

Complete and complete information by sellers

The tackled problem/opportunity

One of the biggest problems of failing Marktplaats listings is the lack of product information and its ambiguity. This problem has been confirmed by semi structured user interviews, and by Marktplaats.

Complete information

During Literature research, it was found that people create a mental image of a product, and make product inferences about things they do not know or can not observe. For example; if a matching product charger is not presented, a buyer may presume it is missing. If sellers know exactly what information they should present, they are better equipped to create a complete listing. On the other hand; if buyers know exactly what information is left out, they might be able to make better risk/value assessments on the product.

Concrete information

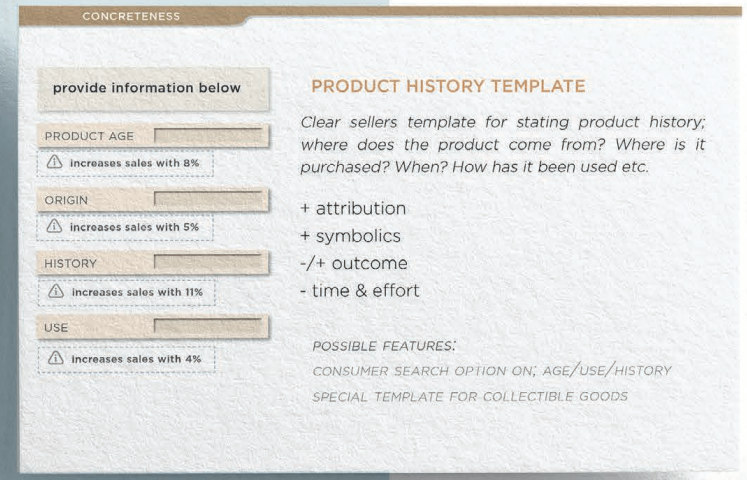
Information ambiguity leads to negative outcomes for either the buyer or seller and is detrimental to the service. The Concreteness design Instrument aids in solving this problem. In this cluster several concrete solutions are presented for specifying and nuancing product information.

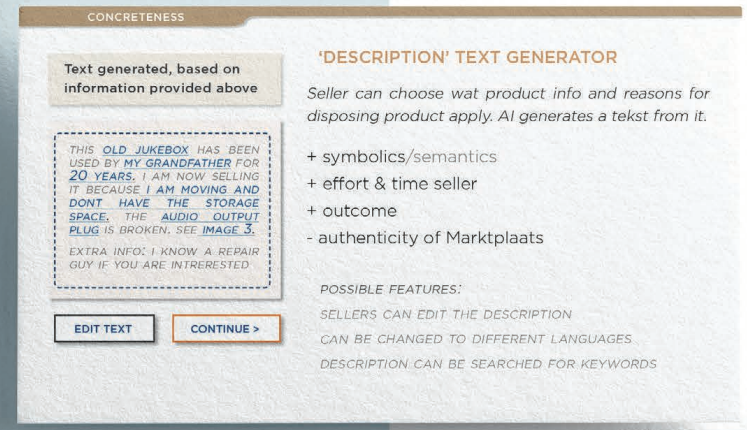
Templates and feedback

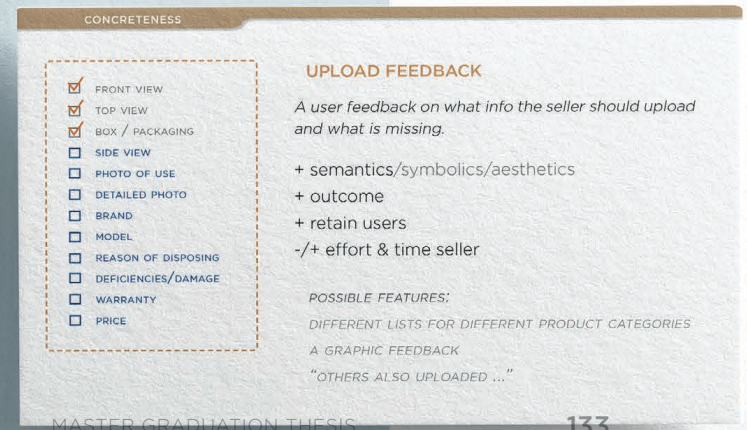
Based on templates and optionally, on AI algorithms, feedback may be provided to Marktplaats' users to optimise product presentation and understanding.

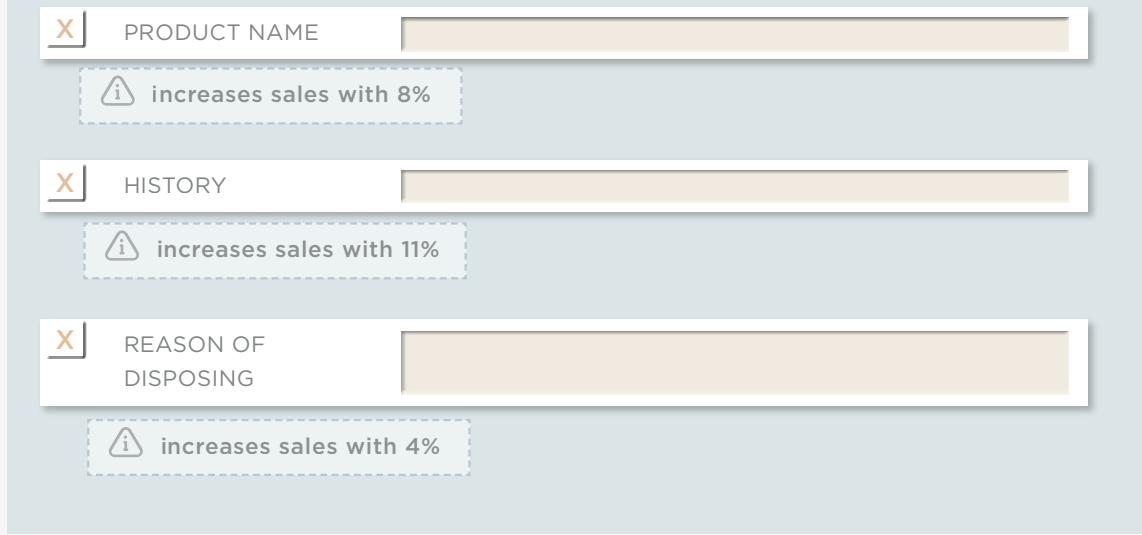
Concreteness

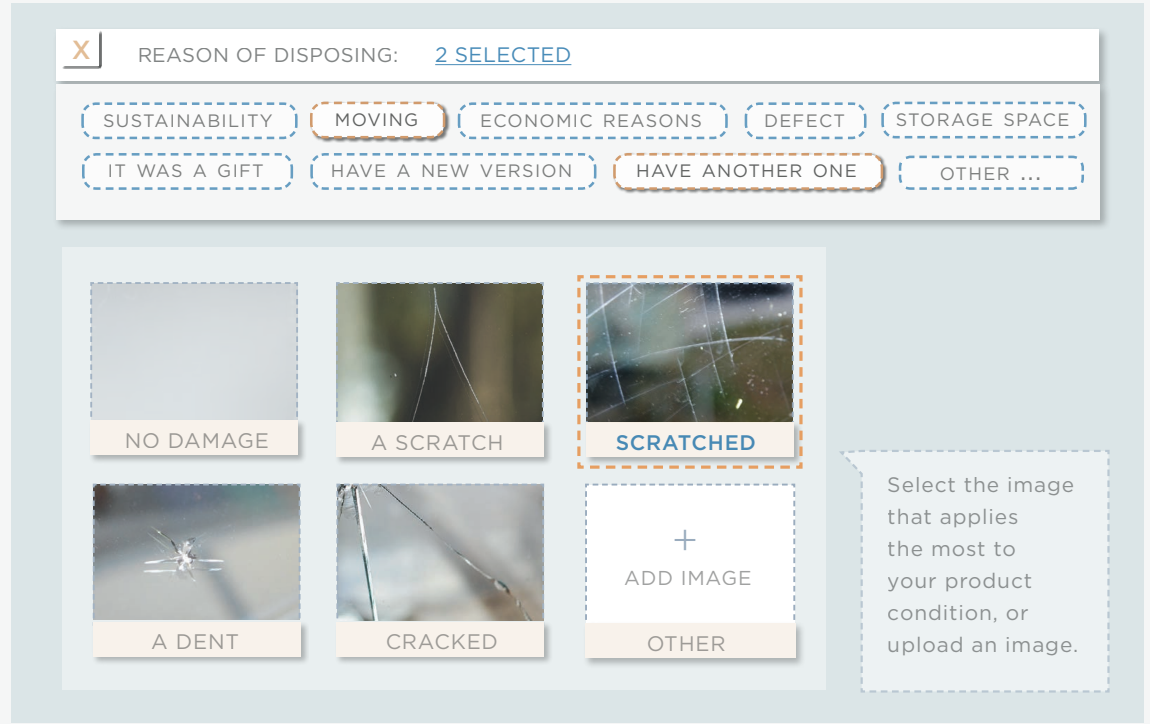
being specific, definite, and vivid rather than vague and general.

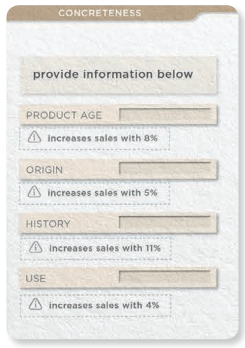












Buyer

On this spread the use of a template for motivating the seller to provide concrete information is conceptualised.

Information template

As simple as the idea may be: using a template provides the seller with an information framework and lays out different kinds of information that the seller could provide. Through manually typing, the seller has the freedom to speak his mind. This way, any symbolic or attributable information will not be lost.

Upload motivation

The 'sales increase text' may provide extra motivation to the seller to upload more. The motivational texts should be based on actual numbers to avoid misleading Marktplaats users and creating wrong expectations.

One click away

The concept above can be added to the textual information template. By clicking on 'reason of disposing' answers, time and effort may be saved for the buyer. Since research has indicated the common reasons for disposing goods, clear suitable options can be provided for this question.

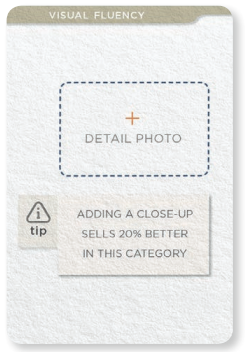
Though authentic textual descriptions provide more symbolic information, some info may be better than none.

The product damage images may be used to bring nuance to the current product condition statements, which are currently comprised of: bad condition, used, good condition, mint and new. What one person may describe as being in 'good condition', another may call 'used'. Therefore, images should be used to solve miscommunications. For different kinds of products or materials, different kinds of images can be displayed, or if no images fits, an image can be uploaded by the seller

Photo template

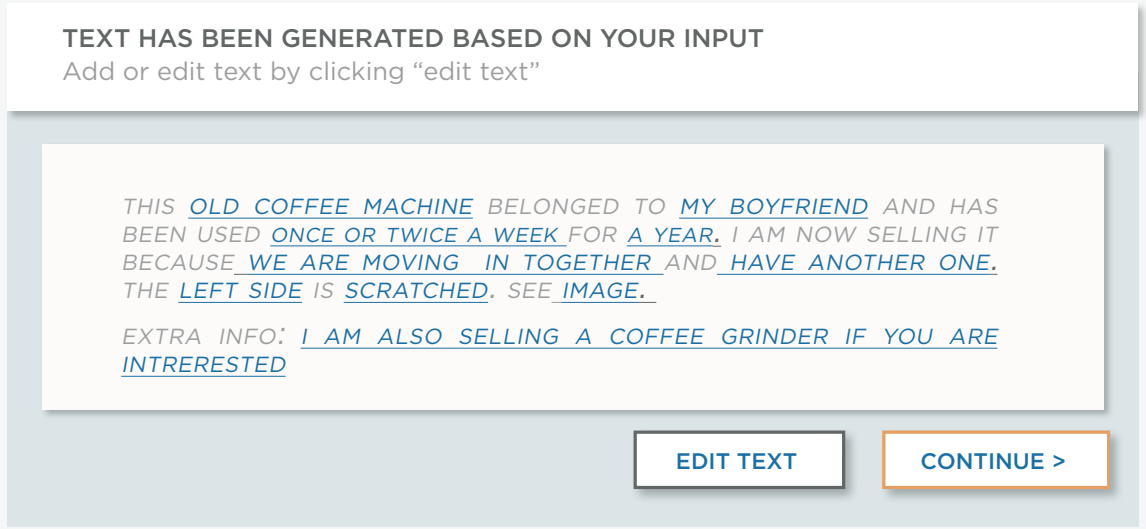
Similarly to the previous textual template, the image template creates a framework for the user and implicitly tells the seller what images could be provided.

Object recognition technology could provide auto upload recognition. Different kinds of products require different kinds of upload templates. Marktplaats already provides guidance for selling cars, however; subtle guidance may also be given for any other product category.



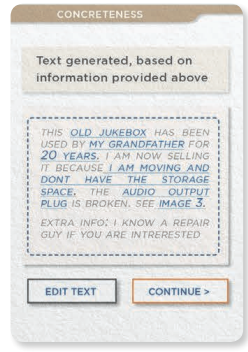
Nudging

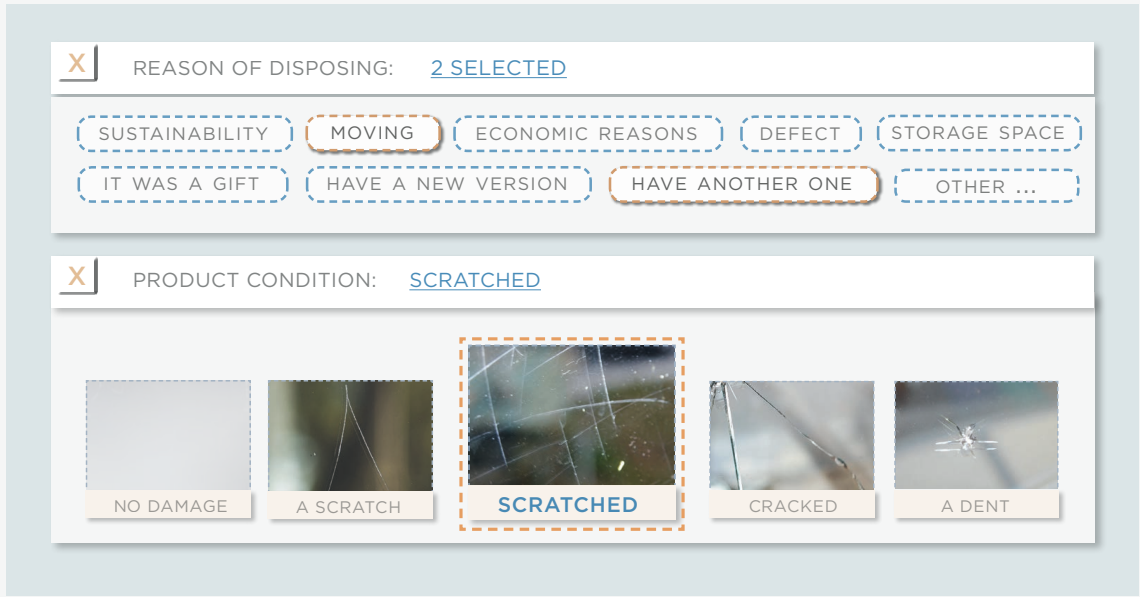
According to Marktplaats and interviewees, sellers do not like to be told what images he/she should upload. Therefore; no motivation texts or recommendations are added to this part. Creating a nudge for the seller may just be enough.



Automatic text generation

Based on all the previously provided information, an automatic text description can be generated. The benefits of this function is that it saves time and effort for the seller, and provides concrete and unambiguous information to the buyer. The downside to this option is that subjective and attributive information may be lost. Manually writing a text creates a more authentic presentation. Therefore, the option of adding and editing the text is provided.





The feedback concept - sellers

By working with templates, upload feedback can be generated as the visualisation on the left illustrates. This visualisation is the essence of this 'Feedback Cluster'. Providing feedback to the seller serves as a an unobtrusive way for nudging the seller into uploading a complete set of information.

A status bar

The status bar visually represents the quality of the listing. If the seller wants to create a complete listing, he/she is prompted to upload more. If the seller does not want to spent too much time or effort on it, he/she can just continue, knowing that the listing is incomplete.

Different feedback lists should be provided for different product categories, because presenting clothes asks for a different set of information than a presentation of LP players.

Buyers

From the literature study it was found that when buyers know exactly what information is missing in a presentation, they are better equipped to perform risk/value assessments on the product. Therefore, presenting a similar list of information to buyers may be beneficial for their product understanding. This will likely create awareness of is missing product information.

Cluster 3: Tangibly

A clear and tangible image from visual information

The tackled problem/opportunity

Images that do not clearly and logically follow on each-other make visual processing of information harder, leading to less perceived amount of information.

> *"The funny thing is, when viewing images of different rooms in a house, consumers understood the house better when images were presented in the same order as one would view the rooms when actually walking through the house"*
>
> *Jeroen Mulder - Marktplaats*

To improve consumer understanding of the presented products, images should be displayed in a logical manner and order.

Image upload motivation and 3D view

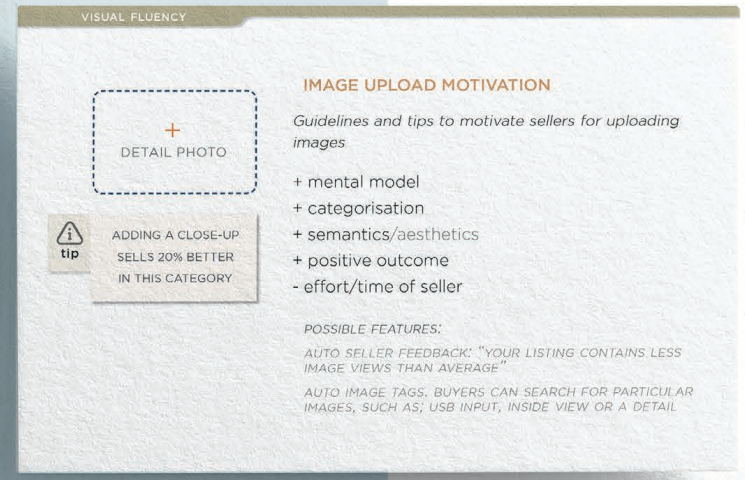
The core of this cluster is the 'image upload motivation' for sellers. Only when images are uploaded and done so correctly, designs can be made for improved product understanding. This improved product understanding may be reached through creating a 3D view.

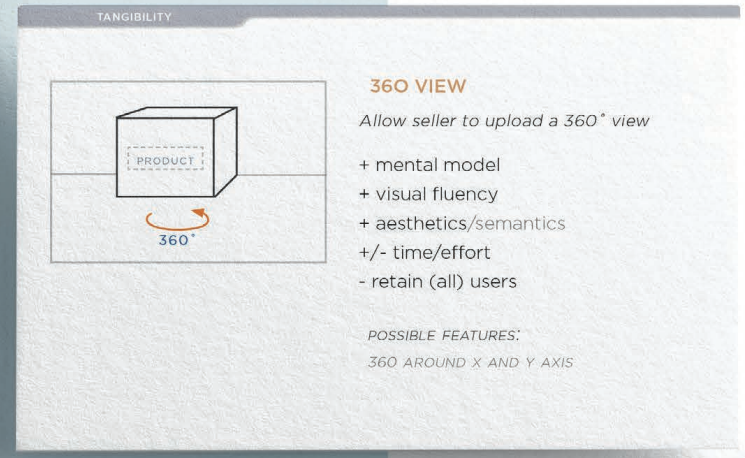
Tangibility:

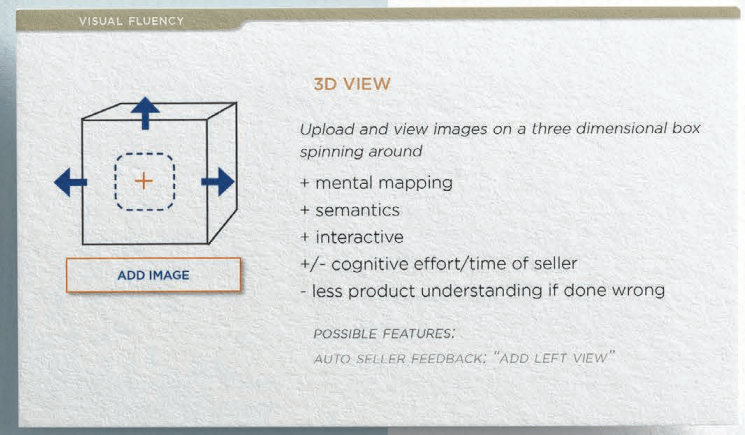
The real, sensational or actual aspects of a product rather than imaginary.

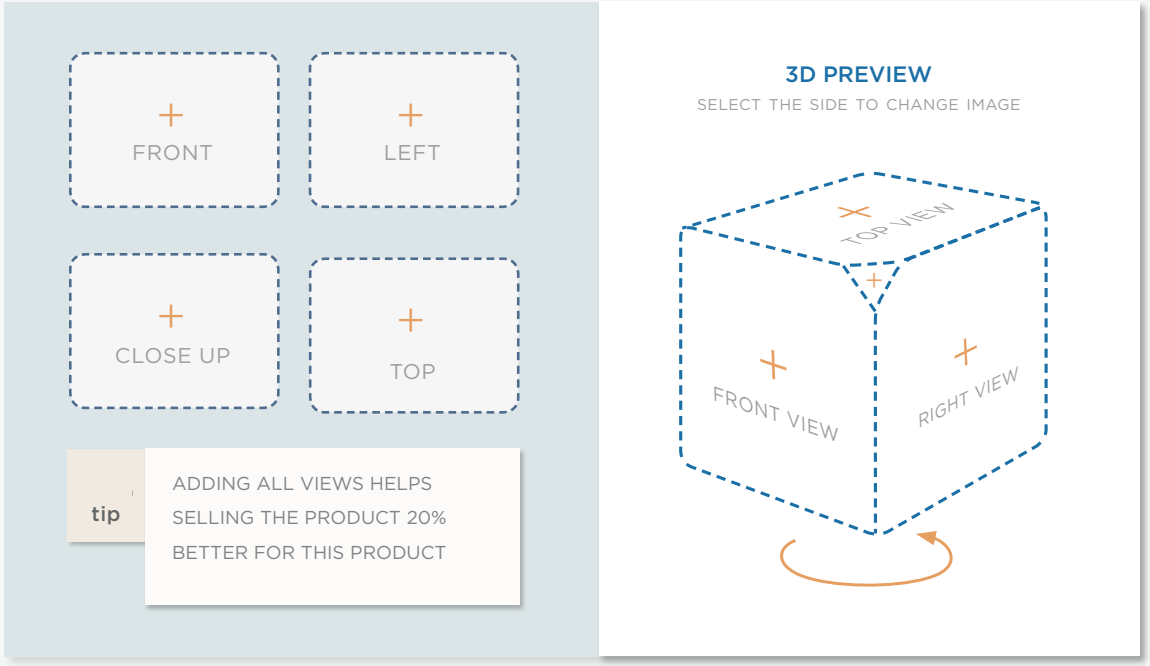
Visual Fluency:

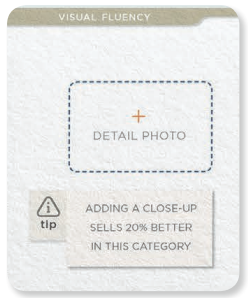
The process of forming a mental story from a series of images

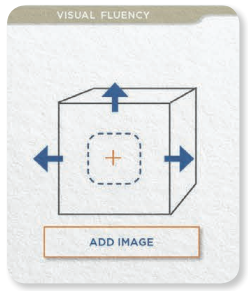












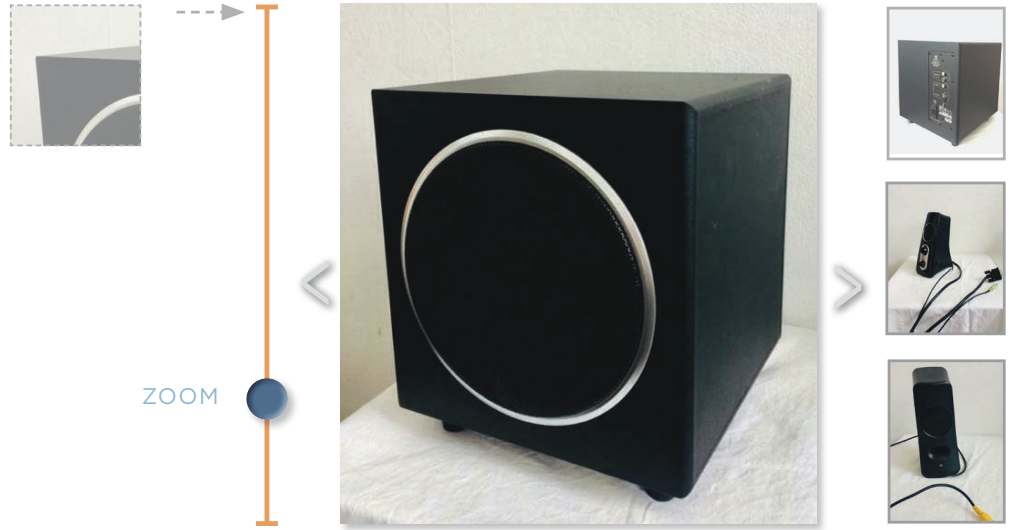
For sellers

A self-evident way for assuring a complete and clear upload is to provide the seller with an upload template. By adding an upload motivation of “Uploading this image sells better”, the seller may be sparked to complete his listing.

A motivational quote as mentioned above should be tested on it’s effect on sellers before implementing. This idea is not grounded by literature findings.

3D template

The ‘3D preview’ shows how the combination of an upload template and a 3d view could be realised. When images are uploaded in the designated templates, images can be mapped on a cube. The cube can be rotated like an actual product.

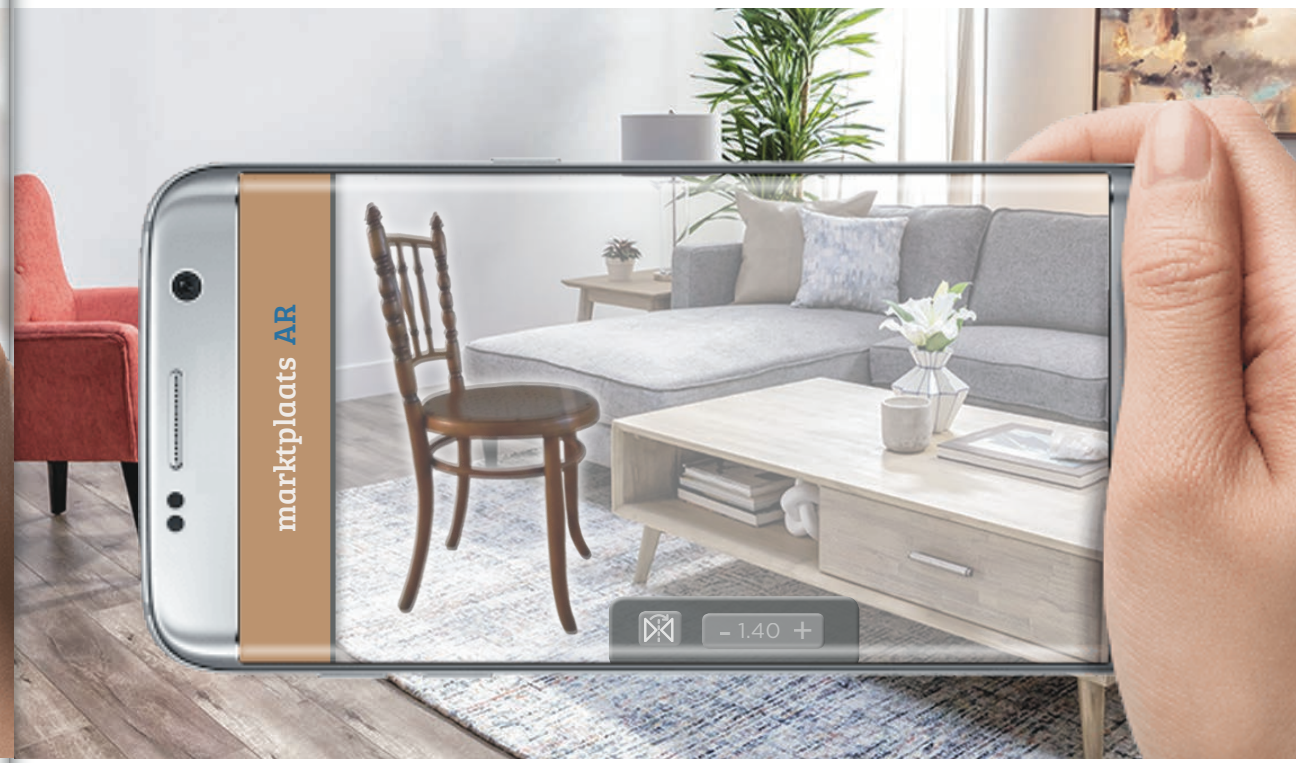


GIF: a moving image

Instead of mapping images on a box. A more obvious way is the use of short video’s or GIF’s. By allowing the seller to upload a gif, time and effort is saved and Tangibility and Visual fluency is increased. The addition of a scroll through button allows buyers play back/forward an pause the gif. A zoom in scroll bar aids in viewing details. Just like holding a product in your hand, turning it and bringing it closer to the eye.

The downside of adding gifs to listings is that it is harder to check for inappropriate content, however; buyer should be able to mark it as inappropriate or offensive. Moreover; analytical AI already exists to identify video content.

Another downside is that not every Marktplaats user may have the ‘skills’ to upload a gif. However, a good design does not ask complicated actions from the user. If the function is incorporated in the app, simple and intuitive, it may work.



Future scenario:

Instead of photographing every side of an object, making a 3D scan may one-day ease the process and increase product tangibility. 3D scanning applications that allow user to fully 3d scan their product could be a powerful implementation on Marktplaats. When users to upload and view full 3D scans of a product, product tangibility may drastically increase.

At this moment, such applications exist, but are in their infancy. They often take too much time and effort, and results often remain poor. To ensure retaining all users, no disruptive technologies should yet be implemented on Marktplaats.

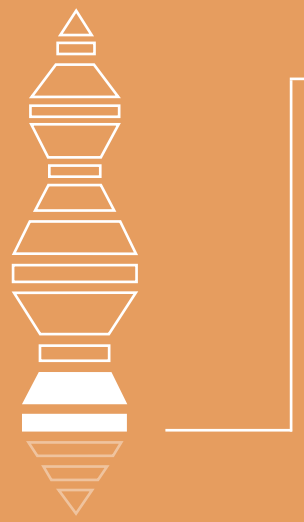
Future use

Should these applications work flawlessly and intuitively in the near future, numerous elegant opportunities may follow. For example, Augmented Reality (AR) may be used to project an object in the real world. This function creates the closest representation to reality of all previous ideas. However as mentioned before; it should only be implemented when all users of Marktplaats know how to use it.

Implications Marktplaats

When designing for product improvements, a tactical approach is to not only consider present possibilities, but future technological and societal developments too. For Marktplaats this implies envisioning the ‘ultimate product-presentation’ and set it as a future aim. 3D scanning and AR may be such an aim.

7 — CONCEPT CHOICE



In this section, the three concepts are depicted and a choice is made. Each element of the final concept is presented and its purpose explained.

Result: the final concept

Three concepts

Three clusters have resulted in three concepts. The final concept is chosen and explained.

Venn diagram

The previous concepts have been presented to and discussed with Marktplaats. The figure on the next spread shows the separate ideas that received most positive feedback. Some of these ideas have not been part of the three concept-clusters, but were added to the graph to determine whether they could be added to a final concept. The ideas are mapped on a venn diagram illustrating their link to semantics, aesthetics and symbolics. Their strongest links are shown.

Feedback, AR and 3D

From the venn diagram it is concluded that the Feedback idea, the AR idea and the 3D idea are the most complete improvements when looking at the three different levels of information. The Icon concept provides a solution that is too specific and not easily validated. It is uncertain whether the benefits weight up to the investment by Marktplaats. With this, the Icon concept is excluded from further development.

The AR and 3D idea solutions are aimed at future use and could be combined into one concept. When a 3D scan of a product is made, it can either be viewed on a webpage or in AR.

The Feedback idea is directly implementable and can be combined with other ideas shown in the venn diagram.

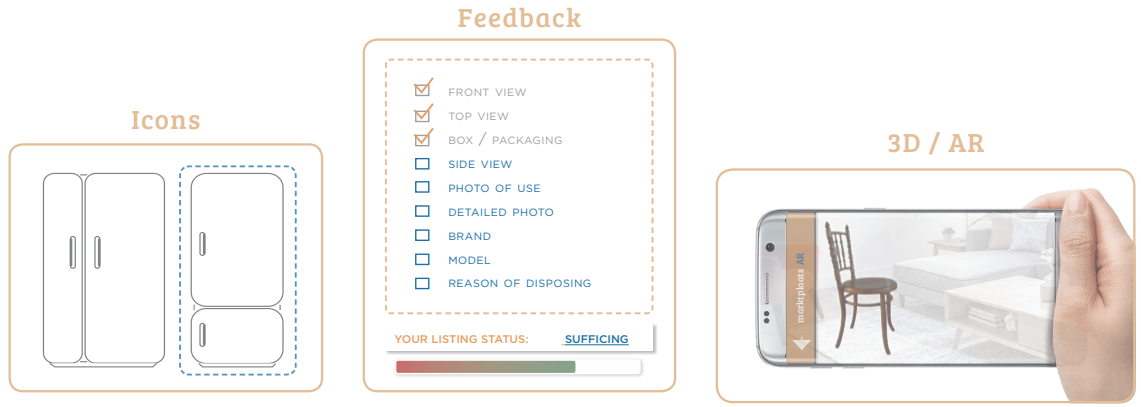


Figure 7.1: The three final concepts. Icons, Feedback and 3D/AR represented by their core image.

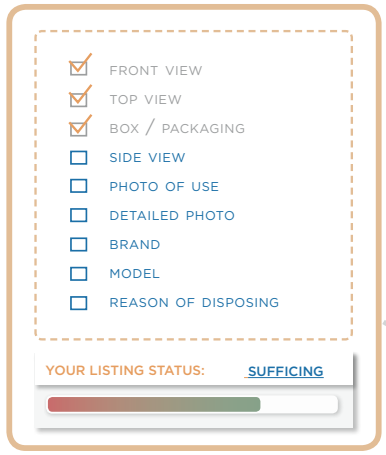
Concept choice

The 3D/AR concept has some pro's and cons. The largest pro of this concept is that it will provide the closest representation to reality. Furthermore it may attract consumers, it is a future proof solution and can be combined with 3D printing. The choice for concept development in this thesis however, has been the Feedback concept. This choice is made for three reasons:

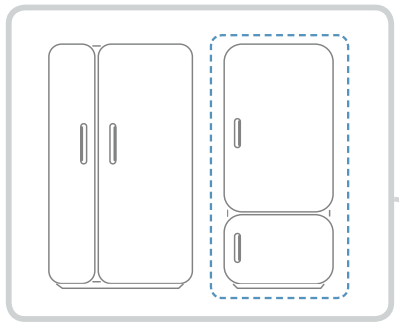
1. IT IS THE MOST NEAR-FUTURE SOLUTION, AND THEREFORE THE FIRST STEP IN IMPROVING MARKTPLAATS.
2. THE CONCEPT IS DIVERSE, EXPANDABLE AND ADJUSTABLE TO FIT MARKTPLAATS CURRENT SERVICE.
3. IT IS THE LEAST COMPLEX PRODUCT AND MOST LIKELY TO BE SUCCESSFULLY VALIDATED WITHIN THIS THESIS.

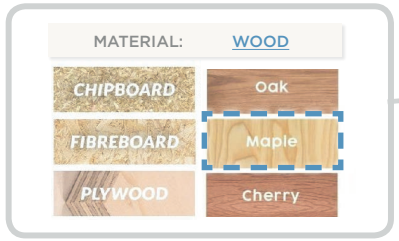
While the Feedback concept is chosen as the main concept for this thesis, other concepts are not eliminated from a final recommendation to Marktplaats. Moreover, they (AI and AR) will form the basis for future recommendations, as will be presented later this thesis in the final Roadmap.

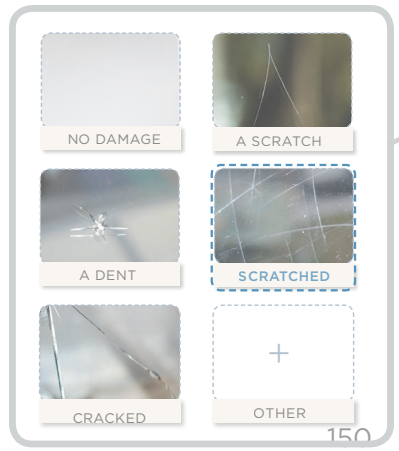
Feedback

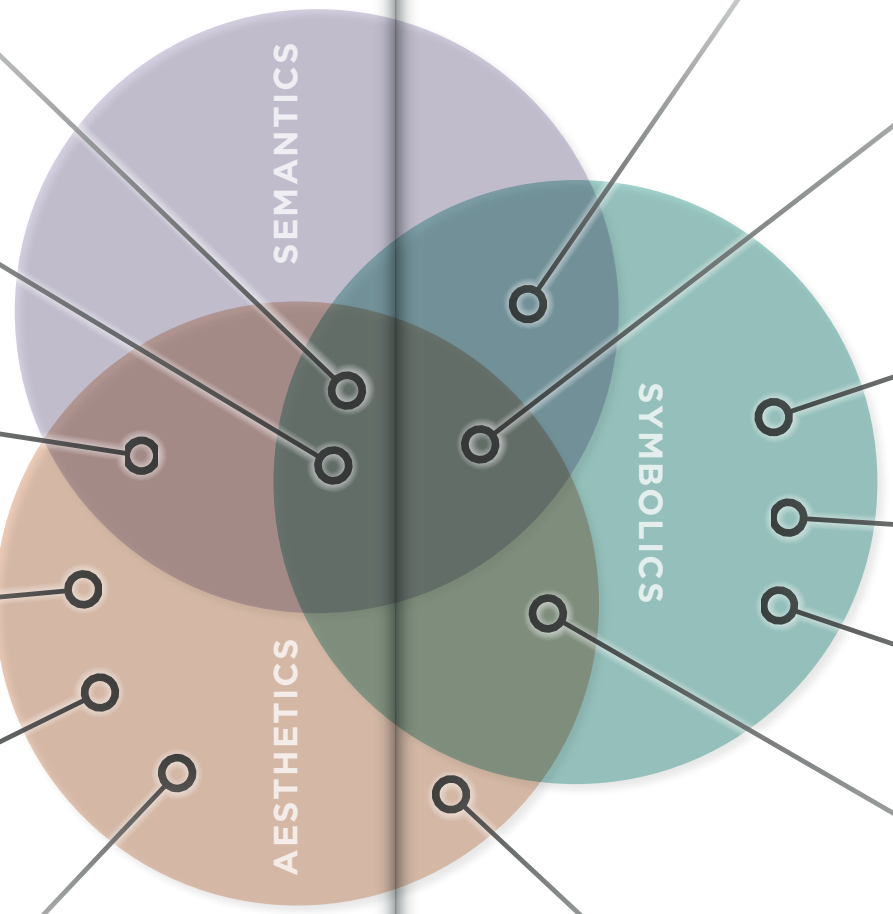


Augmented Reality









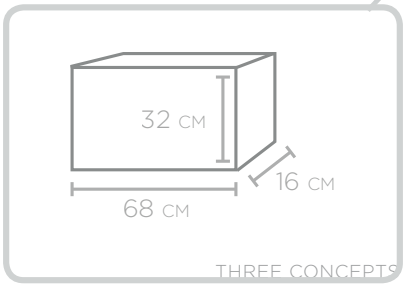


Figure 7.2: Idea venn diagram. A venn diagram created for reviewing different ideas and concepts

3D view

Text generated, based on information provided above

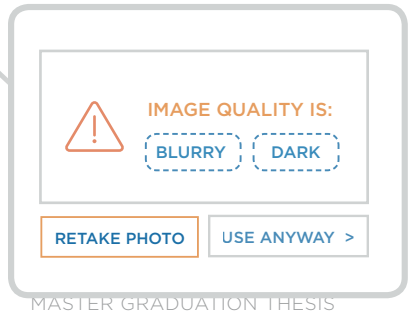
THIS OLD JUKEBOX HAS BEEN USED BY MY GRANDFATHER FOR 20 YEARS. I AM NOW SELLING IT BECAUSE I AM MOVING AND DONT HAVE THE STORAGE SPACE.

provide information below

PRODUCT AGE
increases sales with 8%

ORIGIN
increases sales with 5%

HISTORY
increases sales with 11%



The feedback concept

The each element that the feedback concept consists of is explained. Designs are presented on the next pages.

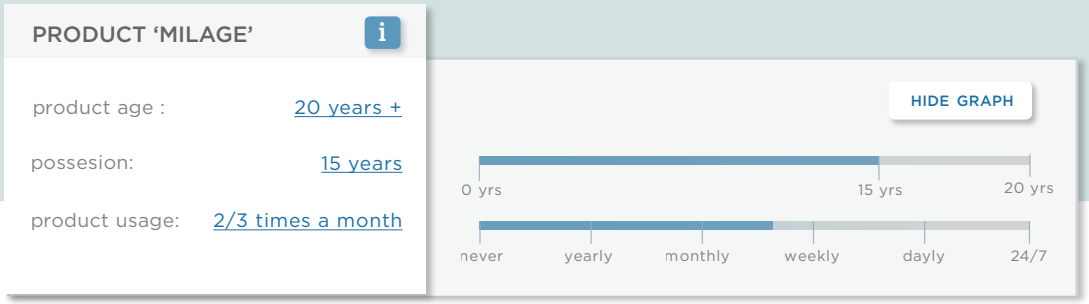
Titel

The feedback concept presents a new way communicating product information. It is a modular system that allows for personalised information visualisation. The most important aspect of the concept is the Feedback list, showing buyers what information is given and missing, and showing sellers what information could be provided. For consumers, the full concept provides the following eight product presentation solutions:

- EASIER ESTIMATION PRODUCT DIFFERENTIATION IN TERMS OF USAGE
- A UNIVERSAL LANGUAGE FOR PRODUCT CONDITION
- QUICKER JUDGEMENT ON EXTRINSIC PRODUCT INFORMATION
- CONCRETE AND VISUAL FEEDBACK ON PRODUCT MATERIALS
- DECREASED TIME AND EFFORT FOR DERIVING TOWARDS A PRICE
- UNIVERSAL COMMUNICATION OF PRODUCT DIMENSIONS
- CLEAR AND COMPLETE OBJECTIVE AND SUBJECTIVE DESCRIPTION
- EMPOWERING BUYERS IN MAKING AN INFORMED VALUE JUDGEMENT

On the next four spreads, each element and solution is explained. These elements have already undergone design improvements based on a qualitative test. The test will be discussed in the validation phase starting on page 164. The old designs with test findings can be found in appendix 6.

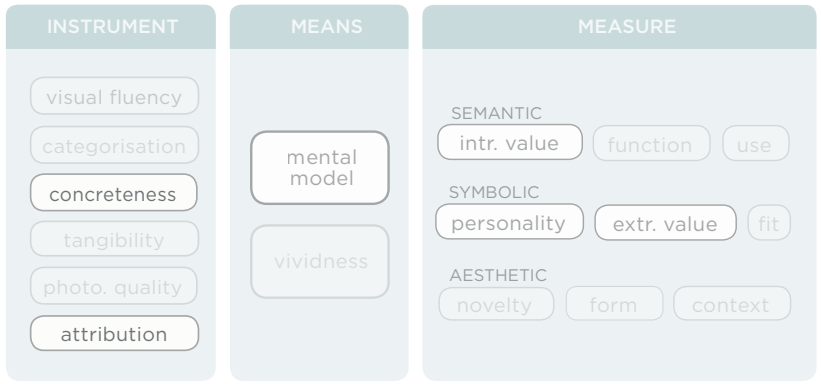
A
product mileage



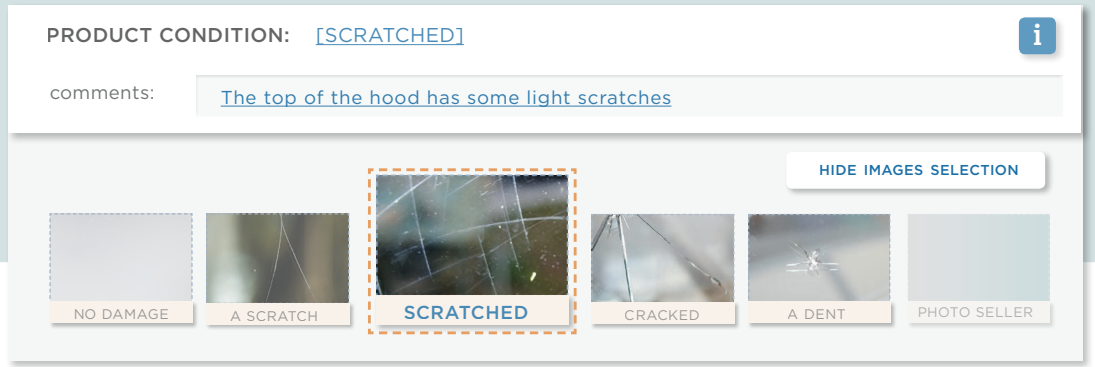
Solved presentation issue

Just like cars, the 'mileage' of a product is an important measure of product quality. However similar a product brand, model and appearance may be, in second-hand resale each product deviates by their previous usage. This element is designed to:

EASIER PRODUCT DIFFERENTIATION ESTIMATION IN TERMS OF USAGE



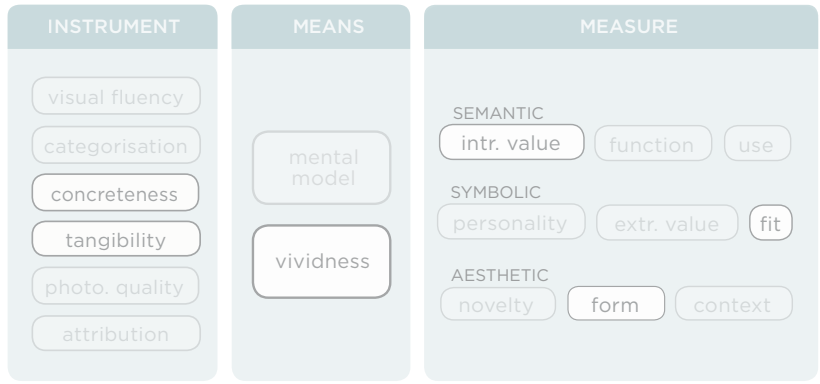
B
product condition



Solved presentation issue

The current product condition categories are unclear and nuance is missing. Through the use of generic images, or images uploaded by the seller, this element provides:

A UNIVERSAL LANGUAGE FOR PRODUCT CONDITION

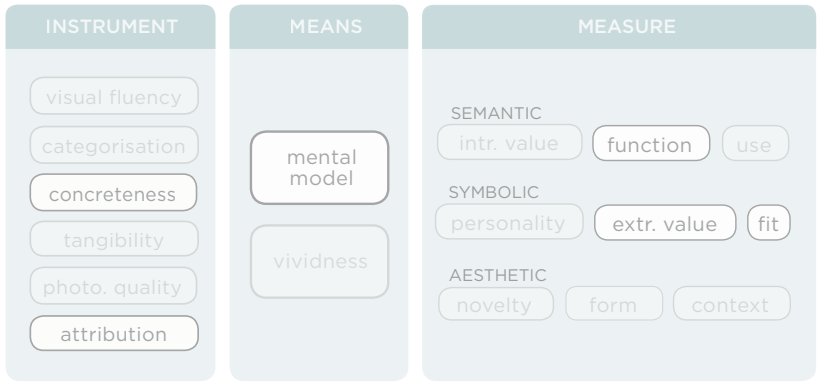


C
Reason of disposing

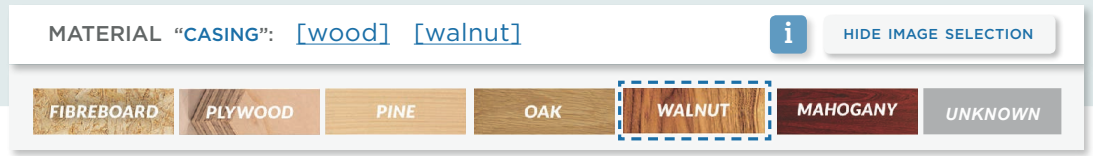
Solved presentation issue

The reason of disposing mainly concerns subjective information that provides a sense of knowledge. Why would someone, selling his belonging, want to get rid of it? What does this say about the product and will it suit my intentions? The issue with this information is that it is often vague and long-winded. This element therefore allows for:

QUICKER JUDGEMENT ON EXTRINSIC PRODUCT INFORMATION



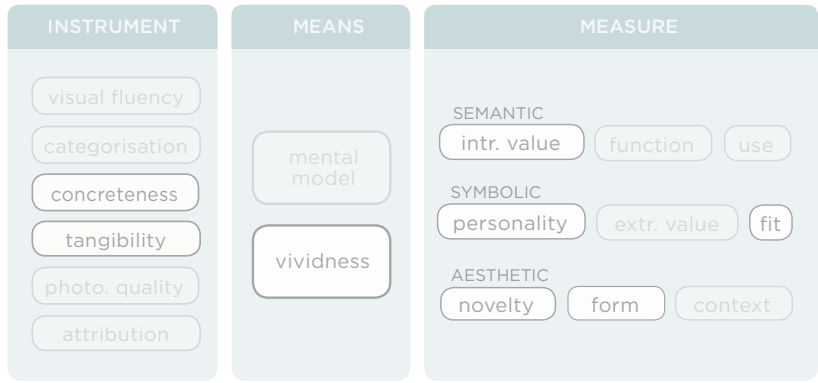
D
Materials



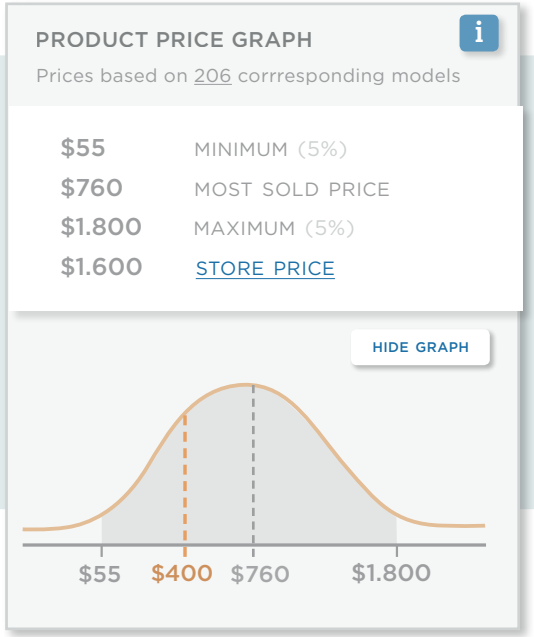
Solved presentation issue

One of the main issues of online product presentation is haptic and materialistic information. Following the statement 'a picture says more than a thousand words', this element provides:

CONCRETE AND VISUAL FEEDBACK ON PRODUCT MATERIALS



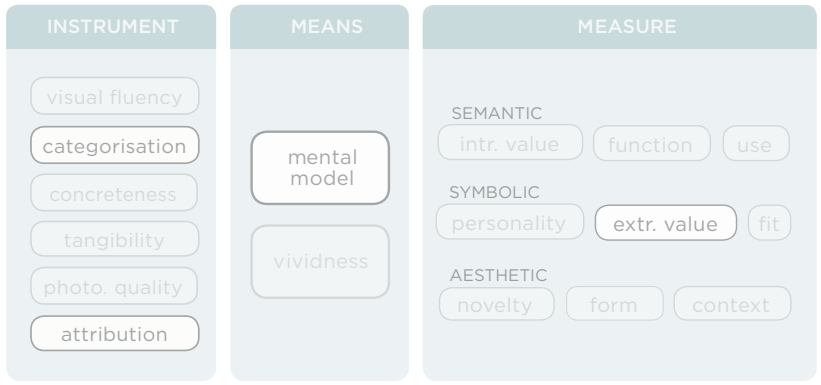
E
Price graph



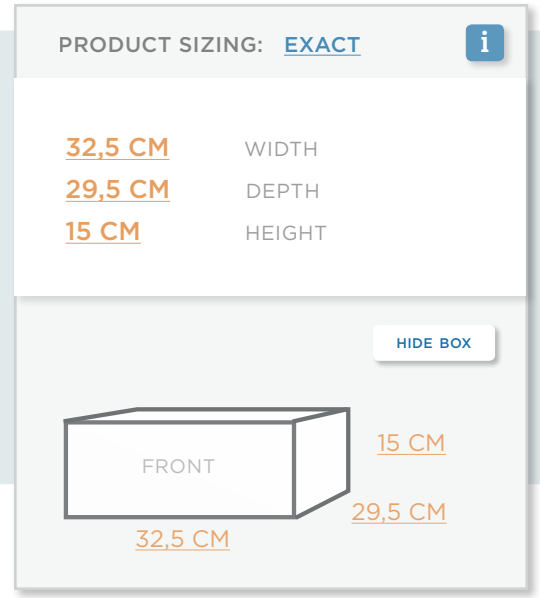
Solved presentation issue

A ‘positive outcome’ is reached when neither seller nor buyer receive too little for their worth. To determine the worth of a product, comparisons are often made on similar product. This element is designed to:

DECREASE TIME AND EFFORT FOR COMING TO A PRICE



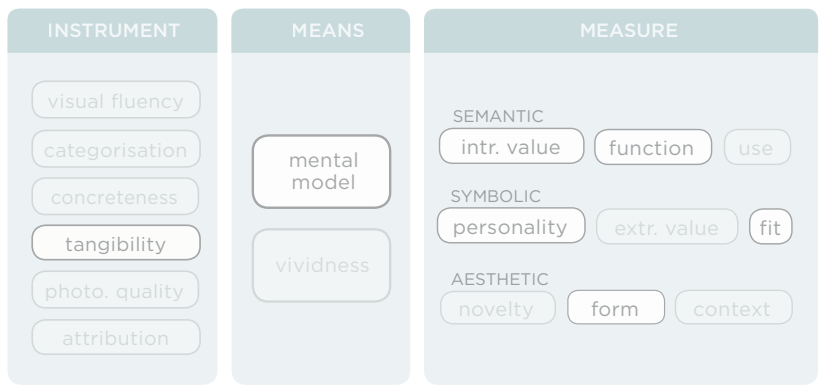
F
Dimensions



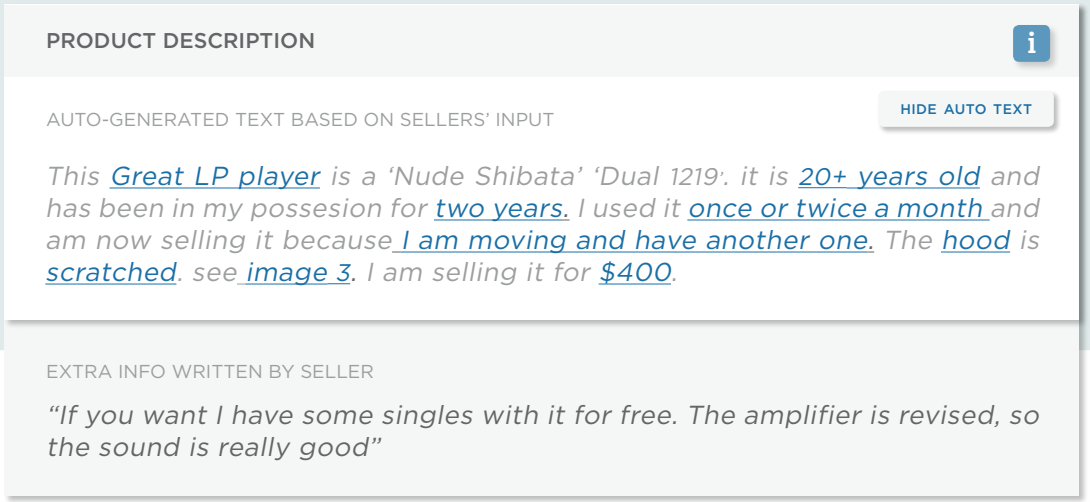
Solved presentation issue

Current size categories on Marktplaats are often lacking, obscure or mixed up. By displaying a similar interface to both buyer and seller, this element provides a:

UNIVERSAL COMMUNICATION OF PRODUCT DIMENSIONS



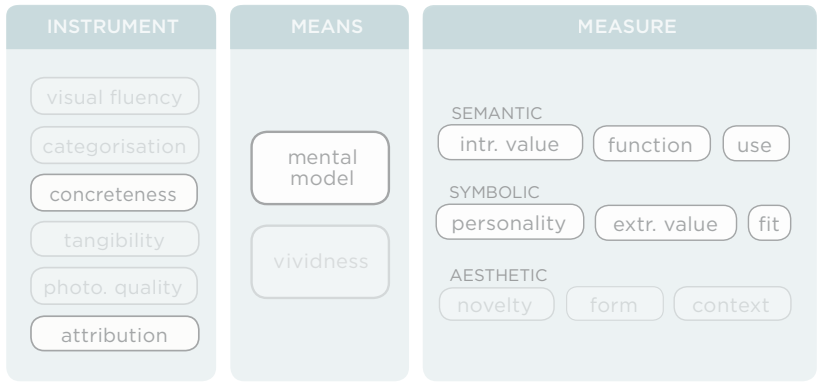
G (auto) Description



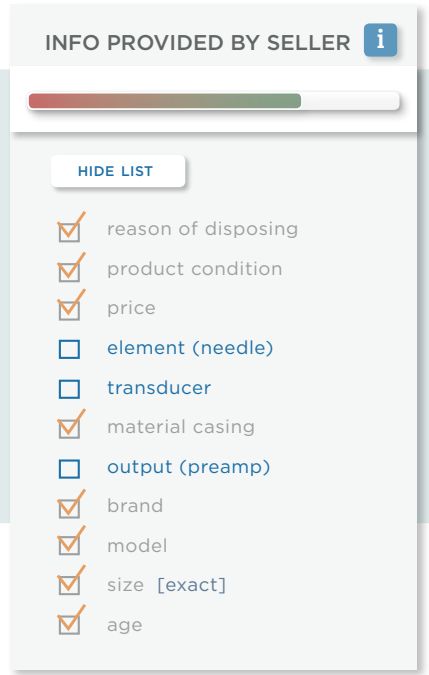
Solved presentation issue

The product description is a highly important feature to text oriented buyers. The issue with this element is that not all sellers are good at 'telling stories'. In an ideal situation, all objective and subjective information is conveyed through this description. By combining AI and sellers' creative freedom, this element is designed to provide a:

CLEAR AND COMPLETE OBJECTIVE AND SUBJECTIVE DESCRIPTION



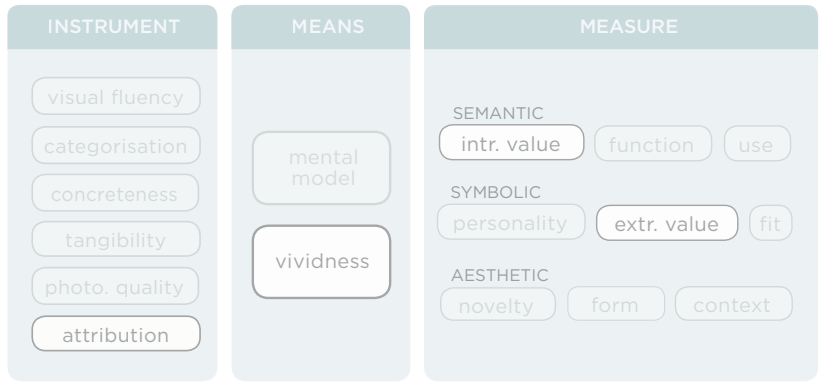
H/I Feedback list & Loading bar



Solved presentation issue

Buyers derive product value based on intrinsic and extrinsic product cues provided by sellers. Sellers can remove certain cues from a buyers' perception that may bring a negative predictive value. This may result in misjudgements by buyers and 'negative outcomes'. This element is designed to:

EMPOWER BUYERS IN MAKING AN INFORMED VALUE JUDGEMENT



8 VALIDATION - QUALITATIVE

In this section, a qualitative test is performed for validating the feedback concept. Each element is regarded and evaluated.

Result: input for quantitative test

Qualitative testing

In this chapter, a qualitative test is performed for receiving user feedback on the concept and to prepare for a quantitative user test. The qualitative test, or rather semi- structured interview is explained below and important findings are discussed. A full overview of the test design and results can be found in appendix 5 and 6.

Learning goals

Previous spreads presented the eight separate elements that are designed to improve product understanding. Each of these individual elements should be understood and accepted by users in order to be successful. The main goal for this qualitative test is to gain insights on user's attitude towards each individual idea.

The main questions of the test was:

1. IS THE INDIVIDUAL ELEMENT A VALUABLE ADDITION FOR UNDERSTANDING A PRODUCT ON MARKTPLAATS?

During the test, a printed A3 sheet of a Marktplaats listing was presented (see figure 8.1 on the right page). On this listing, different (printed) elements of the concept were placed one by one. With each addition, interviewees were asked questions about the value of the information that is presented by each element, the way in which it is visualised and which element the interviewee deems most valuable.

Next to that, the interviewee was asked to lay the elements in their preferred order of receiving information. The full testplan and motivation for the choice of listing can be found in appendix 5

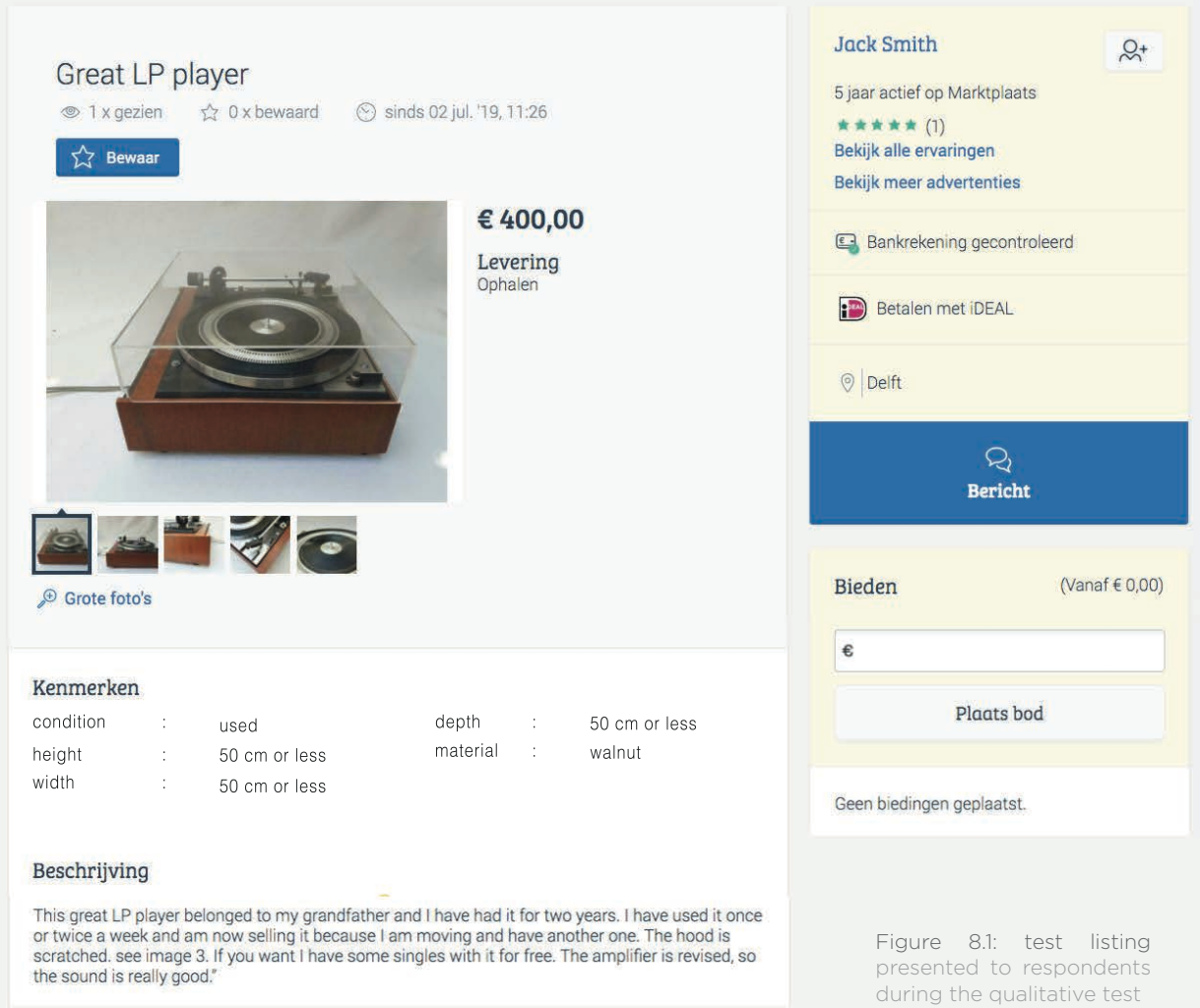


Figure 8.1: test listing presented to respondents during the qualitative test

Results

Feedback of interviewees and observations during the qualitative testing gave insights on the value of the concept and provided points of attention. A full overview of positive points and points of attention can be found in appendix 6.

General results

In this paragraph the main question of the qualitative test is answered. In the next chapter, the findings are processed in an idea-impact graph, a roadmap and recommendations.

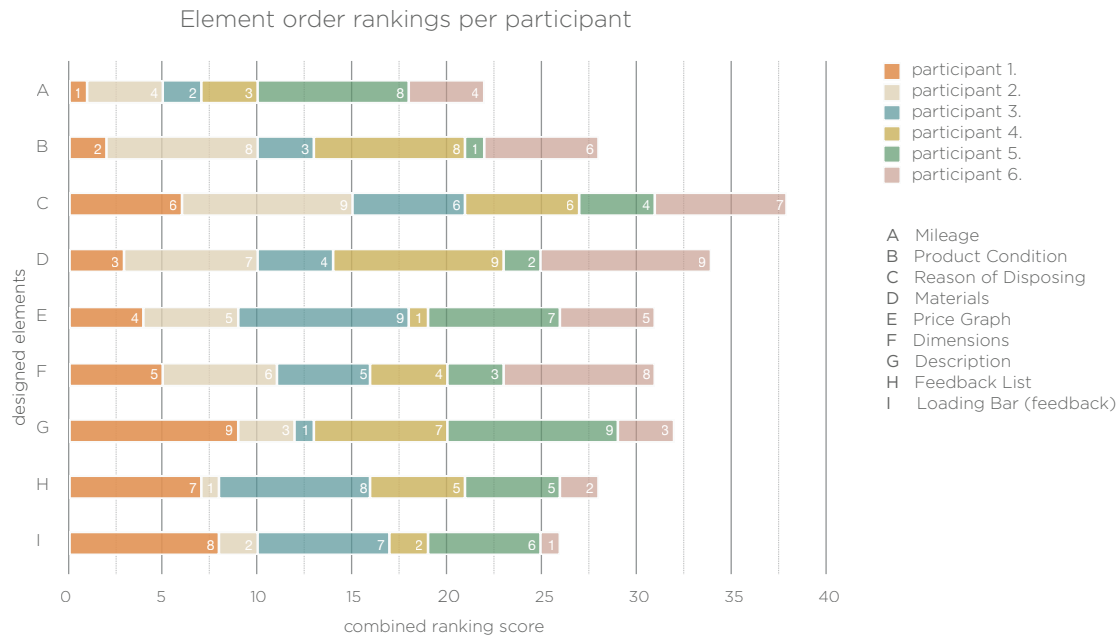
1. IS THE INDIVIDUAL ELEMENT A VALUABLE ADDITION FOR UNDERSTANDING A PRODUCT ON MARKTPLAATS?

Conclusion: Yes, all elements were found to be a valuable addition for product understanding.

Six out of nine elements were immediately considered to be valuable and preferred over textual descriptions by all interviewees. The (old designs of) other three elements; the ‘mileage’, the ‘loading bar’ and ‘price graph’, were not directly understood by all contestants. Once additional explanation was provided, these elements too were rated as being valuable. Based on the user feedback, the elements had been improved into what has been shown in previous pages, the old (test) designs can be found in appendix 6 together with an overview of feedback and design take-aways. The results of interviewees valuation of the concept elements have been processed into the Impact versus Certainty graph on page 170.

Order of presentation

At the end of each interview, the interviewee was asked to put the elements in their preferred order of presentation. As figure 8.2 illustrates, these preferred orders differ considerably from



each-other. In the graph, each element is presented with the letter ‘A’ to ‘I’ and each participant is presented by a different colour. For example; Participant 1 (orange) rated element A first place (1) and element G last place (9). While participant 3 preferred Element G first place, and element E last place. Especially elements H and I (Feedback list & Loading bar) received very divided feedback. In general; the higher the ‘combined ranking score’ (x-axis), the later the element should be presented to the consumer.

In general, the large difference in individual rankings shows that every consumer has a different preference in product information order. When designing for product presentation, this division preference could be taken into account. The most apparent way of doing so is by letting consumers personalise their viewed presentation order within the listings. This may be reached by making each element into a widget that can be moved or hidden. Considering that 84% of the page views are logged in*, this order may be remembered for every user.

Figure 8.2: Element order ranking per participant. Displaying the different scores per element on their prefered visibility order.

*Numbers have been gathered and provided by Marktplaats.

Conclusion

In this conclusion chapter, the previously presented designs are explained in relation to the 'Design for Presentation' model.

Mental Image and Vividness

Seven revised elements have been presented, together with their imprints on the Design for Product Understanding framework. This has shown that the concept will mainly help understand the product through building a correct mental image. For example; presenting the dimensions by showing a visual box helps constructing this image, so does a concrete description, the reason of disposing, a visual price graph and the product mileage. Each of these abstract information has been made concrete, tangible and/or has been categorised.

Through increased vividness, the mental image is made more animated. Vividness is increased by showing images of the material and damage and by sparking the consumer's attention. The latter is reached with the Feedback element. This element is designed to make him/her aware of weaknesses in his mental image. Figure 8.3 on the right page illustrates all covered instruments, means and measures.

The instruments used in the Feedback concept

In the concept, concreteness, tangibility and attribution are the most used instruments to improve product understanding.

One may notice that the concept does not concern the product image and its related instruments of visual fluency and photographic quality. This is for two main reasons: Firstly, to prevent the concept from becoming too complex. The second reason is visualised on the next spread, and implies that suggested improvements on the product image are assumed to be obvious and their positive impact as certain.

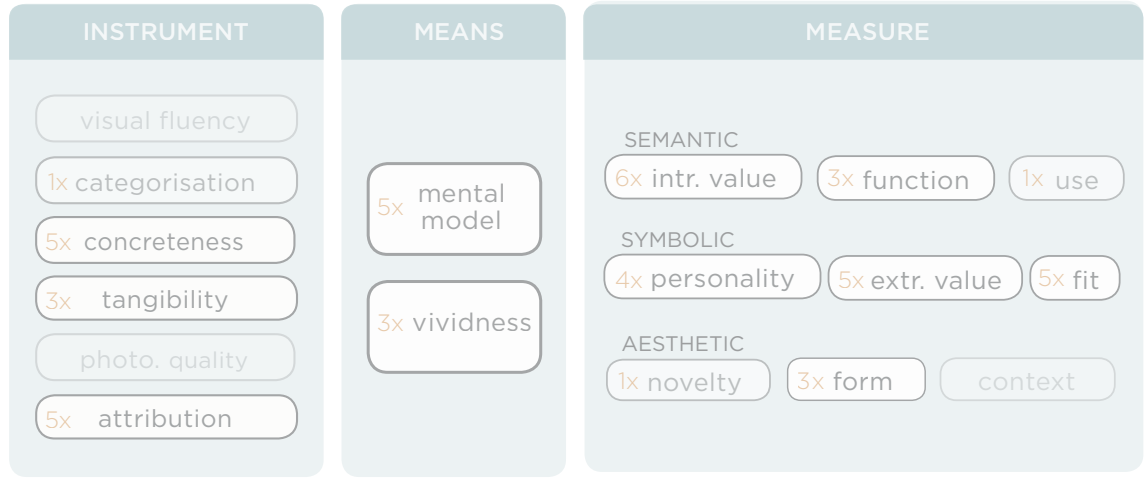


Figure 8.3: The final concept with its imprint. on the DPU model. Showing its main instruments, means and measure

So while this concept is presented as a solution, other idea suggestions could be seen as 'low hanging fruits' that should definitely be considered by Marktplaats to be implemented.

Presentation order

As mentioned earlier; the order of information presentation is suggested to be personalised. On the short term this personalised order of information could be created by the user. In the (near) future, an automatic presentation order may be designed for.

Impact and certainty

Ultimately, the qualitative test has provided insights on the value and impact of the presented ideas. All ideas that have shown value to -and interest by either consumers or Marktplaats are presented in the graph on the next spread.

Impact versus Certainty graph

Figure 8.4: Impact versus Certainty graph, displaying the different ideas with their impact on the x-axis and the certainty of impact on the y-axis. Ideas with high certainty are the 'low hanging fruits'. The different colours illustrate different implementation phases which will be explained in 'the final roadmap'

Reflection

This reflection discusses the impact/certainty-graph and explains the next steps.

Fruitful results

Up until now, this thesis has worked towards one absolute and overall solution. The previous graph however, illustrates that choosing one ultimate solution would do away with the fruitful research, analysis and ideation of this thesis. Many ideas are here presented as impactfull and certain. Together, they use different instruments, means and measures to solve a wide range of presentation issues. For improving product presentation on Marktplaats, on the short and long term, ideas will be combed into one roadmap. However to do so, one element should be validated to assess its certainty of impact: the Feedback List.

From the qualitative test, it could not be concluded whether this element will be a valuable addition for buyers, or an overload of trivial information. Likely for this reason, it received divided scores on the order ranking (figure 8.2; page 167).

The element is designed to make buyers aware of missing information. This may help them in their risk assessment, in determining a price, in avoiding miscommunications and ultimately in increase positive outcomes in their use of Marktplaats' service. If the element proves to do so; it should be implemented by Marktplaats to improve product presentation, communication and understanding.

9 — VALIDATION - QUANTITATIVE

In this section, a quantitative test is carried out for validating the feedback-list element. Based on an online survey, a numerical and statistical analysis is performed.

Result: validation of concept

Quantitative test

After depicting the feedback list as a potentially important feature, a quantitative test was performed to validate its value. This chapter explains the test and shows and discusses the results. A more detailed test setup can be found in appendix 7.

Goal

The test was designed for evaluating the Feedback-list element for Buyers. The goal was to find out whether this element influences the buyers' perception of the product presentation and the risk of buy. The two hypotheses of this test are:

1. THE FEEDBACK ELEMENT MAKES CONSUMERS AWARE OF VALUABLE(/MISSING?) INFORMATION

3. THE FEEDBACK ELEMENT INFLUENCES CONSUMERS' PERCEIVED RISK OF BUY.

The setup

The online survey was a questionnaire was build out of five questions.

In the first question, an image of a Marktplaats add was shown to the respondent (see figure 9.1 on the right page). An open question was asked on what information he/she would deem to be important to get a complete picture of the product.

In the second question, the same listing was shown, but with the feedback list added (see figure 9.2 on the next spread). The accompanying question was:

"Which elements from this list were missing from your previous list, but do you consider to be important?"

The other questions concerned the completeness of the add, the perceived risk of buy, the certainty of this risk and the price the respondent was willing to pay.

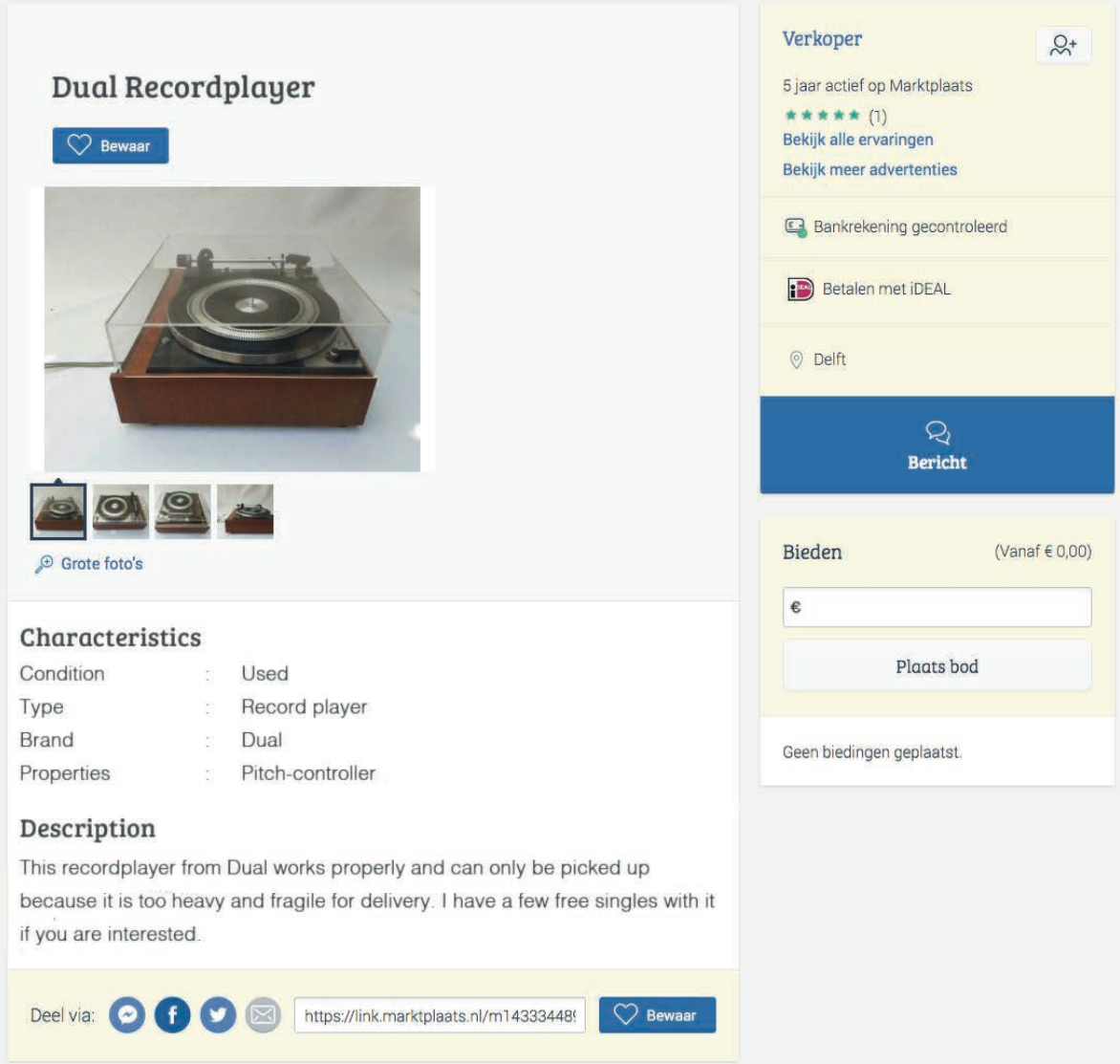


Figure 9.1: Survey image of the quantitative test, accompanying question 1

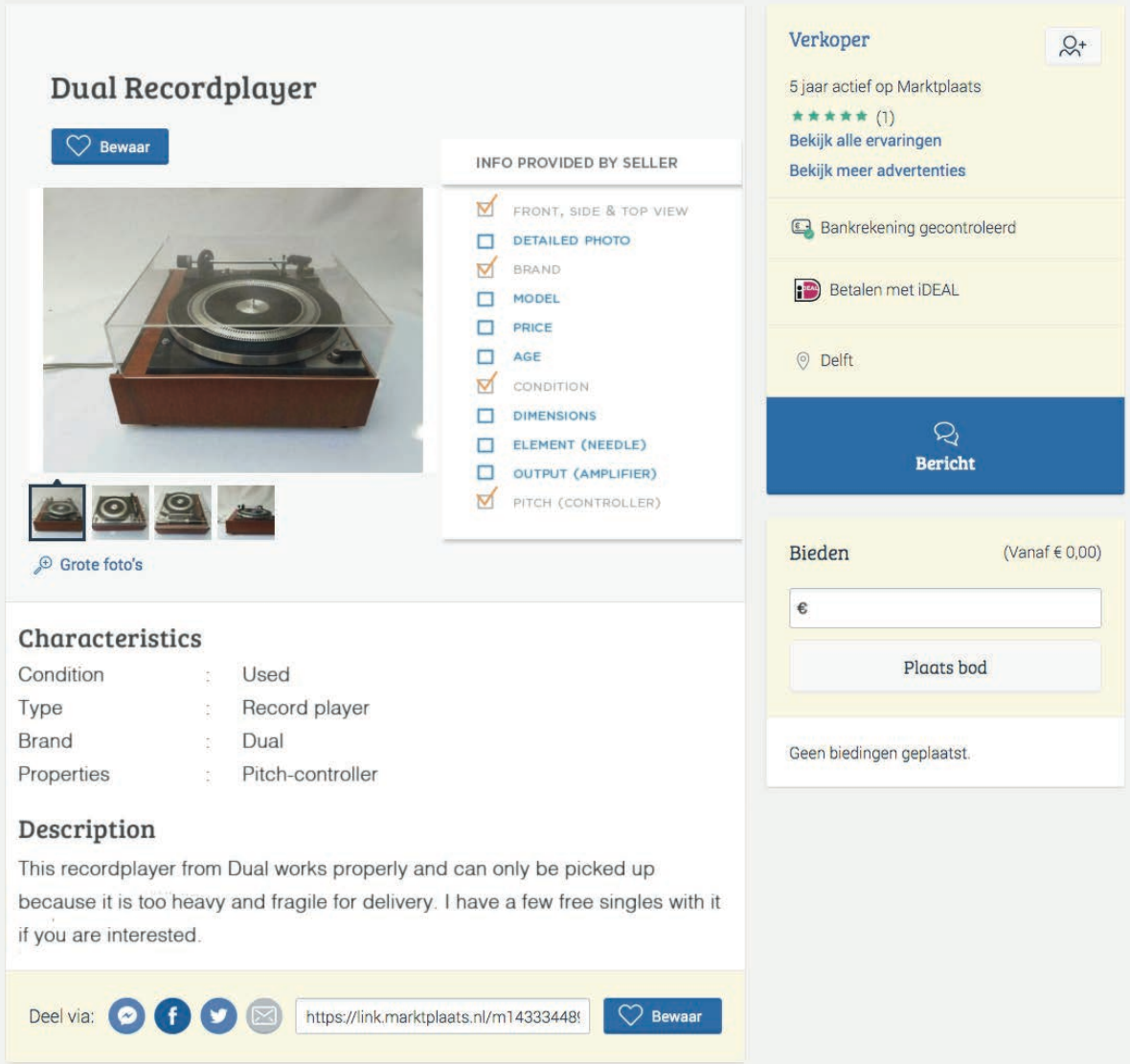
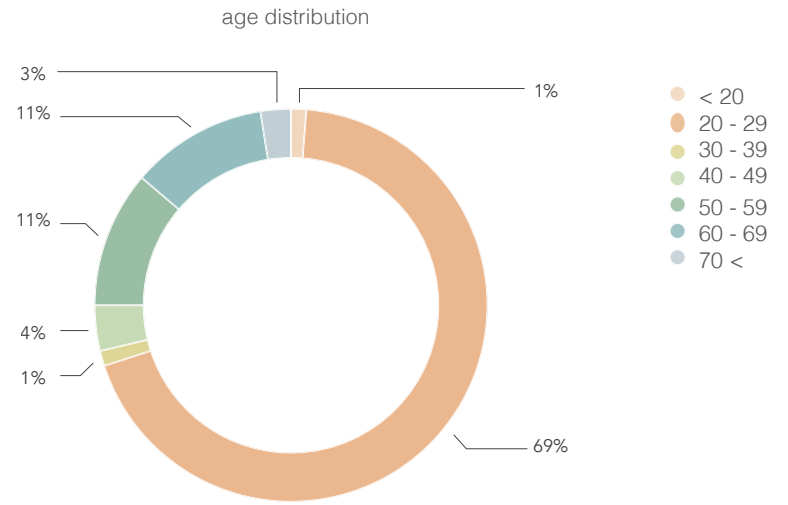


Figure 9.2: survey image accompanying question 2

Results



Age distribution

The respondents' age was distributed as figure ... illustrates.

56 of the 80 respondents were younger than 30 years old. This implies a relatively young age distribution. Age has however not been found to have a significant effect on other survey answers.

Figure 9.3: age distribution of respondents displaying a relatively young age distribution

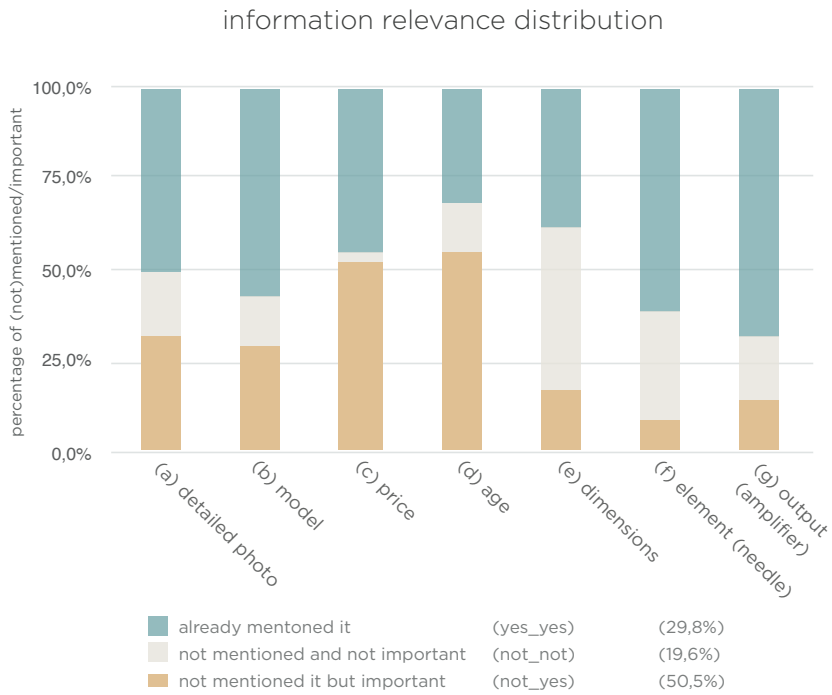


Figure 9.4: information relevance distribution dislplaying what (relevant) information was mentioned before and was not.

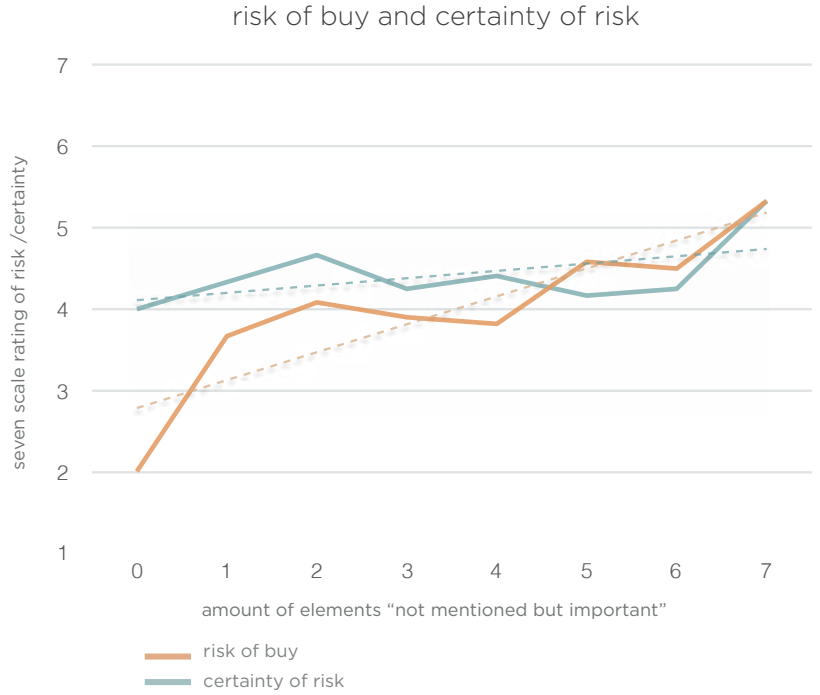
Information relevance distribution

Figure 9.4 above shows the distribution to question two: *"Which elements from this list were missing from your previous lists, but do you consider to be important?"*

The average times voted "not mentioned but important" is 50%. Which means that on average, half of the listed elements were previously not mentioned (thought of) but were found to be important after viewing the list. About 30% of the missing elements was already mentioned to be important in the previous question. A bit less than 20% of the missing elements were not mentioned because respondents did not deem them to be important.*

*** CONCLUSION 1**

The feedback element makes users aware of information that they did not think of before, but find valuable after questioning.



Perceived risk and certainty of risk

Figure 9.5 above displays the relationship between the amount of "not mentioned but important" answers and the perceived risk of buy. The graph shows that when respondents indicated more missed elements from the feedback list to be important (which they had not thought to mention themselves in the previous question), a higher risk is perceived**. The certainty of this risk was asked and is shown in the graph. This certainty does not increase as much as the perceived risk, indicating a more weak relationship. A detailed analysis of the risk of buy can be found in appendix 8.

Figure 9.5: risk of buy and certainty dislplaying the relationship between the amount of "not mentioned but important" answers and the risk of buy.

**** CONCLUSION 2**

The increased awareness of missing elements, the higher the perceived risk.of buy

Statistical analysis

In this chapter, a statistical analysis is presented and outcomes are discussed. The full analysis can be found in appendix 8.

Partial least squares path modelling

Survey results have been statistically analysed through Partial Least Squares Structural Equation Modelling (PLS-SEM). This method has been chosen in consultation with an expert; a research doctorate, skilled in statistical analyses. An explanation of the method can be read in appendix 8.

Variables

From the questionnaire, the following variables were used in the research model:

#Yes_Yes	The number of elements that the respondent had already mentioned in the first question as being important. (see question 2 page ...)
#Not_Yes	The number of elements that the respondent had not mention before but later stated to be important
Completeness	The rated completeness of the add*
Risk	The perceived risk of the buy*
Certainty	The rated certainty of the risk*
Price	Price the respondent was willing to pay

*For these questions a seven point Likert scale was used.

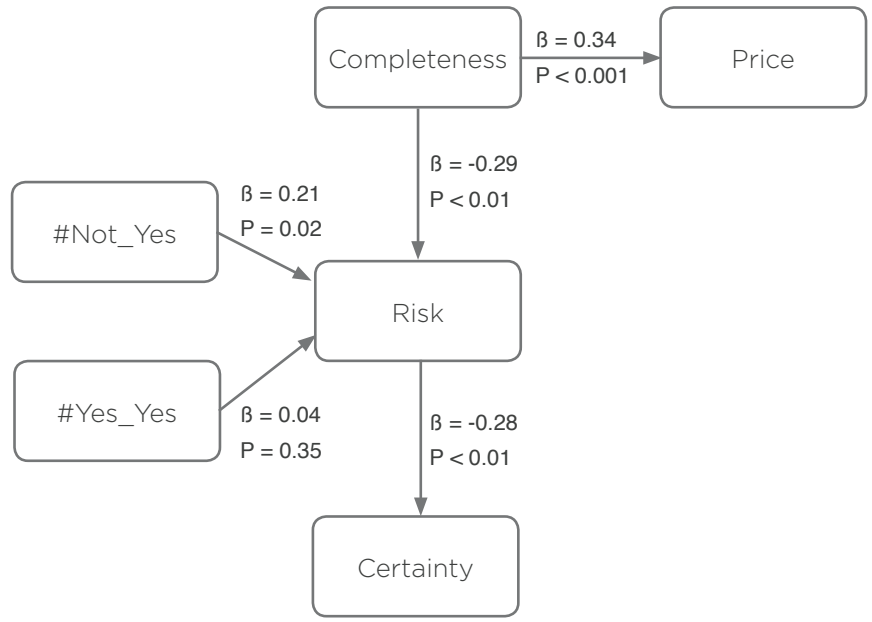


*Figure 9.6 Research model with Path coefficients and P-values. (generated in WarpPLS 6.0)

Research model

In figure 9.6 above the research results are presented in the research model. In which ß denotes the Path coefficient. Which represents the effect of one variable on the other variable. In this model, the coefficients are moderately high. The (relatively small) size of the data set may have influenced these numbers.

The result shows all relationships are significant, except for the relationship between the number of items mentioned before (#Yes_Yes) and the perceived risk of the buy.

*The Path coefficient The path coefficient in PLS-SEM has a similarity with the Correlation coefficient (R) in Covariance-based Structural Equation Modeling, though the values are not similar due to the used algorithm.

Observations, Discussion & Conclusion

Based on the research results shown on the previous pages, observations are discussed and conclusions on their implication on Marktplaats are drawn.

1. Information awareness

When asking respondents what information they find important in valuating a listing, information is often not mentioned but marked as important when viewing a feedback list. 50% of all missing elements from the Feedback listing was rated as 'not mentioned but important' [#Not_Yes].

There is a statistically significant relationship between [#Not_Yes], and the perceived risk of the buy [Risk]. The more elements respondents identified to have forgotten to mention, but deemed important, the higher the Risk. This relationship is not significant for the items in the list that respondents had already mentioned (and thus found important). This implies that becoming aware of missing important information in an add leads to a higher perceived buying risk. A risk that was otherwise left unnoticed.

Implications for Marktplaats

Purchasing products from a listing with lots of missing information is more risky than buying one with full information disclosure. Therefore, providing a list of information that is given and missing, make users aware of missing information and will likely bring buyers perceived risk closer to the actual risk of buy. This will likely decrease the overall negative outcomes of Marktplaats service interaction.

2. Purchase strategy

The relationship between the perceived risk of the buy [Risk] and the certainty of this risk [Certainty] has a negative high significance. This means that an increased perceived risk, will decrease consumers' certainty of this risk assessment.

4. Completeness and risk

The completeness of the add [Completeness] has a negative high significant relationship to the perceived risk of the buy [Risk]. This means that a more complete add will reduce the perceived risk of the sale.

5. Completeness and price

The completeness of the add [Completeness] has a statistically high significance to the price the respondent is willing to pay [Price]. This means that more complete adds correspond with an increased perceived value in terms of price.

Implications for Marktplaats

It has previously been mentioned that consumers respond to a high perceived risk through developing a purchase strategy that is designed to reduce the perceived negative consequences of a sell or purchase. This increases time and effort of the buyer. When the level of risk becomes obscure, the development of a purchase strategy will become more challenging and less successful. To help consumers in their buying strategy, the listing should be complete. A complete listing will not only render a low risk, but also increase the perceived value in terms of the price the buyer is willing to pay, and ultimately lower negative outcomes.

10 — FINAL DESIGN

In this final section, an aesthetic representation of the final concept is presented. This aesthetic design illustrates how the concept could be made to look when implemented in Marktplaats app. Next, a design roadmap is presented, presenting future improvements on Marktplaats, and the ‘low hanging fruits’.

Result: aesthetic design and final roadmap

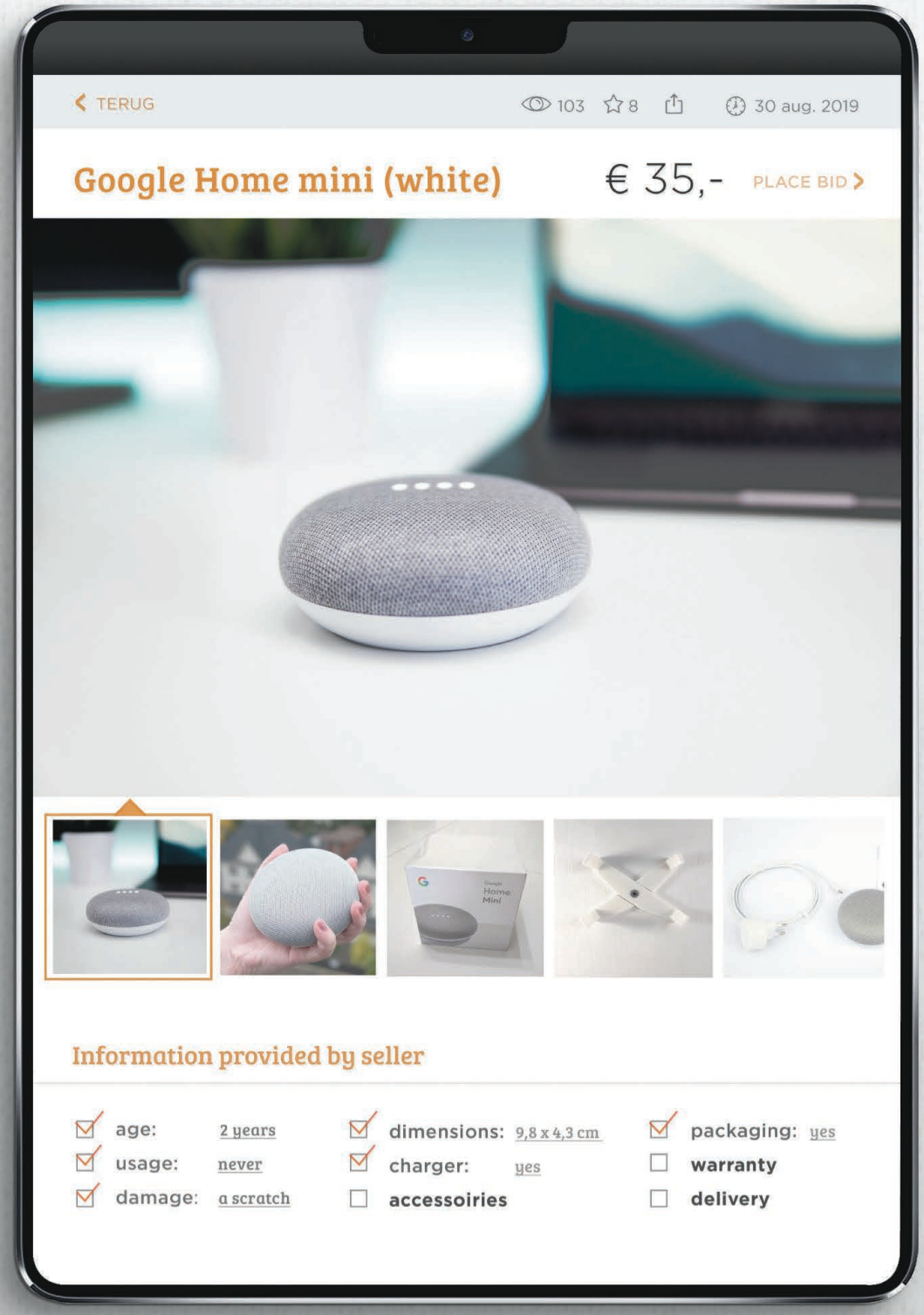
Final design

The next three pages illustrate an aesthetic representation of what the final concept could look like, when implemented on Marktplaats.

Aesthetic representation

This aesthetic representation of the final concept is meant to provide an example of the final concept's suggested improvements. All elements that are contained in the final concept are represented in the following mock-up images. In these mock-ups, the Feedback-list elements are presented directly after the product images. This is done in order to provide a quick overview of the Information that is presented. The (automatic) description element is presented last; it provides a summary of the previous presented information. The presented order of the remaining elements are chosen based on the qualitative feedback. The display order can be altered by users.

Information on the seller and related products, are not presented in this aesthetic mock-up. Nonetheless, they are not recommended to be removed out of Marktplaats mobile/web-based app.



- [x] age: 2 years
- [x] usage: never
- [x] damage: a scratch
- [x] dimensions: 9,8 x 4,3 cm
- [x] charger: yes
- [ ] accessoiries
- [x] packaging: yes
- [ ] warranty
- [ ] delivery

Product mileage

^HIDE

product age: 2 years
posession: 6 months

0 yrs — 6 months — 2 years

product usage: never

never — yearly — monthly — weekly — dayly — 24/7

Product damage

^HIDE

a scratch

no damage | scratches | scratched | a dent | a crack | cracked | upload

explanation:

no explanation given

Reason of disposing

^HIDE

it was a gift

doesn't suit me

Price graph

^HIDE

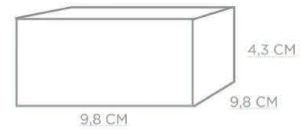
prices based on 206 similar products

€ 24	minimum (5%)
€ 42	most sold price
€ 78	maximum (5%)
€ 59	store price

Product dimensions

^HIDE

9,8 cm	width
9,8 cm	depth
4,3 cm	height
2 m	charging cable



Product description

^HIDE

auto generated text based on sellers' imput

^HIDE

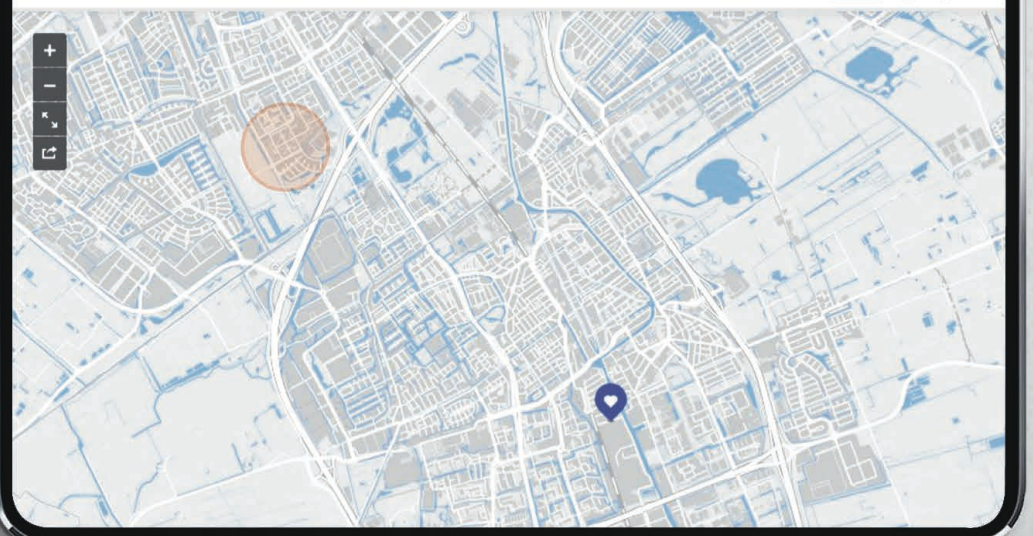
This **Google Home mini (white)** is **two years** old. It has been in my possession for **6 month**, in which I have **never** used it. It has **a scratch.** I am selling it because **it was a gift** and **it doesn't suit me**. I am selling it for **$35**, which is below the **most sold price**. The product dimensions are: **9,8 cm width**, **9,8 cm depth** and **4,3 cm height**. The charging cable is **2m**.

text written by seller

I also have a wifi-connected switch, which can be controlled by Google. If you're interested please sent me a message.

Sellers' location

^HIDE



Design roadmap

From the qualitative test it has become certain that the Feedback-list element will have a large and positive impact on product understanding and create awareness amongst consumers.

A valuable addition

The feedback element makes consumers aware of valuable and missing information. It influences consumers' perceived risk of buy and presumably brings their perceived risk closer to the actual risk of buy.

The final roadmap

Now that ideas, elements and concepts have been designed, discussed and validated, a final recommendation is given on improving product presentation on Marktplaats. This recommendation is presented as a Roadmap, shown on the next spread. A Roadmap is a plan or strategy intended to achieve a particular goal

In the roadmap, ideas are presented as 'low hanging fruits' that should each be implemented in the process of improving product presentation on Marktplaats. The lower the 'fruit' (idea), the more certain its improvement. The larger the fruit, the more impact it will make. Thus the roadmap presents not only the ideas on a time-line, but also the impact versus certainty of the ideas. This roadmap presentation enables Marktplaats to integrate the design recommendations into their own future strategic planning. The ideas are recommendations that allow Marktplaats to 'walk' the roadmap stages and pick their favoured the ideas on their way.

The four stages

1. TEMPLATES FOR SELLERS

The templates stage is the first step in improving Marktplaats. The implementation of this stage is set to start in a year. In this stage, sellers are to be given simple templates for quickly and effortlessly uploading the right information. The templates should contain both pre-determined options and open textboxes, for increasing the speed and allowing for creative input. The templates form the basis for the second stage.

2. FEEDBACK FOR BOTH BUYERS AND SELLERS

Based on the concrete templates, feedback can be provided to sellers and buyers. Sellers will be presented a list of information they could upload, and already have uploaded. A loading bar may provide an extra visualisation in this process. Buyers will view a similar feedback list, to inform them on missing information. Along the way of this process, some low hanging fruits are presented and recommended to Marktplaats.

3. ARTIFICIAL INTELLIGENCE FOR BUYERS AND SELLERS

In the third stage, AI will continuously improve and ease the use of Marktplaats. According to the roadmap, in three to five years from now, Marktplaats will be intelligent and predictive in its information display and interaction. This phase results in the implementation of uploading 3D productviews. Provided that technological developments have enabled this function to be easily implementable.

4. AUGMENTED REALITY FOR BUYERS

Five years from now, the final stage is set to start. The process of implementing AR into Marktplaats service may be extensive and take a couple of years. This stage is set as a future aim to make online product presentation as tangible, complete and vivid as possible. To remove any need for building a mental model: to bring the product, its story and its message to reality.


TEMPLATES
(SELLERS)
1 YEAR
FEEDBACK
(BUYERS & SELLERS)
2 YEARS
AI
(BUYERS & SELLERS)
3 YEARS
AR
(BUYERS)
5 YEARS +
VISUAL MATERIALS
REASON OF DISPOSE
GIFS
PRODUCT CONDITION
IMAGE QUALITY FEEDBACK
MILEAGE
VISUAL DIMENSIONS
FEEDBACK BUYER
PRICE GRAPH
ELEMENT-BASED FILTERS
3D MODELS
AUTO SIZING
AUTO DESCRIPTION
IMAGE ENHANCE
TIME
CERTAINTY OF IMPACT
SMALL / LARGE IMPACT

Mileage

Displaying the product age, time in sellers' possession and its usage by the seller. It allows for easier product differentiation estimation in terms of (previous) usage

Visual dimensions

On the listing the product is represented as a box with its dimensions (instead of text only). By presenting a similar interface to both buyer and seller a natural communication of product dimensions is reached.

Visual materials

Visualising product materials with generic high quality material photographs.

Reason of dispose

Simple predefined reasons of disposing. Increasing speed and effort and conveying symbolic information.

Product condition

Providing an universal language for product condition. Using high quality generic images for depicting product damage. In addition, allowing for seller to upload his/her own image of the damage.

Image quality feedback

Giving feedback and recommendations on uploaded images. Such as: too dark, too blurry or over exposed. Increasing overall quality of images on Marktplaats.

Product gifs

Providing a simple and easy way for uploading short product video's or gifs.

Visual materials

Showing minimum, maximum, store price and most sold price of same products (brand /model).

Element-based filters

With the new ordered and concrete organisation of product information, listings can have improved filters. Filters can be provided for: Price (hoovering over the price graph for previews), Mileage, materials and product condition.

Feedback buyer

Showing a feedback-list to buyers on the information that has and has not been provided by the seller. A empowering buyers in making an informed value judgement. Aiding buyers in their risk and value assessment.

Image enhance

Automatically enhancing the image to avoid under- and over exposure and low contrast. The enhancement should be able to be turned off by buyers.

Auto dimensions

Using the uploaders' mobile phone camera as an AR/object recognition application for acquiring object measurements.

Auto description

Based on sellers' template input, an automatic description is generated. Sellers may manually add subjective information. This feature will help in achieving clear and complete objective and subjective description

3D models

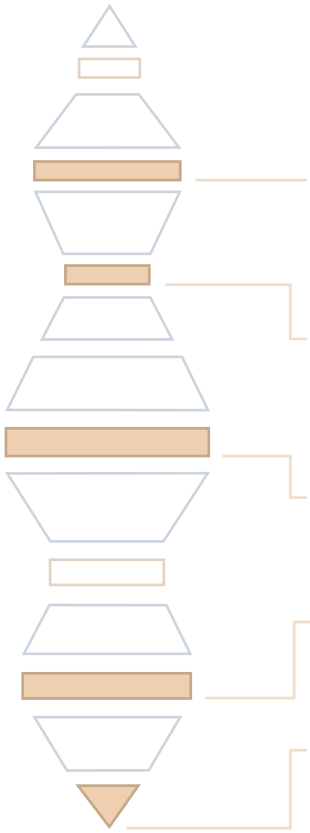
Supporting the creation of 3D product views through a mobile application plug-in. Allowing buyer to rotate the product and preparing Marktplaats' service for AR.

Conclusion & recommendation

In this conclusion, the main goal of this thesis is evaluated and and a recommendation is given.

Five results

The goal of this thesis was to improve consumer product presentation on Marktplaats, which concerns product aesthetics, semantics and symbolics. Two main questions were asked: How this can be done? And: How can we decide whether this goal has been reached? The five resulting phases have answered these questions:



1. A THEORETICAL STUDY EXPLICITLY STATING IMPLICATIONS FOR MARKTPLAATS

Explaining what can and should be improved on Marktplaats, concerning product aesthetics, semantics and symbolics.

2. A FRAMEWORK ON DESIGNING FOR DIGITAL PRODUCT PRESENTATION, AND MEASURING THE IMPROVEMENTS

Providing a tool for determining which kinds of information is conveyed, and which is missing.

3. 36 IDEA CARDS FOR IMPROVING PRODUCT PRESENTATION ON MARKTPLAATS

Concretely showing examples of improvements for Marktplaats.

4. A VALIDATED CONCEPT

Presenting a validated combination of product presentation improvements enhancing the communication of product aesthetics, semantics and symbolics.

5. A ROADMAP FOR FUTURE DIRECTION

Showing how consumer product presentation on Marktplaats can be improved on both the short- and long term

Conclusion

Handholds have been provided for improving amateur product presentation on Marktplaats. Improvements have been suggested and (a model for) validation has been provided.

Recommendation

Based on the performed research and analysis, it is recommended to follow the leads of the proposed roadmap and pick plenty of the low hanging fruits on the way. However, as validation has only been provided for one concept, and on a small scale. It is recommended to validate the provided ideas on a larger scale before implementation.

Implementing the concept and following the recommended roadmap will improve amateur product presentation on Marktplaats, and semantic, aesthetic and symbolic product understanding of consumers.

Reflection

Exactly 6 months ago, I sent a bold email to the recruiter of Ebay asking to perform this graduation research in cooperation with Marktplaats. Today, I am handing in this thesis.

Graduating at Marktplaats was new to both of us, but Jeroen Mulder soon showed me that this collaboration would be solid. And it was. It changed my view on what graduating really means. I was one of those people who thought of graduation as a monstrous project, which I would mainly have to tackle by myself. Luckily I was not quite right. I admit, it is a monstrous project, but I was not alone in it for a moment. The vast amount of people that helped find my direction in this project, also helped me find direction in my creative and future intentions. And for that, I am most thankful.

Starting this thesis, my aim was to learn more on product presentation. I chose this aim because I had concluded that designing actual industrial products would not be my future career. During this master study, I developed a love for researching problems and finding solutions. For creating ideas and visions. And most of all: for presenting my ideas, visions and products to others. Presenting ideas was something I noticed I often did well, but I was never sure of how I did it, or how I could help fellow students with presenting theirs.

Thanks to the help of everyone around me, I can now proudly say that I know quite a lot about presenting information and conveying a message. A new skill that may likely come to use in my creative future intentions □

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Appendices

Table of contents

The Marktplaats
Customer Journey

Acquisition

Finding

Trading

Trigger Interest / Action again

Alternative shopping / collecting / sourcing / sharing / inspiration / money saving solutions

Active problem / latent need

Trigger Classi-fieds as solution

Go check suitability

Realize benefits

Research / browse

Find items

Consider items

Enquire / bi

Converse / Negotiate

Reach agreement

Exchange money

Exchange item / service

Reflect on experience

Share experience

Back to routine

Alternative selling / advertising / clean up / money making solutions

Research / Prep listing

Post listing

Manage listing

Respond

Placing

Reactivation

Appendix 2 - swot

Introduction to the SWOT analysis

SWOT (strengths, weaknesses, opportunities, and threats) analysis is a framework used to evaluate a company's competitive position and to develop strategic planning*. This SWOT analyis is performed to gain insight into Marktplaats current and future position in the second-hand resale service market and to shed light on their goal of increasing user experience and allowing them to 'buy and sell within 5 minutes with a smile'.

As its name states, a SWOT analysis examines four elements:

Strengths: Internal attributes and resources that support a successful outcome.

Weaknesses: Internal attributes and resources that work against a successful outcome.

Opportunities: External factors that the entity can capitalize on or use to its advantage.

Threats: External factors that could jeopardize the success.

Limitations to this SWOT analysis

A SWOT should facilitate a realistic, fact-based, data-driven look at the strengths and weaknesses of an organization. To keep the analysis accurate, pre-conceived beliefs should be avoided*. It should be noted that this SWOT analysis has been partly based on literature insights, but mainly on the judgements of the lead UX designer of Marktplaats. Pre-conceived believes may therefore be interweaved in these findings. And though many of these judgements are fact-based, they are based on intepretations of qualitative (classified) data.

This SWOT analysis is a relatively general analysis where only large trents and factors are included. It is meant for privding context to this project and to statements about Marktplaats' vision. The identified SWOTs may help in ascertaining if their initiatives, vision and strategy fits their environment.

Conclusion:

From the SWOT analysis it can be concluded that their (new) internal structure matches with the external environment. However, a stronger aim towards 'increased environmetal consienceness' and 'increased digital literacy' could benefit their strenghts and lower threats.

In order to retain Markplaats strengths, weaknesses have to be decreased and opportunities have to be unlocked. In this thesis, emotional value, new technologies and increased digital literacy are considered during the idea generation phase. The weakness of risk, time and effort are designed for. The threat of changing consumer expectations are beared in mind.

* Grant, M. (2019, July 11). How SWOT (Strength, Weakness, Opportunity, and Threat) Analysis Works. Retrieved July 17, 2019, from https://www.investopedia.com/terms/s/swot.asp

STRENGTHS

Quantity of listings in a wide number of categories (horizontal reach)

A **monthly reach** of 8.2 million Dutch people

Visitors spend an average of **21 minutes per session** on Marktplaats

Brand Marktplaats has great **brand recognition (91%)**

WEAKNESSES

No optimized product for **specific categories** (vertical depth)

Buying second-hand on Marktplaats remains **risk**y, takes relatively much **time and effort** without guarantee of success

Earning model is not (always) in line with making the user successful (Seller may pay extra for better advertising, but is not guarenteed to get value for money)

OPPORTUNITIES

Unlocking the **emotional value** that arises when dealing with other people

New technologies around AI or Machine Learning to decrease time, effort and fraud.

New **business model**s that are more in line with user success

Increased environmental conscienceness amongst consumers in a developing society that aims towards sustainability

Increased digital literacy and online risk awareness

THREATS

Competing horizontal platforms with more reach and a comparable product that people already use every day (e.g. Facebook Marketplace)

Competitive niche platforms that offer a better and optimized product experience in a specific (horizontal) category

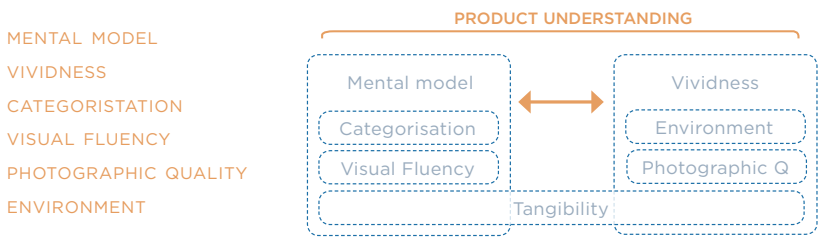
Cheaper prices of new goods lower the "resaleability" (eg cheap clothing from H&M or Primark has no value for resell)

Changing consumer expectations linked to a developing serviced based society and increased artificial intelligence

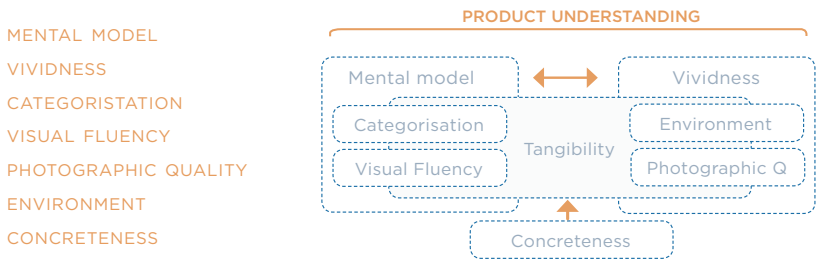
Appendix 3 - framework building

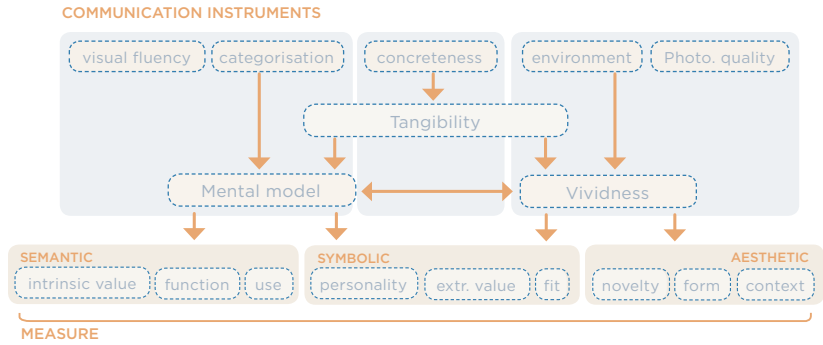
Development of the project framework

The development of the models that form the method to design for improved product understanding, has been an iterative process. At the beginning of this process, the 'design instruments' were derived from literature and consisted of:



The graph was created after receiving feedback that there may be different levels connections between the instruments. Looking at the literature, Mental model and Vividness were found to be the overarching two. Through creating the model, it became clear that 'Concreteness' was missing from the list. It is the concept that directly influences Tangibility. Moreover, Categorisation, Visual Fluency, Environment and Photographic Quality all work through tangibility. The new graph became:





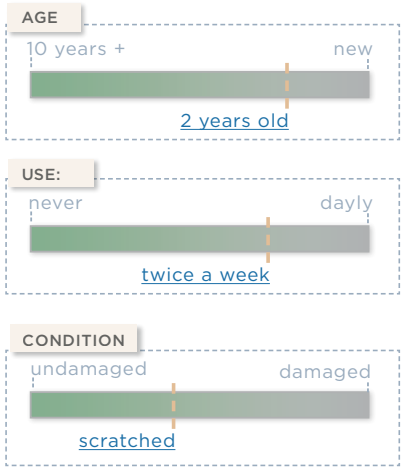
The graph above is the old version of the 'Design for Product Understanding' (DPU) model. In this version, Tangibility has been set apart from the instruments and relations were displayed in a rather complicated manner. In order to enable any designer to use the graph, a simpler (but correct) version would be needed.

During brainstorm sessions , it became clear that Mental Model and Vividness are not instruments themselves, but a medium through which product understanding improves.

After the brainstorm sessions, idea cards were developed and linked to the DPU model. The cards were sorted on measure and instrument. However one group of cards did not fit into the instruments. There was something off with this group, for it did not actually improve product understanding, but only the user's perception of it. I soon realised that I was missing an instrument; the Attribution error. After adding this instrument to the model, the next stage of ideation could be commenced. The full models are shown on the previous spread.

Appendix 4 - idea cards

CONCRETENESS



PRODUCT MILEAGE

How much and often has it been used? What is the damage and when is this product typically overdue?

+ symbolic/semantic/aesthetic
+ outcome
-/+ effort & time seller

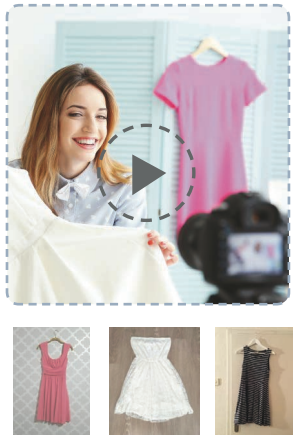
POSSIBLE FEATURES:

DIFFERENT SCALE FOR DIFFERENT PRODUCT CATEGORIES

FEEDBACK FOR SELLER ON DECIDING PRICE

SELLER MOVES SLIDER, INFO IS PROVIDED

ATTRIBUTION



MARKTPLAATS VLOGGERS

Users can upload vlogs and video's of them buying/selling/rating products

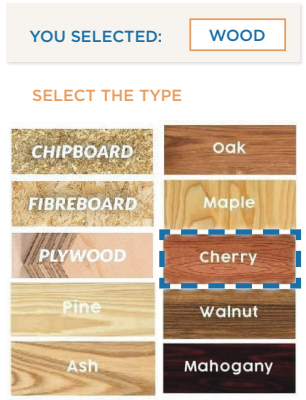
+ vividness
+ symbolics/aesthetics/semantics
+ cognitive effort (buyer)
+ attract users
- time/effort (seller)

POSSIBLE FEATURES:

CLICK ON PRODUCT WITHIN A MOVIE

FOLLOWER COMMUNITIES

CATEGORISATION



MATERIAL VISUALISATIONS

The materials of the product are visualised with separate, high quality material photo's.

+ vividness
+ aesthetics
-/+ time or effort seller

POSSIBLE FEATURES:

AUTO MATERIAL RECOGNITION

BUYER CAN SEARCH FOR MATERIAL

TANGIBILITY

COLOUR PIPETTE

Show or select the colour of the presented product. By buyer or seller

+ vividness
+ aesthetic
-/+ effort & time seller
- negative outcome if colours don't match

POSSIBLE FEATURES:

COLOR CORRECTS TO WHITEBALANCE

SEARCH FOR COLOR BY BUYER

PHOTOGRAPHIC QUALITY

MP MINI PHOTO-BOOTH

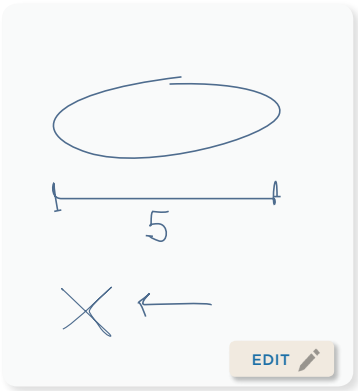
Users can buy mini photo-booths from marktplaats

+ vividness
+ aesthetics
+ attract/retain users
-/+ time & effort

POSSIBLE FEATURES:

DIFFERENT SIZES OF BOOTH

CONCRETENESS



DOODLE

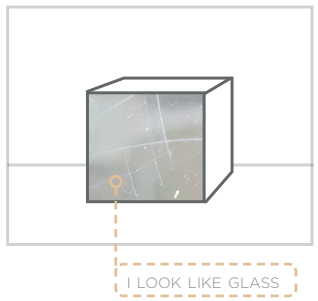
Allows buyers to doodle/write on the image

+ mental model
+ attribution
+ semantics/symbolics

POSSIBLE FEATURES:

AUTO DOODLE SHAPE RECOGNISTION (F.E: A CIRCLE OR ARROW)

CONCRETENESS



MATERIAL RECOGNITION

AI recognises material and tells users

+ vividness
+ aesthetics
+ time & effort
- negative outcome if labeled wrong

POSSIBLE FEATURES:

SEARCH FOR SPECIFIC MATERIAL

SELLER CAN EDIT MATERIAL IF WRONG

PHOTOGRAPHIC QUALITY

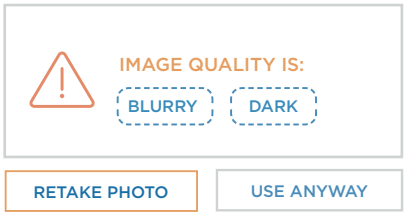


IMAGE QUALITY FEEDBACK

Service provides feedback on seller's uploaded images.

+ vividness
+ aesthetics
+ attract/retain users
+ time or effort

ATTRIBUTION

OBJECT FOCUS

AI auto focuses object and defocuses/ desaturates image background

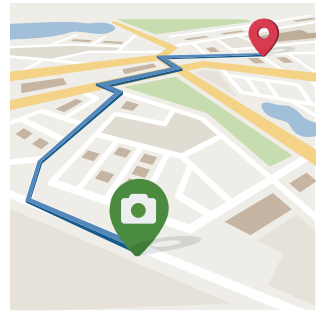
+ vividness
+ aesthetics/symbolics
+ cognitive effort
+ attract users
- possible negative outcome if AI can not or does not focus correct object

POSSIBLE FEATURES:

A PREVIEW OF THE ENHANCEMENT WHEN CREATING THE LISTING

OPTION FOR VIEWING NON-ENHANCED IMAGE FOR BUYER

PHOTOGRAPHIC QUALITY



PUBLIC PHOTOBOOTH

A photo-booth is available to Marktplaats users in every city.

+ vividness
+ aesthetics
+ attract users
- time & effort

POSSIBLE FEATURES:

ANYONE CAN USE THE BOOTH; SPONSORED BY MP

COMBINE IT WITH A MP PICKUP PLACE FOR SAFE TRANSACTIONS

PHOTOGRAPHIC QUALITY

label image as:

- BAD CROPPING
- BAD QUALITY IMAGE
- OTHER:

CONSUMER FEEDBACK

Consumers can label images/descriptions on their flaws. When a buyer doesn't sell, it may receive user feedback. E.g.: unclear image, too expensive, no manual etc..

+ vividness
+ aesthetics/semantics/symbolics
+ retain users
+ community
-/+ outcome

POSSIBLE FEATURES:

OPEN/PUBLIC STATISTICS BASED ON FEEDBACK

POINT SYSTEM FOR GIVING FEEDBACK

VISUAL FLUENCY

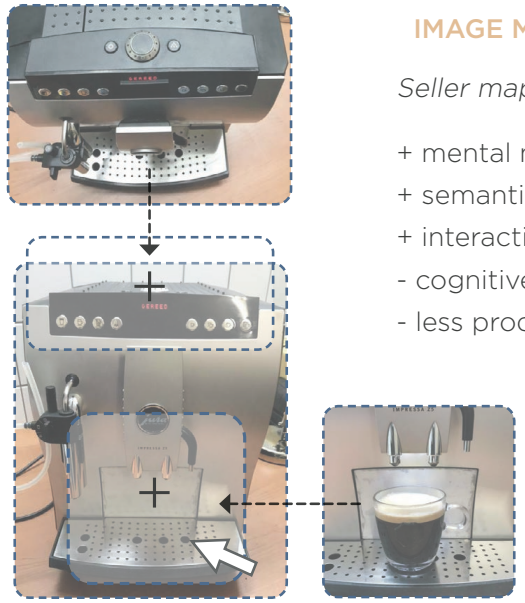


IMAGE MAPPING

Seller maps views and close-ups to main photo

+ mental mapping
+ semantics
+ interactive
- cognitive effort/time of seller
- less product understanding if done wrong

POSSIBLE FEATURES:

IMAGE TAGS (SEARCH OPTION)

AUTO SELLER FEEDBACK: "ADD LEFT VIEW"

HOOVER OVER MAIN IMAGE FOR PREVIEW

VISUAL FLUENCY

tip

ADDING A CLOSE-UP SELLS 20% BETTER IN THIS CATEGORY

IMAGE UPLOAD MOTIVATION

Guidelines and tips to motivate sellers for uploading images

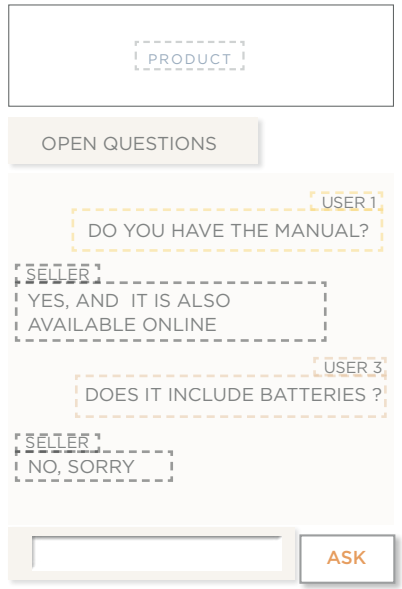
+ mental model
+ categorisation
+ semantics/aesthetics
+ positive outcome
- effort/time of seller

POSSIBLE FEATURES:

AUTO SELLER FEEDBACK: "YOUR LISTING CONTAINS LESS IMAGE VIEWS THAN AVERAGE"

AUTO IMAGE TAGS. BUYERS CAN SEARCH FOR PARTICULAR IMAGES, SUCH AS; USB INPUT, INSIDE VIEW OR A DETAIL

ATTRIBUTION



OPEN QUESTIONS

Sellers can openly ask and view questions

+ semantics/symbolics
+ concreteness
+ social
+/- time and effort
- increased competition between buyers

POSSIBLE FEATURES:

CHAT FUNCTION FOR GROUPS (COLLECTORS?)

ANALISE COMMENTS; MOST ASKED QUESTIONS?

BUYER FEEDBACK IN COMMENTS AFTER TRANSACTION

VISUAL FLUENCY

PRODUCT

+ DESCRIPTION

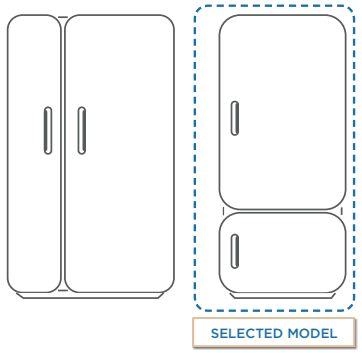
This is the right side of the product. It has a small scratch.

DESCRIPTION PER PHOTO

Sellers may describe each photo

+ mental model
+ concreteness
+ semantics/symbolics
+/- effort

CATEGORISATION



ICON CATEGORISATION

Using icons for depicting product category

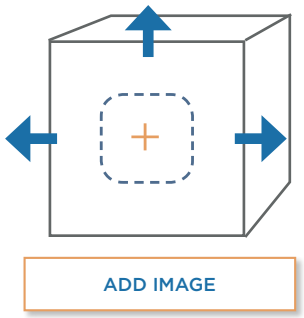
+ mental model
+ semantics/aesthetics
+/- time & effort

POSSIBLE FEATURES:

SEARCH FOR SPECIFIC CATEGORY

LINK PHOTO'S TO THE ICONS

VISUAL FLUENCY



3D VIEW

Upload and view images on a three dimensional box spinning around

+ mental mapping
+ semantics
+ interactive
+/- cognitive effort/time of seller
- less product understanding if done wrong

POSSIBLE FEATURES:

AUTO SELLER FEEDBACK: "ADD LEFT VIEW"

ATTRIBUTION

SNAPCHAT EFFECT

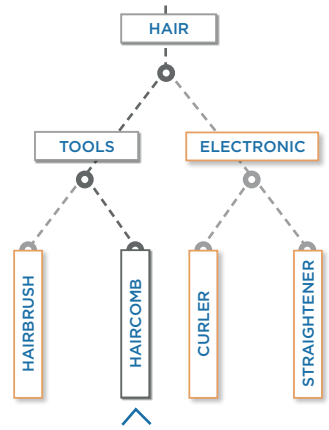
Add emoji's, frames and icons

+ symbolics
+ social
+\- attract/retain users

POSSIBLE FEATURES:

BUYERS MAY TURN ON/OFF THE IMAGE ADDITIONS

CATEGORISATION



CATEGORY WEB

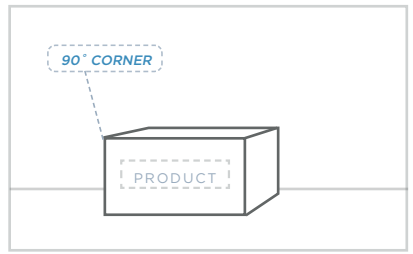
Show consumers their walked path on the service, and related categories from close paths

+ mental model
+ semantics
+ effort
+ positive outcome
- confusion by wrong categorisation

POSSIBLE FEATURES:

SERVICE FEEDBACK: "ARE YOU LOOKING FOR ...?

CONCRETENESS

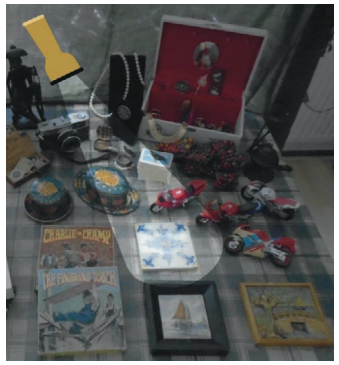


TEXT IN IMAGE

Write and link text in the image

+ mental model
+ attribution
+ semantics/symbolics
+/- time & effort seller
- writing may be unclear or inappropriate

ATTRIBUTION



SPOTLIGHT ON OBJECT

To highlight the object, a spotlight can be placed by the seller

+ vividness
+ symbolics
+ effort/time of seller

POSSIBLE FEATURES:

AUTO IMAGE ADJUSTMENT ON THE SPOTLIGHT

OBJECT RECOGNITION; SEARCHABLE OBJECTS

ONE LISTING FOR SEVERAL PRODUCTS

CONCRETENESS

serial number C02HLLC7DV13

+ ONLINE INFORMATION

APPENDIX

product serial numbers are linked to google manuals, websites and online databases

+ semantics
+ effort & time
+ perceived risk

POSSIBLE FEATURES:

AVERAGE ONLINE PRICE

AVAILABILITY OF MANUALS

SEE IF IT IS FAKE/ORIGNAL BOX

CONCRETENESS

provide information below

PRODUCT AGE
increases sales with 8%

ORIGIN
increases sales with 5%

HISTORY
increases sales with 11%

USE
increases sales with 4%

PRODUCT HISTORY TEMPLATE

Clear sellers template for stating product history; where does the product come from? Where is it purchased? When? How has it been used etc.

+ attribution
+ symbolics
-/+ outcome
- time & effort

POSSIBLE FEATURES:

CONSUMER SEARCH OPTION ON; AGE/USE/HISTORY

SPECIAL TEMPLATE FOR COLLECTIBLE GOODS

TANGIBILITY

TRY BEFORE YOU BUY:


1X FREE


1 WEEK

1 DAY

"TRY OUT AND BUY" OPTION

An option for trying out products/services such as games/extreme sports objects for sale.

+ symbolics/semantics/aesthetics
+ attract users
+/- time & effort
-/+ outcome

POSSIBLE FEATURES:

OTHER TRY OUT OPTION LINKED TO PRODUCT LISTING

ATTRIBUTION

seller tags

38 YEARS OLD

MECHANICAL ENGINEER

TRAVELING

USER TAGS

Users can tag their expertise, hobbies and personality traits to have a closer understanding of the person they are dealing with. and ask for/share knowledge.

+ symbolics
+ social
-/+ time or effort
- expertise may be misused

POSSIBLE FEATURES:

"ASK AN EXPERT"

SEARCH FOR EXPERTISE

CREATE COMMUNITIES

FOLLOW EXPERTS

CATEGORISATION

PRODUCT SCORE: UNIQUE

8% MATCH THIS CATEGORY

3 SOLD PER WEEK

92% SOLD WITHIN 7 DAYS

RARERY SOLD IN ONLINE STORES

UNIQUENESS GRADING

The uniqueness of an object is visible; its availability on Marktplaats/other webshops, how often it is sold and how quick.

+ symbolics
+ time
+/- outcome

POSSIBLE FEATURES:

AVAILABILITY WARNING

"THIS PRODUCT REQUIRES A NO LONGER OBTAINABLE BYPRODUCT"

LINK TO PROFESSIONAL SELLERS/SERVICES

MISCELLANEOUS

+ FIND SERVICE IN YOUR NEIGHTBOURHOOD

REPAIR RENTAL

REFURBISH CLEANING

RELATED SERVICES

Do services relate to the product? E.g: jukebox repair, product rental, paint/refurbish service

+ time
+ effort
+ community
+ perceived risk
+ attract/retain users

POSSIBLE FEATURES:

COMMUNITIES MAY BE FORMED FOR PRODUCT-SERVICE NEEDS; "I JUST BOUGHT A JUKEBOX, DOES ANYONE KNOW WHERE I CAN REPAIR THIS PART?"

AUTO RECOMMENTATIONS

MISCELLANEOUS

QUICK UPLOAD

tip

takes 5 minutes

3 PHOTOS SIZE

AUTO. DESCRIPTION

COMPLETE UPLOAD

tip

takes 10 minutes

sells 20% better

6 PHOTOS GIF MATERIAL

AUTO. DESCRIPTION SIZE

COLOR HISTORY

QUICK OR COMPLETE?

Allow seller choose between a short and quick upload template, or an extensive complete one.

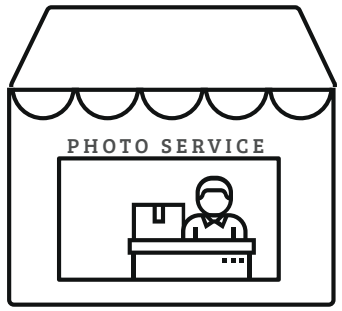
+ time/effort
+ retain (all) users
+/- symbolics
+/- outcome

POSSIBLE FEATURES:

SELLER CAN MAKE THEIR OWN 'FAVORITE' TEMPLATE

BUYER CAN CHOOSE WHAT HE/SHE WANTS TO SEE

MISCELLANEOUS



SEND TO MARKTPLAATS

MARKTPLAATS PHOTO SERVICE

Objects may be send to Marktplaats where a listing is made. If object doesn't sell, it is saved, returned or donated to charity.

+ photo quality
+ semantics/aesthetics
+ attract/retain users
+ effort and time

POSSIBLE FEATURES:

USERS PAY FEE FOR SERVICE

USERS MAY VISIT OFFLINE STORE/STORAGE

MISCELLANEOUS

SEE WISHLIST

REFUND MONEY

tip

your wishlist: '[jukebox]' is for sale within your moneyrange!

MARKTPLAATS PIGGY BANK

online savings function to save money for buying a desired object. Receive price alarms.

+ attract/retain users
+ effort
+ outcome

POSSIBLE FEATURES:

GET A NOTIFICATION WHEN THE DESIRED OBJECT IS WITHIN THE MONEY RANGE OF THE PIGGY BANK

SELLERS CAN STORE RECEIVED MONEY ONLINE IN THEIR PIGGY BANK

GET INTEREST ON PIGGY BANK

Appendix 5 - qualitative test

Qualitative testplan

The final concept as presented in the thesis is build out of nine separate elements that are designed to improve product understanding. The goal of this test is whether each individual elements is understood and accepted by users. Next to this, insights on the combination of ideas formed by the concept and their order of presentation should be gained. Six participants were interviewed.

Research questions

The main question of this testplan is:

1. IS THIS ELEMENT A VALUABLE ADDITION FOR UNDERSTANDING A PRODUCT ON MARKTPLAATS?

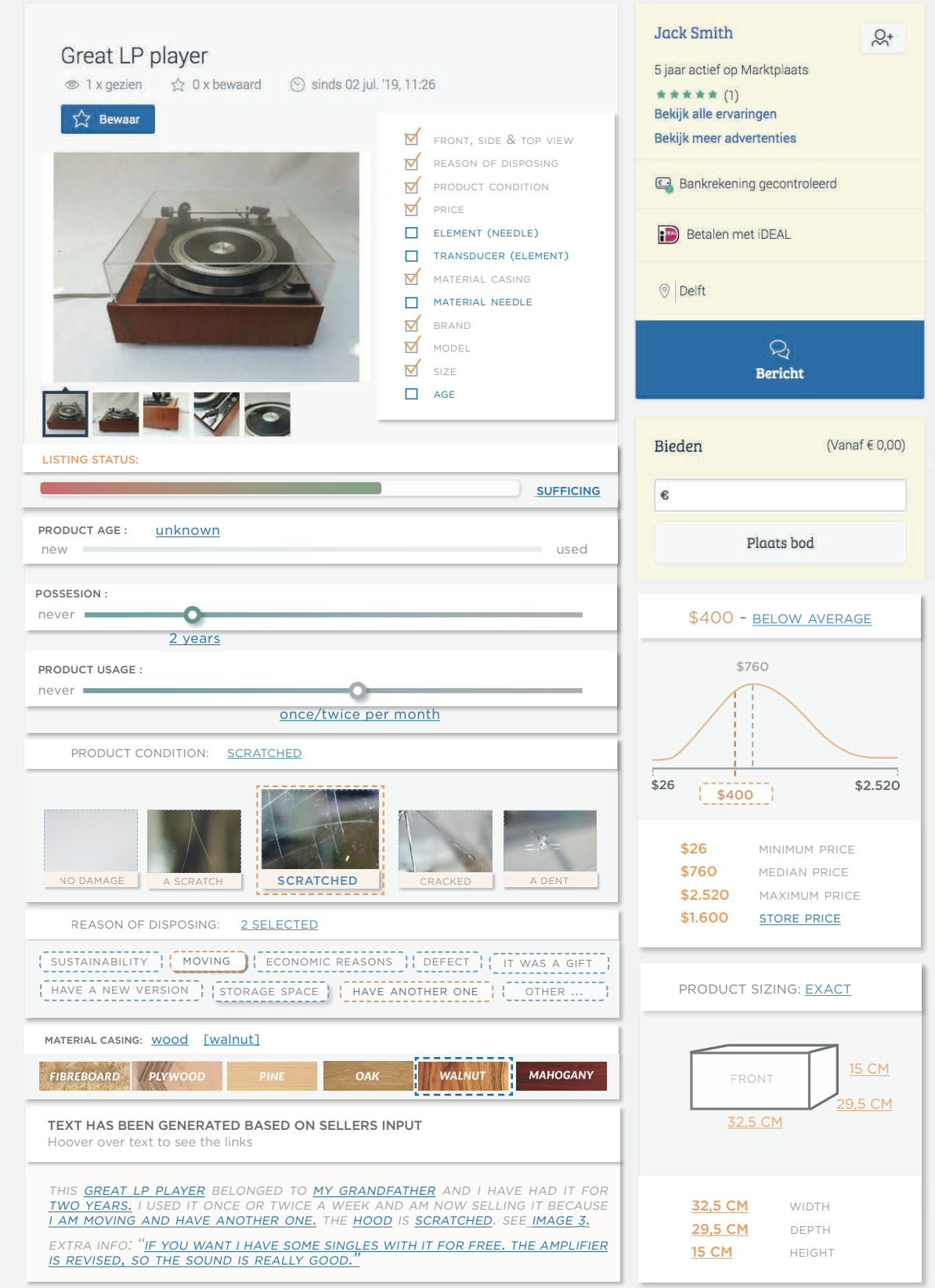
To answer this, questions are asked about the value of the information, the way in which it is visualised. And which element the interviewee deems most valuable.

Next to that, the interviewee is asked to lay the elements in their preferred order of receiving information.

The complete testing plan is visible on the next page.

The semi-structured interview

At the beginning of each test, a short introduction was given on the project, the concept and the interviewees task. During the test, a printed A3 sheet of a Marktplaats listing is presented (see the image on the right page). The listing shows an add of a LP-player with on top the different elements of the concept that are placed on top of the listing during the test, one by one. With each addition, opinions are asked on the different elements that the concept is contrived of. The testing plan is shown on the next page.



The presented listing

A listing was designed specifically for this test, based on actual Marktplaats listings. This was done so to avoid unclear texts or images that may cause confusion during the test.

A recordplayer was chosen for the topic of the listing to avoid second-hand skeptisism; it is a product that is not unusual to buy second-hand, which makes it easier to imagine oneself buying on Marktplaats and may render more confident answers. A recordplayer is a product that argueably is not age, income or gender dependent. According to MusicWatch, 56 percent of vinyl record purchasers are men, and almost half of purchasers are under 25 years old . The industry research company also found that 58 percent of vinyl buyers only purchase used records . Based on the large amount of LP-player adds on Marktplaats, and the numerous websites and services that deal in second-hand LP-players, the assumption is made that recordplayers are not unusual to be bought second-hand. Lastly, a record player is complex enough to present all possible information through the designed concept.

MusicWatch. (2019). Music Acquisition. Retrieved from https://www.musicwatchinc.com/research-studies/music-acquisition/

MusicWatch Inc., Crupnick, R. (2016, July 14). A Mid-Year Look At Vinyl. Retrieved July 3, 2019, from https://www.musicwatchinc.com/blog/a-mid-year-look-at-vinyl/

The interview questions

Introduction of the interviewer; tell about the graduation assignment and the goal of the project: improving product presentation on Marktplaats. Show the Marktplaats listing and explain the focus of the project.

Explain that this is a qualitative test for receiving feedback on the final concept. The concept is made out of nine elements, which I will display, step by step. What I want from you (interviewee) is to share every thought on each element. Each step I will ask the following three questions:

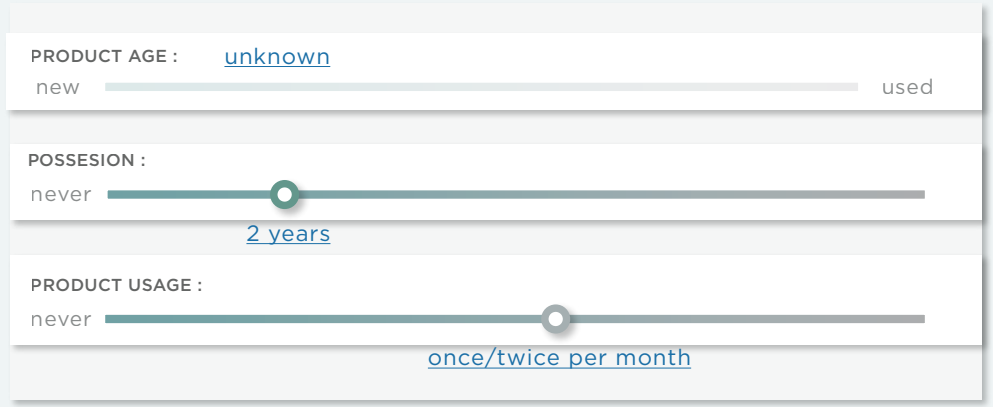
1. COULD YOU DESCRIBE TO ME WHAT INFORMATION IS VISUALISED HERE?
2. DO YOU BELIEVE THIS INFORMATION TO BE VALUABLE WHEN BUYING THIS OR OTHER SECOND HAND PRODUCTS? (WHY)
3. WOULD YOU PREFER THIS VISUALISATION OF INFORMATION OVER PLAIN TEXT? (WHY)
4. WHAT DO AND DON'T YOU LIKE ABOUT THE ELEMENT? (WHY)

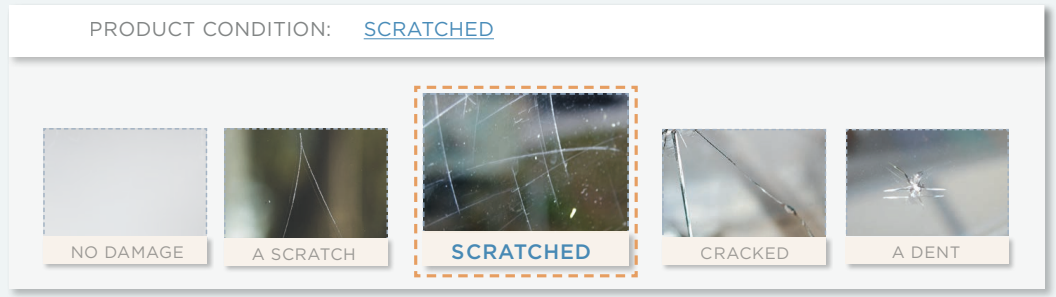
I would like to ask you to be honest in your answers, do not hesitate to be negative or blunt in your comments, they will help me to improve the concept.

After all elements have been discussed, the interviewee will be asked:

5. WHICH ELEMENT WOULD BE THE BEST ATTRIBUTION TO MARKTPLAATS AND WHICH ONE THE LEAST? (WHY)
6. IN WHAT ORDER WOULD YOU LIKE THESE ELEMENTS TO BE PRESENTED WHEN VIEWING A LISTING? (WHY)

Appendix 6 - qualitative results





The results

This chapter discusses the results of the qualitative semi-structured testing. for each element, it states the user understanding, perceived information value, positive point and points of attention.

Element A: Product mileage

Every interviewee could effortlessly describe what is visualised.

5 out of 6 interviewee's found the information valuable. One person only found age valuable "It is a vintage product, so I don't care that much about previous possession or usage. I just care about whether the product works or not"

Positive points: "very Interesting information", "with this information I know whether it is second or third-hand". "I get a lot of valuable information in one glance"

Point of attention: two times the scaling was mentioned to be confusing: "What are the steps and what is the scale"? One interviewee wondered whether the 'usage' was the average over time. One interviewee mentioned he would prefer it as an "addition to the textual description".

Design take-aways:

- Include scale
- Include steps on scale
- 'hide graph' for those who do not care for visuals

Element B: Product condition

Every interviewee understood what is visualised by the element

Every interviewee found the information valuable. One person only believed it to be valuable if the material is glass. Another person only valued it if the product itself is valuable.

Positive points: "An unanimous language" for product condition. Quick understanding of the damage.

Points of attention: Where is the damage exactly? What if different materials are damaged? "I would like some explanation of the damage". More options would be preferred.

Design take-aways:

- Include explaination
- link to images
- more options

Element C: Reason of dispose

Every interviewee understood what is visualised by the element

Interviewees found the information moderately valuable. Three of them usually do not believe the reason of disposing because they feel like people often lie about it. One interviewee always looks for this information.

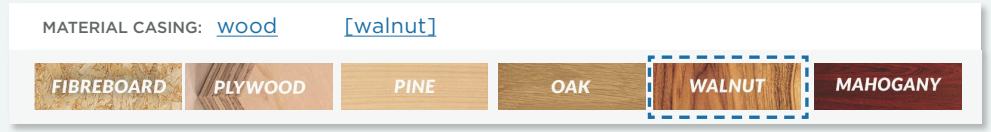
Positive points: “This is more neutral”, “I can now see it in one glance”. “It is very clear”, “I don’t need a whole story”.

Points of attention: “I don’t think anyone will answer ‘economic reasons’ for disposing”.

Design take-aways:

- Not all reasons have to be displayed to buyer

- ‘economic reasons’ may be removerd/changed



Element D: Materials

Every interviewee understood what is visualised by the element

Four interviewees found the information very valuable, two interviewees do not believe an average seller to have this knowledge.

Positive points: “The material has to match my interior, if I can filter on this option, it would save me a lot of time and effort”, “it confirms what I see in the image”. “it helps me deriving towards a price”.

Points of attention: If a seller doesn’t know the material it should be visible to the buyer, “it is a lot of hassle if the product is complex”, “I can usually tell from the description if the seller knows what he is talking about, with this visualisation only I don’t believe it”.

Design take-aways:

- Include a ‘sureness’ or ‘don’t know’ option

- make clear on what part of the product it is

$400 - BELOW AVERAGE

$26	MINIMUM PRICE
$760	MEDIAN PRICE
$2.520	MAXIMUM PRICE
$1.600	STORE PRICE

Element E: Price graph

Apart from two interviewees, everyone found the graph to be a bit unclear. After some additional time, everyone understood the graph.

Everyone thought the information to be valuable both as potential buyer or seller, for determining the price. One interviewee mentioned he would like to use this as a listing filter.

Positive points: Quick, informative and has filtering potential. “I would definitely use it”, “the graph definitely adds to the text”

Points of attention: “To what products is it compared to?” Too complex information/visualisation, “How reliable is this info?”, “How much a product is worth depends on a lot of variables..”, How could the minimum be so low?”

Design take-aways:

- Define comparison
- State amount of compares
- %5 minimum/maximum
- change ‘median’
- move textual info up
- remove ‘below average’ statement

PRODUCT SIZING: EXACT

32,5 CM	WIDTH
29,5 CM	DEPTH
15 CM	HEIGHT

Element F: Product dimensions

Every interviewee understood what is visualised by the element

Everyone thought the visual to be valuable both as potential buyer or seller. One interviewee mentioned how this would help in determining shipping fees.

Positive points: “Relevant information, sizes are usually hard to imagine”, “Would be nice if I could drag the corners to edit the size, also, I would like to filter listings on product size.”, “I am very visually oriented, this is helpful”. “people always confuse width and depth”.

Points of attention: -

Design take-aways:

- may help for deciding on packaging size/cost

TEXT HAS BEEN GENERATED BASED ON SELLERS INPUT
Hoover over text to see the links

THIS GREAT LP PLAYER BELONGED TO MY GRANDFATHER AND I HAVE HAD IT FOR TWO YEARS. I USED IT ONCE OR TWICE A WEEK AND AM NOW SELLING IT BECAUSE I AM MOVING AND HAVE ANOTHER ONE. THE HOOD IS SCRATCHED. SEE IMAGE 3.

EXTRA INFO: "IF YOU WANT I HAVE SOME SINGLES WITH IT FOR FREE. THE AMPLIFIER IS REVISED, SO THE SOUND IS REALLY GOOD."

- [x] FRONT, SIDE & TOP VIEW
- [x] REASON OF DISPOSING
- [x] PRODUCT CONDITION
- [x] PRICE
- [ ] ELEMENT (NEEDLE)
- [ ] TRANSDUCER (ELEMENT)
- [x] MATERIAL CASING
- [ ] MATERIAL NEEDLE
- [x] BRAND
- [x] MODEL
- [x] SIZE
- [ ] AGE

Element G: Automatic text generation

Every interviewee understood what is visualised by the element.

Every interviewee was positive about the text being auto generated, as long as additional remarks by the seller were available. Two persons mentioned that they only read text for extra information.

Positive points: "Well readable", "It is nice to have the extra/ personal text separate", "The links are nice if you *start* with reading the text", "It is a good summary, I always read the text", "I like how the information is separated from personal info".

Points of attention: "I am missing the price in the text", "I don't need the links, unless it will link me to an audio or video, which by the way should also be implemented by Marktplaats", "It should work properly". "I don't see why I would want to read text if there are all these nice visuals"

Design take-aways:

- Clear separation of auto text and personal
- Price in text
- Only be implemented when proper functioning is assured.
- Hide function of summary

Element H: Feedback list

4 interviewees understood the list, one did not immediately understand it and thought it to be mostly useful to the seller. Later in the interview he reconsidered and said that it would be useful for buying expensive products. Or any product he did not want to have a bad buy on.

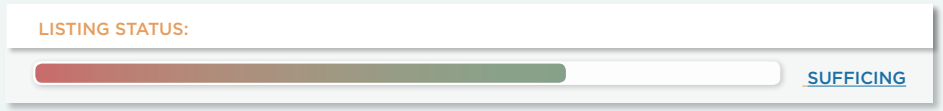
After some explanation, every interviewee found the information to be valuable, a combination with element 'I' (the loading bar) was suggested several times.

Positive points: "A lot of information in one glance", "Great checklist for sellers", "I would use this if I wanted to avoid a bad buy", "Nice summary of information".

Points of attention: "I am not sure if it is too much information to view at once", "Maybe it would be nice to use this as a drop-out option of element I", "If I could filter on the price graph, I would want to make my selection based on this information", "Links or cross-references would be nice". "perfect filter".

Design take-aways:

- A header
- Use as filter option
- Drop-out of the loading bar



Element I: Information loading bar

Only three interviewees understood the loading bar, after short explanation it made sense to the other interviewees

Interviewees found the information moderately valuable. “It shows it, but what does it really mean?”. “It is valuable for a really quick scan”. “maybe I just need to get used to reading this?”

Positive points: “Its quick and can show valuable info”, “Also nice feedback for sellers”, “I like it even better than the checklist (...) because it takes less effort for me to decide”.

Points of attention: “Maybe this element can have a drop-out option, displaying element H (the feedback list)”. “Seeing this I start to doubt myself (...) I thought this was a good listing, but it only says ‘sufficient’ (...) I don’t like that”.

Design take-aways:

- Combine with feedback
- Remove the ‘judgement’ text

Appendix 7 - quant. setup

Quantitative test

Afther the qualitative test was finished, a quantitative test was performed to validate the Feedback element for buyers. This appendix explains the test and shows and discusses the results.

Goal

This test was designed for evaluating the Feedback element for Buyers. The goal was to find out whether the element influences buyers' perception of the product presentation. The two hypotheses of this test are:

1. THE FEEDBACK ELEMENT MAKES CONSUMERS AWARE OF VALUABLE(/ MISSING?) INFORMATION

3. THE FEEDBACK ELEMENT INFLUENCES CONSUMERS' PERCEIVED RISK.

The setup

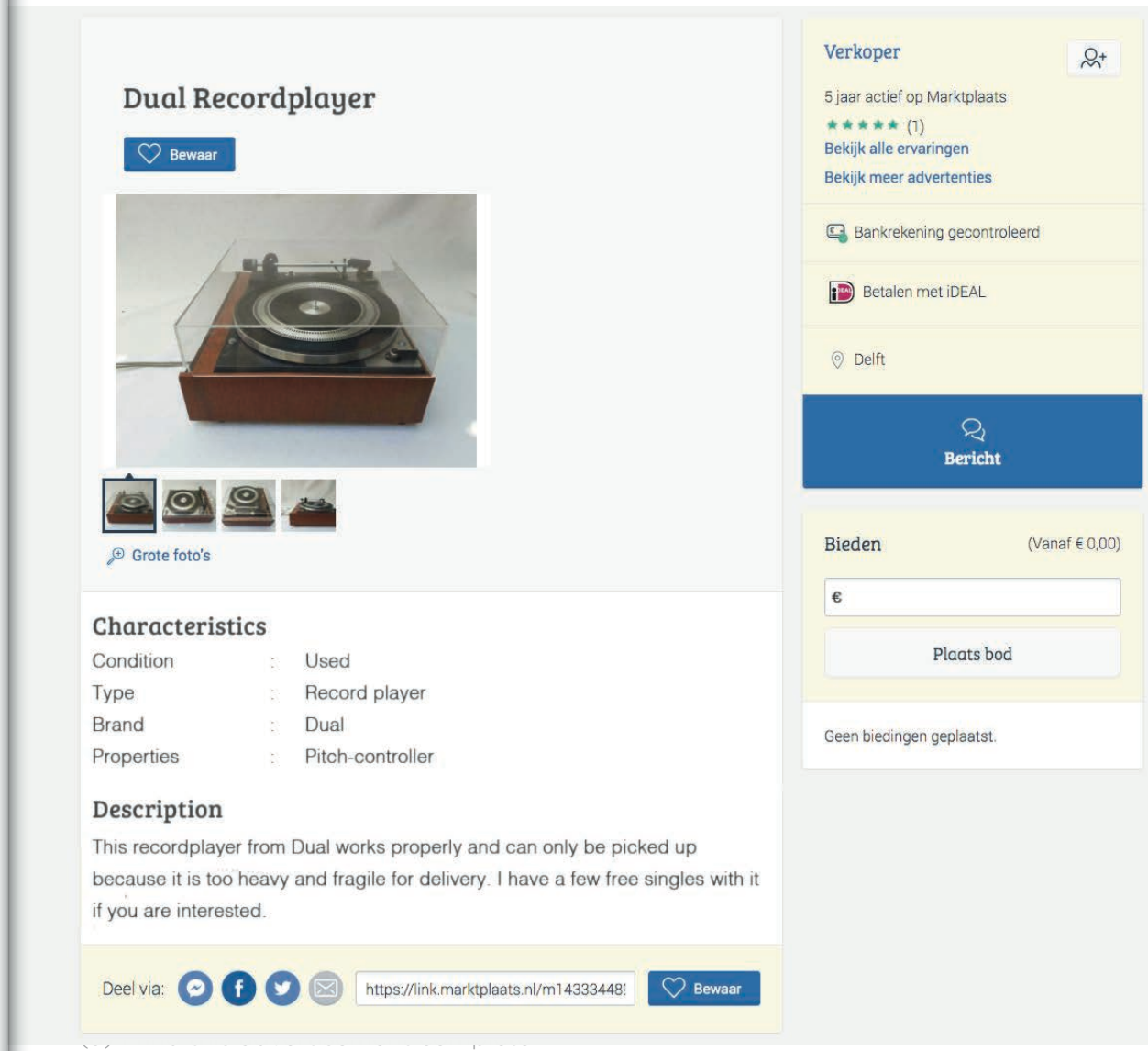
The online questionnaire was build out of five questions:

1. In the first question, an image of a Marktplaats add was show to the surveyed (see image on the right page). The accompanying question was:

"Suppose you are going to buy a second-hand record player on Marktplaats. What information would you like to know to get a full image of the product? Try to name at least 3 things, no matter how obvious they are.

For example: "Product photos, the brand ..." (and 3 others)"

Three answer fields were marked as 'mandatory'.



(b) This product is a risky purchase

(c) I am certain of this estimate (regarding the purchase risk)

The fourth question was:

"Suppose you are interested in buying your a record player, how much would you bid on this record player?"

The fifth question was:

" Indicate what applies to you:

(a) I am familiar with Marktplaats

(b) I am somewhat familiar with Marktplaats

(c) I am not familiar with Marktplaats"

And the final question: "*What is your age?*

(a) < 20

(b) 20 - 29

(c) 30 - 39

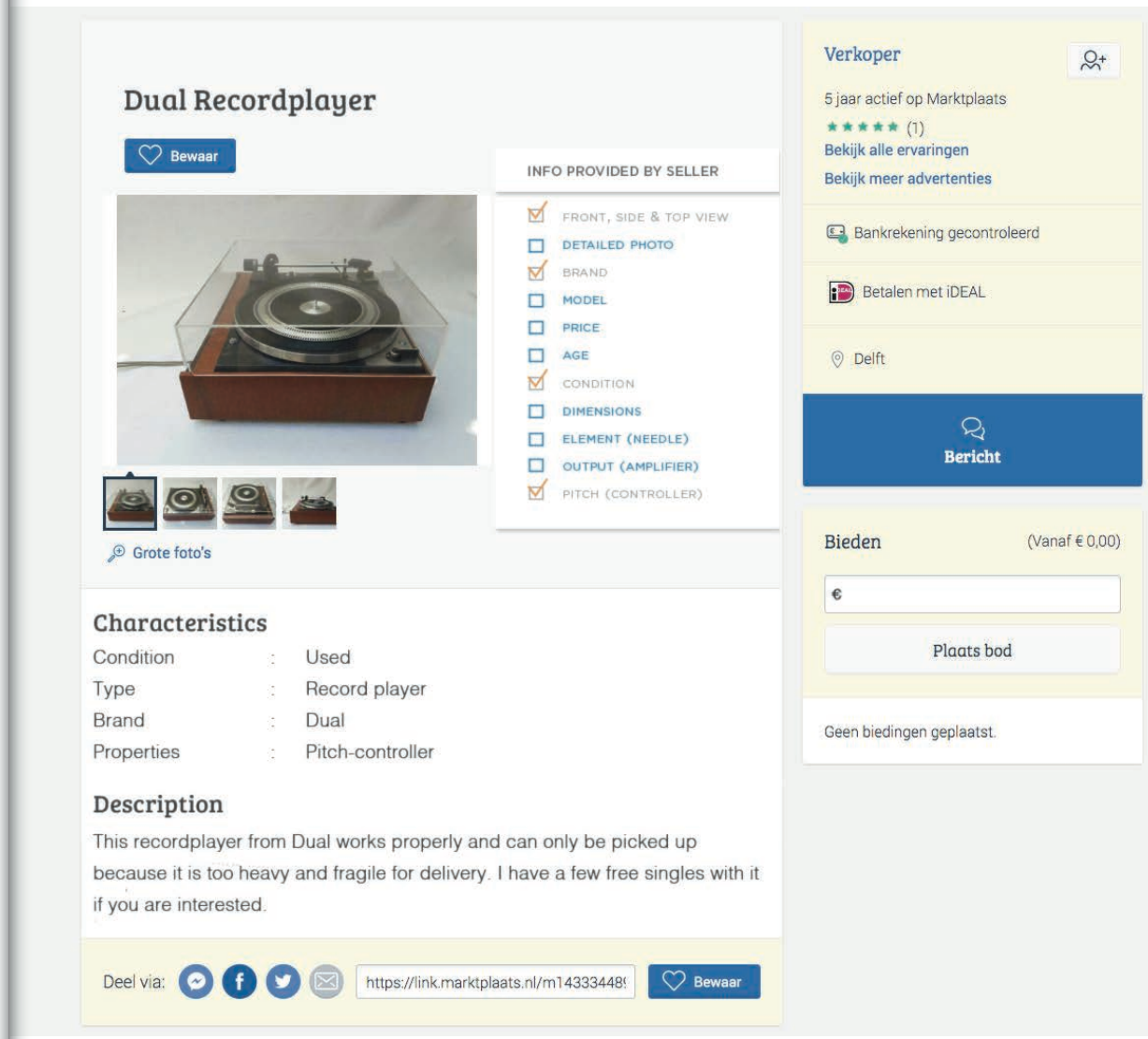
(d) 40 - 49

(e) 50 - 59

(f) 60 - 69

(g) 70 < "

The results are discussed on the next few pages.



Statistical analysis

In the following sections the statistical research method and model will be explained as well as the analysis outcomes.

Partial least squares path modelling

Survey results have been statistically analysed through Partial Least Squares Structural Equation Modelling (PLS-SEM).

PLS-SEM is a method of structural equation modeling which allows estimating complex cause-effect relationship models with latent variables (non-directly opservable variables such as ratings). PLS-SEM has similarities with Covariance-based Structural Equation Modeling, which is used by software like SPSS. The difference is that Partial least squares path modelling does not fit a common factor model to the data, but it rather fits a composite model to maximize the amount of variance explained. In other words: PLS-SEM has an open model approach to find significant relationships anywhere in the model. Because of the algorithm used in PLS-SEM, the method is able to estimate complex cause-effect relationship models. It can also handle complex multi-level structures with variables.

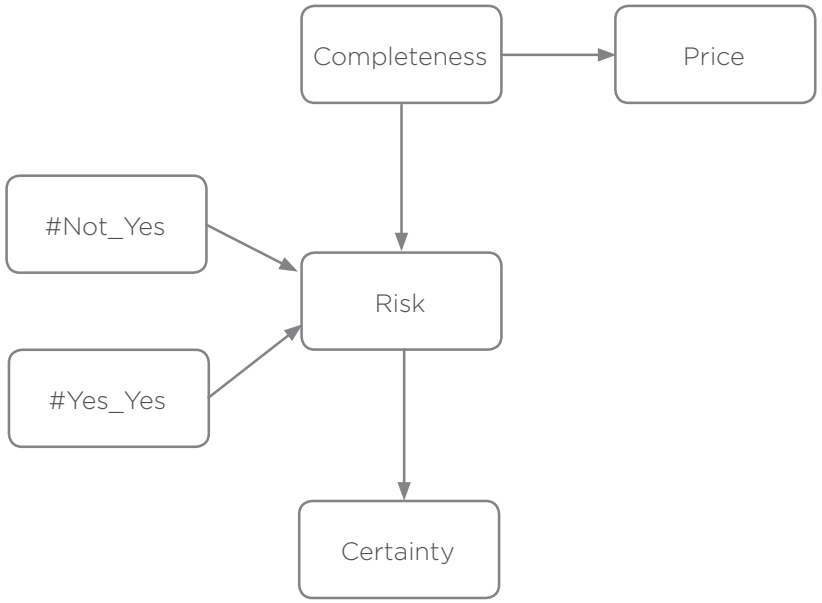
The software used in this research for PLS-SEM is WarpPLS (version 6.0). WarpPLS allows for the identification of linear segments mirroring underlying nonlinear relationships, without the need to generate subsamples. This model has been chosen in consultation with a research doctorate, skilled statistical analysis.

Variables

From the questionnaire, the following variables were used in the research model (between brackets the WarpPLS variable code):

- The number of elements that the respondent had already mentioned in the first question as being important. [#Yes_Yes] (see question 2 page ...)
- The number of elements that the respondent had not mention before but later stated to be important [#Not_Yes]
- The rated completeness of the add [Complete]
- The perceived risk of the buy [Risk]
- The rated certainty of the risk [Certain]
- Price the respondent was willing to pay [Price]

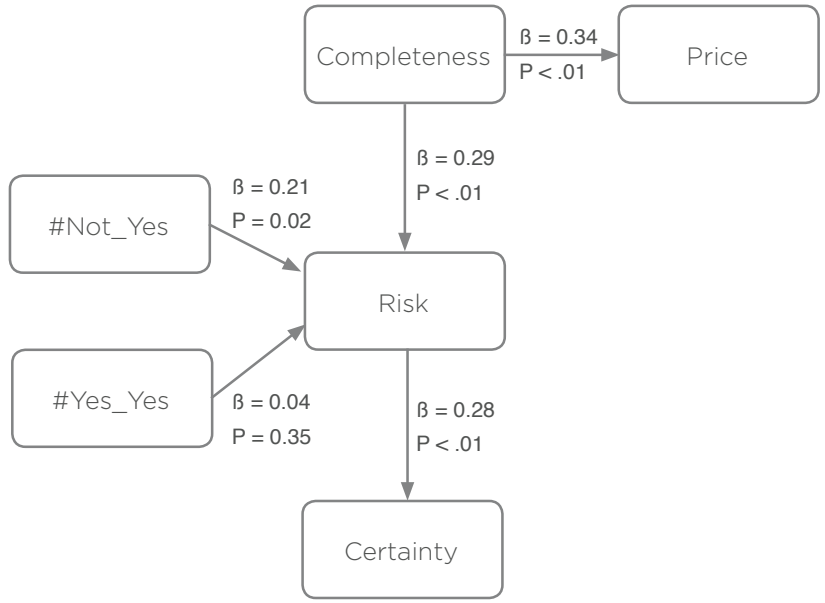
The number of proposed items in the feedback list that the respondent did not mention before, but felt not to be important (not mentioned and not important) is not included in the research model, as the respondent indicated these items had no importance to him or her for the add.



The research model

The combination of the above variables lead to the research model in figure .. above.

On the left the research model shows the two most important relationships: What is the effect on the perceived risk of the buy for (1) the number of items the respondent initially mentioned as important (#Yes_Yes) and (2) the number of proposed items the respondent did not initially mention, but nevertheless were deemed to be important (#Not_Yes). In the middle, the model shows the relationships between the completeness of the add and the perceived risk of buy, and the perceived risk of buy and certainty of this risk. Finally, on the right, the research model shows the effect of the completeness of the add and the height of the price the respondent is willing to pay.



Research results

In figure ... above the research results are presented. In which ß denotes the Path coefficient. The Path coefficient represents the effect of one variable on the other variable. The path coefficient in PLS-SEM has a similarity with the Correlation coefficient (R) in Covariance-based Structural Equation Modeling, though the values are not similar due to the used algorithm. In this model, the coefficients are moderately high. The (small) size of the data set may have influenced these numbers.

The result shows all relationships are significant, except for the relationship between the number of items mentioned before (#Yes_Yes) and the perceived risk of the buy.

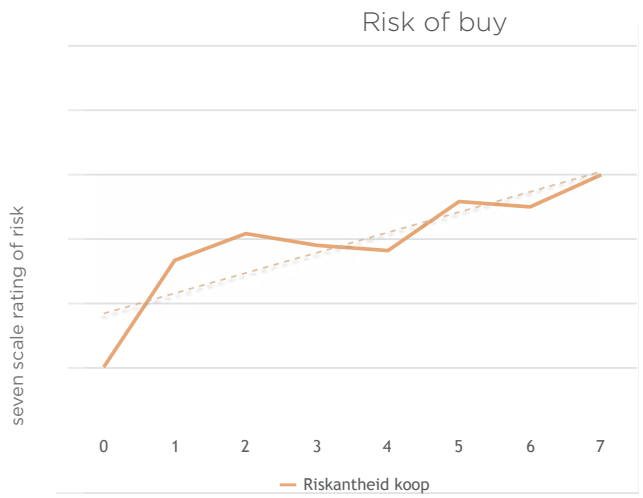
Path coefficients and P-values

Path coefficients	1.	2.	3.	4.	5.	6.
1. #Not_Mentioned_Yes_Important						
2. #Yes_Mentioned_Yes_Important						
3. Completeness_add						
4. Risk_of_buy	0,213*	0,042	-0,286**			
5. Certainty_of_risk				-0,277**		
6. Price_willing_to_pay			0,335***			

P values

* P<0,05 ** P<0,01 *** P<0,001

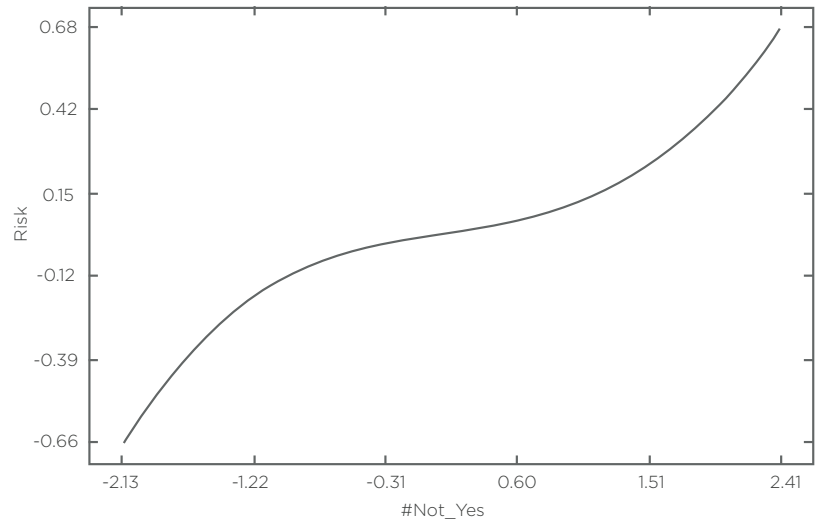
Table A above shows the Path coefficients and their P-values. WarpPLS only presents the relationships that were modelled in the research model.



Graph B right shows the risk of buy opposed to the [#No_Yes] variable

amount of elements “not mentioned but important” [#No_Yes]

Best-fitting curve for multi-variance relationship (standardized scales)



Detailed analysis of risk of buy

As mentioned, the most important relationship in the research model is the relationship between the number of proposed items in the list the respondent did not mention (or think of) before, which were nevertheless seen as important, and the perceived risk of the buy. A first analysis was performed in Excel on the data, which was shown in graph B on the left page. The graph shows the relationship between the number of items and the risk of the buy. The trend-line of the risk of buy is upwards, indicating the significance of the relationship.

The same analysis was performed in WarpPLS. This software can calculate the ‘Best fitting curve’ for a relationship. The scales are standardized (for the algorithm), but they represent the same scales as the Excel graph.

The calculated best fitting curve is a more smooth representation than the calculated line in Excel. It shows that initially there is a steep increase of perceived risk of buy when the number of items grows. In the ‘middle’ there is almost no increase in risk, but in the higher numbers of items the risk again grows increasingly. This indicates that if the respondent misses out on a large number of important items in the add, the perceived risk of buy is increasingly higher.

Appendix 9 - project brief

IDE Master Graduation

Project team, Procedural checks and personal Project brief

This document contains the agreements made between student and supervisory team about the student's IDE Master Graduation Project. This document can also include the involvement of an external organisation, however, it does not cover any legal employment relationship that the student and the client (might) agree upon. Next to that, this document facilitates the required procedural checks. In this document:

- The student defines the team, what he/she is going to do/deliver and how that will come about.
- SSC E&SA (Shared Service Center, Education & Student Affairs) reports on the student's registration and study progress.
- IDE's Board of Examiners confirms if the student is allowed to start the Graduation Project.

USE ADOBE ACROBAT READER TO OPEN, EDIT AND SAVE THIS DOCUMENT
Download again and reopen in case you tried other software, such as Preview (Mac) or a webbrowser.

STUDENT DATA & MASTER PROGRAMME

Save this form according the format "IDE Master Graduation Project Brief_familyname_firstname_studentnumber_dd-mm-yyyy".
Complete all blue parts of the form and include the approved Project Brief in your Graduation Report as Appendix 1 !

family name: Kok, de
initials: M given name: Mendel
student number: 4626893
street & no.: Mijnbouwstraat 116p
zipcode & city: 2628RX
country: Delft
phone: 0637237725
email: m.dekok@student.tudelft.nl

Your master programme (only select the options that apply to you):
IDE master(s): (1) IPD ( ) DfI ( ) SPD
2nd non-IDE master:
individual programme: - - (give date of approval)
honours programme: ( ) Honours Programme Master
specialisation / annotation: ( ) Medisign ( ) Tech. in Sustainable Design ( ) Entrepeneurship

SUPERVISORY TEAM **

Fill in the required data for the supervisory team members. Please check the instructions on the right !

** chair: Dr. M.W.A. Wijntjes (Maarten) dept. / section: ID (HICD)
** mentor: Ir. Klitsie, J.B. (Barend) dept. / section: PIM (MCB)
2nd mentor: J. Mulder (Jeroen)
organisation: Marktplaats
city: Amsterdam country: The Netherlands
comments (optional)

Chair should request the IDE Board of Examiners for approval of a non-IDE mentor, including a motivation letter and c.v..

Second mentor only applies in case the assignment is hosted by an external organisation.

Ensure a heterogeneous team. In case you wish to include two team members from the same section, please explain why.

APPROVAL PROJECT BRIEF

To be filled in by the chair of the supervisory team.

chair Dr. M.W.A. Wijntjes (Maarten) date __-__-____ signature _____

CHECK STUDY PROGRESS

To be filled in by the SSC E&SA (Shared Service Center, Education & Student Affairs), after approval of the project brief by the Chair.
The study progress will be checked for a 2nd time just before the green light meeting.

Master electives no. of EC accumulated in total: ____ EC
Of which, taking the conditional requirements into account, can be part of the exam programme ____ EC
List of electives obtained before the third semester without approval of the BoE

( ) YES all 1st year master courses passed
(★) NO missing 1st year master courses are:

IDE Academy: Course has been successfully finished but the Ects have yet to be administered.

name _____ date __-__-____ signature _____

FORMAL APPROVAL GRADUATION PROJECT

To be filled in by the Board of Examiners of IDE TU Delft. Please check the supervisory team and study the parts of the brief marked **.
Next, please assess, (dis)approve and sign this Project Brief, by using the criteria below.

- Does the project fit within the (MSc)-programme of the student (taking into account, if described, the activities done next to the obligatory MSc specific courses)?
- Is the level of the project challenging enough for a MSc IDE graduating student?
- Is the project expected to be doable within 100 working days/20 weeks ?
- Does the composition of the supervisory team comply with the regulations and fit the assignment ?

Content: ( ) APPROVED ( ) NOT APPROVED
Procedure: ( ) APPROVED ( ) NOT APPROVED

comments

name _____ date __-__-____ signature _____

Improving users' online product presentation on Marktplaats' website — project title

Please state the title of your graduation project (above) and the start date and end date (below). Keep the title compact and simple. Do not use abbreviations. The remainder of this document allows you to define and clarify your graduation project.

start date 04 - 03 - 2019 — 02 - 08 - 2019 end date

INTRODUCTION **

Please describe, the context of your project, and address the main stakeholders (interests) within this context in a concise yet complete manner. Who are involved, what do they value and how do they currently operate within the given context? What are the main opportunities and limitations you are currently aware of (cultural- and social norms, resources (time, money,...), technology, ...).

Context:
Marktplaats is a classified advertising service based in the Netherlands and founded in 1999. The word 'Marktplaats' means 'market place' in Dutch and refers to the main use of their [web- and app based] service; connecting sellers and buyers of (used) products and services through classified ads. The products of individual users are often presented by (amateur) photographs combined with listed features and a short description by the seller. The visual communication of the product presentation will be aimed to improve by designing for these three elements (photos, listed features & description), and possibly combining them into one embodied solution.

User Experience of Marktplaats
The last few years, Marktplaats' vision has shifted from being a passive and functional website towards being more actively involved in facilitating a positive user experience. To reach Marktplaats' vision of enabling users to "buy en sell their products within 5 minutes with a smile", they examined their current advertisement service. Amongst several findings, their research shows that design improvements in the visual domain of product presentation and communication will help them reach this goal.

About the users goals and values, needs and limitations
In line with Marktplaats findings, research indicates that consumers are relying increasingly more on online visual information* ** ***. In this developing society of so-called 'Visual Consumption', users goals and needs are shifting from mainly textual product descriptions into fully visual and immersive product presentations. Moreover, users value their online experience now more than ever, and want to spend limited time to reach their goal. If Marktplaats does not sufficiently adapt these developments, other services will soon arise to attend to these new user needs.

Societal importance
Designing for an improved advertisement service of Marktplaats implies designing for improved circular economy. Being one of the largest Dutch second-hand resale service, sustainability remains a key value to their brand, and towards societal interest.

_____
*Schroeder, J. E. (2007). Visual Consumption. The Blackwell Encyclopedia of Sociology.
** Spence, C., Okajima, K., Cheok, A. D., Petit, O., & Michel, C. (2016). Eating with our eyes: From visual hunger to digital satiation. Brain and Cognition, 110, 53-63.
*** Kane, G. C., & Pear, A. (2016, January 4). The Rise of Visual Content Online. Retrieved March 1, 2019, from https://sloanreview.mit.edu/article/the-rise-of-visual-content-online/

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introduction (continued): space for images

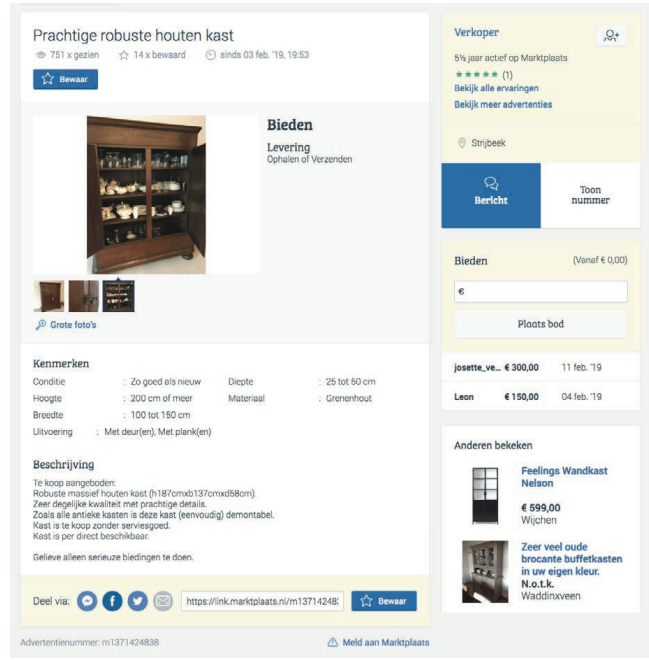


image / figure 1: Random web-advertisement page Marktplaats

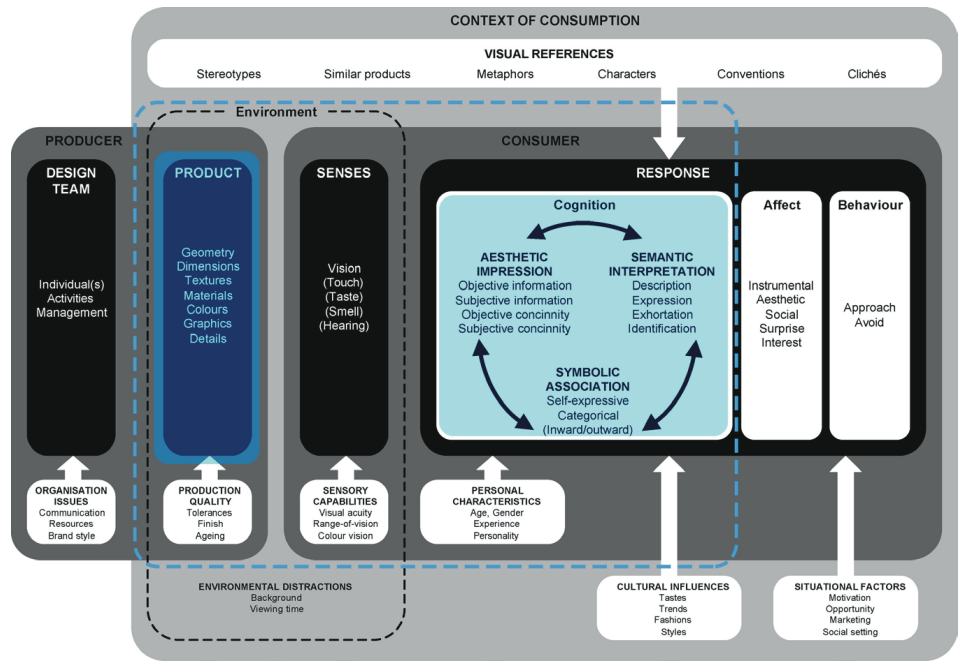


image / figure 2: Project research framework by Crilly, Moultrie, & Clarkson (2004). Blue indicades research scope

PROBLEM DEFINITION **

Limit and define the scope and solution space of your project to one that is manageable within one Master Graduation Project of 30 EC (= 20 full time weeks or 100 working days) and clearly indicate what issue(s) should be addressed in this project.

The current problem is:
The way in which users can present their products on Marktplaats' often renders a low quality product presentation and fosters miscommunications of their presented product. Moreover, modern visual communication techniques such as interactive display and AI offer additional opportunity for improvement. Design communication shortcomings and opportunities in the visual area will be studied and designed for.

Scope of the research:
Figure 2 on the previous page shows the research framework of Crilly, Moultrie, & Clarkson (2004), which will be used during the research phase and defines the scope within this research. The framework is a combined framework of multiple researches relevant to product presentation & communication. The blue line/areas in the image represent the main research area on which I will focus: The product presentation and the consumer response in the cognitive area. Aesthetic, semantic and symbolic association will be regarded when designing a solution. Other responses (affect & behavior) and contextual factors will be considered during the process, but are excluded from the main area of research to keep the project feasible within the set time-span.

The targetgroup will be:
The design should fit any user of Marktplaats. Specifically the needs of 'buyers' are considered, granted that 'sellers' are directly linked to this process. Users with limitations such as computer-illiteracy (digibeet) or visual impairments are excluded from this targetgroup.

ASSIGNMENT **

State in 2 or 3 sentences what you are going to research, design, create and / or generate, that will solve (part of) the issue(s) pointed out in "problem definition". Then illustrate this assignment by indicating what kind of solution you expect and / or aim to deliver, for instance: a product, a product-service combination, a strategy illustrated through product or product-service combination ideas, ... In case of a Specialisation and/or Annotation, make sure the assignment reflects this/these.

Improving the online product presentation of users on Marktplaats: Designing for improved visual communication of product aesthetics, semantics (function) and symbolics (meaning).

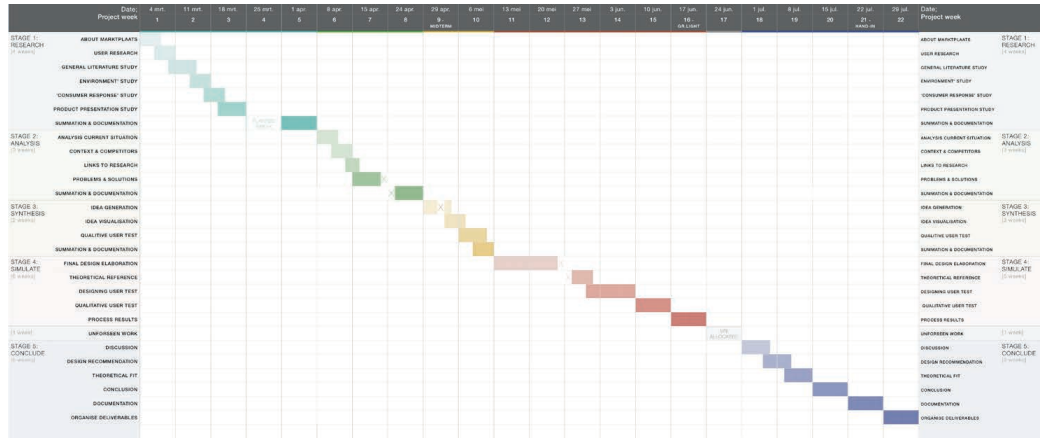
A design solution will most likely be presented in the shape of a online service or product-service system. By going through six design stages, a solution is researched, designed and validated. These five steps are based on Roosenberg and Eekels (1995), and expanded based on common UX design stages:

Stage 1. Focus: This stage is about defining clear objectives and goals for the research. Face 1 entails preliminary research with respect to the assignment.
Stage 2. Research: In this stage I will study relevant literature within the previous mentioned framework of Crilly, Moultrie, & Clarkson (2004). The processed information will yield the design criteria in terms of values, needs and objectives.
Stage 3. Analysis: In this stage I will analyse the current state of Marktplaats' advertisement design and their context/competitors. Results are compared with research findings and inconsistencies are described. The list of design criteria may be complemented.
Stage 4. Synthesis: In this stage I will generate possible solutions. This ideation will result in ideas and designs. A design solution is chosen based on qualitative research.
Stage 5. Simulate: In this stage I will form (more) images of the properties and behavior of the design solution. Here, the whole array of design communicational theories and user research are combined. This final design will be tested (either fully or a critical part) by quantitative research.

PLANNING AND APPROACH **

Include a Gantt Chart (replace the example below - more examples can be found in Manual 2) that shows the different phases of your project, deliverables you have in mind, meetings, and how you plan to spend your time. Please note that all activities should fit within the given net time of 30 EC = 20 full time weeks or 100 working days, and your planning should include a kick-off meeting, mid-term meeting, green light meeting and graduation ceremony. Illustrate your Gantt Chart by, for instance, explaining your approach, and please indicate periods of part-time activities and/or periods of not spending time on your graduation project, if any, for instance because of holidays or parallel activities.

start date 4 - 3 - 2019 2 - 8 - 2019 end date



The five stages each have their own color and are divided over 22 full-time weeks, of which 2 weeks are non working days.

MOTIVATION AND PERSONAL AMBITIONS

Explain why you set up this project, what competences you want to prove and learn. For example: acquired competences from your MSc programme, the elective semester, extra-curricular activities (etc.) and point out the competences you have yet developed. Optionally, describe which personal learning ambitions you explicitly want to address in this project, on top of the learning objectives of the Graduation Project, such as: in depth knowledge a on specific subject, broadening your competences or experimenting with a specific tool and/or methodology, ... Stick to no more than five ambitions.

My personal goal in this research is to learn about product communication in industrial design. In my past IPD projects I have learned how to design industrial products, but I feel like am lacking knowledge in how to properly present it. Moreover, I have noticed that many other product designers too, lack these design communication skills. Because of my interest, I wrote to Marktplaats, a webshop with amateur visual presentation by sellers. I aim to design a solution to improve product communication by non-designers. In different elective courses, I already showed interest for this subject by studying the subjects of consumer behavior, cognitive psychology, packaging design and graphic design. I now plan on combining this knowledge, and implementing it within the basic design cycle of Roosenberg and Eekels (1995).

FINAL COMMENTS

In case your project brief needs final comments, please add any information you think is relevant.

About this Thesis

This is a thesis on the improvement of amateur product-presentation on Marktplaats, a classified advertising service. In a broader sense; this thesis is about online product presentation. The thesis provides research on product presentation, a tool for communicating product information, and it demonstrates a design process for improved product presentation on Marktplaats.

Improving product presentation

A good product presentation is like a good story, with an important message that is told by a storyteller. Through the means of speech, text or image, the message is conveyed. However important the message may be, it is only conveyed if the intended receiver fully understands the story and believes the storyteller. 'The story' is the message containing all explicit and implicit information; that what is told and that what has been left out. Thus, a good story equals a good presentation of information.

In product presentation, the 'message' to be conveyed is the physical product. Explicitly its function, use and looks, implicitly its symbolic value. If the 'receiver' - the intended buyer - trusts the seller and understands the information, the product has been successfully presented.

From literature, there are no known exact guidelines for presenting a product online. Service interfaces and defined interactions limit the seller in their means of 'storytelling' and therefore limit the quality of the message to be brought across. How can Marktplaats remove these limitations and equip the amateur seller in communicating his or her product more clearly and vividly? And how is it determined whether the story has been told well?

This thesis presents a framework for virtually presenting products and for measuring product understanding. The presented guidelines are applicable to any online product presentation, but are developed specifically for second-hand amateur resale on Marktplaats.