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The development of a design methodology for the translation of brand identity into physical attributes to ensure cohesive packaging portfolios

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This paper outlines the development and evaluation of an adaptive design methodology specifically tailored for cohesive product portfolios of FrieslandCampina. Emphasizing user-friendliness and seamless integration into the company's workflow, the methodology addresses the translation of implicit design cues into explicit elements. The research investigates the key determinants of packaging design, considering the perspectives of designers, marketers, and consumers to improve communication and evaluation among stakeholders. The development process integrates existing design methods, rapid prototyping, and user testing to refine the methodology, which is further validated through case studies across multiple brands. This work aims to provide a flexible and adaptable tool for FrieslandCampina's design team.

Design methodology, brand identity, brand image, packaging design

1. Introduction

For many companies it has become increasingly more important that their products do not only appear attractive but also carry the brand identity, as visual recognition of brands and their products have become a central competitive factor within various product categories [1]. To accomplish this, the translation from brand identity to its physical aspects should be done correctly. When done correctly a coherent message will be created, the brand image and brand identity will be similar and the core values the consumer ascribes to the brand will be the same as the brand ascribes to themselves. However, the development of cohesive product lines that maintain a consistent brand identity while appealing to diverse markets presents unique challenges [2].

This paper examines the development of an adaptive design methodology aimed at addressing these challenges.

2. Preliminary research

In general, six categories of constraints in design have been defined by Lawson and Bloch: functional & aesthetic, ergonomic, production and cost, regulatory and legal, designer-generated, and marketing [3], [4]. These constraints can be subdivided towards three determinants, the consumer, the marketeer, and the designer.

2.1. The brand owner/marketeer

Marketeers emerge as a pivotal stakeholder, wielding authority over various aspects of packaging design to maximize revenue and foster a sustainable brand identity. Consequently, they exert influence over nearly all six categories of packaging design restrictions: functional and aesthetic, ergonomic, production and cost, regulatory and legal, designer-generated, and marketing considerations. While the brand owner makes the overarching decisions, spanning production costs, brand alignment, and marketing strategies, they do not handle the intricate details of brand implementation. This shows the need for clear communication and alignment of brand vision across all involved parties. A developed design method must thus ensure coherence between brand identity and image, reflecting the marketeer's overarching objectives.

2.2. The consumer

Consumer satisfaction is vital for a brand's success as it drives purchases. For consumers, brand identity emerges primarily through products or services, environments, and communications [5]. Many aspects within the product and its environment can influence a consumer to purchase a product [6].

In the current market consumers have access to a large variety of products and brands, therefore design has become an added value besides its functional qualities[7]. In environments as the supermarket, where there are a lot of stimuli, packaging must not only stand out but also align with consumer expectations and product identity, emphasizing the need for a method that reinforces these aspects and maintains a cohesive presence.

2.3. The designer

Meanwhile the designer is the active determinant of packaging design, synthesizing the constraints imposed by the other determinants into cohesive and recognizable designs [8]. It is important that these constrains, and potentials are made clear to the designer to effectively design packaging. Clear guidelines and insights into the multidimensional aspects of packaging—2D, 2.5D, and 3D—are essential to enable designers in making informed choices[2]. A method that effectively translates these insights into actionable design features is important, ensuring alignment across all involved parties and optimizing the packaging's visual impact and functionality.

3. Methodology analysis

The definition of a design methodology as a design intervention was investigated, together with the definition of a good design methodology. Further more current limitations and potentials of design methods were researched.

3.1. Definition of a design methodology

Design methodologies are fundamental to design research, providing a means for describing, coordinating, and standardizing the design process. As the definition of a design method and methodology are virtually the same the terms can be used intertwined. Consequently, terms like framework, tool, and development tool fit within the broader description of a design methodology[9]. This means the definition of a design methodology is broad enough to allow for design exploration in the ideation process.

3.2. Definition of a good design methodology

Despite design methods being one of the pillars in design, limited information exists on their functionality and the factors that predict their success [42]. Multiple researchers have emphasized that for a good design method it is important of linking the methods to issues regarding the usability, user experience, the utility, the performance, and its context compatibility [10][11]–[13].

Daalhuizen and Cash created one of the first models in which the essential elements of a method are described. They also investigated how these elements interact with the method user and how variations in these elements and interaction might impact performance[14]. This has resulted in 5 key factors that should be considering when creating a method: Method goal, method procedure, method rationale, method framing and method mindset. Each factor must be understood in relation to the method for it to function effectively, visualized in figure 1.

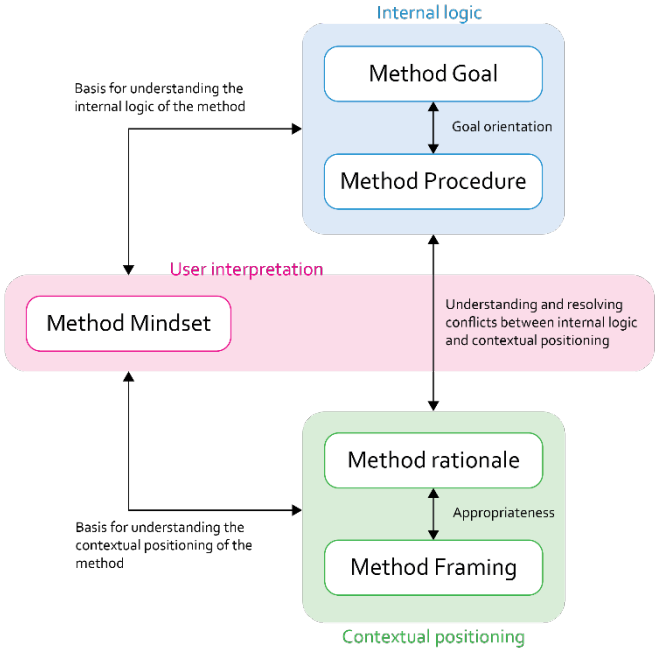

Figure 1: Method content theory factors and relations [43]

3.3. Potentials and Limitations

The exploration of the potentials and limitations of design methodologies reveals a nuanced landscape where success hinges on various factors beyond the five fundamental principles. While design methodologies have the potential to streamline processes, enhance creativity, provide adaptability, and support skill development, their effectiveness is heavily influenced by the mindset of the users, the complexity of the methods, and their perceived restrictions [15], [16].

To leverage these potentials effectively, it is essential to understand and address the limitations. Resistance to change, personal biases, and the perceived rigidity of methods are critical factors in their adoption[17]. Additionally, the complexity and abstract nature of some methods pose challenges, particularly for less experienced designers [18]. Ensuring that design methods are adaptable, clear, and aligned with the specific needs and contexts of the users is of importance [19]. Subsequently the overarching aspects should be kept in mind to deal effectively with their influence on the overall development of the method.

By recognizing and addressing the limitations whilst simultaneously striving to maximize the potentials, an effective and comprehensive design method should be created. The limitations and potentials function as a solid foundation for design requirements of the design method.

4. Exploration of design methods

Many design methods that currently exist do not adequately address the translation of brand identity into physical products or provide a comprehensive framework for a cohesive product line. They typically follow the normal design process of ideation, iteration, development, and testing [20]. While these are also essential during the design process, they do not include the importance of translating the implicit and explicit cues of a brand into physical product attributes. Which is a shame, as earlier research has shown that the implicit values, representing the core values of a brand, are the most important values to integrate in a product[2].

To develop or adapt a method it is important to get a thorough understanding of the specific methods available. A review of literature was conducted to take a broad look at multiple design methods, and assess which aspects might be applicable for creating cohesive packaging solutions. The methods with aspects applicable to the research are as follows:

- Brand translation framework [2]
- Design format handling method[21]
- Brand radar (developed by Frieslandcampina themselves)
- Semantic differential method [22]
- Butterfly model (Graphic language of Product design course)

Each method has its own strengths and weaknesses, and none fully meet all requirements. Indicating that combinations or adaptations of the methods should be explored to create a method that is suitable

5. Concept development

Four design cases were identified in which a method could help to translate brand identity into design attributes: The evaluation of the current product line, the evaluation of a new concept, the evaluation of the brand identity and brand image, and set-up design guidelines for a new brand or product category. In the development these cases will be taken into account.

Building on the conducted research on design methods, their limitations and limitations the developed design method should consist of multiple levels to guide the designer through one specific or more design cases. Keeping in mind the longevity of the model and the experiences of the users.

The designed concept is based on the existing design methods discussed in section four, however the methods are adapted and combined to comply better with the demands of packaging design within the corporate environment.

The top layer of the methodology contains the four design cases, explanations of their goal and rationale. Below each case the

further explanations on how to conduct the evaluation or analysis is provided, to guide and give insights to the user, visualized in figure 2.

Combining the Design format handling method and the Semantic differential method, each with a focus on the explicit or implicit cues of the packaging, allows for an all-encompassing view of the brands cohesiveness. While the Brand Radar and Brand translation framework ensure a seamless translation between the cues. The Butterfly model is used as an comprehensible visualization of the Semantic differential method.

The method is designed to be flexible and adaptable to multiple design scenarios. This versatility ensures that the method can be applied broadly within FrieslandCampina's design processes.

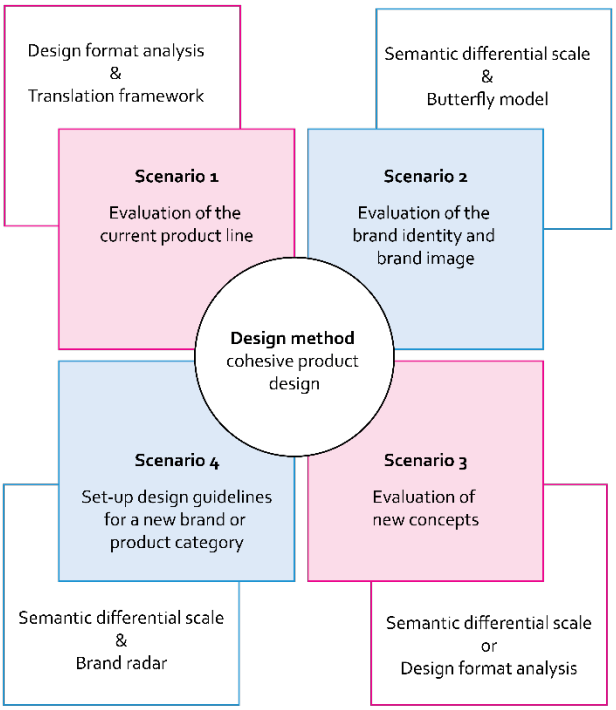

Figure 2: The design methodology concept

6. Implementation

Two main pitfalls in the adaptation of design methods lays in their implementation and the mindset of the user [19]. Many users stop using applications for one or more of the following reasons: it was too complicated, it took up too much of their time (poor interface, bugs/glitches, excessive features, slow), missing features, and lack of training in the application [23].

Given the resistance to change, only one of these reasons is enough for users to switch back to previous methods. Therefor it is important that the implementation and visualization of the design methodology is done correctly.

6.1 Visual implementation

The aim of this paper is to develop a working first version of the design methodology. As the methodology consists of multiple design cases and methods it is quite a large system. Therefor, the developed design methodology consist of multiple visual levels to intuitively guide the designer through the four design cases, offering concise and understandable explanations for each step. Through multiple explanation layers the model takes into account its longevity and accommodate users with varying levels of experience.

Users who are well-versed with the methods and procedures only use the top layer of explanations, which shows compact steps and everything you need to complete it. While novel designers can use the second or third layer. These layers explain each with more in depth guidance what needs to be done and how to conduct the steps, visualized in figure 3.

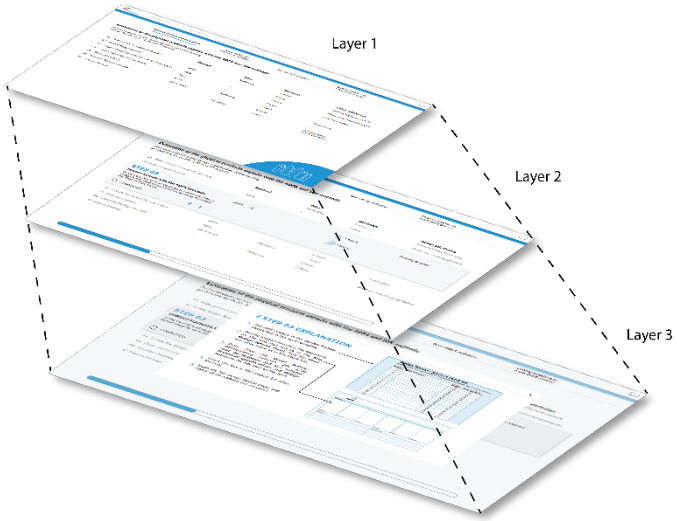

Figure 3: Explanation layers of the methodology

6.2. User tests

As one of the main limitations found in the adoption of design methodologies is the mindset of the user it was of importance that the methodology fits seamlessly within the design environment of FrieslandCampina, and the use of the methodology is intuitive and user friendly. To accomplish this, rapid prototyping and qualitative user tests were conducted. During the user test the participants were asked to perform specific tasks with the application, after which they filled in a System Usability Scale which was followed with an open discussion.

Throughout the user test and the adaptations the methodology usability improves which results in a user friendly, easily understood design methodology document. Through the qualitative testing the feedback was in depth and useful enough to update the system every time.

The final layered structure allows first-time users to get the necessary explanations without being overwhelmed by excessive text, while experienced users can efficiently find the right templates and monitor their progress.

7. Proof of concept

With the validation that the working methodology document is intuitive an user friendly it is also of importance to proof that the output of the methods is useful. Therefor a case study with Chocomel was conducted. As the brand has a big assortment of packaging and is well known by the consumers , an Adapted Design Format Analysis(ADFA) and Inverted Brand Radar analysis(IBR) will be conducted first. These analysis will show the current state of the brand both for implicit and explicit cues. Based on the outcomes, a new packaging concept will be created and evaluated using a Design Semantic Differential (DSD) analysis.

The ADFA created a comprehensive overview of all the features of the entire product portfolio, highlighting strengths and weaknesses of the brands packaging. Mainly in the information sides inconsistencies can be found. From the ADFA the IBR is created, translating the explicit cues found into implicit cues. As a step in between these results are compared to the brand propellor

of Chocomel, which states the brand identity. Here a disconnect can be found. Chocomels identity is more quirky and playful than the packaging seems to evoke. With this information a redesign of the packaging is created implementing more playful features. A DSD survey comprising of multiple parts confirmed the disconnect and also confirmed that the redesign is perceived as more quirky and fun. Fitting more within the brand identity of Chocomel.

The proof of concept provided an initial validation of the methodology and the output.

8. Conclusion

Brand identity can be translated to create cohesive packaging lines with a multilayer, interactive, design methodology. By developing a methodology that contains multiple methods each focusing on a part of the translation it is possible to analyses a brand on it physical cohesiveness as well as its overall perception.

Through two methods, the Design Semantic Differential and the Adapted Brand Radar, the methodology encourages designers to actively engage with marketing teams and consumer, ensuring that both the explicit and implicit cues are accurately identified.

An extensive Adapted Design Format Analysis focusing on the cohesiveness of the explicit cues, and distinguishing between 2D, 2,5D and 3D features ensures that no design element is overlooked. Thereby the physical cohesiveness can be expanded throughout the product line and for the design of new products. A further analysis conducted with the Inverted Brand Radar can expose initial differentiation between the explicit cues and the perceived implicit cues.

Not only were the outputs considered but also the usability, as if the methodology will not be used it can also not aid the designer. Through user tests it is ensured that the final product is user friendly and intuitive.

In conclusion, this paper provides a practical solution for industry application, empowering design teams to create cohesive packaging. The adaptability and detailed documentation ensure that the methodology fits with the company's needs and supports brand consistency.

8. Discussion and Recommendations

Research into design methodologies indicates that while they have significant potential, they often fail to be adopted in corporate environments. Limited research has been conducted on why these methods fail, with the main sources offering only educated guesses. More research and insights from businesses on limiting factors could help to create an even better and seamless implementation of the design methodology.

The iterative development process, involving rapid prototyping and user testing, provided valuable insights that were crucial in refining the methodology. However, since the user tests were limited to portions of the methodology to keep the test time reasonable, not everything was tested. Feedback from the tests was implemented across all aspects of the document, but this setup might have left some parts less developed than others.

Subsequently the choice was made to focus on a working prototype that after this project could be immediately implemented by FrieslandCampina. As a result, some usability choices were limited, and not all advanced functions could be implemented. It is important to be aware of these limitation within the methodology document.

For further testing of the methodology it is important to expand the scope to include a more diverse range of products and brands within FrieslandCampina providing deeper insights into the methodology's versatility. This could involve testing the methodology with both established and emerging brands to understand how it performs across different stages of brand development. Also, testing with bigger teams could help to get more insights in those aspects of the model and the communication between the teams.

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