



Design for Brand Identity: A Case of Industrial Design Studio Process by Two Projects

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Abstract

For industrial design studies, understanding the target market and the company/brand for which the design is being implemented is crucial for the success of new products, given the product design ideas of both design-candidate students and professional designers. This study focuses on the relationship between design, designer, and brand identity. It aims to uncover the relationship between designers' research, understanding, and interpretation of the brand, focusing on form and function, and the final product decisions. As part of the research, 26 prospective design students pursuing industrial design education were given two projects regarding product design and brand identity to observe their approach and design decisions. At the beginning of the process, the lecturers gave students the project topics, goals, and expectations for success. The students' design stages were evaluated as group work for the first project and individually for the second. A comparative analysis was conducted of how they reflected the keywords associated with the brand identity in their final product designs. The identical brands designed in different contexts in these projects, which featured physically and spatially, provided a source of information for students studying brand identity, thus preparing them for the expectations they will encounter in professional practice. The study results were interpreted as a guide for designers who continue professional practice in different sectors or adopt similar brand lines by revealing how the adjectives defined by the designers are reflected in the design language, form and function-oriented design decisions of the products.

1. INTRODUCTION

The design of products can be analyzed in several dimensions, such as functionality, aesthetics, meaning, and message transformation, as well as emotional, cultural, social, and meta-aspects [1, 2]. Industrial design not only defines a product's physical form and function but also shapes its meaning, the emotional connection established with the user, and the brand's strategic direction. Therefore, a product's mere aesthetic or functional success is insufficient; it is also expected to reflect the brand's values, identity, and strategic stance [3-5]. Therefore, product design should be guided not only by aesthetic and technical decisions but also by the concern for accurately reflecting the brand identity to which the designed product belongs. Especially in professional design practice, the designer's accurate analysis and internalization of brand identity during the product development is a critical factor in product success.

The impact of brand identity on the design process is significant not only at the product level but also at the professional practice level. When designers establish long-term collaborations with specific brands, they develop a design language specific to them over time [6]. This language ensures that the products are visually and experientially compatible. In professional design practices, the continuity of such a design language directly contributes to the sustainability of the brand identity. It also creates a sense of familiarity for the user across different product categories. How the designer integrates these identity codes into their design determines the product's consistency with the brand and user perception. The

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design's alignment with the brand identity helps users perceive the product as an object and a brand experience [7, 8]. This integrity supports the brand's position in the market and facilitates user recognition and identification with the brand.

In today's rapidly changing world, the professional practice of designers necessitates dynamic research and interpretation for new design outcomes. During design stages, the relationship between the product, designer and the company/brand crucially affects the end-product designs. At the center of this process, the designer becomes both a creative solution provider and the carrier and transformer of the brand's identity. Designers either create a design language by considering the brand's history, current position, and future vision, or reinterpret it while maintaining the existing language. In this process, the product becomes an aesthetic, functional tool, and visual and experiential representation depending on the brand identity [9, 10]. Therefore, in a designer's professional life, understanding the brand's identity and correctly interpreting and integrating it into the design process is a fundamental prerequisite for creating successful and holistic products. Designers are responsible for producing creative solutions while interpreting the values of the companies/organizations they represent, the target audience, and the brand culture. In this context, a direct connection is established between a product's style-oriented design language and the brand's identity. The brand's values, culture, history, vision, and the relationship it seeks to establish with the user directly influence design decisions [11, 12]. When a designer evaluates a product solely based on formal or technological solutions without understanding this set of values, the emotional and semantic connection that must be established between the brand and the user may be lacking. This context is particularly evident in globally recognized brands, as the brand may represent a lifestyle, a value system, or a sense of belonging for the user. When a product's form language, material selection, color palette, or user interaction holistically reflects the brand's identity, the user's relationship with the brand is strengthened [13, 14]. For instance, an electronic device with simple lines and an intuitive user interface gains value for its functionality and embodies the brand's core principles, such as simplicity, accessibility, or advanced technology [15, 16].

This study emphasizes the growing importance of brand identity in professional product design. The study aims to explore the theoretical and practical connections between the role of product design and designers and the brand identity. This study will examine the design processes of third-grade prospective designers pursuing an undergraduate degree in industrial design at a university. Two projects are focused on revealing the designers' approaches to physical and spatial products, individually and in groups. The primary purpose is to understand their definitions concerning brand identity, investigate their development in the design process and evaluate their final designs and design decisions accordingly. The students' definitions for the compatibility and connection of product designs with brand identity, and how these adjectives are reflected in the products, are also discussed. In this context, the research questions of the study are explored as follows:

- At what points of the design process do designers establish the relationship between a brand's identity and product?
- What keywords do designers uncover regarding the brand and its identity in professional practice?
- How do the keywords that designers define reflect on the designer's aesthetic interpretation and product design language?

These questions aim to be answered according to the results obtained by two projects. While addressing these research questions, the theoretical framework focuses on examining the experiences of designers who create brand-oriented designs through the lens of students who take the first steps of the process. The design elements they focus on during this process and their evaluations of the products they create concerning the brand are central to this study. Although the link between brand identity and product design is frequently acknowledged in the literature, this relationship tends to be reduced solely to formal or superficial aesthetic features. Overemphasis on visual integrity or material selection risks ignoring brand identity's deeper cultural, symbolic, and experiential layers. A more robust theoretical framework that integrates design theory, semiotics, and brand management approaches is needed to move beyond a

purely descriptive framework for brand-oriented design decisions. Thus, in the scope of this research, several dimensions of product design studies and the role of designers in professional practice concerning the companies and brands of design are examined in detail.

2. LITERATURE REVIEW

This literature review examines research on the three-way relationship between design practice, brand identity and designer perception. Existing research highlights the importance of designers acting as bridges between market, company, and brand identities, which affect the design of new products.

2.1 Dimensions of Product Design Practice

Products serve customers/users with both formal and functional properties. Once basic needs such as usability, reliability, and comfort are met, new emphases emerge, such as the product's aesthetics and emotional appeal [17]. Lidwell applied Maslow's hierarchy of needs triangle to product designs to emphasize the importance of aesthetics in products. Accordingly, for product designs to be successful, they must first meet basic needs. The highest-level needs of mastery and creativity transform designs into something different, innovative, and satisfying. At this stage, users' aesthetic judgments about the product play a significant role [18]. A product's positive formal characteristics not only indicate that it looks good but also indicate that it speaks to the user functionally. Finding a clear answer to the visual quest provides the designer with the information they need throughout the process [3]. Bloch correlates consumer reactions with the formal characteristics of products. A well-designed product draws consumers to itself, speaks to them, and adds value by enhancing its quality. To better analyze design, the study developed a conceptual model of product form and consumers' psychological and behavioral responses [19]. Norman argued that designers should create products with immediate visual and tactile appeal. In his triple design model, including visceral, behavioral and reflective behaviors, he emphasized the aesthetic and functional values of the product. Visual properties lead to usability and positive feelings, increasing users' overall experience regarding a product [7]. Many studies claimed that reactions to products are emotional, thus emphasizing that emotions are important in product analysis [4, 20].

Design features include messages from designers or companies that would be meaningful for the users of a product [9, 21]. In the model of Monö, product design communication focuses on transmitting a message from the product designer to the intended recipient through a channel. In this model, the designer conveys messages to the user through the product as they design it. Crilly developed this model in their studies. The encounter between the producer and the consumer begins with the user perceiving the product through their senses. While functionality is presented as an essential feature for the product, visual elements play a significant role in comparing similar products in the marketplace and determining their preference. The consumption context relates to the product's geometry, size, texture, material, color, graphics, details, and the channel through which users perceive these elements through sight, touch, taste, smell, and hearing, as well as the consumer's cognitive, emotional, and behavioral responses [3].

In addition to visual characteristics, the consumer's personality, cultural, and social influences influence consumer decisions [22-25]. It is asserted that consumers buy products due to their symbolic meanings, including their cultural status and ideology emerging from their physical properties and style [26]. Hekkert also claimed that users' cultural and social values, prior knowledge, and expectations play an important role in the aesthetic experience of products [1]. Perspectives from social sciences, cultural context, and marketing disciplines have made concepts such as the social importance of products, consumer behavior, and user research, as well as terminologies such as the commercial dimension of design, target market, and brand identity, vital issues for industrial design studies [2].

2.2 Design's Role for Brand Identity

The design of the products plays a critical role in giving information about brand identity. In a competitive market where functional demands are similarly satisfied, products' aesthetic features and emotional attributes play a significant role in style and experience [27, 28]. The triple design model of Norman is compatible with forming brand identity where users are eager to express or find themselves via their products, giving them an emotional meaning [7, 29, 30]. It is stated that brands must have deep-rooted identities to succeed in today's competitive world, emphasizing the importance of a brand's visual and characteristic elements. Using sincerity, excitement, competence, sophistication, and ruggedness dimensions proposed by Aaker in 1997, the study stated that the desired brand personality perception can be successfully created in consumers based on the design elements used in creating a visual brand identity [12, 30].

Brand identity is strongly linked to product shape. A product's geometric form is crucial in conveying a holistic design identity to end users. Maintaining brand identity across shape changes provides a means of systematizing design principles, as in the case of a unique product family developed under a specific design concept [5]. Visual properties convey messages about the product, its designer and the values of the related company or the brand. Aesthetic elements become part of the brand's tangible entity, creating a difference from the rivals, giving meaning to products, and consumer loyalty [11]. Using aesthetics, users can understand a product and interact with its interface [31]. Product designs are critical to the value of the brands, as they try to position themselves in an identifiable place. Thus, they try to use formal elements besides functional ones as strategic determinants for the brand's success to structure a consistent design language [32]. It is focused on the terminology of design language that emphasizes the unity and repetition of similar visual elements, which can create a relation between users' minds and the products of related brands [6]. When creating products, designers aim to establish a design code as the DNA of products to ensure alignment with the brand identity, which gives its key characteristics, values and individuality [11]. This DNA includes brand-specific guidelines regarding various design decisions for several product categories, such as the use of formal and functional as graphical features, lines, shapes, scales, proportions, surface applications, textures, patterns, colors, material choices, details, interaction and usage steps [8, 13, 33]. That kind of visual elements and signatures of brands through the products make users recognize it even if they do not see the brand's logo [34]. Thus, the products behave as physical aspects and touch points of brands, as in the examples of Apple's minimalistic approaches, Dyson's technological innovations and Alessi's emotional touch on designs [35]. It is also emphasized that the concept of semantic transformation, whereby brand values are defined by consumers through some keywords and adjectives (e.g., "fun", "futuristic", "soft") and translated into product properties such as form, size, color, materials, and interface [6]. To illustrate, Apple's minimalist design language visually depicts the features of simplicity, novelty, and quality inherent in the brand identity [15]. Raposo proposed a design-driven branding method for designing a brand's visual identity. This model aims to improve the brand's visual language by integrating the brand-world-market-people relationship with dynamic design processes such as co-design, testing, and evaluation [16].

A systematic literature review was conducted on brand visual identity and consumer attitudes. This review revealed that academics and practitioners have researched brand visual identity in the context of brand communication and corporate governance. Based on 559 articles published between 2004 and 2024 in the Web of Sciences, ProQuest, Scopus, and Elsevier databases, it was observed that consumers' brand visual identity is based on key elements such as the brand logo, color, name, typography, and font. These visual identity elements influence consumers' perceived brand quality, brand personality, brand satisfaction, loyalty, and liking, as well as their purchase intentions and social perceptions [36]. Another study also focused on brand identity and brand image concepts. The study defined brand identity as the strategic decisions, values, personality traits, visual elements (such as logos and typography), and messages that create emotional connections and differentiate a company from its competitors, which it

aims to create and maintain in the minds of consumers. The brand image was related to reputation, quality, reliability, customer service, and social responsibility efforts [37].

2.3 Designers' Perception of Brand Strategy in a Professional Context

Designers are vital in researching, interpreting, and developing brand identity through product designs. They create a distinguished and consistent design language for the brand that needs to be understood, internalized and recognized by its consumers for a long time. In the modern world, designers' responsibility for developing brand identity is increasing, aligning with a company's values, priorities, and target customers [38]. Brand strategy directly influences new designs. A company's identity determines its product line and design decisions.

Furthermore, by prioritizing aesthetics and product sustainability, a company can utilize more expensive, high-quality materials and advanced technology in new products. In professional practice, designers maintain the company's strategy and brand identity while creating new products. The current market's demand also plays an important role in the designer's ideas and new product selection. Thus, designers need to make design decisions that meet both consumer/market needs and brand expectations, keeping their core values [10].

Moreover, the cultural economy approach interprets the value of brands and designer products through market prices and within the context of cultural and social capital [39,40]. This perspective emphasizes that designers shape user perception by reflecting the brand's cultural values in their products. In this context, designers explore issues related to brand goals, cultural and social sensitivity, and user expectancies to design consistent and engaging brand experiences. According to a study, in professional design practice, designers should support the reliability and recognition of a brand with their design decisions. Designers' responsibilities become higher, especially for brands whose physical products are most attractive, such as consumer goods, electronics and automobiles [11]. A study was conducted on brand identity and physical product design using the example of various automobile frontal shape designs. The results showed that inheritance for a brand can be provided by imagery transfer and form aesthetics of products [14]. For this purpose, designers use consistent design elements including line, shape, size, color, typography, materiality and utilization choices.

The consistency in product designs may result in some difficulties, as well. Sometimes brands face problems entering a new market or countering new users due to their strict design language and resistance to innovations [34]. As market needs change depending on the cultural requirements, global brands need to adapt and localize their design elements to maintain identity consistency [41]. In this situation, the designers alter the key design values to protect the brand's uniqueness, so the designers play a critical role. Designers solve this dilemma by using innovative but compatible elements that improve the visual language without giving up the values that preserve the continuity of the brand [9]. As proposed in the literature, brands can identify and position themselves in the market by adopting design-oriented innovation, which causes a critical alteration in the meaning of products [15].

Within the framework of the design practice, brand identity and designer perception triangle developed for the study, a dynamic network of relationships emerged that emphasized not only the physical and functional characteristics of products but also their symbolic and cultural values. While designers encode brand values into products, users interpret these codes according to their cultural and social backgrounds. Thus, the product becomes both a reflection of the brand's identity and a determinant of the user experience. In this way, this study contributes to the literature not only by documenting student projects but also by critically examining the tension between the superficial formal reflections of brand identity and its deeper symbolic layers. While the students' projects demonstrate their ability to capture visible aesthetic codes, they also reveal the challenges of integrating brand identity's cultural, emotional, and

experiential dimensions into design decisions. This analytical approach positions the study as part of broader discussions about the semiotic dimension of design and how institutional dynamics shape design practices.

3. METHODOLOGY

This section explains the study participants, design procedure, and study tools, consisting of two studio projects.

3.1 Participants of Design Studio

This study included students who continue their bachelor's degree education in the Industrial Design department with three years of designing experience. Twenty-six designer-candidate students were analyzed through ID302 Product Design IV, a compulsory and practice-oriented course. In this design studio lecture, the students were expected to carry out, fulfil, and present all the requirements of a design project similar to a simulation of product design processes conducted in professional practice. 17 female and 9 male students with a mean age of 21 participated in the study. Students worked either in groups or individually.

3.2 Study Procedure

Designer-candidates were given two projects throughout the semester, which continued for four months. They were given two project briefs that focus on different design expectations. For 3rd-grade students, researching the brand and having insight about the companies was evaluated as essential for students to be prepared for their professional practice. The study period started with a lecture where the instructors gave information about the brand identity and then covered the process from the students' research to the final product designs.

Thus, two projects were related to the brand identity and its reflections on new product designs developed by the students. Each student was asked to research the given brand to understand the brand's identity. The variety within brands was considered vital to understand different purposes, design patterns, companies' aesthetic approaches, production decisions, consumption properties, and user demands. It was intentionally chosen that the brands should serve in totally different products and services from their existing product line. The brands chosen were Tesla, Ikea, Sketchers, Ford, Bang & Olufsen, Braun, Samsung, Victorinox, and Columbia. The most critical part is to collect designers' keywords about the brands and their impacts on the final design decisions.

The success of the product design and the designers was calculated according to an evaluation criterion including a research sheet, a mood board, an inspiration board, a benchmark, a perspective, technical drawings, problem definition and design solution, usage scenario, material and details, and scaled models of the products.

3.3 Study Tools

Study tools consist of two briefs of the projects below, as shown briefly in Figure 1. Two projects were selected for in-depth analysis due to their distinct design focuses and the approaches expected of designers: one focused on physical product design, the other on spatial design. The goal was to uncover how designers interpreted the same brand identities across product designs with varying outcomes at different scales of design implementation. By comparing individual and group-based outcomes, the study aimed to capture both personal interpretations and collective negotiations of brand values, thereby providing richer insights into the role of brand identity in shaping design decisions.

First Project:

This project required a design regarding brand identity and product family. Within the first project's scope, focusing on brand identity, students were expected to design new products that would carry the same design DNA of the defined brands. When designing the requested product family, students needed to consider certain aspects. First, students should do research regarding "brand" terminology. The chosen products of this brand should have problems related to their aesthetic value, function, usability, etc. Second, the designers should evaluate the related products with design solutions of this brand as if they were this brand's designers, according to these problems. The product family should have a consistent design language, including unity of visual elements according to users' needs. There was no restriction on the materials.

This project was conducted in groups of three students (the last group included two), determined by drawing lots. Each group was assigned a brand chosen by drawing lots from a pool of brands established by the course instructors. Each group is expected to design an electric kitchen appliance family with three products not currently in the brand's product range. The product family need to include a cooker (toaster, grill, deep fryer, etc.), a beverage maker (coffee maker, tea maker, kettle, etc.), and a chopper-mixer (blender, mixer, chopper, etc.).

In total, nine groups designed 26 products, including 9 product families. This project focused on a product family that can be used physically in kitchens. Two lecturers of the design studio evaluated it at the end of the process.

Second Project:

In this project, each student is asked to design a first-class passenger module for an aircraft. Within this project's scope, focusing on brand identity, students were expected to design a living and travel area that would carry the same design identity as the previously defined brands. When designing the requested product, students needed to consider certain aspects. First, students should keep using their knowledge and research regarding their existing brands. The products of this brand should have problems related to their aesthetic value, function, usability, etc. Second, the passenger module should have a consistent design language, including unity of visual elements according to users' needs. There was no restriction on the materials.

This project was individual, requiring each student to continue to design on their existing brands. The single passenger first class module/unit expected to be designed must have many functional features.

- Sitting and locating in the aircraft: First, each unit must be positioned side by side and back-to-back in a section of the aircraft.
- Relaxing and sleeping: Each unit must comfortably meet the needs of people travelling for long periods, including sleeping.
- Eating, working, watching TV and having a business meeting: The passenger must be able to eat and work with their laptop in this unit.
- Storing the bags and accessories: The areas where the cabin baggage will be placed must be designed.

Different from the first project, in the second, 26 individual products were designed at the end of the process. Moreover, this project focused on a spatial application of product design. It was evaluated by four lecturers who participated as guest jury members from three different universities, as illustrated in Figure 1.

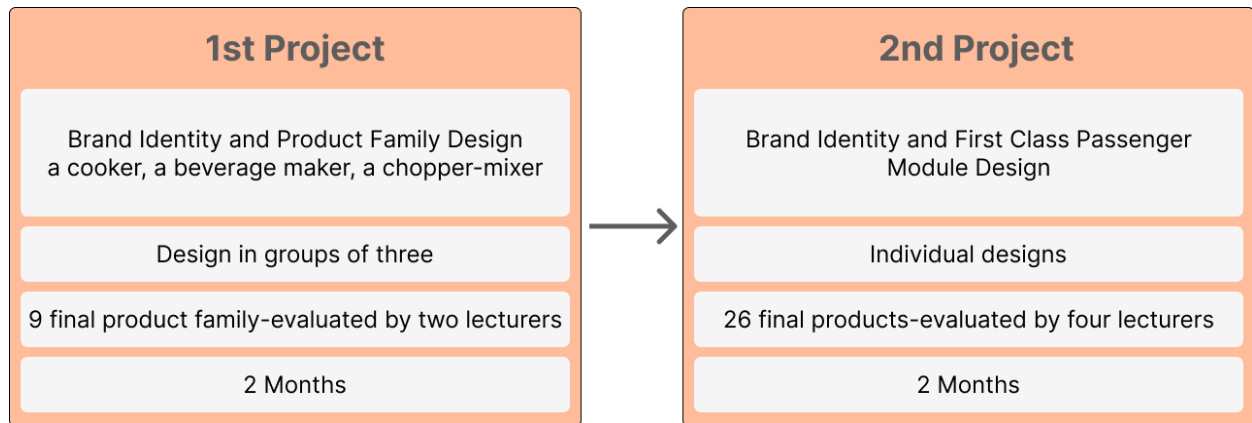


Figure 1. Flow of Design Process by Two Projects

4. ANALYSIS

This section includes the outputs of two projects and a thematic synthesis of two product design decisions. How students evaluate brands and apply design decisions accordingly are explained and compared through the product outputs of the first and second projects.

4.1 Designs for the First Project

As part of the first project, designers developed a product family. Each of the three designs included a cooker, beverage maker and chopper-mixer. The designers decided on the product details for the designs developed for the three main functions within the framework of the brand. For instance, one group designed a hand mixer in the mixer category, while another chose a tabletop mixer.

Each group began their projects by analyzing their brands. The designers conducted detailed research analyzing the brand's historical development, purposes and target users. Next, they researched and interpreted the brands' existing products, product line and product families. The brand's design style was analyzed by examining the shapes, lines, textures, and surfaces that create the main form and style. Additionally, each group of designers created the brand's moodboards as given in Figure 2.

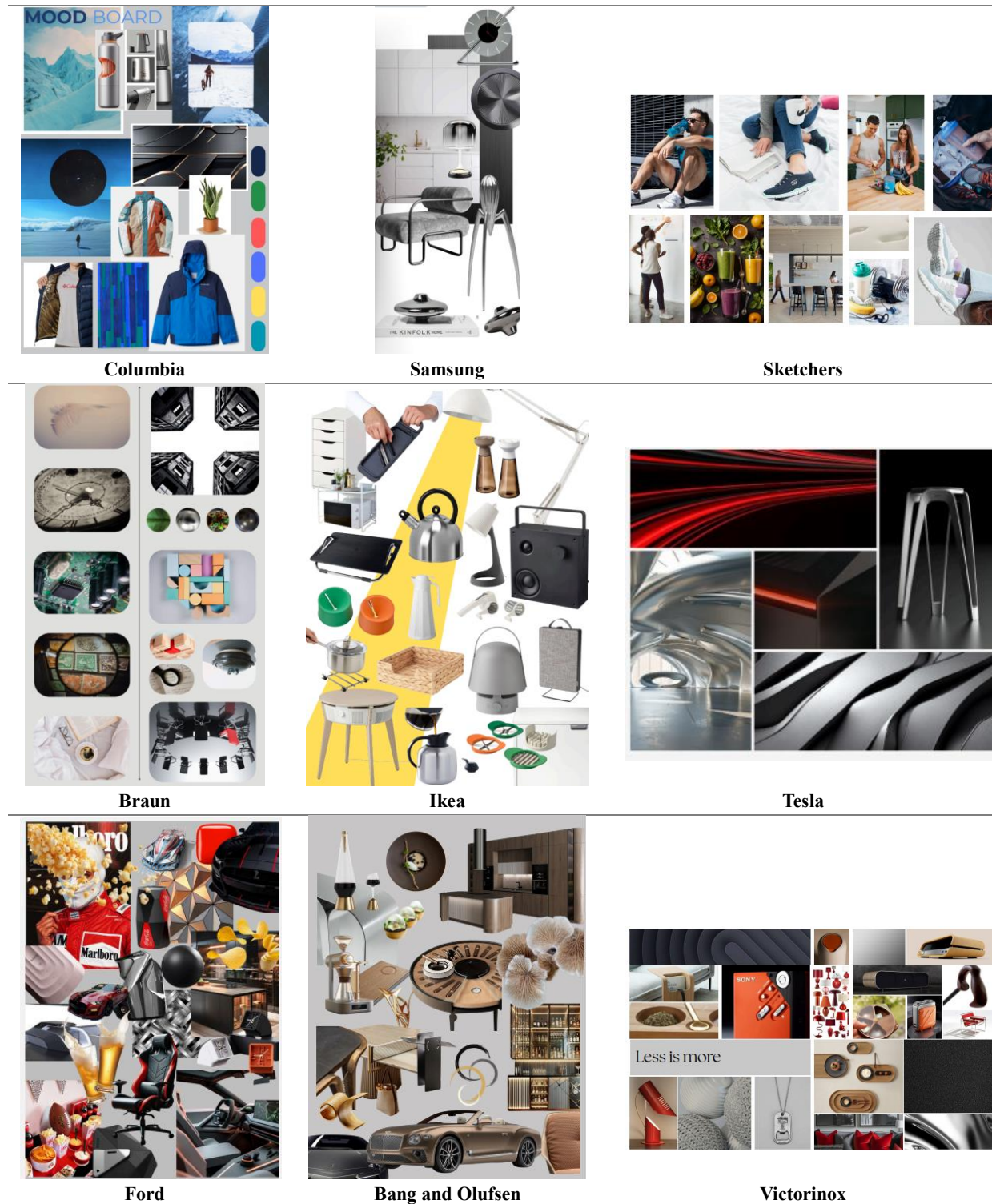


Figure 2. Moodboard Designs for Nine Brands

Moodboards, inspiration boards, and benchmarking steps gave students more profound insight into the brand, its target users, and the primary purposes of its products. While conducting brand analysis with visual presentations, the designers determined five keywords that describe the brand and its products. They aimed to develop a product family suitable for the brand by reflecting the analysis on the forms within the framework of the keywords. The design process began with hand sketches. They worked to develop their product designs using hand sketches and the three-dimensional models they developed following the regular critiques in class. The final product families they designed as their first project are demonstrated in Figure 3.








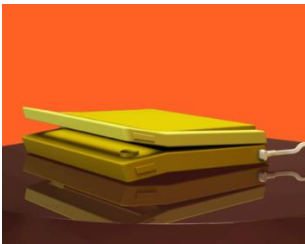
Brand	Cooker	Beverage Maker	Chopper-Mixer
Columbia			
Samsung			
Sketchers			
Braun			
Ikea			

Figure 3. Final Kitchen Product Family Designs of Nine Groups Based on Their Brands

Brand	Cooker	Beverage Maker	Chopper-Mixer
Tesla			
Ford			
Bang & Olufsen	Not Designed		
Victorinox			

Figure 3. (continued) Final Kitchen Product Family Designs of Nine Groups Based on Their Brands

Columbia: The group, which designed a product family for the Columbia brand, chose smoothie blenders, steam cookers and hand mixers. Brand keywords were defined as simple and functional, durable, practical, dynamic, rhythmic, and open to exploration and adventure. The designers aimed to reflect the five keywords they identified, both aesthetically and in line with the brand's design language, with their hand drawings, which are exemplified in Figure 4. While developing the product family, the designers' aimed to design the three products that comprise the family to be consistent and part of the Columbia brand for each product. The products for Columbia, an outdoor and sports brand, were

designed with sharper lines and vibrant colors. While there was a quest for a dynamic form, they also strived to achieve simple forms with sharp, defined lines. Combining different materials and the selected textures comprising the brand line strengthened the designs.

Samsung: Designers in the second group designed an air fryer, coffee machine, and blender for Samsung. The five keywords they chose to reflect the design identity of the Samsung brand were innovator, simple, premium, technological and functional. Samsung's infinity display technology has strongly inspired designers. They created their forms using simple and minimalist lines and surfaces. At the same time, they aimed to emphasize Samsung lines in their forms by adding dynamic surface structures that reflect today's production technology to these simple forms. They used similar curves in the three products they designed for the product family and aimed to create a style for the brand by prioritizing function and technology. They referred to Samsung's technological products using black and grey colors in their designs.

Sketchers: The Sketcher group designed an air fryer, a coffee maker and a smoothie blender. Their five keywords were ease of use, compatibility, dynamism, comfort, and health, which could describe the design language of the Sketchers brand. The brand's fluid lines inspired the designers mostly. The flowing lines in the Sketchers brand's overall identity reference comfort and foot health. Applying these fluid and dynamic lines to their product forms resulted in sculptural designs. While applying these lines to kitchen appliances, designers also prioritized functional features. Figure 4 shows the hand-drawing examples of the Sketchers group.



Figure 4. Hand Sketch Examples: The Upper One-Columbia; the Lower One-Sketchers

Shoe lines inspired the hand-drawing process of a kitchen appliance. Each line in the kitchen appliance was designed to reference a design function. Additionally, designers who designed for the Sketchers brand aimed to underline the sporty atmosphere of the brand by using white and blue colors as the final touch on their products.

Braun: The Braun group designed the sous vide, espresso machine and hand mixer as a product family. This group of designers identified precision and quality, minimalist and functional, reliable and innovative, smart and intuitive, and sustainable and durable as five keywords. Designers developed their forms using straight and simple lines to emphasize Braun's minimalist brand identity. To create orderly and defined designs, they ensured that each line served as a reference point. They approached their products holistically, creating them with well-defined lines. Each component and surface design element of the product were harmoniously integrated into a whole. Their minimalist and straightforward approach ensured the designs could be produced with today's technology, ensuring a modern feel. Emphasis was placed on product details and finishes to ensure the design of the product family was aligned with Braun's brand identity.

IKEA: The IKEA group designed the toaster, espresso machine and blender as a product family. Their five keywords were minimalist, affordable, sustainable, innovative and user-centric. The first thing designers who developed products for the IKEA brand paid attention to is that IKEA has modular products, which is its most important feature. Designers' focus on its modular products was a key feature of IKEA. Second, they ensured that the designs were as simple as possible regarding materials and form, while remaining as minimalist as possible. Each modular component was carefully designed to be functional and stylish. In order to achieve this simplicity, the designers aimed to obtain easy-to-use products based on basic geometric forms. In addition, using different vibrant colors in the products references IKEA's fun and straightforward design.

All groups incorporated 3D model making into their industrial design processes as part of the project requirements. The IKEA group contributed to their processes by revising each part of their modular designs by 3D printing them multiple times to check the problematic design points and develop them further, as demonstrated in Figure 5.



Figure 5. 3D Print Model Examples of IKEA Group

Tesla: The Tesla group designed a raclette machine, a moka pot, and a coffee grinder as part of its product family. Their five keywords were smart, futuristic, minimalist, aerodynamic and innovative. It was considered vital for the Tesla brand to target early adopter personas. The brand's futuristic products were emphasized as a strength for the brand's identity and served as a significant source of inspiration for the designers. The group members who designed for Tesla paid close attention to these technological

improvements of the brand, which were in line with users' expectations. Curved surfaces and unusual forms that could be produced with high technology significantly shaped the designs. Five keywords identified by the group members were found to direct the designs toward sculptural structures. The designers tried to support the futuristic perception by finishing the products only in grey while creating as dynamic forms as possible.

Ford: Designers in the Ford group designed a popcorn machine, a beer brewer, and a veggie processor. The five keywords that the designers chose to reflect the design identity of the Ford brand were durability, performance, reliability, American heritage, and innovation. Because surfaces reflect the design identity of Ford, being an automobile manufacturer, designers in this group emphasized surface movement in their products using vibrant and bright colors. They gravitated toward more crude and ostentatious forms, drawing inspiration from American culture.

Bang & Olufsen: Since this group consisted of two designers, there were two product designs, a soda maker and an ice maker, in the product family. Five keywords of designers were identified as premium, high quality, luxury, sculptural, and ergonomic. Being a premium brand, Bang & Olufsen had inspired designers with its sculptural forms reminiscent of works of art. Another key focus for the designers was the high-quality of existing brand products, joining various materials. In addition, the efficient functional use of the products was also considered while searching for a sculptural form.

Victorinox: The last group designed a product family for the Victorinox brand. These designs were a toaster, a coffee maker and a chopper, and their keywords were functionality, durability, flawlessness, timelessness, and stylishness. Designers were mostly inspired by the brand's identity, serving multifunctional and timeless products. A search for the product forms was made with simple and timeless lines. The red color that depicts the brand was frequently used in the details of the designs.

After completing this project, the second project's outputs were examined in a diverse context, where the brand value was questioned in a more spatial-focused product form.

4.2 Designs for the Second Project

Each student designed a first-class cabin using the same brands as part of the second project. The brands were kept the same for each student, except for Sketchers. The Sketchers group asked for a different brand, which was decided as Razer at the last step. The final designs developed by the students individually are given in Figure 6.










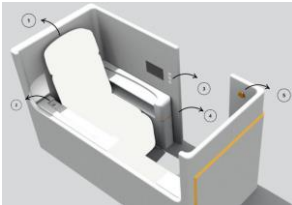

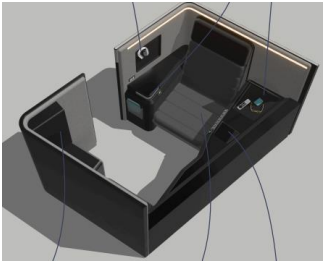

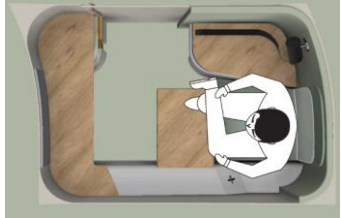

Brand	Designer1	Designer 2	Designer 3
Columbia			
Samsung			
Razer			
Braun			
Ikea			

Figure 6. Final First-Class Cabin Designs of Individual Designers Based on Their Brands

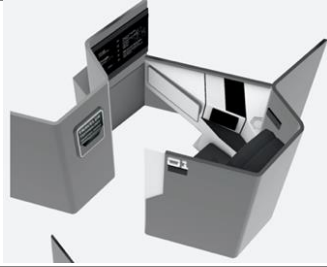








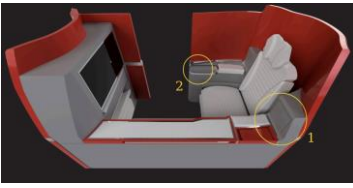
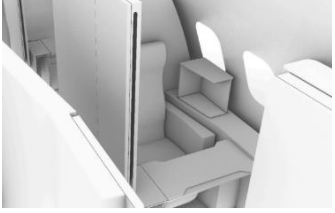
Brand	Designer1	Designer 2	Designer 3
Tesla			
Ford			
Bang & Olufsen			
Victorinox			

Figure 6. (continued) Final First-Class Cabin Designs of Individual Designers Based on Their Brands

Columbia: The designers used hard and sharp lines in the second project, as in the kitchen appliances. They chose to use tones of blue and green in the interior so as not to disturb the user. Due to air travel safety standards and the cabin's functionality, they tried to design ideal units by distorting the harsh lines of the brand identity. Additionally, the units they designed in a segmented structure, with metal joining details, ensured that the sporty feel of the brand identity was preserved.

Samsung: Although the designers worked independently throughout this project, they each gravitated toward curved lines and scalloped elements to keep Samsung's brand identity. They shaped their cabinets with continuous lines and defined geometric shapes. Drawing inspiration primarily from Samsung's latest mobile phones, they sought to combine both technological and luxurious perceptions. Possessing a futuristic approach, the designers emphasized the sense of luxury with metal details, metal shades throughout the cabinets.

Razer: The design group developing products for Sketchers asked to change their brand and chose Razer as a new brand for their second project. Each designer worked independently to design a cabinet for Razer. However, they were not given additional time for research and analysis on the new brand, which increased the time pressure for detailed brand research to catch the remaining designers. In their independent designs, they did not deviate from one another. All designers used the dominant black and green LED lighting elements of the Razer brand identity. While each designer chose different keywords, the following were the most common: performance, power, aggressive, customizable and futuristic. Due to the dominant character of the brand identity, the first-class cabin designed by each designer was somewhat reminiscent of gamers' rooms.

Braun: The individual designers of Braun's first-class cabin maintained the brand's style, which was established in their first project. They brought the style of their first products to their second designs. They shaped their cabinets by blending the same minimalist design with ornate details. They finalized their cabinets with a smaller variety in colors and textures, prioritizing the function. While reflecting the Braun style in space, they created their units with simple and defined lines. While all three designers generally exhibited a similar approach, they differed in the space's layout.

IKEA: Unlike others, the IKEA group had a unique experience designing a first-class cabin for the furniture brand. While they could easily incorporate IKEA's modular structure into kitchen appliances, they could not do the same functionally due to airline safety protocols. Therefore, they aimed to design functional, easy-to-use units with simpler lines. The diversity of IKEA's extensive product range allowed each designer to differentiate their designs. This situation resulted in three distinct cabinet design projects. Designers either highlighted the colorful and playful aspects of IKEA's brand identity or opted for completely minimalist lines. The designers did not differ in color use. Generally, they complemented their designs with simple cream and white tones, aiming to create spacious interiors.

Tesla: Although the designers worked independently, the three resulting cabins shared similar characteristics. The distinctive, sharp, and futuristic lines of Tesla inspired the final designs. While Tesla's more curvy lines were prominent in the first project, the straighter and sharper lines were highly used in the first-class cabins. Tesla's futuristic brand identity was also functionally reflected in the cabin designs. The designs used touchscreens, sensor-controlled doors, and cabinet doors as technological accents. As a final touch, emphasis was placed on grey and black colors.

Ford: While Ford's designers were inspired mainly by the surfaces of cars in the first project as a group, they individually started this project by taking inspiration from the interior lines of existing products and car seats: functional configurations and buttons on the dashboard, in particular, guided cabin designs. Ford's fluid lines and comfort-focused units were reflected in the cabin designs.

Bang & Olufsen: The designers started their project to keep the premium perception, which was the central element of the brand identity. The key focuses for designers were the high-quality materials and elegantly crafted details that define the luxury brand's image. They incorporated wood and metal into their cabin designs. Functionally, the designs were sleeker and larger than other brands' products.

Victorinox: As in the first one, the designers prioritized multifunctionality and timeless lines in this project. Each designer interpreted the brand identity differently, seeking inspiration from existing product lines. They referenced the brand identity by focusing on the functionality of the cabin's units.

4.3 Thematic Synthesis of Two Design Projects

This section presents a thematic synthesis of how students transformed brand identity into final design outcomes through two projects they designed in groups and individually.

Table 1. Thematic Synthesis of Brand Identity and Product Design Decisions by Two Projects

Brand	Brand Focus (by designers)	Project	Design Decisions	Designer Purposes
Columbia	Simple/functional, durable, practical, dynamic/rhythmic, adventurous	Kitchen Product Family	Sharp and dynamic lines, high use of vibrant colors, material and textural contrasts	Group of designers conveyed a sporty and dynamic brand image through lines, surface movements, and colors, but integration of the cultural narrative was limited.
		First-Class Cabin	Segmented units, blue and green tones, sharp lines softened for comfort	Individual designers maintained the brand's sporty character with sharp lines but faced a dilemma between formal consistency and experiential comfort. While the cultural and symbolic brand dimensions were partially integrated, spatial constraints limited the full cultural narrative.
Samsung	Innovative, simple, premium, technological, functional	Kitchen Product Family	Minimalist lines, geometric shapes with technological references, dynamic surfaces, grey and black palette	Designers in a group reflected the brand's technological identity through a minimalist visual language. Formal consistency was achieved through the pursuit of a futuristic aesthetic. However, user interaction and the experiential aspects of the products were more limited in their focus.
		First-Class Cabin	Curved lines, scalloped surface movements, metal accents, futuristic elements	Designers individually focused on surface elements using curved and distinct lines. While the technological emphasis was maintained, experiential consistency was partially reflected through touch and interaction.
Sketchers	Ease of use, compatibility, dynamism, comfort, health	Kitchen Product Family	Flowing, dynamic lines	In the initial design reviewed by the group, the designers used fluid, sculptural lines to balance between aesthetic elements, dynamism, and comfort.
	Performance, power, aggressive, customizable, futuristic	First-Class Cabin	Black and green colors, LED lighting, exaggerated surface elements	From Sketchers to Razer, the cultural context also changed. Designers consistently used LED lighting and color. Surface elements were used extensively to emphasize the strong brand signature of cultural identity regarding gaming aesthetic, while designers' interpretation remained limited.
Braun	Precision/quality, minimalist, functional, intuitive/reliable, sustainable/durable	Kitchen Product Family	Minimalist straight lines, simple forms, geometrically defined surfaces, material precision	Within the group, designers focused on strong visual consistency using straight lines and minimal forms. Surface touches preserved brand codes, but experiential interaction remained more subordinate.
		First-Class Cabin	Simple, defined lines, visually apparent forms, functional layout, subtle textures	While designers focused on a formally consistent design language, they adopted a minimalist approach to aesthetics. Individual designers focused more on user experience, striving to balance between spatial arrangements and functional constraints.
IKEA	Minimalist, affordable, sustainable, innovative, user-centric	Kitchen Product Family	Modular units, geometric forms, playful colors	Designers working within the group emphasized the brand's modularity and playful aspects, striving to balance functional and visual consistency. However, the cultural understanding of the brand's philosophy and deeper symbolic meanings were less explored.
		First-Class Cabin	Minimalist design elements, bright colors as white and cream tones	Designing individually, the designers partially preserved the brand's formal consistency and playful identity. User experience came to the fore, depending on the designers' interpretation. Modular designs adapted for airline safety attracted attention. Cultural meaning was limited by context.

Table 1.(continued) Thematic Synthesis of Brand Identity and Product Design Decisions by Two Projects

Brand	Brand Focus (by designers)	Project	Design Decisions	Designer Purposes
Tesla	Smart, futuristic, minimalist, aerodynamic, innovative	Kitchen Product Family	Curved lines, technological forms, grey finishes	Designers' futuristic focus and innovative form elements in the products were noteworthy within the group's work. The brand's identity was preserved through an emphasis on surface aesthetics. However, cultural interpretation remained limited.
		First-Class Cabin	Futuristic forms, metallic colors	Designers deeply integrated the brand's visionary spirit with the product, utilizing strong visual and futuristic elements to create a culturally integrated experience. Formal consistency was maintained by combining curved and sharp forms. Experiential diversity was also prioritized using technology in the product.
Ford	Durability, performance, reliability, innovation American heritage	Kitchen Product Family	Surface design elements, partially integrated cultural lines	Designer group focused on American heritage in its brand research and used the brand's existing vehicle surfaces as visual references. However, the focus on user experience remained limited.
		First-Class Cabin	Car-inspired interior lines, curves and dynamic lines, comfort-oriented units and interactive dashboard	Working individually, the designers emphasized spatial interaction and experiential coherence in the cabin design. Cultural symbolism was more evident in this product. The brand identity, focused on automotive design, was conveyed through surface design elements in the seating and cabin layout.
Bang & Olufsen	Premium, high-quality, luxury, sculptural, ergonomic	Kitchen Product Family	Sculptural forms, premium materials	Working within the group, designers focused largely on the relationship between aesthetics and materials. They were superficial in reflecting the brand culture on the product and inadequate in achieving functionality.
		First-Class Cabin	Premium materials, especially wood and metal choices, elegant forms, functional units	When designing individual cabins, designers were able to partially embody the brand's cultural story within the spatial experience. High aesthetic pursuits, formal consistency, appropriate material selection, and luxury were prominent features of the designs. User experience remained a secondary concern.
Victorinox	Functional, durable, flawless, timeless, stylish	Kitchen Product Family	Timeless forms with soft and curly transitions, functional modularity	Designers focused on the brand's symbolic and historical significance. Cultural storytelling through product designs was emphasized through timeless and functional design elements.
		First-Class Cabin	Multifunctional details, contrast in design elements with different shapes and colors	In the designers' individual cabin designs, the cultural context of the brand and product was limited to brand awareness. User experience was prioritized. Multifunctionality, along with aesthetic and stylistic consistency, was the goal.

The table shows that, based on the designers' identified brand keywords, product design decisions, and deeper-level design objectives, the designers could reflect the visible elements of brand identity mostly successfully. In both projects, the designers' efforts to maintain the brand-form relationship through their products in a familiar way (familiar to the brand or "familiar" enough to keep them safe) and their focus on formal aesthetic harmony were particularly noteworthy.

A thematic synthesis of the project outcomes revealed the designers' focus when making product design decisions. Five distinct dynamics, listed below, were particularly noteworthy in the designer's objectives:

1. *Individual or collaborative work:* Collaboration in group projects and independent thinking in individual projects influenced their creativity, interpretation of the brand-product connection, and final product decisions.

2. *Kitchen appliances or spatial-based product:* Designers faced significant challenges when designing a product that was not yet in the range of brands they were familiar with. Some brands were more helpful in utilizing the physical product in the first project, while many others found it easier to design the spatial-based product in the second project.
3. *Cultural and symbolic integration:* Designers more readily incorporated the brand's formal values into their work, while using cultural and symbolic meanings to a limited extent in final product design decisions. Users, cultural expectations, and symbolic brand values influenced product designs to a lesser extent.
4. *User experience:* While designers strived to reflect the brand identity in most designs, the impact of the product's usage context varied depending on the project type and the brand. While basic user needs such as efficient, easy, and fast use were prioritized, the use of design elements such as interactive interaction, intelligent systems, and technologically driven screen designs was emphasized.
5. *Time pressure:* Because this was their first time with a product design project for the brand, the designers' primary focus, and therefore their longest time spent, on the first project was on brand research, visual analysis, and product selection. In the first project, they felt significant time pressure during design processes such as sketching, three-dimensional product rendering, prototyping, and detailing. Conversely, in the second project, they had more time for the design process due to their greater familiarity with the brand but could not address the level of detail required for spatial products.

These themes indicated that although students demonstrated proficiency in visualizing brand codes within a given product focus, both individually and in groups, their engagement with the broader cultural and experiential dimensions of brand identity within the given timeframe remained limited.

5. DISCUSSION AND CONCLUSION

This study investigated designers' decisions when designing products based on brand identities. It included the design process of two different design projects to encourage the designers, as third-grade industrial design students, to develop brand-new visions for future brands. Designers started with deep research regarding brand identity and determined it with five keywords. Throughout the transformation journey from words to lines and from lines to objects, all industrial design processes were explored within the projects. This work, which operates in reverse, transforming qualitative data into visual outputs, led to numerous product designs within brand identities. The designers completed their two-stage designs for the brands. In the first project, they designed three kitchen appliances as a product family in groups of three, and in the second, they designed individual first-class cabins for the same brands. Designing products that could reflect the brand identity in the first project proved more challenging than in the second. This situation was because it was easier to incorporate the brand identity into a spatial design consisting of multiple units that form a whole. Representing the brand identity through lines in a single product required more precise decisions and was more challenging. For example, when designing a coffee machine, all brand identity elements must be present in a single product. However, multiple objects can be arranged in a space to reflect the brand from a holistic design perspective. Ultimately, the outcomes of both projects demonstrated designers' ability to convey the brand identities.

The study highlighted the importance of integrating aesthetics, functionality, cultural meaning, and experiential quality in product design for brands through the decisions made by designers. Designers act as intermediaries between brand strategy and designed products. Their role is to shape a brand's values and address potential conflicts between innovation, market expectations, and brand strategies. Thus, the design is not only a reflection of brand identity but also a discipline where commercial imperatives, cultural narratives, and user expectations intersect [15, 42]. This study sought to highlight the positioning

of designers at the intersection of creativity and institutional constraints. Such a critical approach can enable a more holistic evaluation of product design practices by revealing both the designer's creative autonomy and the structural limitations of brand strategies.

Maintaining brand identity across form changes provides a means of systematizing design principles, as in the case of a unique product family developed under a specific design concept [5]. Designers had used many elements to bring brand identities to their products, including the brand's form, surface textures, colors, and materials. These elements essentially attempted to visually convey the brand's identity and aesthetics simultaneously. Visual aesthetics was important for a brand that created a design language with several design elements such as lines, shapes, scales, proportions, surface applications, textures, patterns, colors, and materials [6, 33]. In this study, the Columbia design team emphasized the brand's sporty nature, incorporating harsher, sharper lines into their designs with vibrant colors. In contrast, the designers developing Samsung's products employed simpler, clearer geometric structures. The Sketchers and Razer design groups emphasized the dynamic nature of existing brands' products in their designs. On the other hand, the students designing for Braun adopted a minimalist approach, ensuring their products were aesthetically pleasing and straightforward. Meanwhile, the IKEA team emphasized functional modularity while drawing inspiration from IKEA's simplicity and playful design approach. On the other hand, Tesla designers sought to create truly futuristic and technologically unconventional designs based on the brand's vision. Unlike Tesla, those designing for Ford were heavily influenced by the lines and surface textures that have become an American icon. The Bang & Olufsen group, while shaping their forms based on the brand's expertise in materials and production methods, did not neglect sculptural flair. Bang & Olufsen's use of anodized aluminum, sharp contours, and tactile interfaces conveys values of precision, elegance, and high fidelity—defining the sensory and symbolic identity of the brand [6]. Designers aimed to reflect its aesthetics and functional technology in their new products, although the related brand was not industrially feasible to produce kitchen appliances. Thus, in addition to the brand's aesthetic approach and sculptural premium products, designers needed to explore what it would be like if the brand produced kitchen appliances or a first-person aircraft cabin, and the design offered a visual answer to this question. As a result, the designed products carried the DNA of this brand. Finally, the team that designed for Victorinox aimed to create timeless and multifunctional designs based on the brand's historical past and today's technology.

Existing studies also note that designers are not passive executors of marketing strategy but active participants who interpret abstract brand values into tangible design elements, even if it is challenging [13, 34]. It can be inferred that designers can design and reshape products that brands have never had, in line with the brand identity. In this study, designers faced constraints when innovating within rigid brand guidelines. To illustrate, creating a colorful, curvy form for a minimalist brand would not be appropriate. For example, this may be why the team designing for Braun completed their projects with simple lines and forms.

The research questions asked at the beginning of the study were answered, along with the experiences gained after the analyses were conducted.

- *At what points of the design process do designers establish the relationship between a brand's identity and product?*

The study revealed how designers transformed brand identity into design outcomes through two projects conducted individually and in groups. This study revealed that brand identity is a crucial research topic that influences many stages of the design process and touches upon the product in various ways. Research and concept development constituted the first stages in the design process, leading to the final product design. Examining the brand's history and product range and understanding its historical development also created significant awareness for the designers. The designers' initial questions were: "What is this brand, and what was its purpose? What was the brand's historical development? What are the brand's

products, and why were they designed? How did the evolving designs propel the brand from one point to another, and what is the brand's future goal?" More importantly, "For whom does the brand produce these products?" The answers to all these questions formed the bridges the designer built during the design journey to build product design on brand identity.

In this study, designers emphasized the strong connection between brand identity and product shape, and the crucial role of a product's geometric form in conveying a holistic design identity to end users. Each line representing the brand revealed the product's function, material, production technique, color, texture, and shape. The relationship between brand identity and the product encompasses the designer's processes of creating a product concept, searching for lines appropriate for the brand, creating a surface and object using these lines, then selecting materials appropriate for the production method, creating detailed designs, and applying colors and textures to the right surfaces. While designers who set out with these goals generally successfully reflect the visible elements of a brand's language, they remain superficial when addressing the deeper symbolic and cultural layers of identity. As the literature emphasizes, products are carriers of meaning and cultural codes. [9] The findings of this study showed that students successfully applied visual and more familiar brand codes while prioritizing formal consistency. However, product decisions regarding brand identity's deeper cultural, symbolic, and experiential dimensions were more limited. Integrating cultural, experiential, and symbolic dimensions remains an area of development. Designers (whether students or professionals) who systematically engage in brand research, keyword extraction, and thematic interpretation can create products that not only look and feel aligned with a brand but also convey its deeper values and narratives.

- *What keywords do designers uncover regarding the brand and its identity in professional practice?*

In professional design practice, designers need specific filters to simplify their research, divide it into central themes, obtain visual clues, or create a starting point. In this study, when developing keywords related to a brand and its identity, they first examined its target audience and product design styles. Then they identified keywords to define and position the brand. Keyword selection was an attempt to capture the brand's spirit and image visually. This stage was concerned with documenting perception during the design process. For instance, questions such as "Does the brand appeal to active individuals who prefer a sporty lifestyle, or a brand with more premium but ostentatious products?" were used to generate keywords.

This study showed that when defining brand identities, designers generally used keywords consisting of clear and descriptive single words such as simple, innovative, futuristic, or technological. Furthermore, they highlighted concepts such as functionality, durability, and user-centricity. While they focused on qualities such as minimalist, premium, luxury, or ergonomic to emphasize the aesthetic and emotional aspects of brands, at the same time, more technical elements such as performance, strength, reliability, and compatibility were also considered as a crucial part of the identity. Furthermore, the designers referenced cultural and historical references (e.g., American heritage) that differentiated the brand, demonstrating that the brand is identified not only by its product features but also by its origins and story. In this context, the discovered keywords were used to present a holistic expression of both the brand's functional and symbolic values.

- *How do the keywords that designers define reflect on the designer's aesthetic interpretation and product design language?*

The study found that the keywords identified by the designers strongly reflected their aesthetic interpretation and design language in their final product decisions. For example, a designer who chose the keyword "minimalist" used simpler, cleaner lines, while a designer who chose "futuristic" created designs with sharp angles and dynamic surfaces that were more costly. Pastel tones, white, and cream colors dominated the minimalist designs, while shiny metal surfaces and grey tones dominated the futuristic

products. Moreover, designers used sharp lines and contrasts in color, form and materials in the product designs, which reflected “dynamic/rhythmic” products. On the other hand, they chose clear and distinct geometric shapes with appropriate materials to evoke more “premium” products.

The answers to the research questions and the analytical implications of the study are presented in Table 2.

Table 2. *Answers to Research Questions and Insights*

Research Questions	Findings	Insights
RQ1	Students primarily engaged with brand identity in the early concept stage (research, moodboards, benchmarking, keyword generation), but less so in finishing the design, detailing or prototyping.	The remaining of brand identity at the research and idea stage without deep synthesis, and the weakness of the integration of cultural and symbolic brand meanings into functional product features
RQ2	Keywords were often descriptive adjectives (e.g., "durable", "dynamic", “smart”, etc.) and focused mainly on the visual properties of the brand.	When defining a brand in the minds of designers, the mention of definitions and adjectives that generally involve superficial contact, and the ignorance of brand values such as user habits, needs and interaction
RQ3	Keywords were translated to final product designs mainly in the style of the product, form language, color palettes, and material choices. Aesthetic interpretation was less evident in user interaction or emotional dimensions. Designers tended to equate brand identity with formal coherence rather than holistic user experience.	The tendency for designers to equate brand identity with formal consistency rather than the overall user experience

Beyond the descriptive findings of the projects, this study highlights the importance of understanding brand identity when designing products, while also revealing important insights and limitations for shaping design education and practice. In this context, the key takeaways from the study are as follows:

The transfer of brand identity to products occurred primarily through visual output. Students successfully reflected brand keywords through lines, shapes, materials, and colors. However, the deeper cultural, symbolic, and experiential dimensions of brand identity were less integrated into the products. Furthermore, formal consistency often took precedence over experiential needs. User interaction and sensory experience were observed to take a back seat, particularly in spatial applications constrained by functionality and safety requirements. This situation demonstrated a gap between superficial visual translation and holistic brand interaction. This gap highlights the need for a stronger integration of sociocultural perspectives in design education. A critical understanding of how design outcomes embody power relations, lifestyle associations, and symbolic narratives can enhance a designer’s ability to move beyond surface aesthetics to achieve more meaningful and context-sensitive design outcomes. Furthermore, individual and group work shaped the final product designs. In particular, individual interpretations facilitated the second project’s explorations of futurism, luxury, or modularity.

A key limitation of this study is its focus on two projects, limiting generalizability, and its use with third-year industrial design students whose professional experience was still developing. This narrow scope allowed for an in-depth examination of interpretative processes. Future research could incorporate multiple cross-institutional case studies, incorporating user evaluations to assess experiential alignment with brand identity and exploring how design education can foster critical engagement with the cultural and symbolic dimensions of branding. Thus, the field could move beyond descriptive analyses toward a more comprehensive and critical theory of brand-focused design practice. Furthermore, because this was the first project in which students analyzed the product and brand together, they found the time constraints and challenges challenging. Because the projects were limited by semester length, the brand

design processes could not include user testing or market feedback. Future research would be expanded to include user research methods that integrate user experience research, cultural context, and brand narrative, supporting more efficient use of time. This proposal could explore methods for developing students' holistic brand interpretation, integrating user experience, and examining cross-cultural influences. Furthermore, while the thematic synthesis provided high-level insights, this study would be expanded to assess how students' approaches evolve with professional experience. Expanding the research to include experienced professional designers could validate and diversify the thematic findings.

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