COMMUNICATING CORPORATE IDENTITY THROUGH FORM ATTRIBUTES AND EVALUATING VISUAL ANALOGY OF DIGITAL CAMERAS

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ABSTRACT

COMMUNICATING CORPORATE IDENTITY THROUGH FORM ATTRIBUTES AND EVALUATING VISUAL ANALOGY OF DIGITAL CAMERAS

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The basic notion of this study is related with visual attributes of products which reflect the identity of the company as well as form and design consistency which is a factor forming corporate identity. The sub-notions of the topic are elaborated in the literature review. The efforts which aimed at finding out the distinguishing characteristics of products focused on certain sample products. Digital camera is selected for the field study. The objective of the study is to put evidence that firms can be distinguished from each other with the help of visual attributes of their products and to determine which factors are effective throughout this process.

Keywords: Corporate identity, product design, product identity, product attributes, product form, industrial design, digital camera.

ÖZ

KURUMSAL KİMLİĞİN ÜRÜN FORMU YOLUYLA ALGILANMASI VE DİJİTAL FOTOĞRAF MAKİNELERİN GÖRSEL BENZERLİKLERİNİN KARŞILAŞTIRILMASI

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Ürünün görsel özelliklerinin firma kimliğini yansıtması, form ve tasarım sürekliliğinin, kurumsal kimliği oluşturan unsurlardan biri olması, bu çalışmada temel alınmış kavramdır. Bu konunun alt kavramları literatür araştırması ile detaylandırılmıştır. Ürünlerin benzerlerinden ayrılması kapsamında gözlenmiş çalışmalar, belirli örnekler dahilinde incelenmiştir. Alan çalışması olarak da dijital fotoğraf makinesi ürün grubu olarak seçilmiş ve ürünlerin görsel özellikleri kullanılarak firma ayrışımlarının yapılabilirliği ve hangi faktörlerin etkili olduğunun saptanmasına çalışılmıştır.

Anahtar Kelimeler: Kurumsal kimlik, ürün tasarımı, ürün kimliği, ürün özellikleri, ürün formu, endüstriyel tasarım, dijital fotoğraf makinesi.

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I would also like to use this chance to thank www.dpreview.com for their proffessional approach to criticization of cameras and high quality comparisons by using systematical and upper level standarts which help variety of users in photography sector including me.

I am thankful to my father Mehmet Çekceoğlu, who gave the initial idea about this study, my mother Makbule Çekceoğlu, my sister Çiğdem Çekceoğlu, for their never ending support, help and understanding, my father-in-law, Doğan Muammer Öcal, who always motivated to re-start this study, my mother-in-law, Elif Bärbel Öcal, especially for her efforts and assistance to find respondents for the questionnaire. They all backed me up the whole way through this project. Their past and continuing guidance and proximity helped keep me more motivated and strong.

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This thesis is dedicated to my wife Gülsüm and my son (not yet born) Ege.

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CHAPTER 1

INTRODUCTION

1.1 Background of the Subject

The author of this thesis is currently working in a product design department of a company. Throughout his experiences, he has realized that the final product of a company can be affected by any decision, change of employees, or evaluation during the design and development process. The history and habits of a company may contribute to shaping the product apart from usage or functional and mechanical necessity.

The argument first arises regarding the role of an industrial designer within the complex organization of a company. Apart from a more traditional and technical role such as designing technically produceable products which are aesthetically pleasing and user-friendly for the consumer, reflecting and communicating the company values to the market is increasingly being considered as a task for designers. As the product is the ultimate communication tool of the company, its design plays a crucial role. (Figure 1.1)

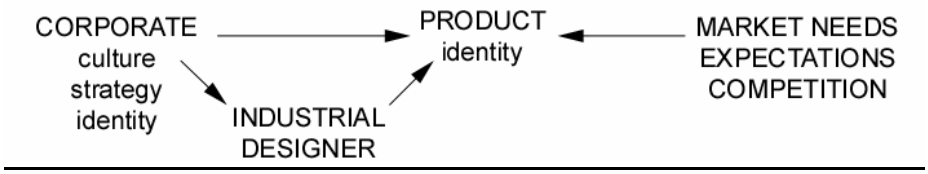


Figure 1.1 Function of industrial design in a firm

After that progress the main topic of the study return to the product and its attributes. It can be said that products are the visual representations that reflect the background, technology, strategy and identity of a company. Every product is unique because apart from its physical functions, it serves the critical role of a communication tool for the company.

1.2 Scope of the Study

This study is about product attributes and the role of visual elements in establishing the visual identity of corporations. Just as parents give their physical and psychological characteristics to their children, companies reflect their values and communicate their philosophy and arguments through their products as a symbol of their corporate concept for the end user. Apart from product development, function and usability variables, the main topic of this study is form differentiation among competitors and visual consistency of product lines.

Products are ubiquitously placed in modern life with the intention of giving messages about their identities and the specific groups to which they belong. During the course of the literature survey, little information regarding the relationship between corporate identity and industrial design was found. Rather, the majority of available information lay in the area of the relationship of corporate identity to graphic design. Lack of case studies in “corporate identity through product design” in the literature survey directed the author to look for current market and existing examples. Logotypes, symbols, business cards and vehicle graphics of an organization serve as some of the basic elements for the visualization of the corporation. Since the author of this thesis is an industrial designer, he prefers to approach the subject as an industrial design issue. A survey was conducted in this study as a tool for understanding and evaluating the consumer as a beholder. A direct observational study was conducted for a selected group of consumers to test their concerns regarding product image and company relationships in terms of “product as the 3D form of a brand”.

1.3 Aims of Research

The aim of this research is to identify the relation between the form attributes of a product and the corporate identity of the organization in which the product has been designed. The main concentration of this study is the form attributes of the product as an item in the whole corporate identity pool, essentially using the product as a forum to indicate to customers the uniqueness of the company. An empirical study is

carried out to find out to probe the possibility of discrimination of visual attributes of products by the consumer in terms of a corporate identity issue.

1.4 Structure of the Thesis

After the introduction, the basic terms of the study are informatively defined. Company, product, product design, and product and corporate identity issues are elaborated upon in the literature survey. Issues including market segmentation, consumer behavior and visual perception headlines are also defined since they might be necessary in field study for both the sampling of the subject and selection of the product.

In chapter 3, illustrative examples selected by the author are examined in terms of design consistency and reflection of corporate identity. The issues brought to light in the second chapter are thoroughly addressed in the third chapter. Beginning with product development stages, product form, product attributes, and corporate product design are defragmented and defined. As the name of this thesis is “communicating corporate identity through form attributes,” this chapter is the core of this study.

Chapter 4 focuses on the field study conducted. Selection of the survey method, sampling protocol, and application and evaluation methods are clearly presented here.

The final chapter concludes the findings of previous chapters. The closing section also suggests topics for further study.

CHAPTER 2

INFORMATIVE

This chapter is dedicated to the presentation of the main topics which are related to the subject of the thesis. The product, product design, the company where the product is designed, and the relationships between these concepts are introduced by way of the literature review. The concept of “form attributes” mentioned in the title of the thesis is a feature which comes forth as a result of such concepts as corporate mission, company strategy and product design (Figure 2.1). Hence, to begin, it is appropriate to address these concepts separately within the scope of this study.

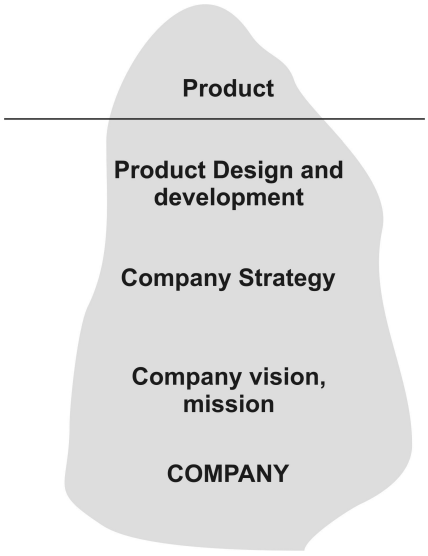


Figure 2.1 Visualization of the iceberg analogy of a company

2.1 Company

In this study, a company is defined as an organization aimed at designing and producing tangible goods for a commercial market, and with the intention of generating a profit. Additionally, the definition of a company is further refined as a place where there is a product design process, and interaction between in-house departments occur.

A company is a living system and just like people, it has its own style, methodology, weaknesses and strengths. As a financial trader, companies exist primarily for profit. Traders must turn their investments into product and subsequently sell the product to the appropriate consumer to recuperate their investment and continue their mission of expanding their consumer base. According to Deschamps and Nayak, satisfied owners will make the necessary investments in terms of pay and benefits, productivity improvement, and work environment to increase employee satisfaction. Satisfied employees will work hard to provide the goods and services that increase customer satisfaction. Satisfied customers will provide the loyalty, higher sales, and profits that will boost owner satisfaction even further (Deschamps and Nayak, 1995: 6) (Figure 2.2).

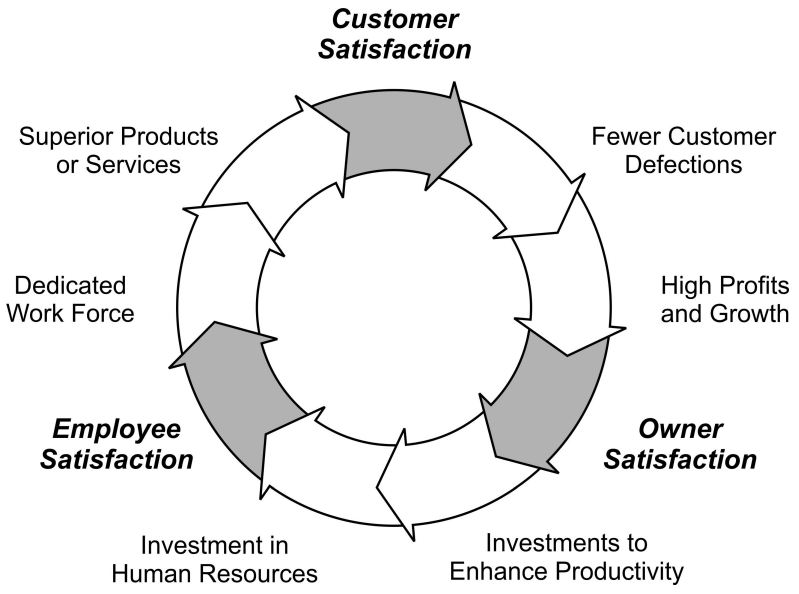


Figure 2.2 Virtuous circle (Deschamps and Nayak, 1995: 6)

The company consists of different departments which each serve important and distinct purposes. All of these departments must work cooperatively in order to further a prospering business, and thus to compete with other firms. As the literature review continued, it became evident that in a corporate system where teamwork should occur, having only one professional department is insufficient for substantive achievement and positive outcomes. Erhorn and Stark suggested that it is an effective organizational tool to separate the company into departments. Each department works on a limited number of defined activities, and by consequence, they become very good at their specific tasks (Erhorn, Stark, 1994: 55). Each department is expected to concentrate on doing its particular activities as well and as much as possible. In most manufacturing companies, the main departments are marketing and sales, engineering, manufacturing, field service, finance, and human resources.

2.1.1 Company Vision

Vision is the core of any organizational attitude (Dowling, 1994: 45). Although all organizations have a vision of one type or another, some have attempted to encapsulate their shared values in a formal document. This written statement aims to contain "what the organization stands for". According to Dowling, it is useful to have vision statements in the sense that they can help to achieve some goals, including:

- motivating and focusing all employees on a common goal
- defining the niche of the business
- providing an overall unifying theme for advertising and public relations
- helping to differentiate the organization from its competitors.

Vision statements must address the question: 'what is our business, and what should it be in the future?' They should provide an answer that comprises the 'core business function of the company' (Dowling, 1994: 46).

2.1.2 Corporate Culture

Culture is used to describe the whole way of life, namely the actions, feelings, and thoughts that are learned by groups of people rather than being biologically determined (Erhorn, Stark, 1994: 89). The culture of an organization defines appropriate behavior, unites and motivates individuals, and asserts solutions wherever there is ambiguity. Erhorn and Stark argue that culture governs the way a company processes information, its relations, and its values. The corporate culture functions at all levels, from the subconscious to the visible. Culture arises from

people and grows from them to celebrate and unify the ideas and practices that they have in common. It lends continuity and identity to the group.

In a traditional hierarchy, 'the brains' at the top of the organization dictate to 'the hands' at the bottom what to do, and how to do it and when to do it. Yet the complexity of modern business operations has overwhelmed this system. The company of the future is often prognosticated as flat and without vertical command chains. It is impossible for a single head to contain all of the information and the necessary skills needed to run the company. All a leader can hope to do is to manage the culture of the place where the work is being performed. In a world of increasingly flat companies and sophisticated knowledge based products, controlling and understanding an organization's corporate culture are key responsibility of leaders, as well as a vital tool for management if it is to encourage high performance and maintain shareholder value (Figure 2.3).

Ludlow suggested that corporate culture is the deeply rooted 'feel' and 'way' of a company. It both shapes and communicates behavior by affecting the organization and the people who comprise it (Ludlow, 1993: 28).

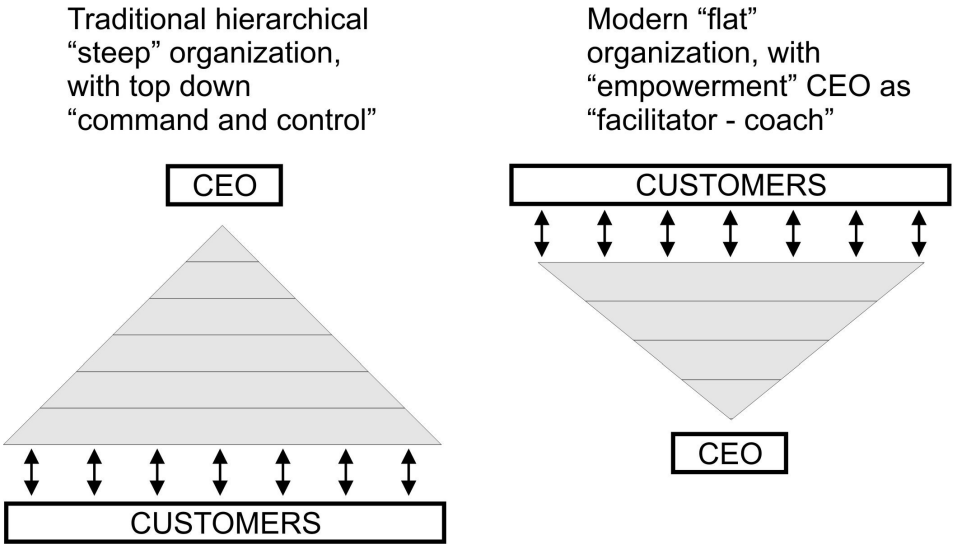


Figure 2.3 Traditional vs. "Empowered" organization
(Erhorn, Stark, 1994: 90)

2.1.3 Corporate Image

Corporate image is defined as the beliefs and impressions that a person may hold about an organization (Dowling, 1994: 8).

According to Ind, corporate image is in the eye of the receiver. An organization may transmit a message about itself to its employees, its investors, its customers, and all of its internal and external audiences. Though it may indeed wish to convey a particular self-image, it is the reception of the message that is the important component of the interaction. The corporate image is the picture that an audience holds of an organization through the accumulation and processing of received messages. An organization may commonly assume that it only communicates when it wants to, but in reality, it communicates through everything it says and does (Ind, 1992).

Dowling supported the theory that people like to deal with companies that they know (Dowling, 1994:111). This finding has been supported by sound research. At the 11th Public Relations World Congress in 1989, the Roy Morgan Research Company presented the results of a survey of almost 10,000 people from nine countries including Australia, Canada, Finland, UK, Japan, The Netherlands, New Zealand, Norway, and the USA. The results showed that the more people said that they knew about a company, the more they believed that the company had a good product and a quality service. Another study carried out for the advertising agency J. Walter Thompson in 1986 found that if respondents (including 1,000 financial analysts, corporate executives, and affluent consumers from the USA) knew a company well, they were more likely to rate the company as a winner. Good corporate communications were found to play an integral part in projecting a winning corporate image (Dowling, 1994:111).

Gray suggested that corporate image formation begins on the inside of the organization (Gray, 1986:5). The image generated by employees spills into the community and spreads beyond with a rippling effect. Community members, consumers, suppliers, investors, the media, and the government cause the permeation of the organization's image through society, which subliminally absorbs it. Those inside and outside the corporation constitute publics whose interactions with the corporation contribute to the total image picture (Figure 2.4).

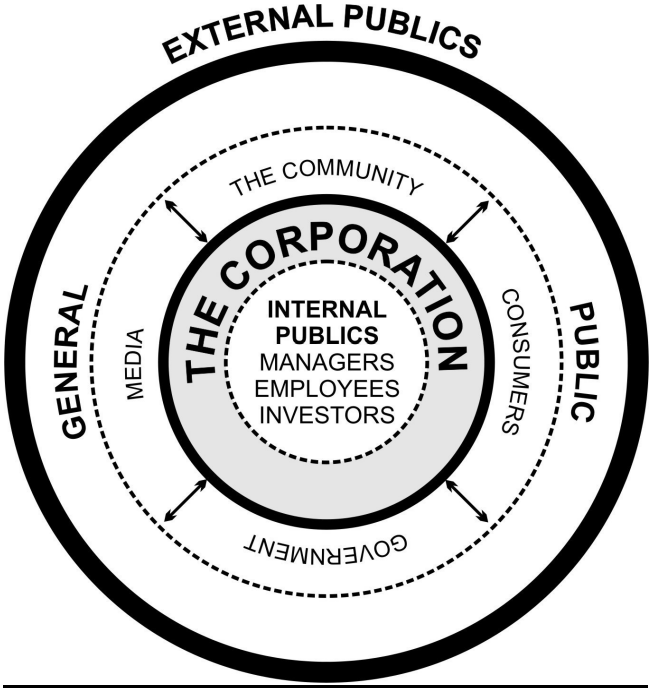


Figure 2.4 Corporate-Public relationship (Gray, 1986:5)

Dowling argues that the public image of an organization is the net result of all its activities and that it reflects the performance of the company. Managing a desired image is ultimately the responsibility of senior management, but because the interaction between the employees and customers has a significant impact on the organization's reputation, the maintenance and enhancement of the image is the responsibility of every employee. It is essential that if an organization projects a positive image that it can -in reality- maintain positive business practices in order to live up to this image (Dowling, 1994: 12).

2.2 Corporate Identity

Corporate identity is the projection of history, beliefs, philosophy, technology, the personality of its leaders, ethical and cultural values, and strategies of the corporation to employees and customers. Advertising, packaging, graphics, public relations, architecture, and product design are all mediums for communicating corporate identity.

An organization's identity is like a human identity. Consequently, it is unique. Identity is determined by an organizations history, it is the core of an organization's existence (Ind, 1992: 19). Corporate identity is a total communication system for a company. As Ludlow stated (Ludlow, 1993: 30), it is a manifestation of an organization's corporate mission in terms of visual, verbal, behavioral and cultural values (Ludlow, 1993: 27).

Olins argued that the best companies today, regardless of field, create very good products. But in order to win the marketplace, that alone is no longer enough. The companies behind the products have to distinguish themselves as a distinct personality, thus creating the concept of a 'value added' brand. The companies of today have to win the hearts and minds of the public. It is at this point when the term corporate identity becomes highly relevant. Today any successful company knows that it has to deal with the needs of employees, its suppliers, the local community, the financial world and those of the consumer. Corporate identity is able to reach all of these audiences with the same message. The identity of the corporation becomes both the glue which binds together its various parts, and its trademark for the disparate constituencies with whom it deals (Olins, 1995).

2.2.1 Types of Identity Structures

Identity can clearly present the style of an organization. It is used to convey a complementary and equally significant set of messages which are concerned not only with style, but also with the corporate structure of the organization. Olins divides the types of identity structures into three main categories (Olins, W, 1990):

Monolithic Identities This is where the organization uses one name and one visual system (i.e. IBM, Apple, Ford). They operate in a relatively niche market of specific activities, which the consumer sees as being closely related with each other. The fundamental strength of the monolithic identity lies in each product and service launched by the organization having the same name, style and character. By way of promotion, everything from the organization supports everything else (Olins, W.,1990).

Endorsed Identities This is where the companies forming a group are perceived either by visual or written endorsement to be part of that group (i.e. General Motors, Buick, Cadillac, United Technologies). They are multi-sector business, operating in a wide variety of activities such as manufacturing, retail, selling components to competitors, and making finished product themselves. Endorsed identities frequently

operate in many different countries within which their products and their reputations may vary (Olins,W.,1990).

Branded Identities Pharmaceuticals, food, drink and other fast moving consumer goods sometimes separate their identities as corporations from those of the brands of the products which they make or sell. This model is where the company operates as a series of brands or small companies that are seemingly unrelated (i.e. General Foods, Procter & Gamble). Unlike for monolithic or endorsed identities, for a branded identity, companies do not present their corporate faces to the consumer. Instead, what the consumer perceives is only the brand. Brands may have a life-cycle of their own, quite distinct from that of the company. The brands can develop powerful identities of their own, appropriate for their consumers (Olins,W.,1990).

2.2.2 Components of Corporate Identity

Corporations are like people; they have individual characteristics, cultural impressions and philosophies. A trademark, the visible part of a corporate identity program, helps to humanize a company by presenting a personality in the form of a symbol. The symbol reflects the company's desired identity and helps to mold their image. Corporate image is developed by contact with the company and by interpretation of information about the firm. The company's products, buildings, advertising, business dealings, and even the way in which the phone is answered can be clues as to how the company is being perceived and how it thinks it is perceived (Gray, 1986).

All organizations have an identity whether they are aware of it or not. According to Olins, corporate identity can project three things: who the company is, what the company does, and how the company does whatever it does. Corporate identity manifests itself primarily in four major areas: products and services, environment, communication, and behavior (Olins, W.,1990).

2.2.2.1 Products / Services

Products and services are what a company makes or sells. According to Eppinger and Ulrich, sometimes a product and how it performs is the most significant factor in influencing how the organization as a whole is perceived (Eppinger, Ulrich, 1995) Industrial design plays an important role in determining the company's identity in product-based companies. It determines a product's look and feel, which are fundamental to the public's perception of the firm.

In a product based company, for example, an automobile company, the product is the most significant way by which the company's identity emerges. Olins stated that it is the way the car looks and feels, how the doors open and shut, how big it is, what kind of engine it has, how it performs, and what it costs that primarily shapes the way people feel about the product and therefore about the company. Thus, the product's designer is responsible not just for the product, but additionally is responsible for a large part of the company's identity (Olins, 1990:177).

The packaging component of a product refers to any container within which it is offered for sale and on which information is communicated. The consumer's first exposure to the product is through the package, and it is consequently an expensive and important part of the marketing strategy of any company. Despite the cost, packaging is essential in providing important benefits for the manufacturer, retailer, and ultimately for the consumer. A package can connote status, economy, or even product quality. It is one of the most important elements in communicating corporate identity (Berkowitz, Kerin, Hartley, Rudelius, 1992: 306).

2.2.2.2 Environments

Environments are the places where a company makes or sells its product and services. All organizations have offices, factories, canteens or other places in which they carry out their work. These places have a powerful influence on the way both employees and outsiders see the organization. The environment is crucial in representing the image that the organization presents to its customers.

Gray suggested that symbolic of the corporate image is the corporate headquarters and surrounding landscape. Many business executives believe that in order to project an image of success, the corporate headquarters itself must appear successful. Communicated to all visitors, interior and exterior design both create first impressions of the company's success (Gray J.,1986 : 62).

2.2.2.3 Communications

Communications encompass all of the printed material that an organization uses, from invoices to press advertising, together with communication with other firms, media, TV, events, and new product launches. The totality of the communication processes influence the way in which different audiences perceive the organization. Corporate communications are the means of internal and external expression, including corporate advertising, annual reports, magazines, corporate brochures,

videos, exhibitions and fairs (Ludlow, 1993: 29). Everything from the corporation's internal communication materials to its advertising materials to its instructional manuals must have a consistent quality and character about them that accurately and honestly reflects the whole organization and its aims (Olins, 1990).

2.2.2.4 Behaviour

Organizations such as banks, airlines, police forces, and health authorities create their personality and style not so much through what they look like, what they make or where they live, but through the way that they behave (Olins, 1990: 12). Corporate behavior comprises all communicative behavior including attitudes towards the environment and natural resources and social behavior (Ludlow 1993: 29).

The future is multicultural and corporate identity can help organizations to achieve their maximum potential in that future. As culture is the main obstacle faced in internationalization, corporate identity has a major role to play in the internationalization of companies.

2.2.3 Visual Identity

Visual identity is a device for helping people to recognize an organization and to recall their image of it. In some circumstances, it may be helpful in defining some of the attributes of the company's desired image. Visual identity can also help a company to differentiate itself from its competitors (Dowling 1994, p.125). Figure 2.5 illustrates the role of visual identity for an organization. It argues that the name and other visual identity symbols act primarily to trigger awareness in the consumer. The dashed arrows indicate that sometimes the name of an organization may directly help the image formation process. High levels of awareness often lead to increased familiarity and linking, which in turn activates a person's mental image of a specific entity. It is these images which help differentiate one organization from another, and which may enhance the effectiveness of communication (Dowling 1994, p.126).

The basic components of an organization's identity are: name, logo/symbol, typeface, and color scheme. Additionally, the company's buildings, office decor, signage, stationery, uniforms and vehicles can all play a part in helping stakeholders and others to identify the organization. Companies often combine these visual elements to create visual style which can help to make a statement to people about what the company stands for.

When identity and image are in harmony, the company is perceived as it actually is, which is also the way it wants to be perceived by members of its target market (Napoles, 1988).

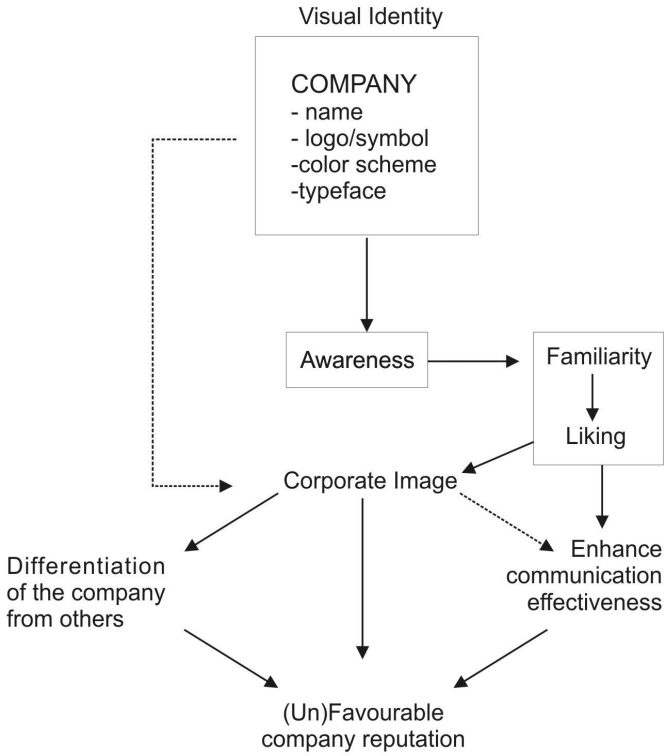


Figure 2.5 Role of Corporate Visual Identity (Dowling 1994, p.126)

A good trademark can help sell a product (Berkowitz, Kerin, Hartley, Rudelius, 1992). A basic decision in marketing products is branding, in which an organization uses a name, phrase, design, symbols, or combination of these to identify its products and distinguish them from their competitors. A brand name is a word, device (design, sound, shape, or color), or combination of these used to distinguish a seller's goods or services. A good brand name is of such importance to companies that it has led to a concept called brand equity, the added value a given brand name lends to a product beyond the functional benefits provided. The value has two

distinct advantages: first, it gives a competitive advantage and second, an ability to endure environmental changes. Branding is important not only for manufacturers, but also for retailers and customers. Retailers value branding because consumers shop consistently at stores that carry their desired brands. From the consumer's point of view, recognizing competing products by distinct trademarks allows them to be more efficient and discerning shoppers. Consumers can recognize and avoid products with which they are dissatisfied, while becoming loyal to other, more satisfying brands.

2.3 Product

Products are the lifeblood of organizations. They are the public face of a corporation. The style, quality and ingenuity of the company's image are represented through its product. BMW cars denote quality engineering, as well as status, while Volvo cars are renowned for safety; both are sought after throughout the world (Bruce, M. & Biemans, G: 1995).

The product is the reason a company is in business. It is the most important thing a company can say about itself. The quality of the products will be judged by technical competency, cost, and serviceability. These "hard" values must absolutely be gotten right. Once these components are competently achieved, these factors bring the competitive positioning up to the starting line. The "soft" values of environmental-friendliness, ease-of-use, and distinctive appearance are now recognized as the differentiating values that enable the product to have a competitive advantage (Blaich, R. & Blaich, J., 1993: 8-9).

The product is defined as 'tangible' and 'consumer' according to product types. As mentioned in 'Marketing' (Berkowitz, Kerin, Hartley, Rudelius, 1992: 254), product types are classified in two different ways: by the degree of tangibility and by the type of user. Additionally, the consumer's wants and needs are utilized as input for determining factors that define some constraints during the product development process. How a company sees the consumer and its relationship to the consumer is also investigated.

Durable goods and the companies that produce them are the types which are valid for the current study. Industrial design and product development process are generally used for durable products in which consumers use the product for a longer

period of time and therefore want more precise and higher quality products to choose from when making their purchases.

The most important avenue of interaction with a company for consumers is receiving and using its products. Consumers see, hear, feel, and use the product according to its performance and ability to satisfy his or her (physical or psychological) conscious or unconscious needs. The product sends the message to the consumer to continue using the product, and to use other products of the company. From the company's point of view, a product is a good, service, or idea consisting of a bundle of tangible and intangible attributes that satisfies consumers and is received in exchange for money or some other currency. The life of a company generally depends on how it conceives, produces, and markets new and existing products (Berkowitz, Kerin, Hartley, Rudelius, 1992). As companies offer a wide range of products, consumers do not make their decisions in isolation.

2.3.1 Product Variations

A particular item is a specific product as noted by a unique brand, size or price. A product line is a group of product items that are closely related. They satisfy a class of needs, are used together, are sold to the same customer group, are distributed through the same type of outlets, or fall within a given price range. Canon cameras, Adidas shoes and Adidas clothing are all product lines. A product mix is the third way of categorizing a product. It is the number of product lines offered by a company (Berkowitz, Kerin, Hartley, Rudelius, 1992).

In order to develop similar marketing strategies for the wide range of products, companies classify products in two major ways: the degree of tangibility and the type of user (Berkowitz, Kerin, Hartley, Rudelius, 1992).

2.3.1.1 Degree of Tangibility

Classification by degree of tangibility further divides products into three categories: nondurable goods, durable goods and services. This type of classification method provides direction for marketing actions.

Nondurable goods are consumed in one to several uses, such as food products and fuel. These types of goods are relatively low cost and are purchased frequently. Wide distribution and advertisement is essential to remind consumers of the item's existence.

Durable goods typically last over an extended number of uses, such as automobiles and stereo equipment. These type of products generally cost more than nondurable goods, therefore resulting in a longer consumer deliberation period before purchasing these types of items. Personal selling is an important component in durable product marketing as it assists in addressing and answering consumer concerns.

Services are defined as activities, benefits, or methods of attainment of satisfaction offered for sale, such as education and health care (Berkowitz, Kerin, Hartley, Rudelius, 1992).

2.3.1.2 Type of User

The second type of product classification is according to the targeted type of user. These are generally broken down into consumer goods and industrial goods. Consumer goods are the products purchased by the ultimate consumer. Industrial goods are used in the production of other products for ultimate consumers (Berkowitz, Kerin, Hartley, Rudelius, 1992) It can also be said that there is a third type of products which are purchased by the state for governmental purposes.

2.3.2 Product Design and Development Process

The term 'product development', refers to the process that starts with a brief and ends with a product ready for manufacturing. The term 'product design' is defined here as the activity that transforms the brief or initial market specification into design concepts and prototypes and finally into the technical drawings, specifications and other instructions needed for the manufacturing of a new product (Eppinger, Ulrich, 1995).

The product creation process can effect and be affected by the company financial situation in a positive or negative way. A stream of successful product introductions will lead to rapid sales and profit growth. Companies that top their industries in profitability and sales growth get 49 percent of their revenues from products introduced in the past five years **(**Deschamps & Nayak, 1995). Product creation is the core process supporting customer satisfaction and long-term growth in company value.

Product design is very important, particularly in terms of competitive priorities and the product life-cycle, both of which are components of strategic planning. The

increasingly global economy means that product designers should initially consider every possible market in an attempt to eliminate redesigns for specific countries or situations. Factors such as logistics, distribution costs, inventory investment, product availability, customs duties, and local market customization should be accounted for to minimize overall product costs.

Product design therefore has a significant effect on a firm's competitive priorities, which include cost, time, quality, and flexibility. The cost of a product is determined by such factors as: materials used, labor and production resources required, and design effort expended. Design determines packaging and shipping requirements as well, which have an impact on transportation and insurance costs.

2.3.2.1 Contributors to Product Development

Product development is an interdisciplinary activity requiring contributions from nearly all the departments of a firm; however, three functions, namely marketing, design and manufacturing are almost always central to a product development project. These key functions involved in product development play an important role in the success of the product development process and the final product.

Marketing: Marketing functions as a mediator for the interactions between the firm and its customers. Marketing often facilitates the identification of product opportunities, the definition of market segments, and the identification of customer needs. Marketing also typically arranges for communication between the firm and its customers, sets prices, and oversees the launch and promotion of the products.

It is essential that there be a well-defined market need and that the company understands the market-place and is aware of both its present and its likely future competitors in that market-place. Marketing is involved in most stages of product development, product planning, screening and testing through to launch.

Design: The function of design is to guide the definition of the physical form of the product so as to best meet customer needs. In this context, the design function includes engineering design (mechanical, electrical, software, etc.) and industrial design (aesthetics, ergonomics, user interfaces).

In manufacturing, particularly of consumer products, industrial design is becoming an increasingly important factor in differentiating products from their competitors by giving them a coherent identity or higher levels of perceived value (Bruce, Potter, Roy, Walsh ,1992).

The Gallup Organization recently completed a study of how U.S. business uses industrial design and what it considers to be industrial designs' major contribution. A startling highlight from the Gallup study is that "senior business executives rate industrial design as responsible for 60 percent of the success of any new product; 23 percent of them rated industrial designs' contribution as 80 percent or more" (Woodring, 1989:15).

An analysis of the performance of 203 new products revealed that product design was the most important determinant of sales success (Cooper and Kleinschmidt 1987). The receipt of design awards is also positively correlated with positive average profit margins and sales growth (Goodrich 1994; Roy 1994).

Whatever the 'new product', whether it be purely technical (as in a turbine blade), purely aesthetic (as with textiles and fabrics), or as is more common, a combination of both technical and aesthetic design, some discipline of design will inevitably be involved (Biemans, W. G., Bruce, M. ,1995: 85).

Manufacturing: The function of manufacturing is primarily the design and operation of the production system that creates the product.

Apart from marketing, design and manufacturing, most studies find that factors such as strategy, structure, culture and climate are significant contributors to success (Figure 2.6). The product development process must be planned and managed effectively. This cannot be achieved without the organizational structure in place to create the right teams, foster an appropriate and supportive work climate, and encourage active communication and management commitment (Nystrom, 1993).

2.3.2.2 Contents of Product Design

Product design takes into account aspects of all activities related to the product and its life-cycle, including strategy, supplier involvement, customer involvement, cost, time, manufacturability, management, usability, marketability and serviceability / disassembly (Tarasewich, P.1996,:2 Vol. 38 Issue 2, p28, 4p,).

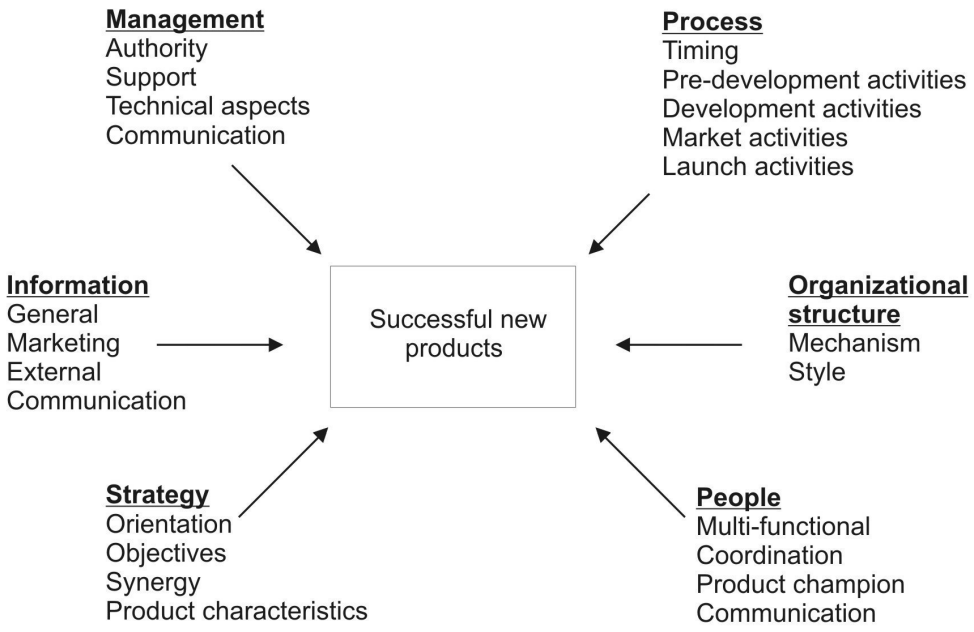


Figure 2.6 Key themes for successful product development
(Biemans, W. G., Bruce, M. ,1995: 17)

Strategy: Strategy deals with using product design as a competitive tool. The long term and strategic issues of product design are considered, including the integration of product design with the functions of marketing and manufacturing.

Supplier Involvement: Supplier involvement deals with the role of the supplier in the product design process. It also concerns the role of purchasing departments and the relationships between purchasing, design, and suppliers.

Customer Involvement: A company must constantly focus on its customers to differentiate itself from its competition and create a competitive advantage. Marketing intelligence and customer feedback are very important in designing a product that actually appeals to the customer.

Cost: The cost of a product is determined by the materials it uses, the amount of labor and production resources it requires, the effort it took to design, and any repair, rework, or maintenance effort it needs to perform properly. Costs should be addressed early in the design process to prevent unnecessary redesigns of the product.

Time: If a company can design a product or service faster than a competitor, it can bring it to market sooner and gain the competitive advantage. Faster design times may allow for more customization of a given product. New products also can be introduced quickly as customer needs change.

Manufacturability: Manufacturability is concerned with product design that increases the ease with which the product is produced. Products can be designed so that they simultaneously address any effects they might have on process design.

Management: In the context of product design, management focuses on organizational concerns. How well product design works within a company can depend on how that particular company is structured and managed.

Usability: Usability is not only how a product is physically designed, but how logical and natural a product is to use, and how people feel about using it.

Marketability: Marketability is designing a product with concern for current or anticipated markets. Issues of design for global sale and use are addressed. Environmental and government concerns or trends are also important considerations, for they are constantly changing and can affect the sale and use of both present and future products.

Serviceability/Disassembly: Product design needs to address the issue of what happens to a product after it reaches its final consumer. A product can be serviced and/or repaired to keep it functioning over the course of its useful life. A product must also be disposed of properly when it is no longer needed or functional.

The strength of the link between product design and each of these aspects depends on the product being designed, but all aspects must be considered to some degree for the product to be successful.

2.3.3 Product Identity

In an age of information overload, looking good is not enough. In addition, it can be argued whether a strong visual identity is even needed. It has become difficult to produce images and communication programs sufficiently compelling to differentiate products and services from their competitors. The design and building of an identity must be inherent in the product and in the values of the company (Ducay, 1993: 57).

In product-based companies, the product is the most significant way by which the company's identity emerges; it then follows that (Napoles, 1988) industrial design plays an important role in determining the company's identity. Industrial design

determines a product's look and feel,which are directly related to the public's perception of the firm. Some companies that have effectively used design to establish corporate identity through their product lines include (Eppinger, Ulrich, 1995: 161):

Apple Computer, Inc.: The original Macintosh had a small, upright shape and a benign buff coloring. This design purposely gave the product a non-threatening, user-friendly look that has since been associated with all of Apple's products.

Rolex Watch Co. Ltd.: The Rolex line of watches maintains a classic look and solid feel that has become synonymous with quality and prestige.

Braun AG: Braun kitchen appliances and shavers have clean lines and basic colors. The Braun name is now associated with simplicity and quality.

Bang & Olufsen: B & O high-fidelity consumer electronics systems are designed with sleek lines and impressive visual displays, providing an image of technological innovation.

2.4 Company/Consumer Relations

Consumers do not buy products just for their utility, but more importantly, for what they symbolize in terms of their meaning and value. Consumers buy increasingly as a means of communicating their lifestyle values and social status (Cooper, Press, 1994). A report prepared by The Japanese Ministry of International Trade and Industry in 1988 states: "People no longer base their decisions for purchase on fundamental criteria such as function, economy and safety. There is a growing tendency to select on criteria such as comfort, warmth, elegance, humor and personal statements conveyed by individual life and taste. The future of design would seem to indicate greater individualism and design diversifications, possibly leading to an inordinate variety of products" (Cooper, Press, 1994).

Walker suggested an important concept in consumer culture is lifestyle, which broadly means self-expression and assertion of individuality through the consumption of distinctive styles of goods and services (Cooper, Press, 1994, 79). Lifestyles of consumers can be broken down into psychographics. Psychographics is concerned with the way consumers express their culture and values, demographics and personality. It reflects a variety of dimensions (Wells, Prensky, 1996).

Cultural: A consumer's lifestyle reflects his or her cultural background and the values held by that culture.
Demographic: The subcultures –gender, age, race, geographic location, and other social characteristics– to which a consumer belongs affect the consumer's lifestyle.
Economic: The economic characteristics that reflect a consumer's social class influence the ability to choose a particular lifestyle.
Psychological: The configuration of personality traits affects the consumer's motivation to exhibit a particular lifestyle

Wells and Prensky suggested that marketers are able to gain information about customers' lifestyle from their hobbies, magazine subscriptions, club memberships, product purchases and demographics. Such information enables marketing professionals to identify target market segments and deliver specific appeals to each group (Wells, Prensky, 1996).

The expression of lifestyle is one of the concerns of design and has extended into everything from cars and electronic consumer goods to the fashion industry. It is not wrong to say that design follows emotions. Consumers look to design, not to simply manifest a certain function, but to communicate values. The term "humanware" is used to describe design which injects lifestyle, differentiation, image and user requirements rather than pure function (Cooper, Press, 1994). The non-price components of products are gaining importance in product differentiation. Consumers take a number of factors into account in their purchasing decisions. Although there is a common assumption that a higher price is indicative of higher quality, the actual results may vary. In general, if there are two goods which are roughly the same in quality and design but differing in price, the average person will choose the cheaper item. If there is no significant price difference, the consumer will chose the item with more quality and design features. This is, of course, a gross simplification. In reality, both price and non-price factors contribute to differential purchasing decisions. The primary non-price factors include: increasing symbolic value of many products and services, brand loyalty and advertising strategies. The primary price factor is manufacturing costs. Price and non-price factors complicate purchasing decisions. Design both interacts and affects these two factors.

2.4.1 Behavior Patterns of Customer

Why should a customer buy 'A' product instead of its competitors? Reinertsen argued there is a fundamental problem with the design of the product if that question can not be answered in a compelling way in twenty-five seconds. Nevertheless, the motivations behind the purchase of a product may be far too complex to capture in one or two sentences. Reinertsen's experience suggests that most successful products have simple and clear functions and values. Customers make their choice between products based upon three or four key factors (Reinertsen, 1997).

Reinertsen suggested that in order to produce a product that people will buy, it is necessary to focus on three critical issues: what is it that the customers want, why do they want it, and how do they make their purchasing decisions? (Reinertsen, 1997)

According to Deschamps and Nayak, there are at least five obstacles to finding out what the customer wants: (Deschamps and Nayak, 1995:77-81)

1. Customers all want different things. Customers are as diverse as their needs and wishes. Some companies see an opportunity in this diversity for differentiation. They recognize that customization of products in a cost-effective and timely way can only be achieved by those with superior operational performance.

Many companies are either unwilling or unable to confront this diversity. They limit themselves to developing middle-of-the-road products, aiming at the largest common denominator among their clients. Ultimately, they meet all needs partly but none fully.

2. Customers do not know what they want or need. This is a classic dilemma awaiting companies that want to innovate. For example, how could any consumer have expressed the need for or desirability of a fax machine before its invention? However, while it is true that customers are no better predictors of the future than the average palm reader, they can tell you what their problems are today. That is where a needs-analysis should start—with the customer expressing the difficulties he or she faces. Customers should not be asked to solve their own problems.

3. Customers do not always buy what they need. Customers have objective needs that can be expressed in a rational, thought-out way. Needs are driven by usage requirements. They are product and service centered. In theory, customers will always try to satisfy their basic objective needs first. But, customers do not

always act rationally. Even those who share the same objective needs may have quite different buying motivations. Beyond needs, these motives may include a range of wants, from the important to the mundane. Wants may be irrational, emotional, and instinctive.

4. Customers do not always buy what they or others think they want. Some years ago, Philips developed a portable radio-cassette player for teenagers called "Moving Sound." The line was designed to appeal to young customers, so Philips made the player a striking golden yellow color. When prospective customers were brought in to test the product, they were given two color choices: golden yellow or the more classic black. An overwhelming majority said they preferred yellow. Philips offered each a free radio-cassette player on leaving. Two piles of music-players were placed outside the testing room: one pile yellow, and one pile black. To testers' surprise, most of the young people chose a black player. Teenagers did not really mean that they would buy golden yellow radio-cassette players themselves when they said they preferred that color. What they meant was: "The yellow sets are better looking." Upon leaving the testing room, they clearly showed that the black players were the color they would actually choose for themselves.

5. Customers keep upgrading their expectations. Customers do change. They increasingly demand new products, and their expectations are constantly raised by the continuous product improvements of competitors.

If the organization can create its own distinct personality, then it has differentiated itself from competitors. If this image fits the individual's values, then the organization's image will be positive. Additionally, research concerning individuals' self-concepts suggests that people will respond more favorably to brands and companies that they perceive as having an image that is consistent with their own self-concept. When there is a tight fit between the organization's image and individual's self-concept, it is easier for a company to communicate with these people and to form a commercial relationship with them (Dowling, 1994)

2.4.2 Market Segmentation

Selecting a group of target customers is a critical step in the product development process. The intentional decision to serve less than 100 percent of consumers is called market segmentation. It is the act of dividing up the market in order to find a group of customers that is more profitable to serve as compared to another group of the customer population (Reinertsen, 1997).

Having a clear statement identifying a well-defined target market before the product development begins is very important. This document should specify consumers' needs, wants and preferences, state what the product would be and do and communicate a strategy for making the product succeed where others have failed (Berkowitz, Kerin, Martley, Rudelius, 1992). Although successful new products may sometimes involves luck, more often it involves having a product that meets a need and has significant points of difference from competing products (Berkowitz, Kerin, Martley, Rudelius, 1992).

2.5 Perception Principles

Visual perception is the basic concept which lays the foundation of the case study to be conducted within the scope of this thesis. In this questionnaire, respondents will be asked to compare and exclusively categorize visual elements. Therefore, a general overview of the principles of visual perception is presented before presenting the aforementioned study.

Human beings receive information about their surroundings using usually by their visual sense. The perception of any object with has physical structure begins with the arrival of sufficient light, which first reflects off the object and to the eye. Electrical signals are transmitted to the brain with the help of neurons in the eyes and are compared with past knowledge and categorized into groups. The brain analyzes past data in order to define the new message it has received, and then groups the new message together with similar data (http://coe.sdsu.edu 2006).

Perception refers to the location of things in a particular space and the definition of them as a separate entity from surrounding objects. The essence of perception is the composition of our past experiences, models and styles stored in our mind and the additional personal ability to process and understand new information (Gürer, 1970:8).

The Gestalt psychology -which made important contributions to the study of visual perception by focusing in areas like thinking, memory, and the nature of aesthetics- emphasizes that we perceive objects as well-organized patterns rather than separate constituent parts. According to this approach, when we open our eyes, we do not see disordered fractional particles. Rather, we notice larger areas with defined shapes and patterns. The "whole" that we see is something that is more

structured and cohesive than a group of separate particles. The main factors that determine grouping -which is the focal point of Gestalt theory- are figure and ground, similarity, proximity, continuity, closure, area and symmetry (http://www.usask.ca 2006).

Figure and ground: The terms figure and ground are important to how we use elements of a scene which are similar in appearance and shape and group them together as a whole. Similar elements –figure- are contrasted with dissimilar elements –ground- to give the impression of a whole.

Similarity: The principle of similarity states that things which share visual characteristics such as shape, size, color, texture, value or orientation will be seen as belonging together. In Figure 2.7, in the example on the left, the two filled lines give the impression of two horizontal lines, even though all the circles are equidistant from each other. In the example on the right, the larger circles appear to belong together because of the similarity in their sizes

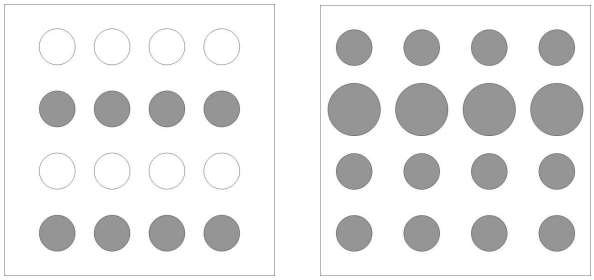


Figure 2.7 Similarity principle

Proximity or Contiguity: The principle of proximity or contiguity states that things which are closer together will be seen as belonging together. Looking at Figure 2.8, one can observe that since the horizontal rows of circles are closer together than the vertical columns, we perceive two vertical lines.

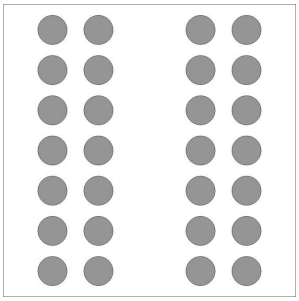


Figure 2.8 Proximity or Contiguity principle

Continuity: The principle of continuity predicts the preference for continuous figures. It is perceived in Figure 2.9 that the figure is two crossed lines instead of 4 lines meeting at the center.

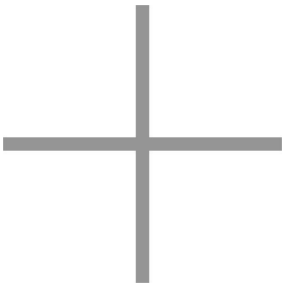


Figure 2.9 Continuity principle

Closure: The principle of closure applies when we tend to see complete figures even when part of the information is missing. In Figure 2.10, three black circles appear to be covered by a white triangle, even through it could just as easily be three incomplete circles joined together. Our minds react to patterns that are familiar, even though we often receive incomplete information. It is speculated that this is a survival instinct, allowing us to complete the form of a predator even with

incomplete information. Even though the circle on the right is not joined together, it is still perceived as a circle due to the principle of closure.

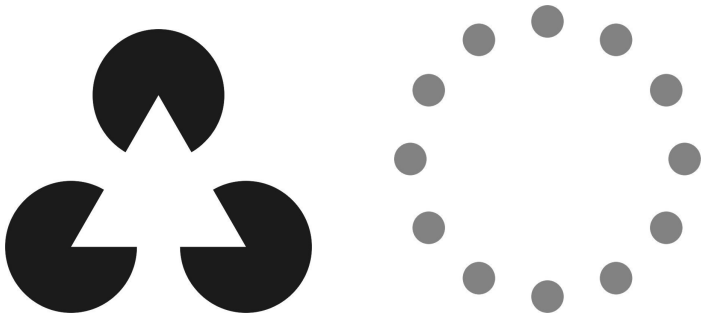


Figure 2.10 Closure principle

Area: The principle of area states that the smaller of two overlapping figures is perceived as figure while the larger is regarded as ground. It is perceived that the smaller square is a shape on top of the other figure, as opposed to a hole in the larger shape (Figure 2.11).

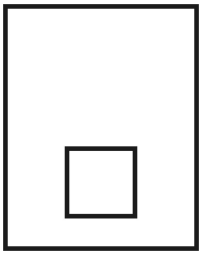


Figure 2.11 Area principle

Symmetry: The principle of symmetry describes the instance where the whole of a figure is perceived rather than the individual parts which make up the figure. In Figure 2.12, there are two overlapping diamonds, or three objects, a small diamond

and two irregular objects above and below it. According to the principle of symmetry, humans perceive this as two diamonds overlapping.

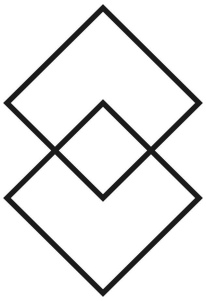


Figure 2.12 Symmetry principle

The scientific researchs on visual perception were carried out in two-dimensional environments and using the art of painting (Asatekin, 1997). The perception of three-dimensional objects is studied on the basis of the findings of these researches in the literature.

In the design of any industrial product, taking the said principles into account and elaborating the visual design of the product in the light of these principles ensures that the perceptional, psychological and material relationships between the product and the user are more effective and more rapidly achieved.

CHAPTER 3

INTERACTION BETWEEN COMPANY AND THE FORM ATTRIBUTES OF PRODUCT

3.1 Corporate Identity and Product Relation

The “company” is defined as the organization which employs product design processes including the industrial design discipline by an in-house department or a freelance firm. The product is an essential relay between the customers and the company because the product fundamentally conveys the company to its customers. Corporate identity as expressed through product design aims to propagate and sustain the firm’s identity, as well as to further establish the company through activities, that will help them to gain trust from consumers (www.lg.com, 2006).

A product is the physical result of a corporate system and has a long-term effect on the consumer/user. Depending on the sector, every six-months or year, new product models are released and marketed. Companies try to convince consumers that their newest product is better than the previous one, and is of course superior to its competitors. In time, there develop thousands of products with essentially identical functions. It is important to differentiate the product set and to uniquely define every product. Every product should be unique, yet designed and produced with the same philosophy and corporate background.

In this study “product” is defined as a designed, developed and produced object for a competitive market. The selected product must first be differentiated from its former model while at the same time accommodate visual and emotional relations with other products or sets of the company. The product must also be differentiated from competitors and appear unique in the marketplace

Product is something that filters out from the elements that a company have (Figure 3.1). Issues such as organizational structure, technology, time to market and decision-making processes shape, and develop the product.

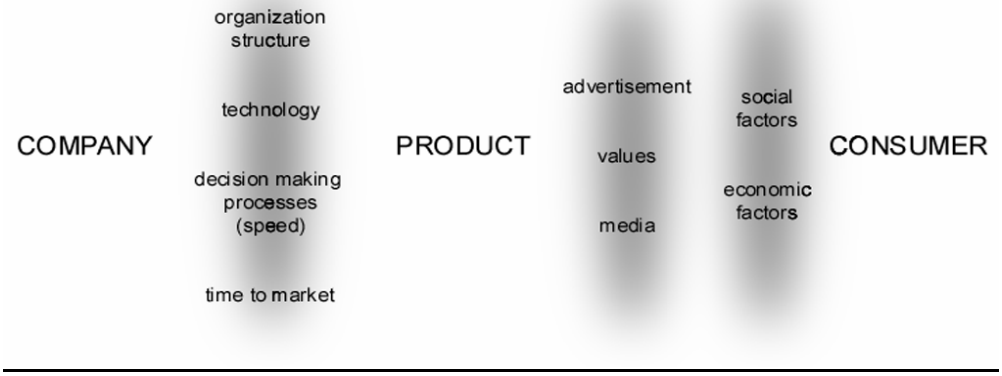


Figure 3.1

There are invisible filters between the consumer, product and company

The unique product that filtered out from the company values during its development and production processes actually reflects all the means that company has. The consumer feels the organizational structure and values of the company by interacting with the product, whether this assessment takes place consciously or otherwise. According to Forty, because products help to develop corporate and brand identities, companies such as Braun, Smith & Wesson, and Ralph Lauren, have distinctive design philosophies that help them to develop and reinforce a recognizable corporate character (Cooper & Press, 1994).

In today's marketplace, only those corporations making highly competitive products will be able to survive. In the longer term, products from major competing companies around the world will become increasingly similar. Thus, the whole of the company's personality and identity will become the most significant factor in choosing between one company and another (Olins, 1995). According to Olins, in corporate identification, each element must not only stand alone successfully, but examined as a whole, should build a unified story. If the story is interesting and unique, people will listen and want to know more. .

3.2 Place of Industrial Design in the Product Development Process

For companies, whatever their size and business, good product design is both a goal and a tool. Bernsen stated that all products can be improved through design. In most cases, design can increase the usefulness of the product, the effectiveness of the product's communications and the perceived value of the product. It can reduce the manufacturing costs and generate spin-off sales for other products of the company. According to Bernsen, these factors explain the success that companies achieve through good design (Bernsen, 1989).

The discipline of industrial design occupies a position which plays a determining role on physical and visual attributes of products. The definition of product attributes includes the interface which determines form, color, texture and properties of use. The values lent by these characteristics to the product may vary during the process of product design and may also vary as a result of company factors which impact this process.

3.2.1 Product Development Steps

The designing process of a camera by Canon constitutes the case herein. The information on the process of design collected from the official Internet site of Canon emphasizes the importance of the contribution of the industrial design discipline on the product.

Project inception When a new product is under development, design projects will proceed based on concepts that are developed by Canon's product planning committee. In this stage, designers will confirm their understanding of the product concept and determine the direction they want to take for the final designs. (http://www.canon.com, 2006) General technical drawings of products are used in the initial meetings. Designers can conjure up one image after another simply by looking at the underlay, which is the name they use for these drawings (Figure 3.2).

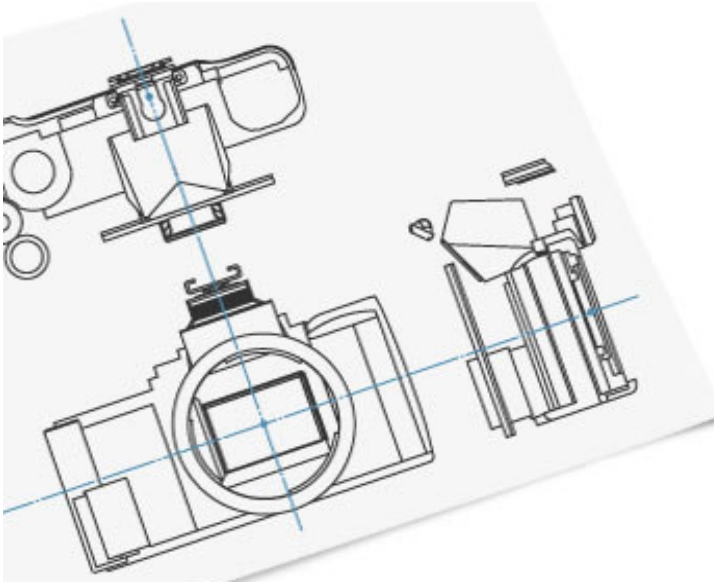


Figure 3.2 Project inception

Idea Sketches Sketches are generated from ideas developed during brainstorming sessions. These sketches are based on the general technical drawings. Figure 3.3 shows the design sketch of a designer who worked on the EOS-1V. According to him or her, emphasizing the smooth line sloping on both shoulders from the pentaprism-cover is the key form of the EOS-1V. Designers eliminated the chamfering of the front pentaprism-cover and generated design precedent with EOS-1V. The message the designer is trying to express is that the camera is "tough," yet "supple." The presentation of an overall image of a "metallic mass," has been carefully avoided by calling attention to the cover (Figure 3.3). Sport photographers comprise the most important segment of market share in Canon's professional division. The designers gave the words "power" and "aesthetics" as the key words for sports activities and determined the form of the product by abstracting upon these words. The producer of this camera reflected its product identity on the form within a defined concept, and the product transformed into a three-dimensional symbol which reflects the corporate identity.

Figure 3.3 Idea skeches

Narrowing down the design candidates Related divisions spend a great deal of time evaluating these sketches to select the best few that will proceed to the final rounds. Designers refine the details with engineers. In this stage, design professionals make critical decisions about whether to go with their designs or with the production designs. This back and forth relationship is a hallmark of the design process.

Rough Mock-ups For evaluating shapes, volume and basic operatability of the ideas and to give dimension to concepts that are difficult to perceive through sketches, rough mock-ups are constructed (Figure 3.4).

3D CAD After a design has been finalized, it is converted into a 3D data format. Once the data is input, the camera design enables the designers to generate a computer graphic (CG) rendering and a simple mock-up. That data is then made available to the engineers (Figure 3.5).

Figure 3.4 Rough mock-ups

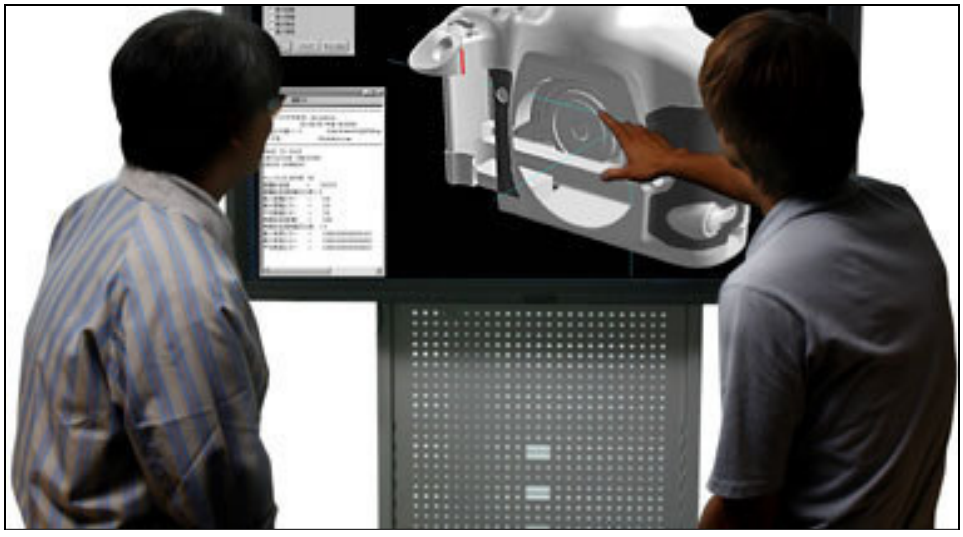


Figure 3.5 3D CAD

Mock-ups Simple mock-ups are used to evaluate the actual size and shape of the camera and to simulate how it might feel in the user's hands. (Figure 3.6)

Figure 3.6 Mock-ups

User Interface In digital camera design, much thought is given to the monitor displays and to the functions for operating the camera. During this stage of the design process, function assignments of each button are carefully studied and determined (Figure 3.7).

Figure 3.7 User interface

Coloring and Surface Finishing Coloring is also considered during the sketching stage of the project, but in most cases, it is more seriously studied after the shape has been set. Painted, metallic and plastic samples are created to help decide how the camera's surface finish should look (Figure 3.8).

Figure 3.8 Coloring and finishing

Production Model Prototypes After the design development process finishes, regular and frequent tests are conducted to ensure that the original intent of the design will be achieved in the manufacturing stage. Along the way, when any problems occur, modified prototypes are created, tested and sent on to mass production (Figure 3.9).

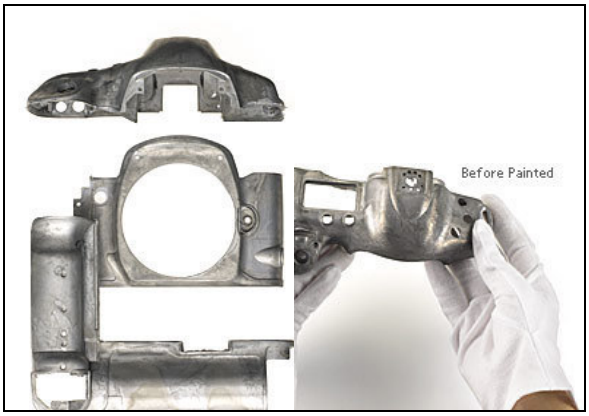


Figure 3.9 Production model prototypes

Announcement and Release After mass production is completed, the product debuts at a variety of events, such as fairs, new product announcements and camera shows. Then camera is displayed at camera shops and various retail outlets (Figure 3.10).

Figure 3.10 Announcement and release

3.2.2 Form Factor

Throughout history and in every known culture, people have found pleasure and meaning in the use of their eyes. They have consciously attempted to produce objects of beauty and have delighted in them (Csikszentmihalyi and Robinson 1990, p. 2). A well proportioned and "designed" object not only have positive aesthetic qualities, but also attracts consumers and communicates to them, This value added product increase the quality of the user-experience. Fether argues that the form of a product is one of the most compelling and seductive attributes. A Bang & Olufsen television or the engineered lines of a BMW say as much about the brand through their physical design as through their advertisement or packaging (Fether, 1998, pp 10).

The form or design of a product may contribute to its success in several ways. In crowded markets, product form is one way to gain consumer attention (Berkowitz 1987; Dumaine 1991; Jones 1991). With new product offerings, a distinctive design can render older competitors immediately obsolete and make later competitors appear to be shallow copies (Midgley 1977). The form of a product is an important means through which to communicate information to consumers (Nussbaum 1993). Product form creates the initial impression and generates inferences regarding other product attributes in the same manner as price (Berkowitz 1987).

In addition to managerial considerations, product form is also significant in a larger sense because it can affect the quality of our lives. The perception and usage of beautifully designed products may provide sensory pleasure and stimulation. In contrast, objects with unattractive forms may evoke distaste and displeasure. Essentially an applied art, product design has a greater impact on our daily lives than do other art forms, because we see and interact with products every day (Lawson 1983).

Product form can also have long lasting effects. Although many goods are quickly discarded, the aesthetic characteristics of more durable products (Figure 3.11) can have an impact for years on users and non-users alike as products become part of the sensory environment. (Lawson 1983).

Figure 3.11 1975 Beetle

Design is clearly an interdisciplinary activity.It brings together both the needs of consumers and the objectives of the firm in creating products and services which have positive aesthetic qualities perform appropriately, express a commitment of quality, and can be produced efficiently. Design is a complex discipline that has to meet company objectives and integrate appropriately with other corporate objectives. This requires that the design process be effectively managed (Cooper, Press, 1994).

3.3 Product Attributes

As the main argument of this thesis is about products which are designed and produced in industry, the conjunction of outside form and inside technology is a crucial area. The digital cameras selected for the field study includes the required technological structure as well as the details and systems which ensure that the user apprehends and uses this technology physically and mentally. The physical structure is a package which organizes the complex media based functions and presents it as an understandable service for users (Figure 3.12).

Physical appearance is the combination of the inside and outside components of a product. With modern technical products such as cellular telephones and cameras, the usability of technical features is one of the main necessities of product design.

Throughout the process of product development, an idea is transformed into a tangible object. Industrial design is the discipline with the greatest influence on the visual attributes of the product. Along with physical and technological factors, the visual message that the product conveys is an important factor which ensures positive interaction between the user and the product. The products is shaped during the design process, passing through multidimensional filters such as the coexistence of various geometrical forms, the mutual proportion of color, line and texture components, technology, fashion, cultural differences, and more (Figure 3.13).

According to Eppinger & Ulrich, a product's core technology is generally not enough to ensure commercial success. The globalization of markets has resulted in the design and manufacture of a wide array of consumer products. Fierce competition makes it unlikely that a company will enjoy a sustainable, competitive advantage by technology alone. Companies such as Motorola are increasingly using industrial design as an important tool for both satisfying customer needs, and differentiating their products from those of their competitors (Eppinger & Ulrich, 1995).

Figure 3.12 Inside-outside relation

Figure 3.13 Formal attributes

Different systems are required for the products sold at different prices and produced for different consumer groups. For companies, the most basic flexibility ensured by standardization is the reduction in the period of design and production; standardization develops as a natural protocol throughout the design process. Attribute continuity and standardization of parts and molds are two sides of the same coin.

Figure 3.14 demonstrates three handheld radios made by Motorola. All of these products seem to resemble each other at first glance. The most important contributor to their resemblance is their common structure and elements; volume and channel knobs, antenna and the push-to-talk button are all identical. This demonstrates the flexibility of variation with underlying visual similarities of product sets. The main plastic injection mold of the body is the same for all models. It provides the opportunity to use the same parts in three different casings by only changing the front cavity insert of the plastic injection mold.

Figure 3.14 Motorola GP Series handheld radio

3.4 Corporate Identity Product Design (CIPD) - Products as Corporate Identity Symbols

Maintaining cohesion has always been a problem for organizations which extend over large geographical areas, and across different countries and languages. Empires, armies, navies, religious orders and modern corporations have all used design to convey ideas about what they are like both to insiders and to the outside world. The task was as great for the monastic orders of the middle ages as they are for multi-national corporations today. Design policies of multi-national companies have been developed to fulfill specific purposes, making the identity of the company apparent to the employees and to the public (Forty, 1992).

Products are the solid form of a company's identity, where each product conveys management, company strategy, organization, vision and a mission through its design and implementation. Products are the most concrete way of communicating identity to the public; the methodology and design process is extremely important in eliciting high performance from the company and its user indicators. Companies such as Braun, Harley-Davidson, IBM, Olivetti, Philips, Sony, and many others have for many years devoted a high degree of attention to the way their products look, feel, and operate. According to Deschamps and Nayak (Deschamps, Nayak, 1995: 42), for these manufacturers, design is not a cosmetic add-on, but a means of expressing their corporate identity in the market-place and of establishing their products as synonymous with quality.

According to Dowling giving a product a 'personality' is a key factor for market success. (Dowling,1994). His statement implies that consumers do not buy products; rather, they buy products with personality, namely brands. His idea is that people buy products not only for their basic functions, but also for their symbolic meaning. Products and services offer the user both functional and psychological benefits (Dowling, 1994). According to Bruce, & Potter, & Roy, & Walsh, 1992):

> *In designing a product to be seen by potential customers, the designer projects an image of a desirable life-style by 'symbolizing meanings beyond the ones that are obvious' (Woudhuysen, 1989) and in so doing, turns a need into a want (Conran, 1989). Design thus provides an 'elusive psychological bridge' between people as they presently are and people as they would like to be (Seymour, 1989). (p. 45)*

As mentioned before, corporate identity is studied as a branch of graphic design in the current literature. The examples concerning the relation between product and corporate identity are listed below. The concepts of color, form and design consistency and perceptible corporate image on a product are analyzed using these examples.

The concept of design consistency can be dealt with in two dimensions: diversity of time and diversity of product groups. (Figure 3.15) The relation among different product groups will be examined in Chapter 3.4.2 drawing from the cases of Canon, Nikon, Braun and Olfa. Aesthetic similarity of products made by the same company is an important issue in terms of this study. Moreover, the gradual design evolution of products in the same series is also a topic related to corporate product design. Total development in technology, fashion and changing consumer need in time, shapes the product and eventually, shapes the company as well. This second fact is also observed in the light of products marketed by Mercedes, Porsche, Canon, Nikon and Olympus

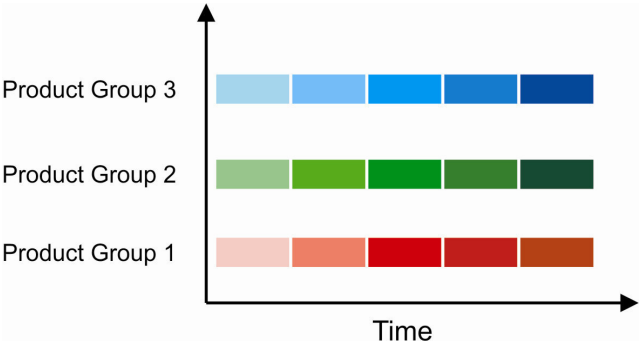


Figure 3.15 Effect of product groups and time variables on product

3.4.1 Time Diversification

3.4.1.1 Mercedes S-Class

Ludlow is quoted as stating that corporate design is concerned with the elements and application of visual identity, such as logotypes, symbols, colors, products and environments. (Ludlow, 1993: 29) Designers realize the necessity for the integration of many disciplines in

the design process. These capabilities must relate to communications and aesthetics and must include behavioral psychology and marketing, as well as graphic arts.

As the designer has the role with the greatest responsibility in shaping the product, it is stated that the aim of the designer is to give the product a sense of unity, coherence and individuality which together produce a distinct product personality. Figure 3.16 illustrates Mercedes automobiles belonging to the same series. The recycling of forms is the basic clue demonstrating that the products belong to the same group. Ind stated that an international organization should use a symbol that conveys a consistent message (Ind, 1992). In the example of Mercedes, their symbol is an air grill of an engine. The symmetrical lines which run from the grill on the engine bonnet to the windscreen are the expressions of a specific visual style which is common to all models. It may not be necessary to see the emblem or logo to understand that a Mercedes car is in fact a Mercedes car.

Figure 3.16 Form development of S-Class Mercedes

3.4.1.2 Porsche 911

The company Porsche was awarded a prize from IF Industry Forum Design in 1994 for successfully transitioning its product identity to form and for establishing visual coherence among its products. The design of the Porsche 911 was rooted in organic lines, giving an impression of suppleness and power. A strong sense of integration was an omnipresent theme of the vehicle, as if the body of the car had been machined from a single piece of steel. Although the multiplicity of lines and the subtle interplay of convex and concave curves, the result is a shape that appears deceptively simple. This design theme for the 911 is applicable for all examples shown in Figure 3.17 and 3.18.

A Porsche 911 from the 1960s juxtaposed with a newer 911 model from the 1990s (Figure 3.17, 3.19), along with the newest edition from 2006 (Figure 3.18) clearly shows that the similarities are more than striking. They are essentially the same car, despite many refinements in detail. According to The Hannover Yearbook of Industrial Design from 1994, Porsche has consistently pursued an evolutionary strategy of design based on the principle that forms of proven excellence –in function, aerodynamic efficiency and aesthetics- should not be changed. The jury states in the Yearbook of Industrial Design:

> *"The design of this sports car classic has not been radically changed or tinkered with in the name of innovation. Instead it has undergone a gradual progress of organic evolution. This latest design overhaul has served to emphasize even more strongly the principle on which the design of this car has been based from the outset, namely its high degree of formal integration. With its strategy of judicious, carefully managed change Porsche exemplifies the long-term approach to product design that will become increasingly important in years to come." (The Hannover Yearbook of industrial Design, 1994)*

When we look at the Porsches of 2006 (Figure 3.18), the similarities in overall appearance of the new model to older editions adds credence to their design strategy; an added benefit of this tactic is that Porsche avoids devaluing its predecessors by making them appear dated. Apart from many technological innovations and technical refinements, the shape of the product set is very similar through all of its iterations; the design consistency of visual attributes is clearly perceivable.

Figure 3.17 Porsche 911 series side view
The Hannover Yearbook of industrial Design, 1994

Figure 3.18 Porsche 911 year 2006

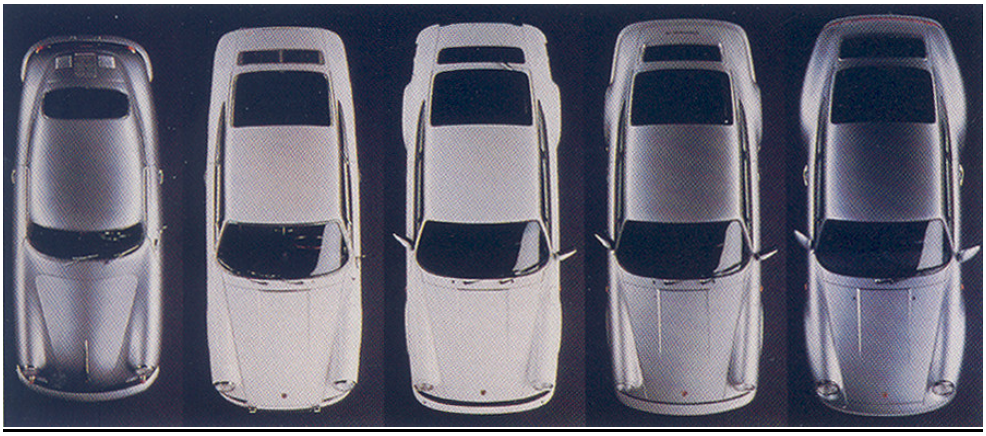


Figure 3.19 Porsche 911 series top view
The Hannover Yearbook of industrial Design, 1994

3.4.1.3 Canon EOS Series

The product line of “amateur SLR” is put to market by Canon for use by users in the amateur and semi-professional customer segments. This product line is shown in Figure 3.20. Main models and sub-versions of EOS 500, 300 (rebel) 300d, 350d and 400d are presented in chronological order according to their date of marketing. When the overall form features of the devices are taken into consideration, there is a definite unity observed within the group. Although there is no significant similarity between the 1993 model EOS 300x and the 2007 model 400d, it can be clearly observed that each perennial update in design is crafted by modifying the previous edition. The most prominent physical feature in the product range is the use of double colors. Metallic color use may have been used so as to attract a more general audience. When the devices are scrutinized, the common feature in all models is an indent underneath the flash. This purely functional touch was created for conformity. Various lens options affect the appearance of all models of the series.

When 14 years long design process from 1993 onwards, all the developments in this process and the variety of the consumer needs are all considered, design consistency relationship has been interesting among the abovementioned models.

3.4.1.4 Olympus L, Camedia and E Series

In Figure 3.21, two samples of each of the L, Camedia, and E series made by Olympus are shown. The first impression of an audience of these samples is to remark on the diversity of form and styling in the cameras. Form consistency can be observed in the sampling products.

EOS Rebel (1993)

EOS 500n (1996)

EOS 300 (1999)

EOS 300v (2002)

EOS 300d (2003)

EOS 300x (2004)

EOS 350d (2005)

EOS 400d (2007)

Figure 3.20 Canon Eos 300 Series

Olympus L 3 (1992)

Olympus L 10 (1995)

Olympus Camedia 1400L (1997)

Olympus Camedia 2500L (1999)

Olympus E-10 (2000)

Olympus E-1 (2003)

Figure 3.21 Olympus Series

Nikon F (Nikon's first SLR camera) (1959)

Nikon F2 (1971)

Nikon F3 (1980)

Nikon F4 (1988)

Nikon F5 (1996)

Nikon F6 (2004)

Figure 3.22 Nikon F Series

Additionally notable are the smooth transitions between the surfaces in the L3 and the L10 models, as well as the organic form relationship between the lens, handle and body, lending a visual clue that these two models are in the same group. The Camedia 1400L and 2500L models seem particularly reminiscent of the types of objects designed for science fiction movies. In the E-10 and E-1 models, complexity of form is employed to create a functional and professional impression of the camera. The details of the different models, including shutter release and pentaprism, are closely related with each other in the various iterations of the camera. A distinguishing feature of Olympus products is their divergence from the common product typology used by compared other brands.

3.4.1.5 Nikon F-Series

A basic visual history starting with the first F series –the first SLR type machine of the company - which Nikon put onto market in 1959, to the F6 model released in 2004 is presented in Figure 3.22. The visual feature which has been carried through from the F3 model until today is the use of the color red. One can see that the function buttons have been dispersed to the right and left of the lens in various samples. The graphic indicating the model number (F3, F4, F5, and F6) are written in the same font as the “F” emblem used in the very first model. Overall, the devices of the series are function-oriented and tough in appearance.

3.4.2 Product Diversification

3.4.2.1 Canon and Nikon

The interpretation of the visual attributes of two companies competing in the same sector, namely Canon and Nikon, and the presentation of groups of competing professional products is addressed in this section. The Digital Single Lens Reflex (DSLR) cameras are examined in a comparative interpretation. Each DSLR camera has to be composed of certain, basic parts. The sizes and geometrical proportions of physical elements such as the lens, pentaprism, pop-up flash (which may not be available on every product), handle, battery case and display resemble each another irrespective of brand and model within the scope of hand and face anthropometrical data and technical limitations.

The objective of the author is to interpret the two- and three-dimensional elements used by the companies to ensure that their products - whose visual proportions are similar due to technical requirements and structural obligations - acquire a product personality. Figures 3.23 and 3.24 involve 6 Canon products and 5 Nikon products. Though DSLR cameras usually appeal to professional users, they are designed to be useable for a range of market segments. Each of the corresponding products in Figure 3.23 and Figure 3.24 is designed for the users in the same market segment. DSLR cameras consist of product groups which can be qualified as an

admiral ship for all manufacturers. Hence, these are the prestigious products whose product identities are emphasized most by the manufacturers. The basic factor, highlighting the distinction between the products for which the same technology and similar materials are used, and whose fundamental functions are extremely similar, is the visual attributes of the products and their visual impact on the user. The physical attributes common to all DSLR models made by companies in the market -when this thesis is published- provide clues that these products may be manufactured by the same company.

The aim of Figure 3.23 is to emphasize the visual similarities of DSLR cameras in the EOS series of Canon. The handles and shutter release buttons of all the cameras are very similar to each other. The model-numbers are located on the upper-left side of the cameras. The button for removing the lens is placed on the right side of the lens circle. In EOS 1 and EOS 5, the form of the shell covering the pentaprism and its placement with respect to the lens is very similar. In the EOS 30D, EOS 20D, EOS 350D and EOS 300D models, there is a pop-up flash; the button used to turn the flash on is placed to the left of the model number. Additionally, the placement and design of the pop-up flash, as well as the brand name written above the lens indicate that the products are in the same group.

Figure 3.24 includes DSLR cameras from the D series by Nikon. The most striking element of the Nikon is the red spot in the upper part of the handle. The triangular structure and color tones act as the determining characteristics classifying these cameras as a group. There is no triangular form on the D100 model. Rather, there is a spot of identical color in the internal part of the handle. The strong emphasis of the red spot on the black background puts this model in the same category with the others, though its form is different. The similarity of adjustment and function buttons located below the shutter release button shows the similarity in camera functions and features. The most remarkable component disclosing form similarity is the angled structure over the pentaprism and the pop-up flash. This identical form is particular to Nikon cameras and is very prominent, particularly in the D200, D100, D70 and D50 models. The “c, s, m” option button located on the right side of the lens in D2x and D100 models is a consequence of using the same utilization scenario for both cameras. The number of buttons on the left and right sides of the lens varies according to the technological level of the model; however, their general styles are identical.

Figure 3.23 Canon EOS series

Figure 3.24 Nikon D series

3.4.2.2 Braun

At the beginning of the 1950s, the products of Braun were technically stable, yet undistinguished. When the owners of Braun changed in 1951, this paradigm changed as well. The new management was interested in modern design and decided on a new approach. At that point, the firm established the formal characteristics now intrinsic to Braun's design process. They made products with clean lines and an appearance of stability synonymous with their brand by using design as the foundation of their corporate identity. With an in-house design department, Braun developed a style based on geometric simplicity, utility and a utilitarian approach to the design process (Fiell, C&P, 1999:131). The product design of Braun was balanced and unified, but this was not always achieved by simple symmetry. By eliminating every unnecessary detail and concentrating on essential elements, Braun embraced a reductionist approach to design (Heskett 1980, p.142).

For example, "Kitchen Machine KM 321" (Figure 3.25) creates a strong sense of order by employing a series of aligned and parallel components (Heskett 1980, p.142). Heskett also added that every element of Braun's designs were similarly balanced and unified. According to Heskett, "Kitchen Machine KM 321" can be thought of as a composition of simple masses. "A series of alignments and parallels creates a strong sense of order, as with the line of the bowl-rim continuing the joint in the casing, and the curves of the casing aligned to those of the bowl." The use of white surface finishes, with grey and black detailing, adds to the impression of concentrated focus on organizing the essential elements and eliminating every unnecessary detail (Heskett, 1980:142).

Braun's unadorned style was not only used on the product's design, but was also applied to all areas of corporate design including packaging, logos and advertising.
The company uses design innovation to achieve technical and functional advances. The strong aesthetic clarity of Braun products is the outcome of a logical ordering of elements and the search for harmonious and unobtrusive unity (Fiell, Charlotte and Peter 1999, p.133).

Figure 3.25 Kitchen Machine KM 321
Fiell, P. & C.(1999: 131)

3.4.2.3 Olfa

The cutter model from Olfa provides a striking example regarding the use of color:

> *"The body color of Olfa products was determined in 1967 by our founder Yoshio Okada. He decided on a soft yellow color (similar to egg yolk), and blended it into a soft pastel color. In those days, tools were dark colors, such as black and silver. Realizing a knife should be easily recognized in a toolbox and be associated with safe and familiar images." (www.olfa.co.jp/en/company/index.html#02) 2006 09 14*

The official web site of the corporation asserts that the colors used in the tools not only help to distinguish them in a toolbox, but also ensure that consistency is achieved amongst all products. The products designed for different requirements become a defined family group thanks to the repeated and deliberate use of a specific color (Figure 3.26).

Figure 3.26 Cutter series of Olfa

CHAPTER 4

FIELD STUDY DESIGN, DEVELOPMENT AND IMPLEMENTATION

4.1 Introduction

The purpose of the field study is to examine the differences and similarities in the attributes of products of a certain group in the same sector and investigate the differences in qualities perceived by respondents with varying social, economic and cultural backgrounds.

As mentioned in previous chapters, firms make use of the physical attributes of their products to create and/or reinforce brand identity. The objective of this case study is to find out whether these deliberate physical attributes are in fact absorbed by potential users and if noticed, to detect the level of perception and acquire information on the nature of this process.

The results of the research are expected to provide valuable information concerning consumer perception of product groups. These data has the potential to contribute to the product design processes of items in the same group by shedding light on consumer perception of corporate identity as communicated through products.. Additionally, it can provide an example for similar studies. Furthermore, it should be recognized that the outcomes of a similarly conducted study will be different provided that the products or product groups are different. The results of the study should not be generalized so as to assume they apply to all products.

4.2 Expectations for the Case Study

It is assumed that the products selected from various brands for use in the case study are designed with corporate identity in mind. In other words, there is a common visual language among the products, regardless of brand. The expectation of the author is that a user or a potential user will be able to distinguish different brands from these products, even though they do not have an emblem or a logotype.

This qualitative research is structured so as to meet the abovementioned expectation with respect to both its implementation methodology and data evaluation method.

4.3 Determining Survey Method

Soutgate (1994) proposed a quick test for total branding. According to him, very few packaging designs successfully achieve "Total Branding". He proposes for testing:

> *Cover up the logo and ask yourself honestly (or even better, ask your consumers via qualitative research) the four key questions:*
>
> *What proposition is being communicated?*
>
> *Is it distinctive and motivating in the competitive context?*
>
> *What personality does this brand have (i.e. what would be its characteristics if it literally came to life as a person)?*
>
> *Is it distinctive and motivating in the competitive context?*
>
> *Depending on the answers to these questions, it should be obvious what the brand is, even with the logo covered up.* (Soutgate, 1994:54)

Although the mentioned test has been suggested for product packages, hiding the logos, which is the basis of the test, will be employed in the field work planned for this thesis. The main concern for this study is the assessment of the categorizations of product grouping arrived at by looking exclusively at images. The test subject is then forced to draw conclusions from the form and appearance of the product in the absence of corporate logotypes and emblems.

4.3.1 Narrowing the Case

Digital cameras are selected as the sample product for the study because they are popular products with rapidly developing technology. Furthermore, their suitability for personal use and the model segmentation in the market ensures

diversity in the samples. This is required for comparison purposes in the field study. Additionally, cameras are both user and technology-driven products. Thus, this may open the possibility of further studies concerning the relationship between corporate identity and usability. In addition, the keen interest and knowledge of the thesis's author in photography and the photography sector was an influential factor in the selection of this product category.

Cameras are categorized among technology and user driven groups of products (Eppinger & Ulrich 1995 p: 168), and they are primarily designed for personal use. In designs made for personal use, the diversity in products is wide since the demands of users of the same product vary considerably. In its broadest sense, every user forms a buyer group. The firms change the formal attributes of their products without making any dramatic changes to the basic functions of the device so as to increase their potential consumers (Erhan, 1978: 95). To accomplish this, different brands offer ranges of products that appeal to every consumer group. The development and popularity of the internet and desktop publishing has led to an increase in the use of digital cameras for hobby and entertainment purposes. Cameras can generally be categorized into three main groups: professional, semi-professional and amateur. The firms offer their consumers a wide range of models and prices within each market segment.

4.3.2 Defining Product Groups

The objective of this survey is the comparison of visual attributes of the products, using themes such as self-integrity and unity of products from a range of brands. On the speculation that products are brought to market with ideal design and development standards, the products are introduced into the market on essentially equal footing. To this end, images of digital cameras from three different firms – six from each firm – were distributed to respondents, who were asked to classify the brands according to the visual attributes of the products. Each brand (A, B and C) has two products in the professional, semi-professional and amateur segment categories respectively.

Market segmentation may be regarded as the optimization between the characteristics of products and the target audience. Hence, the manufacturers of cameras have developed products in a variety of segments so as to appeal to as many consumers as possible. In this study, the visual consistency of products

from different sectors within a firm was explored. The unity of different products of the same brand developed with different technical features and different target audiences was compared.

The digital cameras are categorized into three structural major groups. The first group is the single lens reflex (SLR) cameras. Cameras in this group are usually preferred by professionals or high-level amateurs. These cameras are equipped with interchangeable lenses, and have the most developed image processors on the market. The cameras in the professional category in the survey were selected among SLR-type cameras made by the firms. According to www.dpreview.com, there are 22 brands competing in the digital camera market. Nine of them make single lens reflex digital cameras (DSLR).

Amateur (also called point-and-shoot cameras), are very ubiquitous owing to their low-price and accessory alternatives. They are usually small in size and are largely designed for the hobby and amateur audience. They come in a wide range of colors, forms and styles. While they may not meet the demands of professional photography, increasingly affordable technology has improved the image quality of these cameras. Digital photography technology has attained a certain level of maturity that ensures that even the cheapest camera has satisfactory performance in terms of image quality and details.

Semi-professional cameras are sometimes called compact or SLR-like cameras. Though the cameras in this sector may appear physically similar to SLR cameras, they are not appropriate for professional use because they have fixed lenses. However, they are equipped with certain electronic features which are as developed as those found in SLR cameras. Semi-professional cameras fall somewhere in-between the professional and amateur segments. These are hybrid cameras that combine certain formal and technical features from both segments.

To minimize the number of images and ensure a reliable comparison, a minimum of two products from each segment for every brand are included in the study. According to internet research (www.dpreview.com:2006), the number of firms with sufficient product diversity in the professional, semi professional and amateur segments is nine. These companies are Canon Fuji, Kodak, Konica-Minolta,

Nikon, Olympus, Pentax, Samsung and Sony. Among these firms, Canon, Nikon and Olympus were selected for use in this study owing to their wide range of models.

The products included in the survey were selected among the cameras available on the market (2006). Brands, models and segments of the cameras used in the field study are listed in table 4.1.

Table 4.1 List of cameras used for study

	BRAND/MODEL	**SEGMENT**
A	Canon Power shot G6	Semi professional
B	Olympus E20	Semi professional
C	Canon EOS 300D	Professional
D	Olympus C8080	Semi professional
E	Olympus E1	Professional
F	Canon Powershot Pro1	Semi professional
G	Canon EOS 20D	Professional
H	Nikon Coolpix 8800	Semi professional
I	Canon Powershot A620	Amateur
J	Nikon D2Hs	Professional
K	Canon Powerhot S80	Amateur
L	Nikon D100	Professional
M	Olympus Stylus Verve	Amateur
N	Nikon Coolpix 4500	Amateur
O	Nikon Coolpix 5400	Semi professional
P	Nikon Coolpix 5900	Amateur
Q	Olympus Stylus 800	Amateur
R	Olympus E300	Professional

4.4 Embodiment of the Study

Cards bearing images of the cameras were used in this study. The visual proportions of images with respect to each other and their viewing angles were taken into consideration during the preparation of the image cards owing to the fact that these are important factors in facilitating comparisons by the respondents. All image cards have identical viewing angle of each product. On all image cards, there are front, back, top, bottom, right, left and perspective images of the cameras (Appendix C). All orthographic images -which had been scaled to similar object sizes- were assembled on 18 image cards. The ratio and scale factor of each card and each image are the same, thus ensuring the impact and data conveyed by each image is identical. Consequently, the perceived differences in size were also used as a criterion in classifying the products. The light-color grids in the background of the images give the respondents a way to compare the products' sizes.

Each image card is printed on A4 size paper. As it was challenging to organize 18 A4-sized papers, each card was minimized by folding (Figure 4.2).

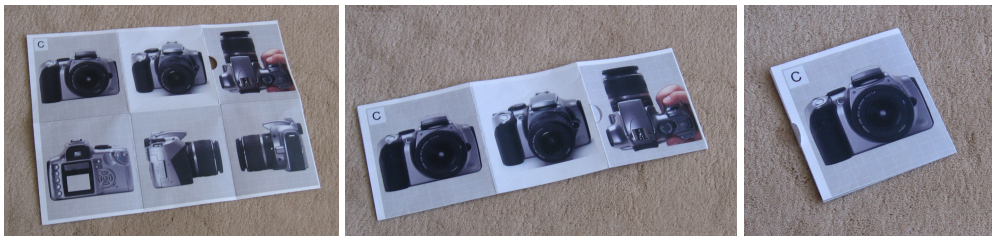


Figure 4.2 Folding pattern of image cards

All images used on the cards were taken from the webpages of www.dpreview.com. Every image is processed using an image-editing software program to erase the logo, symbol and other branding items. All the other graphic elements have been left untouched as they can give clues that reflect the corporate character. In order to create the partitions of brand and sector in respondents' minds, a 50 cm by 80 cm background chart is used (Appendix B).

4.4.1 Sampling

The target group is described as “the persons from whom you will gather information for your survey project” (Thomas, 1999:7). Thomas also added that if the researcher is asking about opinions and attitudes, the respondents should have the appropriate experience and knowledge to form an opinion or attitude about a topic. The participants of the survey were selected from people who had purchased a digital camera for themselves in the past three years. This was a requirement since the primary objective of this study is to examine how potential consumers perceive the visual integrity that firms attempt to create. In addition, these people have recently undergone the process of selecting and buying a product from numerous models and brands. Sixteen users were involved in the comparative study: eight female and eight male respondents. The respondents formed a heterogeneous group composed of people of varying age and professions. The age, gender, educational level and professions of the respondents is shown in Table 4.3

Table 4.3 Demographic data of respondents

No	Age	Gender	Education	Occupation
1	29	Male	H.Ed./Phd	Industrial Designer
2	47	Female	H.Ed./Phd	University Instructor
3	19	Male	High School	Student
4	25	Female	University	German Translator
5	29	Male	H.Ed./Phd	Mechanical Engineer
6	35	Female	University	Economist
7	31	Female	H.Ed./Phd	Social Scientist
8	42	Male	University	Quality Control Specialist
9	34	Male	University	Manager (medicine sector)
10	24	Male	Institution	Graphic Technician
11	25	Female	Institution	Chemistry Technician
12	58	Male	University	Painter / Artist
13	32	Male	University	Designer
14	38	Female	University	Civil Servant
15	30	Female	University	Administrator
16	24	Female	University	Tourism Representative

4.4.2 Methodology

The survey was carried out in an isolated environment with only the respondent and the controller present. These environments were usually in the homes or workplaces of the respondents (Figure 4.1). First, the respondents were asked to complete Part A of the survey (a copy of which is included in Appendix A), and then to read Part B. Next, the purpose of the study and expectations of the respondents were explained orally. Image cards (Appendix C) and the table (Appendix B) were shown to the respondents. It was explained that the respondents could open the image cards whenever they wished to see the other images of the cameras. The respondents were reminded that although the priority of the survey was to categorize the products as belonging to A, B and C brands, initial with characterization of the products by sector (professional, semi-professional and amateur), would facilitate the brand categorization process. The respondents were also reminded that they could have breaks whenever they wished during the completion and discontinue it without any excuse. All 16 respondents continue the survey till they think that they have finished the differentiation process.

Figure 4.1 A scene from a differentiation process

After an initial five to ten minute examination period, video-recording started, and certain questions were asked to respondents about the groups they had begun to classify. These questions are aimed at understanding the criteria with which the respondents classified the products.

4.4.3 Comparing Steps

All respondents of the field study first classified the cameras according to segment. After classifying the pictures into three brands, the respondents made brand groups composed of two products. There were some models that respondents had difficulty in classifying. In all surveys the classification process of the images was as follows:

1. 18 image cards were classified into “professional”, “semi-professional” and “amateur” segments, each composed of six products.
2. Each sector group was further divided into three brands.
3. The sector groups composed of two products were grouped by brand with products from the other sectors.
4. Certain changes were made in the final classification of sectors and/or brands.

4.4.4 Application Remark

Although subjects were reminded to think aloud during categorization operations, the long process distracted both the respondents and the author conducting the survey. Respondents, who at first verbally expressed every detail going through their mind, unconsciously forgot to continue this behavior as the survey progressed. The promptings of the controller were not effective in these situations.

The duration of the survey varied between 45 minutes to two hours. The average duration was around one and a half hours. Respondents became tired, bored and occasionally even panicky when the segmentation process, initially thought to be the easier part, lasted longer than they expected. The respondents seemed to regard the survey as a puzzle with only one correct answer. To combat this, subjects were reminded that every respondent of the survey would suggest their own right response and the main component being tested was the product identity of the firms.

According to the structure of the field study, it was imagined that the number of cards to be segmented would decrease as the table was filled in, thereby facilitating the operation. However, even if the respondent had placed 15 out of 18 cards, s/he needed to re-evaluate these 15 cards as the remaining cards may not have fit into the lingering blanks. As these re-evaluations took a long time, when placing the last remaining card, they automatically placed it in the last blank available in the table, even if they did not think that it was necessarily correct.

Some questions in the questionnaire are included so as to make respondents be familiar with the study process and motivate them. Furthermore, the responses to these questions may provide pre-information for further studies. This information is presented in Appendix E.

4.5 Evaluation and Analysis of the Study

The data from the case study is evaluated in two different steps. The first step is the statistical breakdown of the data obtained from the table in Part B of the survey.

The second step is composed of an evaluation of the key words used by the respondents to distinguish the products and an evaluation of the attributes according to which the firms are distinguished.

4.5.1 Step 1- Average Value of Section B of Survey

The table on which the respondents listed the brands and their segments is evaluated. Calculations are performed to give average values for the extent to which the respondents classify each firm correctly. In sum, the success of brand distinction is presented by percentages.

4.5.1.1 Evaluation Methodology

Table 4.4 illustrates the scores out of 100 which were obtained by comparing the results with the answer key. These results reveal that insofar as the scores are high, the unique recognition response to the brand is high.

In order to distinguish which column corresponds to each brand, it is decided that the column among whose 6 cells the same brand takes place more than others represents the given brand. For instance, table 4.5 illustrates the discrimination table from subject eight. When this table was compared with the answer key in Table 4.7, it was found out that column A is Canon, column B is Nikon and column

C is Olympus (Table 4.8). Differences based on sector were disregarded at this stage; only brand discrimination was taken into consideration.

Table 4.4 Cross reference chart

Correct answer ratio	Points
6/6	100.00
5/6	83.34
4/6	66.63
3/6	50.00
2/6	33.34
1/6	16.67
0/6	0.00

Table 4.8 illustrates the ratio of discrimination of subject eight. Correct answers are highlighted with a black mark. Respondent eight categorized the products correctly for 66.63% or four out of six of the cameras. Using this method, every respondent's discrimination level and average was calculated and is illustrated in table 4.9.

Table 4.5 Answer sheet of respondent 8

	A	**B**	**C**
Professional Segment	G	L	B
	C	J	H
Semi professional segment	R	E	F
	A	O	D
Amateur Segment	P	I	M
	K	N	Q

Table 4.7 Answer key

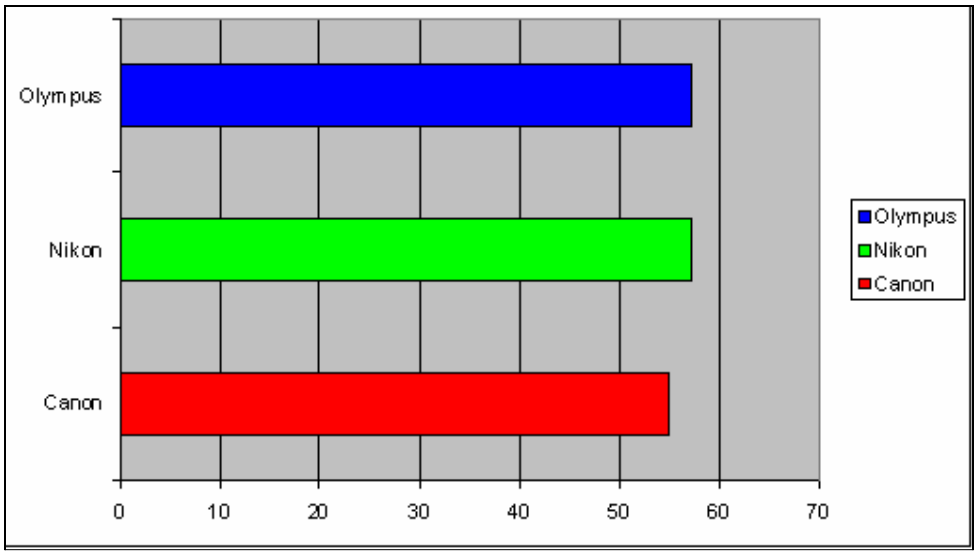
	Canon	**Nikon**	**Olympus**
Professional Segment	C (G)	J (L)	R (E)
	G (C)	L (J)	E (R)
Semi professional segment	A (F)	O (H)	D (B)
	F (A)	H (O)	B (D)
Amateur Segment	K (I)	P (N)	M (Q)
	I (K)	N (P)	Q (M)

Table 4.8 Ratio of discrimination for respondent 8

	A (Canon)	**B (Nikon)**	**C (Olympus)**
Professional Segment	G (Canon)	L (Nikon)	B (Olympus)
	C (Canon)	J (Nikon)	H
Semi professional segment	A (Canon)	O (Nikon)	D (Olympus)
	R	E	F
Amateur Segment	K (Canon)	N (Nikon)	M (Olympus)
	P	I	Q (Olympus)

Table 4.9 Average discrimination percentages of respondents

	CANON (%)	NIKON (%)	OLYMPUS (%)
01	83,33	83,33	100,00
02	66,67	83,33	83,33
03	33,33	66,67	33,33
04	50,00	50,00	66,67
05	66,67	66,67	83,33
06	50,00	50,00	66,67
07	50,00	83,33	50,00
08	66,67	66,67	66,67
09	100,00	66,67	66,67
10	50,00	50,00	50,00
11	50,00	50,00	50,00
12	50,00	66,67	50,00
13	83,33	66,67	83,33
14	50.00	33,33	50.00
15	66,67	66,67	66,67
16	50,00	50,00	50,00
AVARAGE	**55,21**	**57,29**	**57,29**



4.5.1.2 Comparison and Analysis of Survey Results

The principle aim of the survey is to analyze brand segmentation; consequently, the products were selected from various segments so as to measure the design consistency within product groups. The averages are collected in table 4.9. From these values, it is evident that the segmentation rates of the firms are very close in value; in fact, the Nikon and Olympus products were segmented at the same rate. The reason for the low and uniform rate are the weak similarities in the forms of cameras of the same brand in different segments.

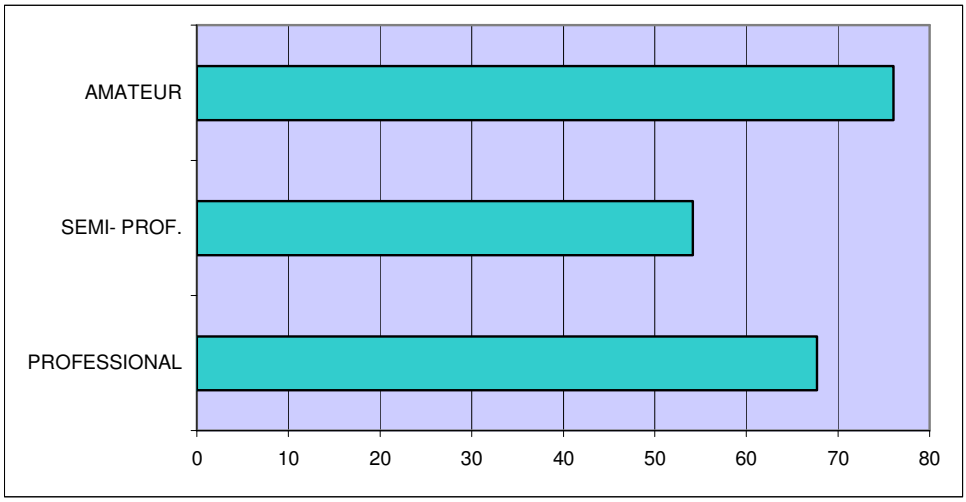
The discrimination rates of devices in the professional, semi-professional and amateur segment groups were evaluated according to the methodology defined in 4.5.1.1, and are given in table 4.10. According to this data, the amateur group is best and most accurately classified. The designs of cameras in this segment are more focused on form and geometric freedom in order to appeal to the target market. Only two respondents in the survey self-categorized their interest in photography as at a “semi-professional” or “professional” level. Other respondents categorized themselves as: “not interest”, “somewhat interested” and “interested”. From this data, one can conclude that this group, mostly composed of amateur photographers, was most discerning with the cameras in this sector.

The function-determined forms and the styling of the professional cameras deviate greatly from the amateur models, while their structures are the similar. Repetition of specific geometric forms gave sufficient clues for grouping cameras in this segment. Form diversity among amateur devices and form similarity among professional devices determines the ease of distinguishability of these segments. The hybrid nature of the semi-professional cameras made it difficult to distinguish among the products in this sector.

An additional reason for the lack of notable difference between brands when examining the firm segmentation of respondents is that the firms all have a distinct product identity. Design, production and competition conditions which have existed for decades have trained the firms towards building strong identities for their products.

Table 4.10 Discrimination percentages according to segments

	PROFESSIONAL SEGMENT (%)	SEMI- PROF. SEGMENT (%)	AMATEUR SEGMENT (%)
01	83,33	66,67	83,33
02	83,33	66,67	83,33
03	83,33	50.00	66,67
04	83,33	83,33	100,00
05	83,33	66,67	83,33
06	83,33	66,67	83,33
07	83,33	66,67	83,33
08	66,67	66,67	100,00
09	50,00	33,33	83,33
10	83,33	66,67	83,33
11	66,67	50,00	66,67
12	33,33	16,66	66,67
13	100,00	83,33	83,33
14	66,67	50.00	83,33
15	83,33	83,33	100,00
16	33,33	16,66	50,00
AVERAGE	**67,71**	**54,17**	**76,04**



4.5.2 Step 2- Think Aloud and Direct Observation Session

During the process of dividing the image cards into sements the most important information revealed is how the segmentation is made rather than which image cards the respondents ended up matching. The data from this has provided some remarkable information.

During the field study, respondents were asked to express their opinions aloud during the survey process. Respondents were asked various questions relating to the ongoing process and to their mental processes during the segment determination. Direct observation by the author was carried out during the study in addition to the streams of conciousness from the respondents. As mentioned before, every survey was recorded on camera, and these recordings were later examined and analyzed.

The respondents of the questionnaire were expected to group the products based on their visual features. Predictably, they exclusively commented on the visual attributes of the products during the think-aloud session. Though they made comments about the usability and ergonomics of the products based on their photographs, the key words concerning these particular aspects were excluded from the evaluation process.

The respondents' key words were extracted from their oral descriptions of the devices. The adjectives and expressions they used -as pertaining to the thesis subject- were simplified and grouped into general categories. The categories are form, color, elements, graphics and aesthetics.

Form /Proportion /Geometry: Under this heading, there fall the adjectives used for describing the overall similarity of the geometrical forms of the products. The sub-headings of this category are "overall" and "detail". The "overall" sub-heading encompasses attributes concerning the similarity of the total geometry of the product form. The "detail" sub-heading covers the attributes used to compare specific parts of the products.

Color: The details concerning color use on the products are categorized under this heading. Color attributes are further sub-divided into "general" and "detail" color usage sub-categories.

Elements: The similarities between the products' shutter releases, handles, flashes, lenses, viewfinders / screens, buttons and key groups and other accessories were collected under the elements heading. Material and pattern information gathered from the images were also categorized under this heading.

Graphics: The descriptions of similarities among graphic elements, icons and fonts on the products have been grouped in this heading.

Aesthetics: The comments describing aesthetic features of the products were grouped under this heading. The heading was further categorized into positive, negative and neutral feedback.

4.5.2.1 Elaboration of Keyword Grouping

Each participant's construct (keyword) list was used as the basis for this analysis. The process by which these were transformed into qualitative data with the transcription of video recordings is explained step-by-step below. The video transcription of respondent eight is used to facilitate the explanation process. The study was carried out in the participants' native language of Turkish. Subsequently, all surveys were translated into English.

Stage 1 The video recordings are watched and the speeches of the respondent are transcribed. Below is the total transcription of respondent eight:

> *The function button in the rear part of the camera and the options may vary for each camera.*
>
> *The similarities between G and C are obvious thanks to characteristics such as the form of a cobra flash located on the top of the camera, the form of the button used to change the lens and the button for flash alternatives. They resemble each other very closely in terms of form and menu.*
>
> *The form of the flash is the same in L and J; moreover, C.M.S option buttons are also same, as is the general structure of the body. One seems as if it has a stronger motor drive (though it does not have one). L is smaller but they are the same in form.*
>
> *In L and J,the flashes and red spots seem as if they were cast from the same mould. There is writing on the right side of the lens. The motor drive is under the body.*
>
> *In H and E, the locations of lens and viewfinder are very close to each other; the handle, the location of shutter release and the body of the camera which resembles a video camera distinguishes the camera as Olympos. The general forms of SLRs, the appearance of a video camera and the compact structure of the body*

In M and Q, the slightly angular form does not have smoothly rectangular lines. It is slightly angular.

A, P and K It is considered on the basis of their menu at back view that all three models belong to the same brand.

A, P, K, G and C the options in menus the general from of the cameras are simple but the functional design, the appearance is not excessively ornamental or fulsome, it has an appearance which offers what is expected from a camera, it does not have a fulsome design.

R has a semi-professional but simple appearance. It could not be included in any of the categories. It is placed in semi-professional category.

Nikon generally produces coarse but durable, functional cameras.

The cameras are categorized as professional or semi-professional on the basis of their menus.

Comments on the group categorized as Olympos: detailed, equipped with many options

C and G resemble each other in form and menu. Function buttons and options vary for each brand.

M, Q slightly angular form, not rectangular.

C, R general form, handle

Numbers of keys / buttons, menu options. Professional cameras are categorized according to their form.

G, C the cobra flash, located on the top, the button to function the flashlight and the button to remove the lens of the camera are similar.

L, J the forms of flash seem as if they were cast in the same mould.

Nikon is durable, coarse but durable.

P and K are distinguished from each on the basis of their menus.

Olympos, its model is specific, manufactured in the form of a video camera.

M and Q are from the same brand, with their modified rectangular external form.

Stage 2 The keywords from the oral evaluations are written in bold.

The function button in the rear part *of the camera and the* ***options*** *may vary for each camera.*

The similarities between G and C are obvious thanks to characteristics such as the ***form of a cobra flash*** *located on the top of the camera,* ***the form of the button used to change the lens*** *and the* ***button for flash alternatives****. They resemble each other very closely in terms of* ***form and menu.***

*The **form of the flash** is the same in L and J; moreover, **C.M.S option buttons** are also same, as is the **general feature** of the body. One seems as if it has a stronger motor drive (though it does not have one). L is **smaller** but they are the same in form.*

*In L and J, the **flashlights** and **red spots** seem as if they were cast from the same mould. There is writing on the right side of the lens. The motor drive is under the body.*

*In H and E, the **locations of lens and viewfinder are very close to each other**; **the handle, the location of shutter release and the body of the camera which resembles a video camera** distinguishes the camera as Olympos. The general forms of SLRs, the **appearance of a video camera** and the **compact structure** of the body*

*In M and Q, the **slightly angular form does not have smoothly rectangular lines**. It is slightly angular.*

*A, P and K It is considered on the basis of their **menu at back view** that all three models belong to the same brand.*

*A, P, K, G and C the **options in menus** the general from of the cameras are **simple but the functional** design, the **appearance is not excessively ornamental or fulsome**, it has an appearance which **offers what is expected** from a camera, it does **not have a fulsome design**.*

*R has a semi-professional but **simple** appearance. It could not be included in any of the categories. It is placed in semi-professional category.*

*Nikon generally produces **coarse, but durable**, functional cameras.*

The cameras are categorized as professional or semi-professional on the basis of their menus.

*Comments on the group categorized as Olympos: **detailed**, equipped with **many options***

*C and G resemble each other in **form and menu**. Function buttons and options vary for each brand.*

*M, Q **slightly angular form, not rectangular.***

*C, R **general form, handle***

Number of keys / buttons, menu options. Professional cameras are categorized according to their form.

*G, C the **cobra flash**, located on the top, the **button to function the flashlight** and the **button to remove the lens** of the camera are similar.*

*L, J the **forms of flash** seem as if they were cast in the same mould.*

Nikon is durable, coarse but durable.

*P and K are distinguished from each on the basis of their **menus**.*
Olympos, its model is specific, manufactured in the form of a video camera.
*M and Q are from the same brand, with their **modified rectangular external form.***

Stage 3 The keywords are distinguished according to brands.

Canon	Nikon	Olympus
form of cobra flash	form of flash	appearance of a video camera
the form of the button used to	C.M.S option buttons	compact structure
change the lens, button for	general feature	slightly angular form does not
flashlight alternatives	smaller	have smoothly rectangular lines
form and menu	flash	slightly angular form locations of
menu at back view	red spot	lens and viewfinder are very close
flashlights	menu on the back	to each other
button for flashlight, button to	coarse, but durable	the handle, the location of shutter
remove the lens	forms of flash	release and the body of the
menu	menu	camera which resembles a video
form and menu		camera
general features		detailed
handle		many options
options in menus		slightly angular form not
appearance is not		rectangular.
excessively ornamental or		modified rectangular external
fulsome, offers what is		form
expected		general form
not have a fulsome design		handle

Stage 4 The statements describing similar functions are grouped and simplified. The frequency of each person's repetition of particular characteristics is also included in the attribute pool. This means that the particular characteristics were notable for the respondent(s).

Canon	Nikon	Olympus
Form of Pop-up flash (x2)	form of flash (x2)	appearance of a video camera
the form of the button used to	C.M.S option buttons	(x2)
change the lens (x2)	general feature	compact
button for flashlight (x2)	smaller	does not have smoothly
form (x2)	flash	rectangular lines (x2)

menu (x5) general features handle appearance is not excessively ornamental or fulsome, offers what is expected not have a fulsome design	red spot menu (x2) coarse, but durable	modified rectangular external form (x4) lens and viewfinder handle (x2) the location of shutter release camera body simple detailed many options general form

Stage 5 These attributes are encoded by using a different color for each brand. In this study, red is used for Canon, green is used for Nikon and blue is used for Olympus.

Total Attributes	**Canon**	**Nikon**	**Olympus**
Form of Pop-up flash (x2) the form of the button used to change the lens (x2) button for flashlight (x2) form (x2) menu (x5) general features handle appearance is not excessively ornamental or fulsome, offers what is expected not have a fulsome design form of flash (x2) C.M.S option buttons general feature smaller flash red spot menu (x2) coarse, but durable appearance of a video camera (x2) compact does not have smoothly rectangular			

lines (x2) modified rectangular external form (x4) lens and viewfinder handle (x2) the location of shutter release camera body simple detailed many options general form			

Stage 6 The attributes used for different brands are categorized under certain titles as main groups and subgroups as mentioned in previous chapters. Respondent eight did not make any comment which could be categorized under the “graphics” heading.

Total Attributes	**Canon**	**Nikon**	**Olympus**
Form /Proportion /Geometry Form of Pop-up flash (x2) form of flash (x2) form (x2) general features, appearance of a video camera (x2) camera body general form does not have smoothly rectangular lines (x2) modified rectangular external form (x4) general feature smaller coarse, but durable compact simple detailed **Aesthetics**			

not ornamental or fulsome not have a fulsome design **Elements** the form of the button used to change the lens, (x2) button for flashlight (x2) menu (x5) C.M.S option buttons many options handle (x2) the location of shutter release menü (x2) handle flash, lens and viewfinder **Color** red spot **Graphics**			

Stage 7 The key words in each main group are totalled for each brand according to the frequency of repetition of each attribute.

Total Attributes	**Canon**	**Nikon**	**Olympus**
Form / Proportion /Geometry Form of Pop-up flash,(x2) form of flash (x2) form (x2) general feature appearance of a video camera (x2) camera body general form does not have smoothly rectangular lines (x2) modified rectangular external form (x4) general feature	**5**	**5**	**12**

smaller coarse, but durable compact simple detailed			
Aesthetics not ornamental or fulsome not have a fulsome design	**2**	**-**	**-**
Elements the form of the button used to change the lens, (x2) button for flashlight (x2) menu (x5) C.M.S option buttons many options handle (x2) the location of shutter release menu (x2) handle flash lens and viewfinder	**10**	**4**	**5**
Color Red spot	**-**	**1**	**-**
Graphics	**-**	**-**	**-**

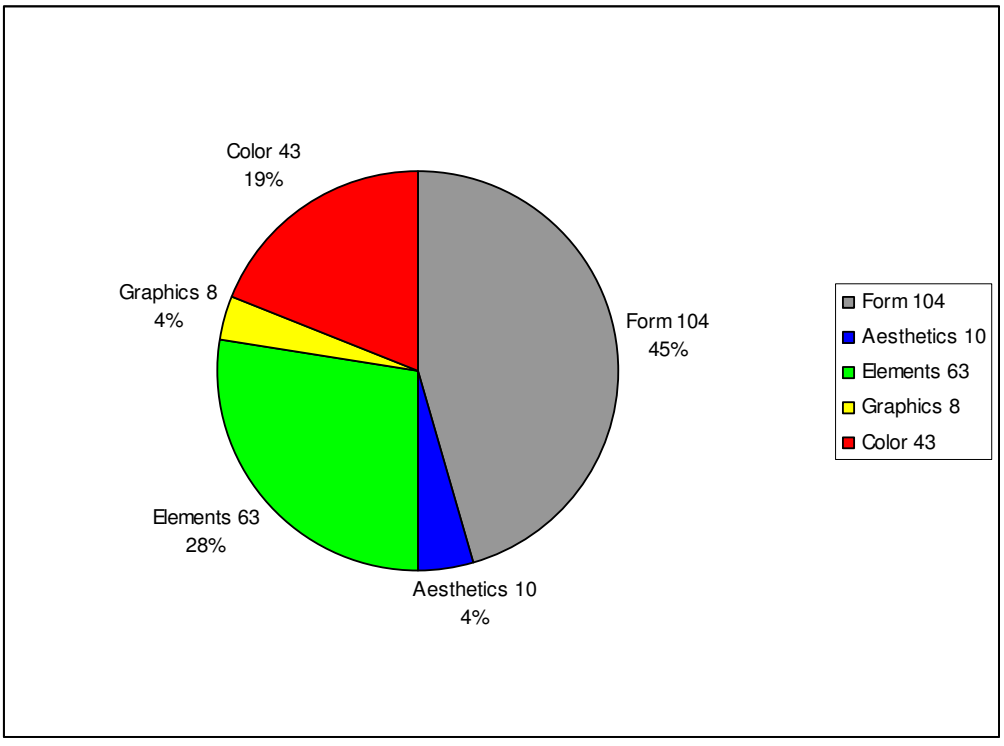
Appendix D shows the data of the results obtained from transcribing the video recordings of all respondents. This attribute pool was created by evaluating the comments of 16 respondents and is composed of groups and sub-groups. However, the above evaluation table does not include sub-groups because the number and diversity of keywords are limited to the comments of just one respondent.

4.5.2.2 Presentation of Attribute Grouping

Table and figure 4.11 show the diversity in physical attributes noticed by users. According to this data, the most significant feature is the general, physical form of the devices. Elements and color attributes are the second and third most influential contributors. Figures and tables concerning sub-categories can be found in Appendix F.

Table 4.11 General attribute distribution

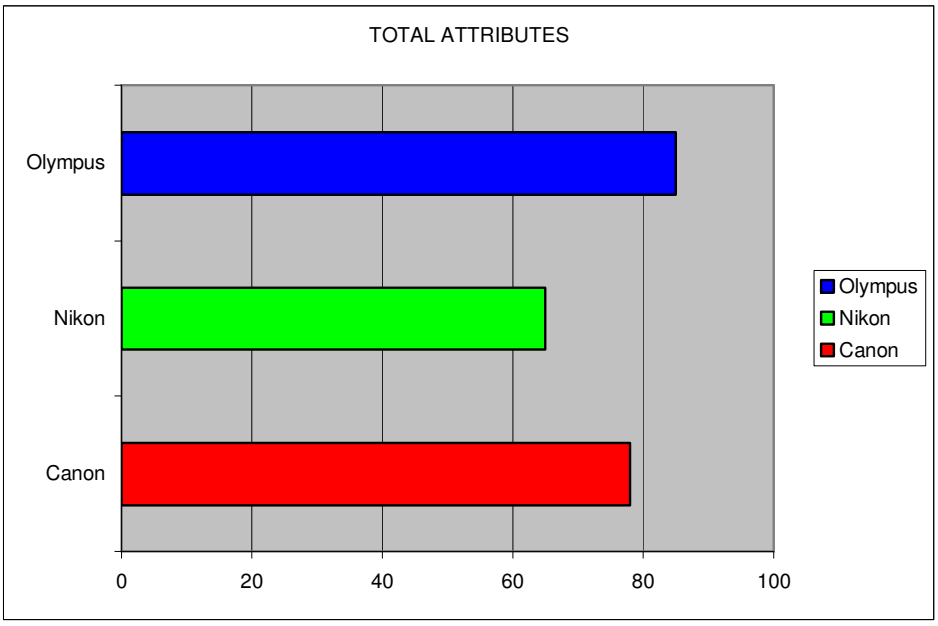
TOTAL ATTRIBUTES				
	Canon	**Nikon**	**Olympus**	**TOTAL**
Form /Prop./Geometry	26	17	61	104
Aesthetics	5	-	5	10
Elements	32	17	14	63
Graphics	3	3	2	8
Color	12	28	3	43



4.6 Sub Conclusions of Comparison

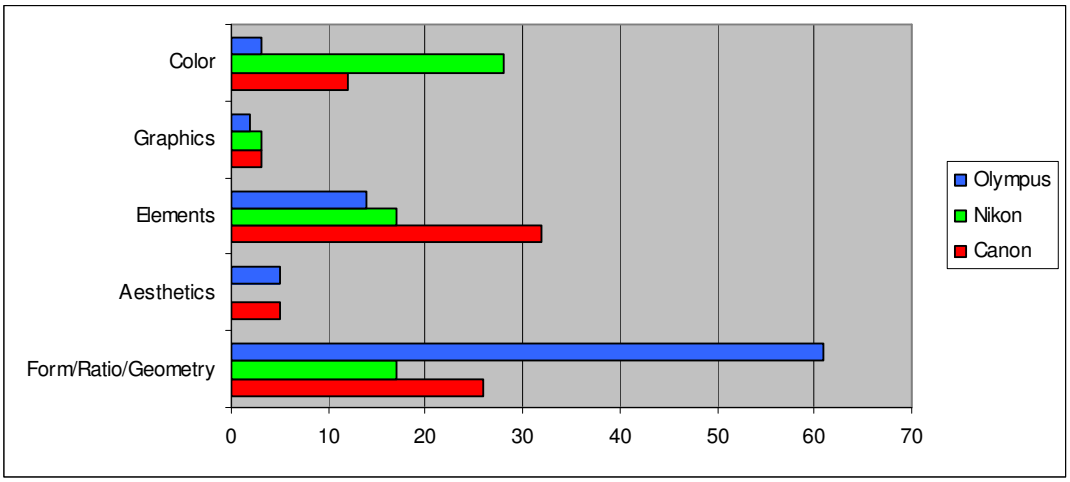
Total objectives used to describe each brand are shown in Table 4.12. As seen in this table, the distribution of attributes by brand shows no significant difference between them. From this it may be concluded that respondents paid equal attention to all three brands.

Table 4.12 Total attribute distribution



As previously discussed, segmentation percentages for each brand (Table 4.9) and total attribute differentiation (Table 4.12) were all very close in value. However, the notable characteristics defined by the respondents for each brand were different from each other. Table 4.11 and table 4.13 clearly illustrate the perceived attribute diversification of each firm.

Table 4.13 Attribute distribution by brands



The opinions and comments of the respondents regarding the segmentation of the products are organized in the table by brand. This gives a clear idea about which firms are perceived to be highlighting which characteristics of their products. Additionally, discussion considering the repetition frequency of the keywords and the diversity of the product attributes is discussed in the following section.

4.6.1 Nikon

The most frequently noticed element in Nikon products was the color scheme. The coloring was described as “red-spot,” “red stain,” “red line,” “red trace,” and “red spots on black” observed over and around the handle. This characteristic was remarked upon by all of the respondents and was considered a brand symbol. Another characteristic frequently mentioned by participants was the great similarity between the machines at first glance. It was observed that the form and proportions were very similar. The shades of black were very similar on the different devices. Another similarity in the geometry and form unique to Nikon is the “C.S.M.” detail, the battery grip under the body, the handle, the shutter release finish and the shape of the flash part look very similar. The overall form of the cameras are closer to square shape and look like the 3D enlarged version of each other. An observation also concerning color is the metallic yellow sphere on the

side of the lens. Other notable similarities in the elements include: the buttons, the string connection apparatus at the sides, the two zoom buttons and the informative indicators next to the visor. The overall impression of these cameras of this brand is that they are strong, tough and functional. The cameras which the respondents most talked about, compared and commented respectively include: J (x21), H (x14), L (x13), O (x7), and N(x7).

4.6.2 Olympus

The most notable feature of the Olympus cameras found during the analysis was the similarity of the overall form and geometrical structure. Devices were stiffly and mechanically designed; they were often described as bulky, massive, full and complex devices. In addition, they were classified as complicated, rough lined, lacking in attractiveness and looking like video camera. Products were found to lack cohesive harmony. A notable theme from the study of the cameras is that all the cameras with negative characteristics were grouped by the respondents into the same group. Respondents considered “lack of characteristics representing the firm’s style” in its products a common feature and categorized the group based on this criteria. “Oval structure”, “small angular section”, “not properly rectangular”, “weird designs with one side bent”, “trapezoidal” “not having a full rectangle design”, “not belonging to a known geometric form”, and “not symmetrical” were descriptions used in segmentation of Q and M cameras. Cameras in the amateur segment category have a more positively described design identity as compared to the professional segments. In addition, the round structure nearby the shutter release, the red-spot by the objective lens, the function buttons, the materials and pattern, the lens locations, the weakness in icon clarity and the similarity of the font are minor characteristics which show the firm’s identity. The models of Olympus, which were most talked about during the survey from most to least were: M (x18), Q(x17), B(x9), R(x9) and E(x7).

4.6.3 Canon

The product characteristics which could be considered positive to a designer were mostly expressed about the products made by Canon: simple yet functional design, image quality that satisfies, functions are in the same places in different models and maintaining the usage habits, user-friendly, not having exaggeration, has elegant and simple style, delicate and simple. The most remarkable color utilization by this brand is the metallic color used on the body. In addition to that, the color differences in the handles of the devices and the common colors used in

the graphic elements help to distinguish the cameras' brand identity. Elemental details include: menu keys, location and structure of the handles and shutter, opening detail of the objective lens, the shape of the button used to change the objective lens, the pop-up flash, the teleobjectives and control button (zoom-in, zoom-out) and the structure of the hinge which helps rotate the back screen. In terms of pervasive characteristics, Canon was found to be marked by rectangular and geometric forms, precise corners, and a general theme of simple, flat and standard-looking forms. The convex structure of the battery pots, the curve of the shutter release, the curving fluidity of the metal, the extent of the ergonomic design, and similar font use played the role of a separating Canon form the other two brands. The most talked about products made by Canon include (in their respective order from most to least): I(x14), A (x13), C(x12), G(x8), and K(x7).

4.7 Overall Results of the Study

In the scope of this current research and under the limits of the evaluation criteria, the first and foremost characteristics used to distinguish the brands of cameras are the form and geometrical attributes of the devices. The attribute pool shows that the general elements found to be important by the respondents in distinguishing the products include:

Similarity and coherence of the overall form and geometry.
Similarity in elements including the shutter release, lens, and key groups.
Cohesive color usage, icon, graphic and font use.

Respondents first observed the general contours of all the devices. First groupings were based on device size and geometrical similarities. Partial color use on the camera was used as supporting evidence to substantiate an impression of geometrical similarity. When the respondent failed to find a strong connection while comparing two or more products, they turned to minor details, such as: font similarity, coloring of the graphics, similarity of string connection detail, and screen size. Although these details were used to establish weak connections between the products, in sum total, they proved to be fundamental elements that contributed to and supported the basic similarities. The results show that the features which are primarily compared by the respondents are the geometry and the general form attributes.

4.8 Limitations of the Study

According to author, the ideal conditions for this study would be to use real cameras without their logotypes. A sample in a subject's hand gives an entire physical knowledge about corporate characters, involving texture, surface finish, weight, sound and even the smell of the material, all of which may give direct clues to aid the subject in grouping.

Particularly in the camera sector, it is difficult to use real product samples. It is hard to gather multiple model and brand alternatives together. Because of the cost of cameras, the author used images instead of real objects to conduct the survey. Yet, the use of images allowed facile concealment of brand indicators that might give away the company's identity. All images used in the test were processed using computer software so as to generate images of the products without their logotypes. This is a fundamental necessity for this study where recognition and grouping of the samples should be done exclusively by using visual clues. Although logos are part of objects' visual integrity, they are omitted in order to emphasize other physical attributes.

Using digital cameras for the field study was ambitious considering that cameras are complicated devices. In addition to the complexity of the product, the range in product diversity – 18 separate models from three different sectors – overwhelmed most of the respondents. The process was too long to tolerate and it was difficult to obtain concise oral data from the respondents. Observing the images, interpreting them off-hand, and processing complex grouping tasks are a complex workload. Most of the adjectives stated by the respondents were very broad and similar in meaning.

The unavailability of a designated environment where the questionnaire could be administered and the change of place for each respondent resulted in each respondent experiencing slightly different conditions. Ambient lighting and noise where the study was being conducted were not standardized for each respondent. These environmental conditions not only affect the visual perception of images, but also influence the psychological comfort of the participant.

CHAPTER 5

CONCLUSION

5.1 Final Remarks

Corporate image, which is the way the user perceives corporate identity, is the result of the structure of the firms and their controlled or uncontrolled behaviors within their relations to their environment. Within the scope of this study, the product itself is - intensively – considered a part of the corporate identity by the user. The products of the firms, which diversify with the years and diverse product groups have been formed at the end of the same corporate cycle. Just as handwriting is characteristic to each person, the traits of a firm should be equally unique and distinguished. The products analyzed in the third chapter support this suggestion.

A product can be thought of as the common thread linking a firm and a consumer. Firms strive to establish their brand in the market-place and to distinguish their products from their competitors. All products are designed with some particular function in mind. Although products start as ideas, they come to fruition when provided with suitable technical and economic conditions. This process, which takes similar forms in most firms, highlights the importance of differentiating the product from others in its class. The end result, as demonstrated by the findings of the case study, is that people generally tend to group products by using similarities in features such as: common physical details, product concept, materials, colors, structural features, and the repetition of geometric forms. The results also indicate that the most distinguishing element of a product is its form, which would generally fall into the realm of industrial design. The importance of design to the long-term

identity of a product can not be neglected. There is a great overlap between how a product is perceived and how a company is perceived. Creating a product identity and sustaining it is a crucial and necessary effort in order to garner attention in the crowded and rapidly changing market-place.

5.2 Further Studies

Throughout the course of this study, new potential subjects and concepts for further study have been discovered. The suggestions for further study are as follows:

1- The hand-held radio example given in Chapter 3 has contributed to the paradigm of visual consistency and standardization in mass-production of products. This relationship is considered a promising area for further study.

2- The same experiment can be repeated using a different product. The complexity of digital cameras made it difficult to obtain results and affected the analysis of the results. However, choosing a simpler product group such as pencils, knives, etc would make it possible to carry a field study with real samples rather than with images. In a study conducted with real products, it would be possible to obtain more and better information from the participants.

3- “Communicating corporate identity through usability and/or interface attributes” may be a potential thesis topic. Corporate identity and its relationship to the usability of products -both user and technology-driven- such as cellular telephones, cameras, digital media players and videogame consuls provide researcher with essentially infinite avenues for study.

4- The dynamic between corporate identity and product attributes could be analyzed in a – preferably- Turkish firm. A particular product group made by the firm could be selected, and the influence of the firm’s culture on the products could be analyzed. Conclusions would be based on the resulting product put on the market after having been filtered through marketing, management, design and production phases.

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APPENDIX A

Turkish Version

ANKET

KURUMSAL KİMLİĞİN ÜRÜN FORMU YOLUYLA ALGILANMASI

Bu araştırmanın amacı fotoğraf sektöründeki üç farklı firma ürününün, kurumsal kimliklerinin ayırt edilebilirliğinin ölçülmesidir. Sonuçlar Orta Doğu Teknik Üniversitesi, Mimarlık Fakültesi, Endüstri Ürünleri Tasarımı bölümünde yapılan yüksek lisans tezinde kullanılacaktır. Bu anketin amacı sizin bu konudaki bilginizi sınamak değil, sadece firmaların ürün tasarımlarında kurumsal vurguları ve ayırt edilebilme düzeylerini araştırmaktır. Araştırmada kişi bazında inceleme yapılmayacak, kıyaslama söz konusu olmayacaktır. Toplanan tüm cevaplar toplu halde analiz edilecektir. İsminizi belirtmek zorunda değilsiniz fakat bunun dışındaki soruların samimi şekilde cevaplanması araştırmanın sağlığı açısından önemlidir. Yardımlarınız için şimdiden teşekkür ederiz.

Engin Çekceoğlu
ecekceoglu@yahoo.com

A

1. Adınız Soyadınız : Doğum Yılınız: ☐

2. Cinsiyetiniz : E ☐ K ☐

3. Mesleğiniz :

4. Eğitim Durumunuz?

Lise ☐ Üniversite ☐ Y.Lisans/Doktora ☐

5. Fotoğrafa olan ilgi düzeyiniz aşağıdakilerden hangisidir?

Hiç yok ☐ Biraz var ☐ İlgiliyim ☐

Yarı profesyonelim ☐ Profesyonelim ☐

6. Fotoğraf makinenizi hangi yıl içinde satın aldınız?

2003 ☐ 2004 ☐ 2005 ☐

Bu ilk fotoğraf makineniz mi? E ☐ H ☐

Bu ilk dijital fotoğraf makineniz mi? E ☐ H ☐

7. Makinenizi seçerken ve alırken dikkat ettiğiniz nitelikleri önem sırasına göre işaretleyiniz.

1. ☐ 2. ☐ 3. ☐ 4. ☐ 5. ☐

A. Fiyat/ ödeme seçenekleri

B. Marka

C. Teknik özellikler- aksesuarlar (megapiksel, zoom, ekran büyüklüğü, pil ömrü, flash vs.)

D. Dış görünüş, estetik özellikler, renk, doku

E. Ergonomik özellikler (kolay taşıma, kolay kullanım, kolay tutma, düğmelere kolay basım, menülerin anlaşılırlığı vs.)

8. Makinenizi seçerken aşağıdakilerden hangisi/hangilerini kullandınız?
(Birden fazla seçeneği işaretleyebilirsiniz.)
Firma Katalogları ☐ İnternet ☐ Mağaza ☐
Dergi-Gazete Reklamları ☐ Arkadaş tavsiyesi ☐ Diğer …….

9. Fotoğraf makinenizin markası ve modeli nedir? Fiyat aralığı aşağıdakilerden hangisidir?

☐

0 - 500YTL ☐ 500 - 900YTL ☐ 900 - 1500 YTL ☐
1500 - 3000 YTL ☐ 3000 - 10000YTL ☐

B

Size verilen kartlardaki ürünlerin marka, logo, amblemleri saklanmıştır. Toplam 18 adet imaj kartında 3 ayrı firma ürününü mevcuttur. Her firmanın iki adet profesyonel, iki adet yarı profesyonel ve iki adet te amatör segment katagorisinde 6 adet ürünü bulunmaktadır. Sizden beklenen ekteki tabloyu kartlar üzerindeki harfleri kullanarak doldurmanızdır. Lütfen tablonun tümünü doldurduğunuzdan emin olunuz.

	A	B	C
Profesyonel Segment			
Yarı Pofesyonel Segment			
Amatör Segment			

1. Size gösterilmiş olan makine modelleri arasında bildiğiniz model(ler) var mı?

Evet ☐ **Hayır** ☐

Hangisi/Hangileri?

2. Size gösterilmiş olan makine modellerinden kendiniz için hangisini seçerdiniz?

Neden?

3. Ek olarak belirtmek istediğiniz düşünceleriniz, yorumlarınız :

----Zaman ayırdığınız için çok teşekkür ederiz.----

English Version

SURVEY

COMMUNICATING CORPORATE IDENTITY THROUGH FORM ATTRIBUTES

The objective of this study is to measure the distinguishability of corporate identities of the products manufactured by three different companies in the photography sector. The survey results will be used in a master's thesis devised in the Department of Industrial Design, Faculty of Architecture, Middle East Technical University.

This survey does not aim to test your knowledge in this field, but to find out companies' corporate characteristics and level of distinguishability in their product design. The survey papers will not be evaluated individually, and there will be no comparison among the papers. All responses collected from the survey papers will be analyzed as a whole. You do not have to mention your name, but your sincere responses to other questions are of great importance for the reliability of this study. Thank you in advance for your assistance.

Engin Çekceoğlu
ecekceoglu@yahoo.com

A

1. Name Surname : Date of birth: ☐

2. Gender : M☐ F☐

3. Occupation :

4. Education Level:

H.School ☐ University☐ Msc, Mfa/Phd ☐

5. What is your level of interest in photography?

No interest ☐ Somewhat interested ☐ Interested ☐

Semi-professional ☐ Professional ☐

6. When did you buy your camera?

2003 ☐ 2004 ☐ 2005 ☐ 2006 ☐

Is it your first camera? Y☐ N☐

Is it your first digital camera? Y☐ N☐

7. Mark the points that you take into consideration when selecting and buying your camera in order of preference.

1. ☐ 2. ☐ 3. ☐ 4. ☐ 5. ☐

A. Price / payment options

B. Brand

C. Technical features - accessories (megapixel, zoom, screen width, battery life, flash, etc.)

D. Appearance, aesthetic features, color, configuration

E. Ergonomic characteristics (easy-to-carry, easy-to-hold, easy-to-use, easy to push the buttons, understandable menus, etc.)

8. Which one(s) of the following did you refer to when selecting your camera? (You can mark more than one choice.)

Companies' catalogues ☐ Internet ☐ Stores ☐

Newspaper and magazine advertisements ☐

Recommendation of a friend ☐ Other ……..

9. What is the brand and model of your camera? In which of the following price ranges is it?

0 - 500YTL ☐ 500 - 900YTL ☐ 900 - 1500 YTL ☐

1500 - 3000 YTL ☐ 3000 - 10000YTL ☐

B

The brands, logos and emblems of the products on the cards presented to you are not disclosed. There exist the products of three different companies on a total of 18 cards. Each company has a total of 6 products: 2 in the category of semi-professional, 2 in the category of professional and 2 in the category of amateur segment. You are expected to fill in the table below, using the letters on the cards. Please assure that you have filled in the whole table.

	A	B	C
Professional Segment			
Semi-Professional Segment			
Amatör Segment			

1. Are you familiar with any of the camera model(s) shown to you?

Yes ☐ **No** ☐

Which ones?

2. Which camera model would you prefer?

Why?

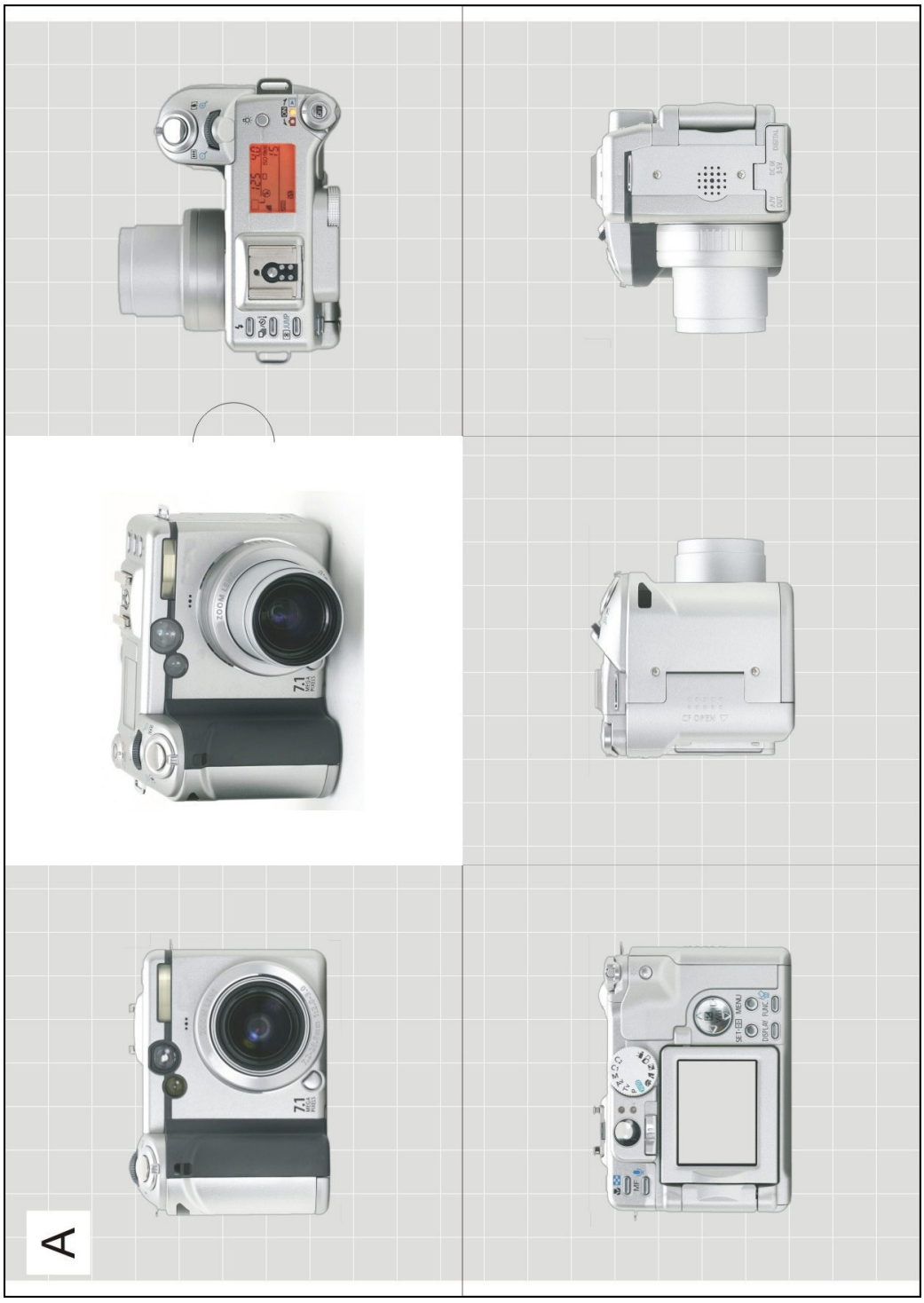
3. Anything you would like to add:

----Thank you for your time.----

APPENDIX B

A
B
C
PROFESYONEL SEGMENT
YARI PROFESYONEL SEGMENT
AMATÖR SEGMENT

APPENDIX C



B


C


D


DIGITAL
14-54mm
1:2.8-3.5
DIGITAL 14-54mm 1:2.8-3.5
ø67

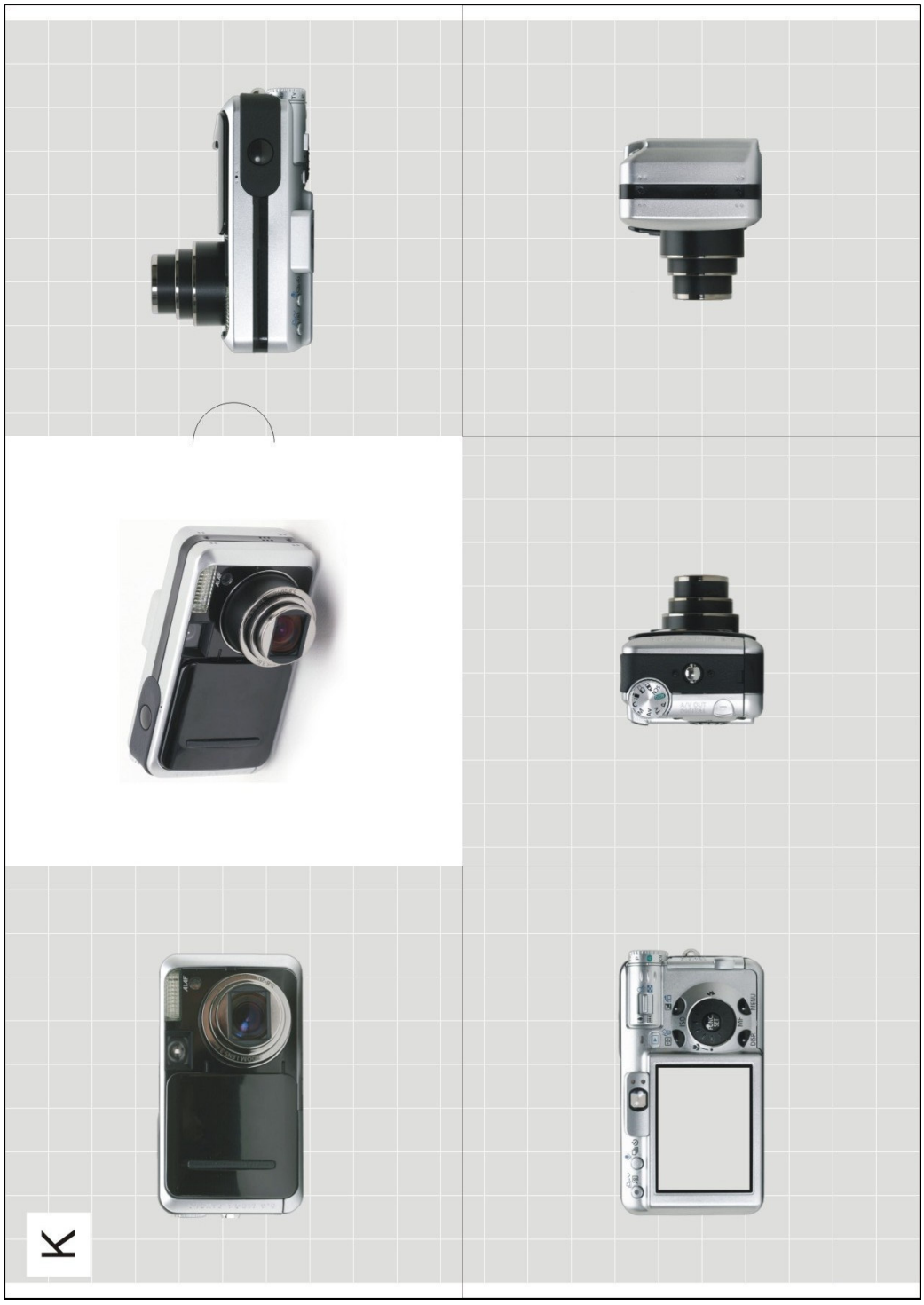

8.0 MEGA PIXELS
7x OPTICAL ZOOM
INFO.
MENU
SET
JUMP
FUNC.
F


LENS EF 50mm 1:1.4
LENS MADE IN JAPAN
ON
OFF
MENU
INFO.
JUMP

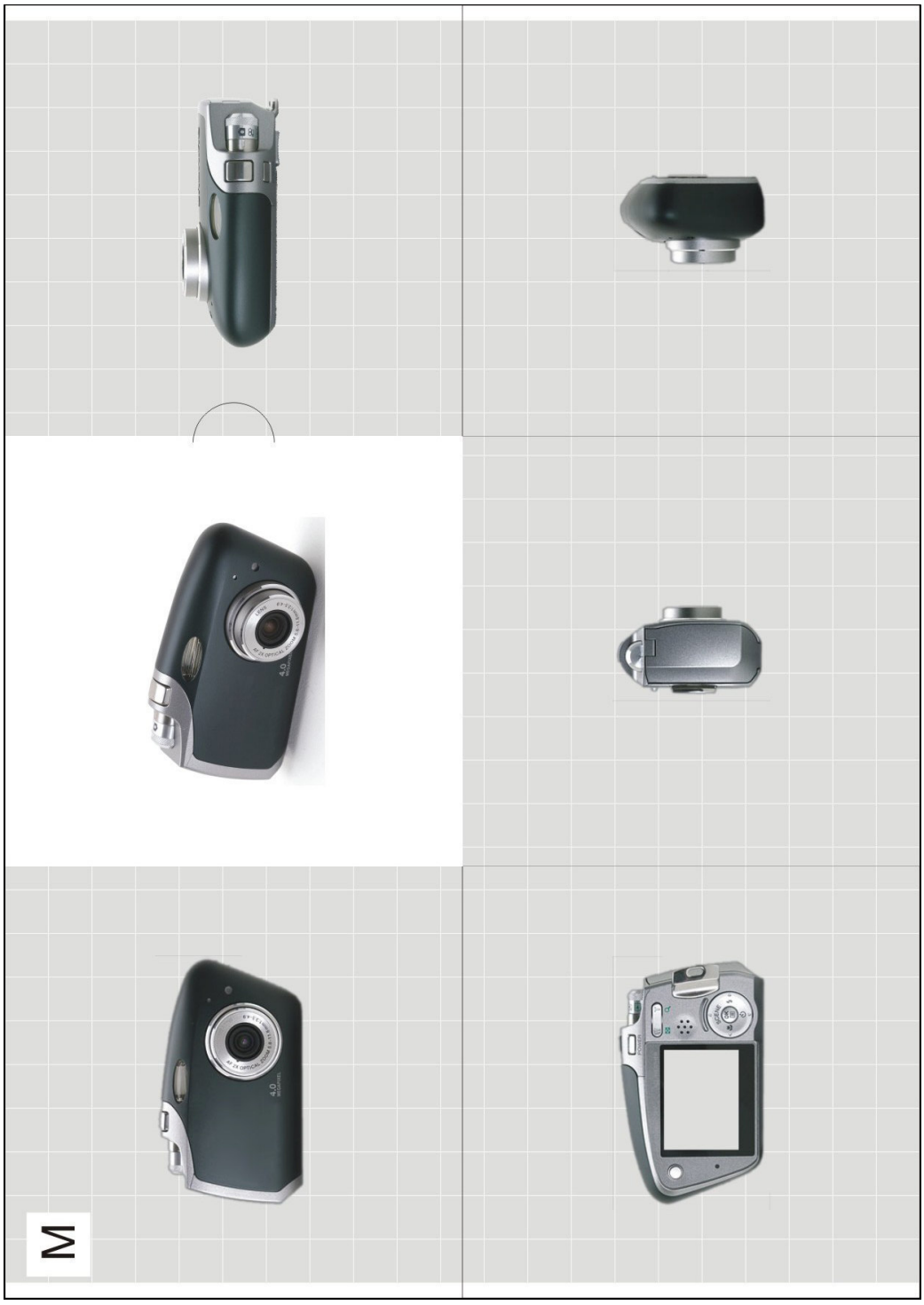
AF
10x ZOOM
ED
MENU
DISP
H


7.1 Mega Pixels
DIGITAL
DC IN A/V OUT
CARD OPEN


AF-ON
ISO
QUAL
WB
ENTER
MENU


K


ED
17-35mm
1:2.8D
50mm
1:1.4 D
50mm


M


P


HyperCrystal LCD
POWER
8.0
AF 3X OPTICAL ZOOM
ALL-WEATHER


ON
OFF
SCENE
SSWF
14 18 25 35
0.38m/1.3ft ∞
DIGITAL
14-45mm 1:3.5-5.6
ø58
8.0
MENU
AF
ISO
OK
INFO
WB
HyperCrystal LCD
R

APPENDIX D

Turkish Version

Renk	**Canon**	**Nikon**	**Olympus**
Genel renk kullanımı malzeme rengi - gövde rengi – metalik - renk kullanımı - kontrast renk (x8) - siyah renk tonu (x2) -tutamaklardaki renk farklılığı - kırmızı renk – leke – çizgi – iz - kırmızının renk tonu (x19) -siyah üzerine kırmızı lekeler (x4) - tutamağın içindeki metalik ve kırmızı hatlar(x2) - renkler (x2)	**9**	**27**	**2**
Detay renk kullanımı objektifin takılı olduğu yerdeki kırmızı nokta - objektiflerinin kenarında metalik sarı çember - grafik rengi (x3)	**3**	**1**	**1**
Renk (Toplam)	**12**	**28**	**3**

Elementler	**Canon**	**Nikon**	**Olympus**
Tuş grupları arkadaki menü tuşları - arka tuş grubu - arka görüntüleri (X6) - tuşlar (x2) - fonksiyon düğmeleri (x3) - menu tuşunun fazla olması - fazla opsiyon - detaylı (x2) - şekil ve menü(x2) - zoom düğmeleri ayrı 2 buton - modellerde fonksiyonların aynı yerde olması - objektifin sağında C.S.M. detayı(x2)	**9**	**5**	**7**
Objektif objektifin açılma detayı (x3) - lens konumları - objektif değiştirmek için basılan	**6**		**1**

butonun şekli - teleobjektif ve kontrol düğmesi - (zoom in-zoom out) merceği çok çıkmıyor gibi duruyor			
Flaş pop-up flaş(x3) - pop-up flaş düğmesi (x2) - flaş - flaş kısmı şekli - aynı kalıptan çıkmış gibi. (x2)	**5**	**4**	**-**
Ekran/vizör Menteşe, yani ekranın dönmesi - ekran büyüklüğü - vizörün yanındaki bilgi amaçlı indikatörler	**1**	**1**	**1**
Deklanşör/tutma yeri tutma yeri (x3) - deklanşör bitişi(x2) - deklanşörün yanındaki yuvarlaklığın geçişi - tutuş formları, deklansör (x2) - deklanşör yerleşimleri, yapısı , özellikleri (x4) - makinenin tutma yeri derin - deklanşörün bulunduğu yerin kıvrımı - tutamaklar (x2) - ele uyum özelliği (x2) - pil yerlerinin dışa doğru bükey olması	**11**	**5**	**3**
Genel kenarlarındaki askı bağlantı aparatları (x2) - malzeme ve doku. (x2)		**2**	**2**
Elementler (Toplam)	**32**	**17**	**14**

Grafik	**Canon**	**Nikon**	**Olympus**
İkonlar ikonlar(x2) - İkonların anlaşılabilirliği zayıf - ikonlar	**2**	**1**	**1**
Font aynı fontla ‘’AI AF’’ - 8.0 megapixel fontları – yazılar - objektifin sağındaki yazı	**1**	**2**	**1**
Grafik (Toplam)	**3**	**3**	**2**

Estetik	**Canon**	**Nikon**	**Olympus**
Olumlu Şık - değişik – hoş	**1**	**-**	**1**
Nötr Süslü, abartılı değil - sade çizgileri var - Albenisi yok.	**2**	**-**	**1**
Olumsuz –brutal-(x2) ortak özellik olarak görünüp aynı grup içinde olmasını sağladı - ağır ve kaba - mekanik bir şekilde tasarlanmış.	**2**	**-**	**3**
Estetik (Toplam)	**5**	**-**	**5**

Form /Oranlar /Geometri	**Canon**	**Nikon**	**Olympus**
Genel Dikdörtgen formlu, köşeli (x3) - formatları (genel kontür) (x2) - form özellikleri - şekil (x2) - genel görünüşler – form - ufak,küçük, kompakt ve ince (x4) - avuç içi -Köşeli - dikdörtgen yapıları (x2) - Şekil - boyut genel şekiller (x5) - fiziksel özellikler - formaları kareye daha yakın - Oval bir yapı - Hafif açılı bir kesim - düzgün dikdörtgen değil - bir tarafları eğri garip tasarımlar – yamuk - tam dikdörtgen tasarımları yok (x11) - bilinen geometrik forma ait değil - simetrik değil -ilk bakışta birbirlerine çok benziyor, (x7) - çok sade (x2) - bulky – masif - içi dolu - kaba saba çizgi. (x2) - Kaba - Sağlam(x2) - farklı - basit (x2) - kompakt gövde yapısına sahip video kamera görüntüsünde(x3) - genel bir karmaşıklık (x4) - belirgin değil -Firma çizgilerini yansıtan genel bir özellik yok - ucuz - benzer çizgiler aynı kişi tarafından yapıldığı	**23**	**14**	**60**

hissini veriyor - naif, uyumlu değil - Abartı yok - istenileni verebilecek görüntüsü var - basit ama fonksiyonel tasarım (x3) - kompakt makine – standart - Basit, düz (x3) - büyüklük farkı - biraz büyüğüyümüş gibi - 3 boyutlu olarak büyütülmüşü gibi - aynı kalıptan çıkmış gibi - Hassas -basit durmuyor			
Detay mercek ortada - parmakla olan uyumu - metalin kıvrılması tarzı - sağ görünüşler - üstten görüntüsü - gövde altında motor görüntüsü, (x2)	**3**	**3**	**1**
Form /Oranlar /Geometri (Toplam)	**26**	**17**	**61**

	Canon	**Nikon**	**Olympus**
TOPLAM SIFATLAR	**78**	**65**	**85**

English Version

Color	**Canon**	**Nikon**	**Olympus**
General color usage Material color - body color – metalic - color usage - contrast color (x8) - tone of black color (x2) -Color diference at handle - Red color – spot – line – trace - color tone of red (x19) - Red spots on black (x4) - Red and metalic contour inside handle(x2) - Colors (x2)	**9**	**27**	**2**
Color usage in details Red point where the lens is attached - Yellow circle that surrounds the lens - color of graphics (x3)	**3**	**1**	**1**
Color (Total)	**12**	**28**	**3**

Elements	**Canon**	**Nikon**	**Olympus**
Button groups Menu buttons at the back - back button group - rear views (X6) - buttons (x2) - Function buttons (x3) - more menu buttons - more options - detailed (x2) - form and menu(x2) - 2 seperate zoom buttons - functions are at the same place at different models - C.M.S option buttons (x2)	**9**	**5**	**7**
Lens Opening detail of lens (x3) - lens locationsı - the form of the button used to change the lens - zoom in-zoom out control button - lens does not seem to come out too much	**6**		**1**
Flash pop-up flash (x3) - button for flashlight (x2)	**5**	**4**	

– flash - form of flash area – they seem like to be made in the same mold. (x2)			
hinge; rotation of screen – screen size – indicators near the view finder (screen/view finder)	**1**	**1**	**1**
handle , (x3) - shutter release finish (x2) – transition of the circular part which stands next to the shutter release button – shutter release (x2) – shutter release locations – structure - features (x4) –the holding part of the machine is deep – the curve of the part where shutter release button is placed - handles (x2) – the charecteristics of well match with hand (x2) – convex feature of battery place (shutter release button/holding part)	**11**	**5**	**3**
General The attechement parts on sides (x2) material and pattern (x2)		**2**	**2**
Elements (Total)	**32**	**17**	**14**

Graphics	**Canon**	**Nikon**	**Olympus**
Icons icons(x2) – meanings of icons are weak - icons	**2**	**1**	**1**
Font ‘’AI AF’’ character with the same font - Fonts of “8.0 megapixel“ label – writings - writing at the right of lens	**1**	**2**	**1**
Graphics (Total)	**3**	**3**	**2**

Aesthetics	Canon	Nikon	Olympus
Positive Stylish - different, nice	1	-	1
Neutral not ornamental or fulsome – have pure lines – not charming.	2	-	1
Negative –brutal-(x2) - heavy and rough - Designed mechanically	2	-	3
Aesthetics (Total)	5		5

Form /Proportion /Geometry	Canon	Nikon	Olympus
Overall Rectangular in form - angled (x3) -format (overall contour) (x2) - form characteristics - form (x2) - general features - form – little – small - compakt and thin (x4) – size - cornered – rectangle forms (x2) – form – dimension - general features (x5) - physical features – the external form is more like square - Oval shape – Little angled in section- does not have smoothly rectangular lines – the design is strange, it is bent on one side – irregular – complete - do not have rectangular design (x11) – does not belong to common geometric form - Not symmetrical - Very similar at first sight (x7) - Very simple (x2) - bulky, massive, full - Rough lines (x2) - Coarse - Durable(x2) - Different - basic (x2) - have video camera appearence with compact body (x3) - general complexity (x4) - not clear - do not have any feature which reflect corporate identity - cheap – similar lines give the	23	14	60

impression of being made by the same person - naif, is not well matched - no exaggeration – seems to please the needs – simple but functional design (x3) – compact machine - standard. Basic - plain (x3) - size difference - looks like it is a little bigger - 3 looks like it is scaled in three dimension – looks like to be made in the same mold - precise - Not simple			
Detail Lens is in the middle - harmony with finger - curl style of metal - right views - top view - motor drive view under the body(x2)	**3**	**3**	**1**
Form /Proportion /Geometry (Total)	**26**	**17**	**61**

	Canon	**Nikon**	**Olympus**
TOTAL ATTRIBUTES	**78**	**65**	**85**

APPENDIX E

Turkish Version

No:	Tarih:	A 1	Doğum yılı	A 2	A 3	A 4
1	11.01.2006	M.Y.	1977	E	End. Tasarımcı	Y.lis./dok.
2	12.01.2006	N. K.	1959	K	Öğretim Üyesi	Y.lis./dok.
3	12.01.2006	T. G.	1987	E	Öğrenci	Lise
4	12.01.2006	B. K.	1981	K	Çevirmen	Üniversite
5	13.01.2006	M. G.	1977	E	Makine Müh.	Y.lis./dok.
6	13.01.2006	H. Ç.	1971	K	Ekonomist	Üniversite
7	15.01.2006	G. G.	1975	K	Siyaset Bilimci	Y.lis./dok.
8	15.01.2006	A. G.	1964	E	Kalite Kontrol Uzmanı	Üniversite
9	20.01.2006	-	1972	E	Yönetici (ilaç sek.)	Yüksek Okul
10	21.01.2006	M. A.	1982	E	Grafiker	Yüksek Okul
11	22.01.2006	G. Ö.	1981	K	Kimya Teknikeri	Yüksek Okul
12	28.02.2006	M. D.	1948	E	Ressam	Üniversite
13	01.03.2006	T. O.	1974	E	Tasarımcı	Üniversite
14	02.03.2006	-	1968	K	Memur	Üniversite
15	05.03.2006	B. E.	1976	K	İşletmeci	Üniversite
16	05.03.2006	G. O.	1982	K	Turizm	Üniversite

No:	A 5	A 6	İlk fotoğraf makinesi mi?	İlk dijital makinesi mi?
1	İlgiliyim	2005	Hayır	Hayır
2	Biraz var	2003	Hayır	Evet
3	Biraz var	2003	Hayır	Evet
4	Hiç yok	2005	Evet	Evet
5	İlgiliyim	2003	Hayır	Evet
6	Biraz var	2005	Hayır	Evet
7	İlgiliyim	2004	Hayır	Evet
8	İlgiliyim	2005	Hayır	Hayır
9	İlgili,Yarı profesyonel	2005	Hayır	Hayır
10	Yarı prof., Profesyonel	2003	Evet	Evet
11	İlgiliyim	2005	Hayır	Evet
12	Biraz var	2005	Hayır	Evet
13	İlgiliyim	2005	Hayır	Evet
14	Biraz var	2003	Hayır	Evet
15	Yarı prof.	2005	Hayır	Evet
16	Biraz var	2006	Hayır	Evet

No:	A 7
1	Fiyat,Marka,Teknik özellikler, Ergonomik Özellikler, Dış görünüş
2	Teknik özellikler, Marka, Ergonomik Özellikler,Fiyat, Dış görünüş
3	Teknik özellikler, Dış görünüş,Ergonomik Özellikler,Fiyat,Marka
4	Teknik özellikler, Fiyat, Ergonomik Özellikler, Marka,Dış görünüş
5	Teknik özellikler, Marka, Fiyat,Ergonomik Özellikler, Dış görünüş
6	Marka,Teknik özellikler, Ergonomik Özellikler, Fiyat, Dış görünüş
7	Teknik özellikler, Marka, Ergonomik Özellikler, Dış görünüş, Fiyat
8	Teknik özellikler, Fiyat, Marka, Dış görünüş, Ergonomik Özellikler
9	Teknik özellikler, Ergonomik Özellikler, Marka, Dış görünüş, Fiyat
10	Teknik özellikler, Fiyat, Marka,Ergonomik Özellikler ,Dış görünüş
11	Teknik özellikler, Fiyat, Dış görünüş, Marka, Ergonomik Özellikler
12	Fiyat, Ergonomik Özellikler, Dış görünüş,Teknik özellikler, Marka
13	Teknik özellikler, Ergonomik Özellikler, Fiyat, Marka, Dış görünüş
14	Marka,Teknik özellikler, Dış görünüş, Ergonomik Özellikler, Fiyat,
15	Marka,Teknik özellikler, Fiyat, Ergonomik Özellikler, Dış görünüş
16	Marka, Ergonomik Özellikler,Teknik özellikler, Dış görünüş, Fiyat

No:	A 8	A 9	Fiyat Aralığı
1	İnternet, Mağaza	Canon A95	0-500 YTL
2	Firma katalogları, İnternet, Mağaza, Arkadaş tavsiyesi	Nikon Coolpix 5400	500-900 YTL
3	Firma katalogları, İnternet, Mağaza,	Nikon Coolpix 990	500-900 YTL
4	Firma katalogları, İnternet,	hp,R717	0-500 YTL
5	İnternet,Arkadaş tavsiyesi	Canon Pshot G2	900-1500 YTL
6	Firma katalogları, İnternet, Arkadaş tavsiyesi	Kodak xslim	500-900 YTL
7	Firma katalogları, İnternet,	Canon Pshot 2.0	0-500 YTL
8	İnternet	Kodak xslim	0-500 YTL
9	İnternet	Canon s80	900-1500 YTL
10	Firma katalogları, Mağaza, Arkadaş tavsiyesi	Nikon D100, Fuji S1	3000-10000 YTL
11	Mağaza	Arçelik	0-500 YTL
12	Firma katalogları, Mağaza, Arkadaş tavsiyesi	Canon	500-900 YTL
13	İnternet, Mağaza, Arkadaş tavsiyesi	Nikon D70	1500-3000 YTL
14	İnternet	Nikon	500-900 YTL
15	Firma katalogları, İnternet, Mağaza, Arkadaş tavsiyesi	Nikon	900-1500 YTL
16	Mağaza	Sony DSC-T7	500-900 YTL

No:	B 1	B 2
1	N,L,I,C,A,H	**Amatör:** M kompakt ve ince, **Y.prof:** B ergonomik, prof görünümlü **Prof:** C çok ergonomik, fonksiyonel.
2	-	**Amatör:** Q,M dizayn, **Y.prof:** A.K **Prof:** C renk
3	N	**Amatör:** K çift enk , kontrast, şık **Y.prof:** H,B şekil **Prof:** C, E şık, iyi
4	-	**Amatör:** Q 8 mpixel **Y.prof:** A küçük **Prof:** F küçük taşıması kolay
5	C A I	**Amatör:** M merak ediyor **Y.prof:** H beğendi **Prof:** G tipoloji tanıdık.
6	-	**Amatör:** K şık zoomlu **Y.prof:** F küçük **Prof:** B küçük
7	-	**Amatör:** bildiği mak. Dış görünüş renk **Y.prof:** H Zoom 8 MP j kapaklı **Prof:** J,C arka komplike teknik, iyi sonuç alınır.
8	N, M	**Amatör:** I en profesyonel görünüm **Y.prof:** E en profesyonel görünüm,sağlam **Prof:** j Nikon olduğu için
9	K, A, I, M, Q, F, C	**Amatör:** Q şık, çözünürlük,kolay taşınabilir **Y.prof:** K ken. Kullandığı,uzun video, sd kard. **Prof:** C EOS tavsiyesi
10	C,G,L,E,H,R,J,M	**Amatör:** I kompakt, **Y.prof:** H marka, prof görünümlü **Prof:** J Özellikli
11	-	**Amatör:** P küçük, özellikli, güzel **Y.prof:** N değişik **Prof:** E özellikli,lcd üstte
12	E, I, A, C, F	**Amatör:** Q Küçük,cepte taşınabiliyor **Y.prof:** F küçük, taşıması kolay **Prof:** C tasarımı etkileyici
13	P, I, C, O	**Amatör:** P Kolay kullanım **Y.prof:** D Profesyonele yakın tutuş, 8mp. **Prof:** L Marka, En uygunu
14	I, B, R, C, A	**Amatör:** M Boyut, biçim **Y.prof:** A Kolay kullanım **Prof:** E Komplike görünüyor.
15	J	**Amatör:** Q çözünürlük,all-weather, **Y.prof:** R 8 mpixel, **Prof: J** fazla özelliği var.
16	P, I, M, Q	**Amatör:** N değişik, **Y.prof:** I Ufak tefek, kullanışlı, **Prof:**H profesyonel

No:	B 3
1	Firmalar ortak renk ve doku kullanarak kurumsal kimliklerini pekiştirebilirler.
2	-
3	-
4	J-H taki kırmızı çizgi belirleyici, C markasındaki tüm modeller köşeli. Markaların şekil, renk gibi tanımlayıcı bir özelliği olmalı
5	-
6	-
7	Çok zor bir test, çok zorlandım.
8	-
9	-
10	-
11	-
12	-
13	-
14	Daha önce bu kadar ciddi bir çalışma ile karşılaşmadım. İşinize duyduğunuz ve bize gösterdiğiniz ilgiye teşekkür ederiz.
15	Gruplarken,markaların kurumsal kimliklerini ayırt etmemi sağlayacak çok belirgin özellikler yok. Segmentleri ayırmak, markaları ayırmaktan daha kolay.
16	-

English Version

No:	Date:	A 1	Date of birth	A 2	A 3	A 4
1	11.01.2006	M.Y.	1977	M	Industrial Designer	H.Ed./Phd
2	12.01.2006	N. K.	1959	F	University Instructor	H.Ed./Phd
3	12.01.2006	T. G.	1987	M	Student	High School
4	12.01.2006	B. K.	1981	F	Translator	University
5	13.01.2006	M. G.	1977	M	Mechanical Engineer	H.Ed./Phd
6	13.01.2006	H. Ç.	1971	F	Economist	University
7	15.01.2006	G. G.	1975	F	Social Scientist	H.Ed./Phd
8	15.01.2006	A. G.	1964	M	Quality Control Specialist	University
9	20.01.2006	-	1972	M	Manager (medicine sector)	University
10	21.01.2006	M. A.	1982	M	Graphic Technician	Institution
11	22.01.2006	G. Ö.	1981	F	Chemistry Technician	Institution
12	28.02.2006	M. D.	1948	M	Painter / Artist	University
13	01.03.2006	T. O.	1974	M	Designer	University
14	02.03.2006	-	1968	F	Civil Servant	University
15	05.03.2006	B. E.	1976	F	Administrator	University
16	05.03.2006	G. O.	1982	F	Tourism Representative	University

No:	A 5	A 6	Is it your first camera?	Is it your first digital camera?
1	Interested	2005	No	No
2	Somewhat interested	2003	No	Yes
3	Somewhat interested	2003	No	Yes
4	No interest	2005	Yes	Yes
5	Interested	2003	No	Yes
6	Somewhat interested	2005	No	Yes
7	Interested	2004	No	Yes
8	Interested	2005	No	No
9	Interested,Semi-prof.	2005	No	No
10	Semi-prof.,Professional	2003	Yes	Yes
11	Interested	2005	No	Yes
12	Somewhat interested	2005	No	Yes
13	Interested	2005	No	Yes
14	Somewhat interested	2003	No	Yes
15	Semi-professional	2005	No	Yes
16	Somewhat interested	2006	No	Yes

No:	A 7
1	Price, Brand, Technical features, Ergonomic characteristics, Appearance
2	Technical features, Brand, Ergonomic characteristics, Price, Appearance
3	Technical features, Appearance, Ergonomic characteristics, Price, Brand
4	Technical features, Price, Ergonomic characteristics, Brand, Appearance
5	Technical features, Brand, Price, Ergonomic characteristics, Appearance
6	Brand, Technical features, Ergonomic characteristics, Price, Appearance
7	Technical features, Brand, Ergonomic characteristics, Appearance, Price
8	Technical features, Price, Brand, Appearance, Ergonomic characteristics
9	Technical features, Ergonomic characteristics, Brand, Appearance, Price
10	Technical features, Price, Brand, Ergonomic characteristics, , Appearance
11	Technical features, Price, Appearance, Brand, Ergonomic characteristics
12	Price, Ergonomic characteristics, Appearance, Technical features, Brand
13	Technical features, Ergonomic characteristics, Price, Brand, Appearance
14	Brand, Technical features, Appearance, Ergonomic characteristics, Price,
15	Brand, Technical features, Price, Ergonomic characteristics, Appearance
16	Brand, Ergonomic characteristics, Technical features, Appearance, Price

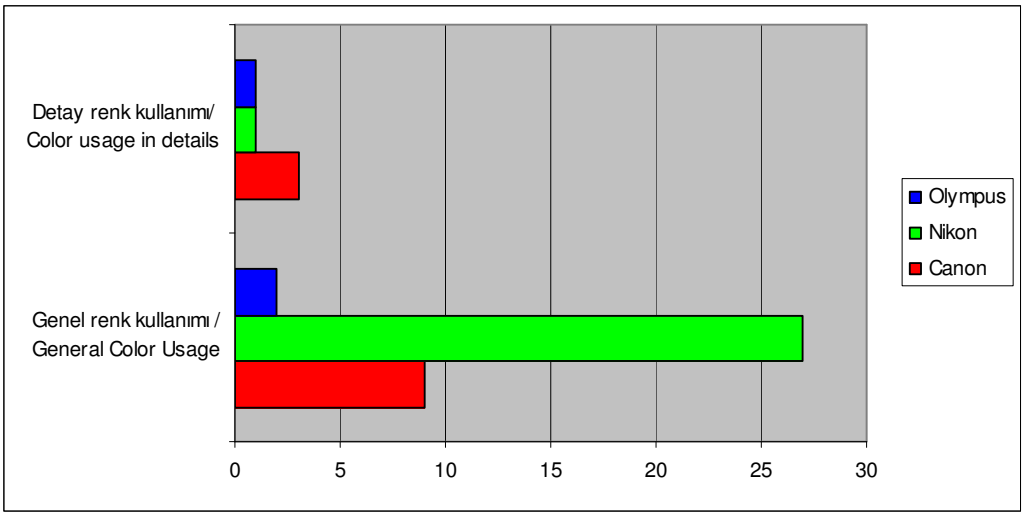
No:	A 8	A 9	Price range
1	İnternet, Stores	Canon A95	0-500YTL
2	Companies' catalogues, İnternet, Stores, Recommendation of a friend	Nikon Coolpix 5400	500-900 YTL
3	Companies' catalogues, İnternet, Stores,	Nikon Coolpix 990	500-900 YTL
4	Companies' catalogues, İnternet,	hp,R717	0-500 YTL
5	İnternet, Recommendation of a friend	Canon Pshot G2	900-1500 YTL
6	Companies' catalogues, İnternet, Recommendation of a friend	Kodak xslim	500-900 YTL
7	Companies' catalogues, İnternet,	Canon Pshot 2.0	0-500 YTL
8	İnternet	Kodak xslim	0-500 YTL
9	İnternet	Canon s80	900-1500 YTL
10	Companies' catalogues, Stores, Recommendation of a friend	Nikon D100, Fuji S1	3000-10000 YTL
11	Stores	Arçelik	0-500 YTL
12	Companies' catalogues, Stores, Recommendation of a friend	Canon	500-900 YTL
13	İnternet, Stores, Recommendation of a friend	Nikon D70	1500-3000 YTL
14	İnternet	Nikon	500-900 YTL
15	Companies' catalogues, İnternet, Stores, Recommendation of a friend	Nikon	900-1500 YTL
16	Stores	Sony DSC-T7	500-900 YTL

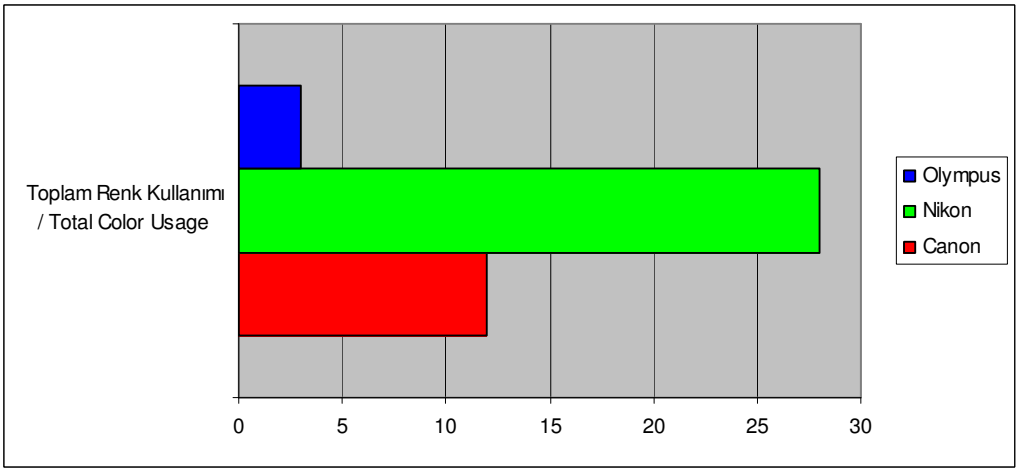
No:	B 1	B 2
1	N,L,I,C,A,H	**Amatör:** M compact and thin **Y.prof:** B ergonomic, prof. appearence **Prof:** C very ergonomic, functional
2	-	**Amatör:** Q,M design, **Y.prof:** A.K **Prof:** C color
3	N	**Amatör:** K double color, contrast, stylish **Y.prof:** H,B form **Prof:** C, E stylish, good
4	-	**Amatör:** Q 8 mpixel **Y.prof:** A small **Prof:** F small, easy to carry
5	C A I	**Amatör:** M curious about **Y.prof:** H liked **Prof:** G typology is familiar
6	-	**Amatör:** K stylish, with zoom **Y.prof:** F small **Prof:** B smal
7	-	**Amatör:** known brand, External appearence, color **Y.prof:** H Zoom 8 MP j with cover **Prof:** J,C back view is complicated, technical
8	N, M	**Amatör:** I most professional appearence **Y.prof:** E most professional appearence,durable **Prof:** j because it is Nikon
9	K, A, I, M, Q, F, C	**Amatör:** Q stylish, megapixel, easy to carry **Y.prof:** K his own camera, long video time, sd card. **Prof:** C EOS tavsiyesi
10	C,G,L,E,H,R,J,M,	**Amatör:** I compact, **Y.prof:** H brand, Professional appearence **Prof:** J features
11	-	**Amatör:** P smal, features, nice **Y.prof:** N different **Prof:** E features,lcd at the top
12	E, I, A, C, F	**Amatör:** Q smal, pocket camera **Y.prof:** F smal, easy to carry **Prof:** C attractive design
13	P, I, C, O	**Amatör:** P easy to use **Y.prof:** D Professional like handle, 8mp. **Prof:** L Brand, most appropriate
14	I, B, R, C, A	**Amatör:** M Size, form **Y.prof:** A easy to carry **Prof:** E complex appearence
15	J	**Amatör:** Q megapixel,all-weather, **Y.prof:** R 8 mpixel, **Prof:** J many features
16	P, I, M, Q	**Amatör:** N different, **Y.prof:** I tiny, usable **Prof:**H professional

No:	B 3
1	Firms can reinforce their corporate identity by using common colour and pattern.
2	-
3	-
4	Red line in J-H is indicator, all models in company C are cornered. Brands should have a defining feature such as form, colour etc.
5	-
6	-
7	Ç It is a very difficult test, I found it hard.
8	-
9	-
10	-
11	-
12	-
13	-
14	I have never seen such a serious study before. Thank you for your concern for your job and for us.
15	There are no specific features which may help me identify the corporate identities of the brands while categorising. It is easier to distinguish segments than brands.
16	-

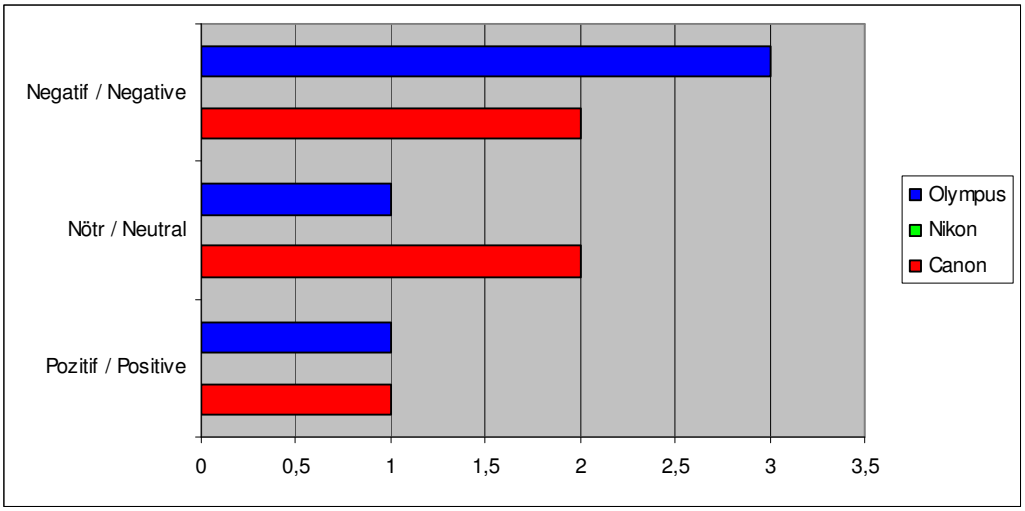
APPENDIX F

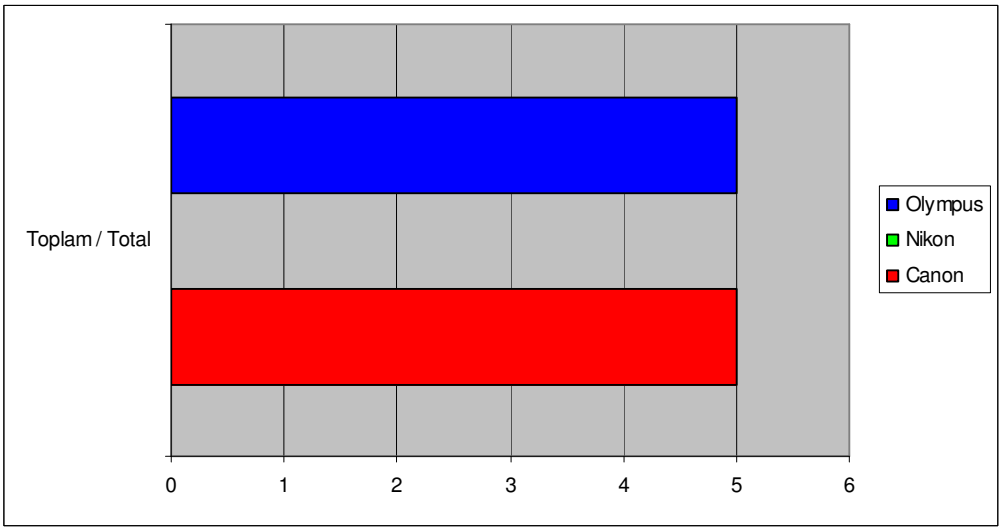
Renk / Color				
	Canon	**Nikon**	**Olympus**	**Toplam /Total**
Genel renk kullanımı / General color usage	9	27	2	38
Detay renk kullanımı/ Color usage in details	3	1	1	5



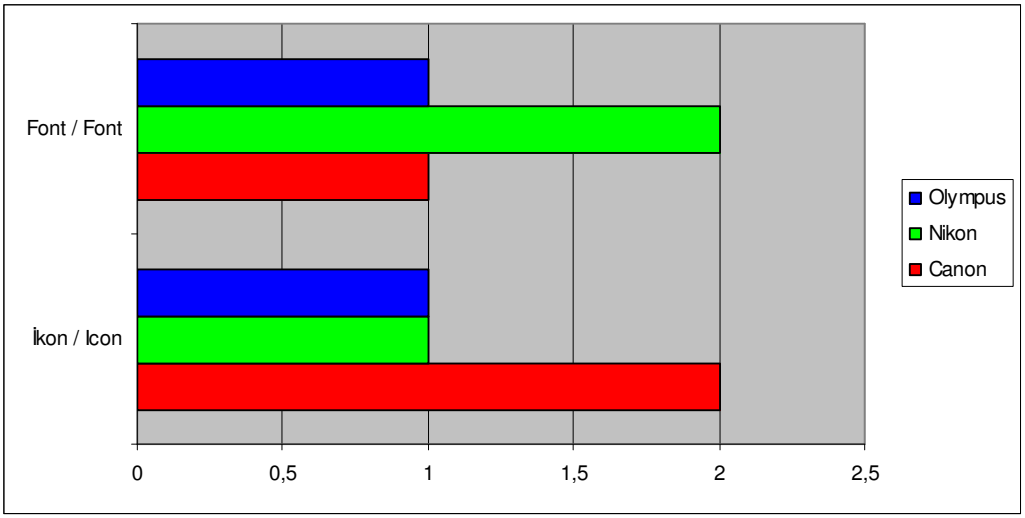


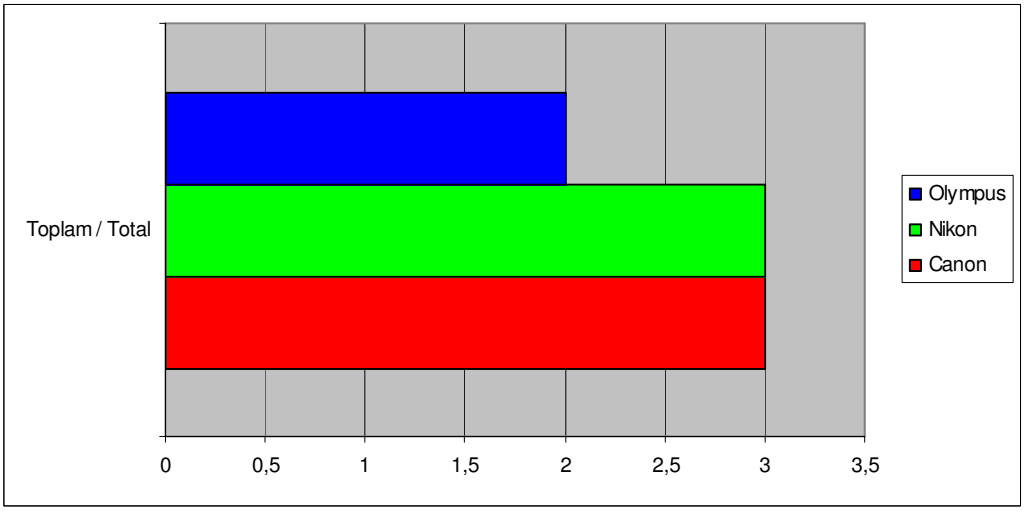
Estetik /Aesthetics				
	Canon	**Nikon**	**Olympus**	**Toplam /Total**
Pozitif / Positive	1	-	1	2
Nötr / Neutral	2	-	1	3
Negatif / Negative	2	-	3	5



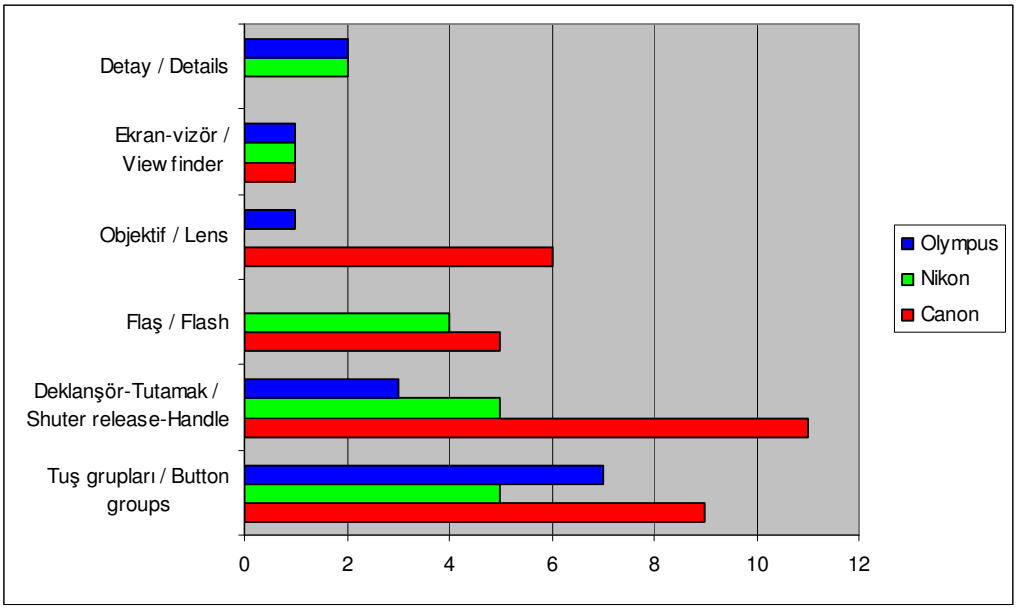


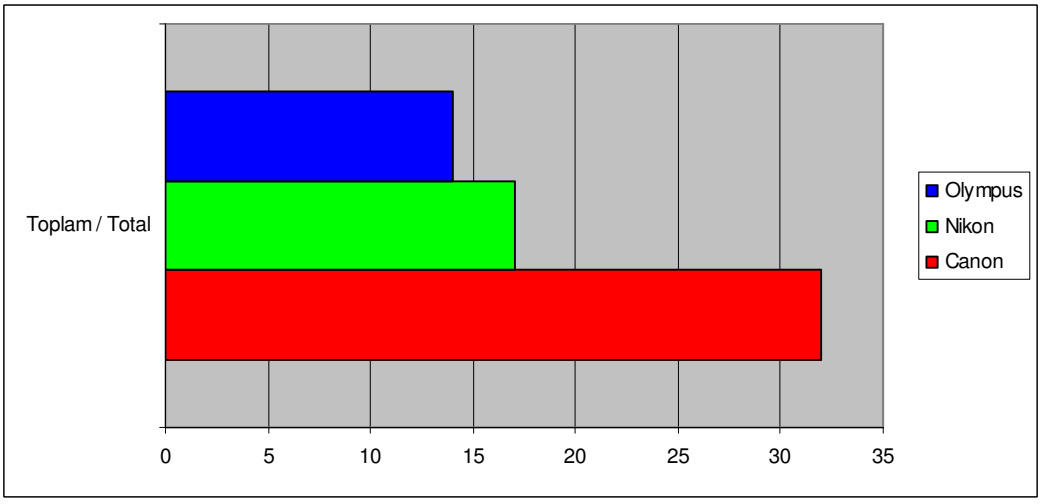
Grafik / Graphics				
	Canon	Nikon	Olympus	Toplam /Total
İkon / Icon	2	1	1	4
Font / Font	1	2	1	4





Elementler / Elements				
	Canon	**Nikon**	**Olympus**	**Toplam /Total**
Tuş grupları / Button groups	9	5	7	21
Deklanşör-Tutamak / Shuter release-Handle	11	5	3	19
Flaş / Flash	5	4	-	9
Objektif / Lens	6	-	1	7
Ekran-vizör / Viewfinder	1	1	1	3
Detay / Details	-	2	2	4





Şekil-Oran-Geometri / Form-Proportion-Geometry				
	Canon	**Nikon**	**Olympus**	**Toplam /Total**
Genel / Overall	23	14	60	97
Detay / Detail	3	3	1	7