

Research on Product Identity by analyzing the examples of Mobile Phones

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Abstract

All corporations have been equalized by the development of technology and it is shown that they have tried to differentiate themselves through their designs. That is, all corporations have started to be concerned about Corporate Identity, Brand Identity and Product Identity for increasing the competitive corporate value as the time of intensely competing in design area had begun. Each corporation represents its own image through products in design and carries out a plan that it actively applies its own corporate culture to management, design, marketing and so on. Among them, it is said that Product Identity has a purpose to establish the identity through a product and it is the most direct strategy that the product is a medium. A consumer directly feels the corporate image by using the product and the communication happens between the corporate image and the consumer when a product is used by a consumer. The corporate can make a good profit through it and it is the purpose of a corporation.

Product Identity is one of the most important corporate strategies to lead the communication to a positive way. Therefore, the Product Identity makes the consumer be aware of the corporate philosophy and image through product design and it is important that it gives the same corporate image to all products.

The purpose of the study is to understand the meaning and necessity of Product Identity and to know how the Product Identity which has increasing importance affects mobile phones which are delicately and rapidly changing, what elements of Product Identity are important in the case of the mobile phone and what factors are demanded for establishing the Product Identity.

For this purpose, the definition, function and necessity of Product Identity are examined through books for reference, and the concept of Corporate Design, Corporate Identity, Brand Identity, and Brand Image, which are related with Product Identity, are analyzed. Secondly, what are the general elements of Product Identity and what are the elements of Product Identity in relation to the mobile phone are surveyed. Thirdly, the elements of Product Identity in mobile phones that the consumers are aware of and concerned about are researched through questionnaires. Fourthly, the Product Identity of the mobile phones of Nokia and Samsung selected according to the result is compared and analyzed in the axis of time and space. Fifthly, a process model is suggested for the powerful Product Identity of a mobile phone according to those results.

The results of the study can be summarized as follows.

Firstly, the consumers are aware of the first visual Product Identity of a mobile phone among many elements of the Product Identity and it includes the type, the general color and the whole form of the mobile phone.

Secondly, Nokia established its own communication way on the basis of form and has a powerful Product Identity different from other competitors according to the result of comparing and analyzing the Product Identity of Nokia and Samsung centered on the axis of time and space in the basis of type, color and form of mobile phones. On the other hand,

Samsung makes an experimental design for the recent trend focusing on the type of mobile phone among many elements of Product Identity. The type of mobile phone, however, makes no difference from the type of other competitors and Samsung has less competitiveness.

Finally, in order to achieve a powerful Product Identity of mobile phones according to the case study of Nokia and Samsung, the corporate Product Identity must be most effectively represented and then the form must be focused based on the Product Identity which gives a difference to the corporation.

In the case of a mobile phone which is sensitive to trend, it is hard to keep the same form without any change but the change without consistency finally creates the loss of its own Product identity. Product Identity is not just a design but an absolute factor which affects all processes including product manufacturing, marketing, consumer needs and so forth. The success of Product Identity cannot be done in coincidence, and the development of Product Identity is very important to the corporate purpose and brand strategy. Accordingly, each corporation must keep and develop its Product Identity through tactical and strategic policy in the consideration of a reasonable design. When a corporation establishes its own Product Identity and communicates it to consumers they can make an ideal product.

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1 Introduction

The background of study and its purpose will be introduced shortly in this chapter.

1.1 Background and Objectives of the Study

The time of intense competing in design has begun and the competition within the market has been increasing between countries. Technological superiority has been the ultimate criterion to evaluate the excellence of the product and still the evaluation of its utility created from it is the most objective way of differentiation. While the production technology has a long cycle of renovation and big cost, it is hard to keep the priority of competitiveness. In addition, it is hard to get the sufficient effectiveness of differentiation with only production technology in a matured market system controlled by delivery and competitiveness due to the equalization between corporations caused by the unification of international markets and the development of technology.

In order to actively respond to the change of the international market, many corporations try to differentiate their products with external properties such as design and brand. These products must provide a different value from other products. That is, a corporation can survive when they develop a product with a good design in an age of limitless competition and once a design is developed and successful it supplies a corporation with a good image. Therefore, many corporations use design as a strategic method.

Reflecting today's market environment where change is not an option but rather a requirement, corporations have begun to focus on Corporate Identity, Product Identity, and Brand Identity. Corporations put emphasis on design, marketing, and advertising in order to manage their product image.

Among them, the purpose of Product Identity is to establish identity through product and, thus, the product itself is the most important factor and at the same time used as most direct strategy to use the product as a medium. Consumers are provided directly and indirectly with a feeling of a corporate image. Hence, when they use a product they directly feel the corporate image and communication happens between the corporate image and consumers. Product Identity is an important link in the corporate strategy to lead the communication in a positive direction. Accordingly, it is important in the strategic value the Product Identity represents a corporate image to consumers in a conceptual function as well as embody the same corporate image to its products in an actual function.

How does the Product Identity, which is increasingly important, affect mobile phones which have a very short life cycle and rapidly respond to them in comparison with other products? Is it hard to make a constant strategy for Product Identity because IT cycle is relatively short in mobile

phones and they are sensitive to trend, and is it more advantageous to the mobile phones to apply diversity rather than consistency in order to respond to trend?

The study first shows the relation between Product Identity and mobile phone, and then it examines what the elements of Product Identity of a mobile phone are and what is the first priority to consumers among them. In addition, it will be compared and analyzed how the Product Identity of the two model groups of mobile phones selected from Nokia and Samsung in the developed market has changed, what their major Product Identity represented through design strategy is and what elements of the Product Identity they try to focus on.

Finally, the best way of establishing the powerful Product Identity for mobile phones according to the results of the comparison and analysis will be suggested.

1.2 Structure of the Study

At first, the essence of Product Identity will be examined, and function and necessity of Product identity for its right understanding will be researched. Then it is investigated what the types of Product Identity are and what the elements of Product Identity related to mobile phones are. In addition, Corporate Design, Corporate Identity, Brand Image, and Brand Identity in relation to Product Identity will be researched because it cannot exist alone.

Through questionnaires the elements of Product Identity, consumers are aware of and concerned about are examined. And Product Identity of selected two corporations is compared and analyzed. The general structure of the study is as follows.

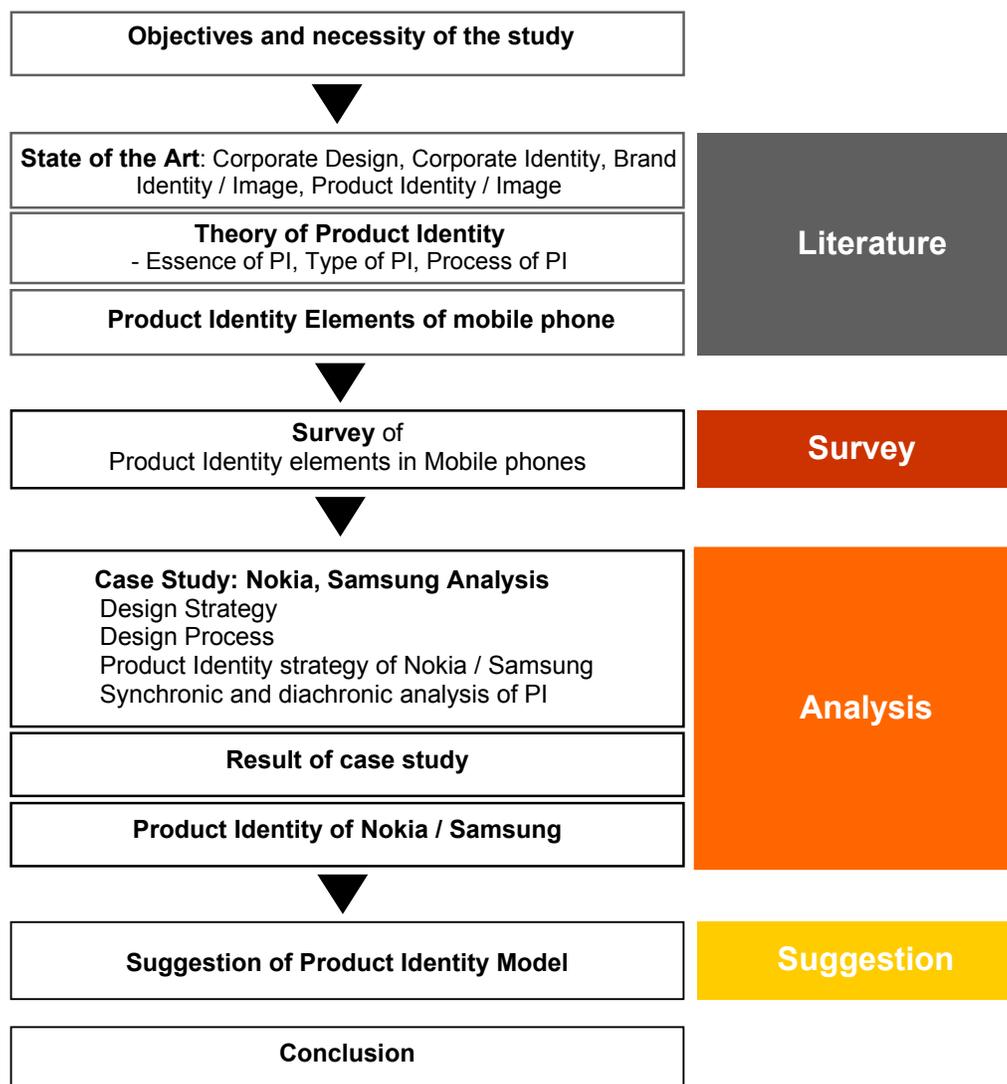


Figure 1-1 Structure of the study

Based on the comparison and analysis, the process model for a firm establishment of Product Identity for mobile phones will be suggested.

2 State of the Art

Before examining the essence, the functions and necessities of Product Identity, Corporate Design, Corporate Identity, Brand Identity, and Brand Image in the relation with Product Identity will be researched.

2.1 Corporate Design

The constituent elements of Corporate Design are the individual factors of the corporation image in general including all parts of the corporation. Those constituent elements are generally and harmoniously combined for the specific form of the corporate image. Here, it is important to understand how those elements are constructed and perform for the Corporate Design with those individual distinctions.



Figure 2-1 Value of Corporate Design and related elements

Source: Young-Gul Gwon, A Study of Strategic Model of Corporate Design for Improvement of Corporate Competitiveness in Korea, Ministry of Commerce, Industry and Energy, 2000, p 204

The elements of the Corporate Design are value and structure. The factors of value in Corporate Design are the intangible factors such as corporate philosophy, corporate culture, and design philosophy. In addition, the design strategy, design organization, marketing strategy, the Public Relation strategy, and so on, encompasses the value factor for Corporate Design. The corporation can accomplish its Corporate Identity and Brand Identity for the consideration of the final Corporate Image through Corporate Design. The value factors of Corporate Design are as shown in Table 2-1.

Value factors of Corporate Design	Factors	Contents
Corporate value factors	<ul style="list-style-type: none"> • Corporate Philosophy • Corporate Design • Design Philosophy 	<ul style="list-style-type: none"> • Basic and top philosophy that the company aims at. • Members' behavioral patterns • Directing for creative design • Human-centered, Culture-centered, technology-driven, Ecology-based
Internal-corporate environment	<ul style="list-style-type: none"> • Design Strategy • Design Organization • Marketing Strategy • Public Relation Strategy 	<ul style="list-style-type: none"> • Conceptualization according to technology-change, lifestyle-change and product market-change. • Becoming network and digital of the design organization • CM (Corporate Market & Management), CC (Corporate Communication)
Corporate Identity / Brand Identity	<ul style="list-style-type: none"> • Corporate Identity • Brand Identity 	<ul style="list-style-type: none"> • Concerning the specific aspects of the certain product groups among varieties of products of the company

Table 2-1 Relation between value factors and elements of Corporate Design

Source: Young-Gul Gwon, A Study of Strategic Model of Corporate Design for Improvement of Corporate Competitiveness in Korea, Ministry of Commerce, Industry and Energy, 2000, p 200

The structural factors of Corporate Design are its history, size and the public awareness of the corporation that represent its present status. The history of a corporation tells how much the positive image and the tradition have accumulated, and it is the index of its growth as a brand. The size of a corporation shows how its design organization operates and how its Corporate Identity is managed by examining whether it is a domestic corporation or international corporation, multinational or global. The public awareness of the corporation is closely related to its history, and the awareness can be diagnosed in the phase of formation, expansion and transformation. In addition, it includes the frames of the Corporate Design such as Visual Communication Design (VCD), Product System Design (PSD), Space Design (SD), and Cyberspace Design (CSD).

Most corporations build their Corporate Identity concentrating on the most proper elements of Corporate Design to their circumference. The product-centered company focuses on the strategy for Product System Design, the service-centered company uses the differentiated strategy in SD, and the network-centered company focuses on Cyberspace Design. The following table is the brief illustration of the elements and the details of Corporate Design.

Elements of Corporate Design	Factors	Contents
Situation	<ul style="list-style-type: none"> • History • Size • Recognition 	<ul style="list-style-type: none"> • History of the company that forms its brand with accumulated tradition • National/International corporation, Conglomerated/Global corporation • Formation/ Expansion/Transformation periods
VCD Visual Communication Design	<ul style="list-style-type: none"> • Size and activities of the company • Brand Identity • CIS 	<ul style="list-style-type: none"> • main and specialized products of medium corporations, main and diverse products of big corporations • CI = BI, CI ≠ BI, CI & Sub-brand¹ • Corporate Symbol, Logo, Color, Typeface
	CIS (Corporate Identification System)	<ul style="list-style-type: none"> • Capacity of CI that includes the scope and the working fields of the corporation • Promoting the recognition of the company through visual and semantic coherence • Corporate Symbol, Logo, Color, Typeface etc.
	CC (Corporate Communications)	<ul style="list-style-type: none"> • Graphic design that closely related to the Corporate philosophy, statement and slogan • Product PR and sales, consumer communication • Marketing, ads and Public Relation
PSD Product System Design	<ul style="list-style-type: none"> • Product System • Renovation • Life Cycle 	<ul style="list-style-type: none"> • Single, Compound, Complex • Prime product, new series products, supplements, improved products, repositioning product, cost-reduction products • Introduction, growth, puberty, declination periods
	Design Language	<ul style="list-style-type: none"> • Appearance, manufacturing quality, Color, Form, Typography, Logo • Styling and applying CI system to production • Function, Usability, human-centered and User-centered design
	Product Identity	<ul style="list-style-type: none"> • Shop: point of purchasing the product • Package: purchasing / transporting • Manual: purchasing / usage • Product and consumer communication
	Interface Design	<ul style="list-style-type: none"> • Operation mechanism • User interface (physical, cognitive and emotional interface) • Visible appearance can be determined by invisible operation mechanism
SD Space Design	<ul style="list-style-type: none"> • Space Design Area • Design Area 	<ul style="list-style-type: none"> • Corporate Building Design, Contract Design, Event Design • Exterior & Sign System, Interior Design, Display Design
	Corporate Building Design	<ul style="list-style-type: none"> • Office building and the corporate environment design that present the total image of the corporate • Cultural space design (design museum, motor museum etc.)
	Contract Design	<ul style="list-style-type: none"> • Exterior and Sign System Design • Interior Design, Display Design
	Event Design	<ul style="list-style-type: none"> • Sales Promotion Event: presentation meetings • Public Relation Event: Motor show, Design Award etc.
CSD Cyberspace Design	<ul style="list-style-type: none"> • Web site • CSD Area 	<ul style="list-style-type: none"> • Search Engine, Corporate, Shopping Mall: Online store, Community, Portal • Contents Design, Interface Design, Look & Feel
	Contents Design	<ul style="list-style-type: none"> • Contents and structure of websites • Promotion, Advertisement, Product Sales, Information, cultural activities, Community, information etc.
	Information Architecture & Navigation	<ul style="list-style-type: none"> • Linear, non-linear, tree and network structure • Hypertext, Hypermedia, Link
	Feel & Look Design	<ul style="list-style-type: none"> • GUI (Graphic User Interface) • Usability Test

¹ There are three corporate types; its Corporate Identity and Brand Identity are the same, its Corporate Identity and Brand Identity are different, and which has Corporate Identity and also sub brand.

Table 2-2 Elements of Corporate Design and contents

Source: Young-Gul Gwon, A Study of Strategic Model of Corporate Design for Improvement of Corporate Competitiveness in Korea, Ministry of Commerce, Industry and Energy, 2000, p 202

The value of Corporate Design is intangible but it represents the purpose of the corporation and structure is the method for visualizing its value. The value cannot be separated with the structure in Corporate Design, and the corporate value comes to user and consumer through surroundings. Corporate Design is not merely the combination of the components but the connection and the strategy makes a difference in its effect.

2.2 Corporate Identity

Identity is “what one is”, design is “what one wants to be”.²

“A company’s identity emerges primarily through what people see. Advertising, logos, signage, uniforms, buildings, packaging, and product design all contribute to creating corporate identity.”³

Corporate Identity tries to develop and improve the corporate image by building its integrated image and improving its business effectiveness as well. “In a company with a well-developed Corporate Identity, the products and services, buildings, publicity material and stationery may all share common characteristics such as the use of a standard ‘house style’ typeface, preferred color schemes and distinctive shape or forms”.⁴

The Corporate Identity program is a strategy of visual communication for the consistency of the corporate image and integration of management. “Design elements may be integrated or standardized by means of a corporate identity program, the aim of which is to present an appropriate, uniform image to customer, suppliers and other groups.”⁵

The purpose of Corporate Identity is to classify and systematize the images of a company. In that process, it is possible to improve the brand value of a corporation by suggesting its philosophy and vision to others and, at the same time, it can internally make a systematic organization by properly managing and inspiring its members through its systematic structure.

Corporate Identity was created in the US and is regarded as a simple project for the managing strategy to internally and externally establish its significance of existence but it has a new and sublime concept these days. That is, Corporate Identity is the individual corporate value and personality which all people related to its survival and development can be in common and can have pride. Its creation is a process of self-

² Brigitte Borja de Mozota, Design Management using design to build brand value and corporate innovation, Allworht Press, 2003, p 155

³ Karl T. Ulrich, Product Design and Development, McGraw-Hill/Irwin, 2004, p 196

⁴ Mark Oakley, Design Management, Blackwell Reference, 1990, p 13

⁵ Ibid.

innovation and self-expression for its independence and unity in a new connection between the corporation and society. The detail of roles in Corporate Identity is as follows.⁶

The first role of Corporate Identity is to clearly understand the business aspect. There are different types of corporate philosophy. First of all, the corporate philosophy was usually used to define a code of conduct. Other types of corporate philosophy were related with the external values including the attitude of management such as customer first, good service and so on. Recently, however, they express the reasons of its existence such as their vision and necessity. This point is important in this rapidly changing world. In fact, a corporation must consider the changing environment for its survival and it is the concept of business area. It is the key to modern Corporate Identity. While the old Corporate Identity usually focused on the visual communication such as logo and color for the symbol, today's Corporate Identity has changed from checking and establishing the corporate mission.

The second role of Corporate Identity is to improve the corporate image. These days, the corporate image is comprehensively recognized according to the visual image and the behavioral image. The consumers, at first, judge the corporation by its visual image but, afterwards, he evaluates it by its behavioral image. Corporate Identity is a review and reestablishment of all behaviors by the corporate itself and it contributes greatly to improve the corporate image.

There are many opinions about the elements of Corporate Identity.

Wally Olins from England and Jens Bernsen from Denmark say that Corporate Identity is the sum of products or services, communication and environments.⁷ Or it is often viewed as being composed of three parts: Corporate Design (logos, uniforms, etc.), Corporate Communication (commercials, public relations, information, etc.), and Corporate Behavior (internal values, norms, etc.).⁸ Or Corporate Identity is the sum of Products, Communication and Environment design.⁹

Besides, it is generally said that Corporate Identity is composed of three elements; Mind Identity (MI), Behavior Identity (Bel) and Visual Identity (VI).¹⁰

Mind Identity (MI) is essential in the concept of CI and it is a program to re-establish the vision and goal of the times for the corporation and to inform it inside and out by re-examining and restructuring the corporate philosophy. In addition, the Behavior Identity and Visual Identity must be followed by Mind Identity (MI). Therefore, in order to promote CI, Mind Identity (MI) must be established.

The second element is Behavior Identity (Bel). It is a very important program that makes all members of the company actualize and objectify the established management philosophy of Mind Identity (MI). Behavior

⁶ Young-Gul Gwon, A Study of Strategic Model of Corporate Design for Improvement of Corporate Competitiveness in Korea, Ministry of Commerce, Industry and Energy, 2000, pp 45-47

⁷ Jens Bernsen, Twelve Principles of Design Management, 1990, p 86 and Wally Olins, Corporate Identity, 1990, p 176

⁸ http://en.wikipedia.org/wiki/Corporate_Identity

⁹ Mark Oakley, Design Management, Blackwell Reference, 1990, p 87

¹⁰ Corporate PR • CI • the present Advertising, Hyundai management Institute, Seungsan Press, 1997, p 120

Identity (Bel) is a program not only to improve but also to activate the organization, and must be done in corporation resource planning. The third element is Visual Identity (VI) which is the core of CI. It could be the strategy of corporate image by Visual Identity (VI) because the change of corporate name and the development of logo are visually shown to others. Many companies have used Visual Identity as a marketing theme in the past because the visual information has a great effect on awareness and memory. Visual Identity (VI) in CI, however, is the visualization of Mind Identity (MI) and it is a very different process from product sales because VI is to systematize and develop the highest priority.

2.3 Brand Identity

Brand Identity is constituted by a set of unique associations that should be defined by the brand strategies. The associations chosen by the brand strategist hence 'represent what it stands for.'¹¹ Also, "Brand Identity should help to establish a relationship between the brand and the consumer by generating a value proposition involving functional, emotional or self-expressive benefits."¹²

In Aaker's conceptualization of Brand Identity, Brand Identity consists of twelve dimensions organized around four perspectives:

- brand as product,
- brand as organization,
- brand as person, and
- brand as symbol

Brand as Product contains six Brand Identity elements:

- product scope,
- product attributes,
- quality / value,
- uses,
- users, and
- country of origin.

Brand as Organization contains

- organization attributes, and
- local versus global

Brand as Person contains

- personality, and
- customer / brand relationships.

Brand as Symbol contains two Brand Identity elements:

- visual image and metaphors, and
- brand heritage¹³

In addition, Aaker makes the distinction between core identity and an extended identity. The core identity represents the central timeless essence of the brand, which should address issues such as the soul of the brand, the fundamental beliefs of brand and the competencies of

¹¹ David A. Aaker, Building strong brands, The Free Press New York, 1996, p 68

¹² Ibid.

¹³ Ibid.

brand as well as the values of the organization behind the brand. The extended identity includes the core identity but is more elaborate and provides texture and completeness to the brand's identity.

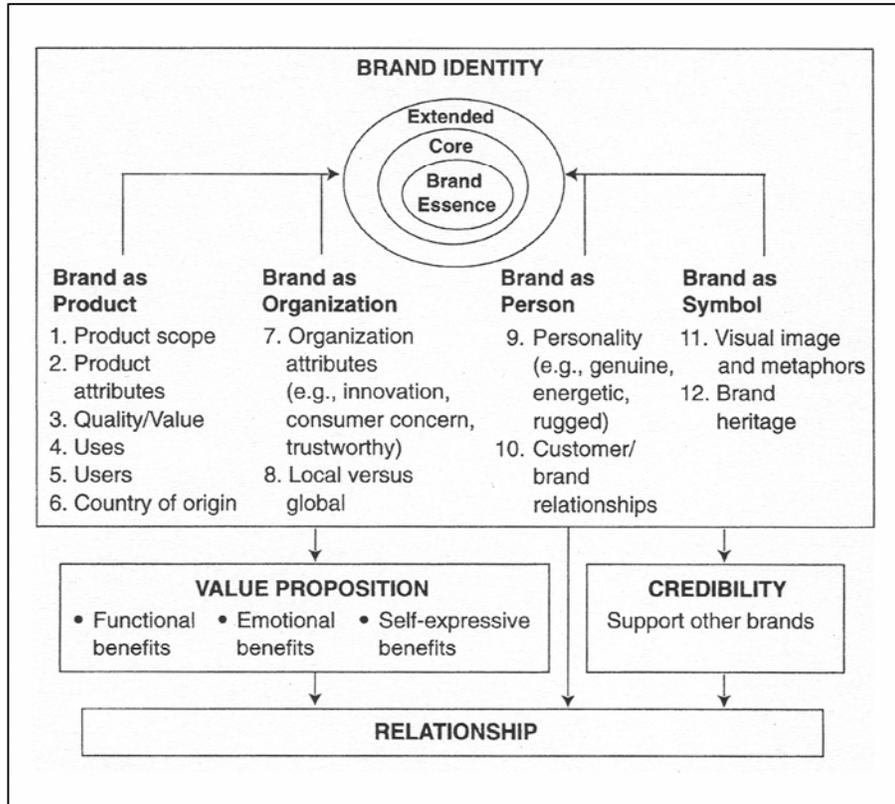


Figure 2-2 Brand Identity System

Source: David A. Aaker & Erich Joachimsthaler, *Brand Leadership*, Simon & Schuster, 2002, p 44

As suggested by Figure 2-2, Brand Identity consists of a core identity and extended identity. “The core identity represents the timeless essence of the brand”.¹⁴ So it should include elements that make and keep the unique and valuable.¹⁵ The extended Brand Identity includes elements that help Brand Identity to be complete. And “it fills in the picture, adding details that help to portray what the brand stands for.”¹⁶ The core identity for a strong brand should be more maintained and timeless than extended identity, although brand position and communication strategies may change, and so might the extended identity.¹⁷

¹⁴ Ibid., p 85

¹⁵ Ibid., p 87

¹⁶ Ibid., pp 87-88

¹⁷ Ibid., pp 86-87

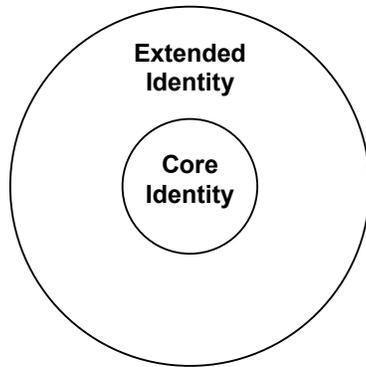


Figure 2-3 The Identity Structure

Source: David A. Aaker, Building strong brands, The Free Press New York, 1996, p 86

2.4 Brand Image

Creating positive images and making consumers remember their brands are the key aspects for the corporations in their marketing; since, brand images for differently targeted market segments influence sales, profit, and market shares in the product industry. David Ogilvy once noted that product image is personality; products have certain characteristics created by many factors such as brand name, package, price, and advertisement that determine the success and failure of the product in the market.¹⁸

Brand image is a standard for consumers to purchase certain items and plays an important role in influencing consumers' future purchase behavior. Product image is a part of brand image; when different product lines' positive images with similarities among them are accumulated, a strong brand image is formed to consumers with loyalty to the brand. Thus, investment in research and the development of a positive brand image unity in different product lines is crucial for corporations.

The scholars' definitions of the brand image are very various as follows.

- Functional value and dis-functional value of brand, Gardner & Levy (1955)¹⁹
- Consumer's behavior or meaning of the product to him/her, Tucker (1957)²⁰
- Every aspect consumer can think of / about a certain brand, Newman (1957)²¹
- Impulsive or aesthetic quality consumer can think of / about a certain brand, Dunn (1961)²²
- Brand personality, Martineau (1968)²³

¹⁸ Quoted in Jang-o Noh, Brand marketing, Four seasons Prerss, 1994, pp 131-132

¹⁹ B. Gardner & S. Levy, The product & the brand. Harvard Business review, 1955, p 33

²⁰ W. T. Tucker, Foundations for theory of consumer Behavior, Holt Reinhart & Winston, 1957, pp 47-55

²¹ J. W. Newmann, New Insight, new Progress for marketing, Harvard Business review, Nov/Dec 1957

²² S. W. Dunn, Advertising: Its role in modern marketing, Holt Rinehart and Winston Inc, 1961, p 125

- Combination of brand characteristics and product characteristics, Oxenfeldt (1974)²⁴
- Consumer's belief of a certain brand, Horowitz & Kaye (1975)²⁵
- Recognition of brand in a picture as a whole, Marks (1975)²⁶
- General characteristics, impression, perception of a brand for a long time, Jain & Etgar (1971)²⁷
- Brand personality, Stanton (1978)²⁸
- Combination of consumer's beliefs of a brand, Kotler (1983)²⁹
- Consumer's perception of a brand by abstraction of physical aspect of product's characteristics, Reynolds & Gutman (1984)³⁰
- Combination of meaningful pictures of a brand Aaker (1991)³¹
- Recognition of a brand as a whole, Assael (1992)³²
- Recognition of brand's pictures in consumer's memory/experience, Keller (1993)³³

2.5 Product Identity

Product Identity is a part of Corporate Identity.³⁴ Product Identity also refers to Product Identity management in which corporations create their images in their products by responding to customers' diversified tastes and wants. Product Identity can be a part of the Corporate Identity Program, but Product Identity not only formulates a comparative advantage by corporation's originality but also delivers corporate images to customers by merging Corporate Image and Product Image. It is a strategy comprising the principles and philosophy of a corporation to deliver the corporation's image as a whole.

Product Identity also contributes to form unity among certain design lines of the products in a corporation and continues the unity in order to make people remember the symbolic image of a corporation and formulate the corporate image symbolizing the corporation in a long term.

²³ P. Matineau, The personality retail store, Harvard Business review, 1968

²⁴ A. R. Oxenfeldt, Developing a favorite price-quality image, Journal of Advertising research, 1974, pp 8-14

²⁵ I. A. Horowitz & R. S. Kaye, Perception and advertising, Journal of advertising, 1975

²⁶ R. B. Marks, Operationalizing in the concept of store image, Journal of Retailing, 1976, pp 37-47

²⁷ A. K. Jain & M. Etgar, Measuring store image through multidimensional scaling of free response data, Journal of retailing, 1976, pp 61-70

²⁸ W. J. Stanton, Fundamental of Marketing, McGraw-Hill Inc., 1978, p 128

²⁹ P. Kotler, Principle of marketing, Prentice-Hall Inc. 1983, pp 151-153

³⁰ T. J. Reynolds & J. Gutman, Advertising is image management, Journal of Advertising Research, 1984, pp 27-37

³¹ David A. Aaker, Managing Brand Equity, The Free Press New York, 1991, pp 118-120

³² H. Assael, Consumer Behavior & Marketing Action (4th Edition), PWS – KENT, 1992, p 651

³³ K. L. Keller, Conceptualizing, Measuring, and managing customer based brand equity, Journal of marketing 57, 1993, pp 1-22

³⁴ Twelve Principles of Design Management, Jens Bernsen, 1990, p 86

2.6 Product Image

Product Image is the product's general image formed by customers using the product. For the customers using products and corporations making the products, Product Image serves to provide discrimination between products. Customers buy or select items based on their previous purchasing experience or information on those products, and those purchases contribute to form images of the producer. Since these Product Images become the reasons for them to make future purchases, manufacturers can use Product Image to differentiate their products from others.

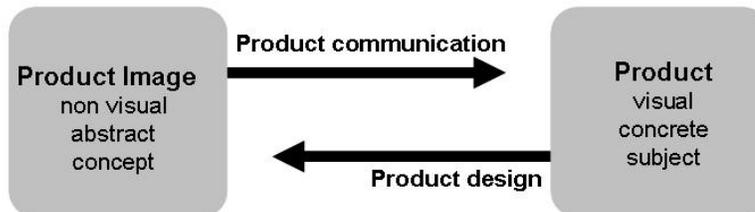


Figure 2-4 Relationship between product image and product

Source: Tae-Sook Lee, A study on the corporate product identity management, Korea advanced Institute of science and technology, 1997, p 17

There are five elements that make up product Image:

- (1) product design,
- (2) product development,
- (3) brand,
- (4) package, and
- (5) price.³⁵

These terms are defined as follows:

1. *Product design* is a combination of attributes, characteristics, or performance factors that constitute a product's existence. Product design is the embodiment of what a physical product is, of course, it largely determining what the product can do for the consumer.
2. *Product development* consists of the ideas, research, and engineering necessary to discover, test, and certify new products. Products' development makes it possible for the consumer to have new and different products.
3. *Brand* is any name, term, symbol, or design, or combination thereof, which identifies the good or service of one seller or a group of sellers and distinguishes them from those of competitors.³⁶ The brand identifies the product for the consumer and relates it to the maker and to quality.
4. *The package* is the container and/or wrapper within which the product is contained. The package protects the product for the consumer and helps in identification. Packaging is closely related to brand and product design.
5. *Price* is the dollar amount the consumer must spend on the product. The price places limits on what the consumer can have and acts as a guide to product quality and desirability.

³⁵ Consumer Behavior, Charles Glenn Walters, Irwin, 1978, pp 517-518

³⁶ Report of the definitions Committee, Journal of Marketing, 1948, p 205

The following chart summarizes researchers' studies on Elements of Product Image.

Elements of Product Image			
Scholar	C. G Walters & G.W Paul	L.W Roger	C.A Kirkpatrick
Contents	<ul style="list-style-type: none"> • Product design • Product development • Brand • Package • Price 	<ul style="list-style-type: none"> • Internal quality of the product • Actual impression of the concept • User's self-expression • Public appraisal 	<ul style="list-style-type: none"> • Brand name • Function • Sales promotion • Public appraisal

Table 2-3 Elements of Product Image

Source: Quoted in Man-Gyu Lim, A Study on Consumer's Evaluation of Corporate Image in Korea, Yonsei University, 1995, p 38.

The product is an important link between producers and consumers. Consumers buy a product, use the product, and create an image of the producer based on their experience with the product.

The same product can influence different people and create different images of the producer due to the diverse backgrounds and characteristics of the consumers.

Different tastes create different consumer behaviors, but if a consumer has a positive image of a certain producer and trusts his brand, the consumer will buy the producer's products even if the products are not satisfactory.

3 Concept of Product Identity

For the right understanding of Product Identity, the essence will be examined as well as the development phase, the process, and the necessities and elements of Product Identity.

3.1 Product Identity

When examining Product Identity, the basics and essentials of Product Identity should be explored.

3.1.1 Essence of Product Identity

Product Identity is used to represent the same corporate image as a part of Corporate Identity³⁷ among many factors which form Corporate Identity. Both Corporate Identity and Product Identity are strategies to establish the Corporate Identity but the Product Identity has a purpose of establishing identity through a product, and thus the product itself is the most important element. That is, Product Identity is a strategy to represent the corporate image in its product based on a corporate idea and philosophy. It is also a series of unifying plans for product image which create the advanced design value satisfying the consumers' desires and improving the corporate image through a product group. Once a user feels a sense of consistency from a product it can be said that the corporate image, idea or philosophy is delivered to the user.

The essential purpose of Product Identity is to reflect positive Corporate Identity with unity through products made by the corporation. Since Product Identity gives a message with the product, the product itself is the most important tool. In the management strategy of Product Identity, certain product lines reflect corporate ideology and philosophy to satisfy a consumer's desire and improve the producer's image. When consumers have certain unity of different products under the same brand, the corporation's Product Identity management can be said to be successful.

People have different images of a same object. These images are created by their different values, experiences, backgrounds, desires, and etc, and they influence behavior which then causes actions.³⁸ In other words, product and corporate image influence the consumer's action to buy the product, but only a positive image causes the consumer's purchase of the item.

Since there is an interactive bond among corporate image, product image, and consumer's reaction, Product Identity is one of the most viable strategies to create positive corporate image through products.

³⁷ Mark Oakley, Design Management, Blackwell Reference, 1990, p 86

³⁸ David Bernstein, Company Image and Reality, Thomson Learning, 1980, p 101

The Product Identity is a method and strategy to express the corporate management principles and philosophy through a product in order to properly give and show the whole corporate image formed in the consumer's mind.

In addition, it is important to take a methodological approach to the major corporate item because Product Identity can be accomplished when the product concept, planning, structure, technology, and so on are secured in a certain level, and because management support and participation of related areas are important for the condition of the Product Identity. Therefore, the first step is to make a clear plan for a product line up and select a unique item. Then it is necessary to make a compromise with other relative areas through negotiation for the relation improvement.

The consumer can be aware of the corporate philosophy and image through the product design in Product Identity. It is the functional concept of the Product Identity and the consumer can have friendly feelings toward the company through the concept. The good feelings and expectations of the customer is a guarantee of upcoming profit in the company. The design must be unified in the aspect of the corporate image and it can be spread in the unified design, simple expression and the unity of the same idea.

The important function of Product Identity is to unify and keep up the product image. In other words, the function is to find what the consumer's need is for the product and to keep up the same image for a long time by giving a guideline and continuing the unity of various elements for the effectiveness of the design.

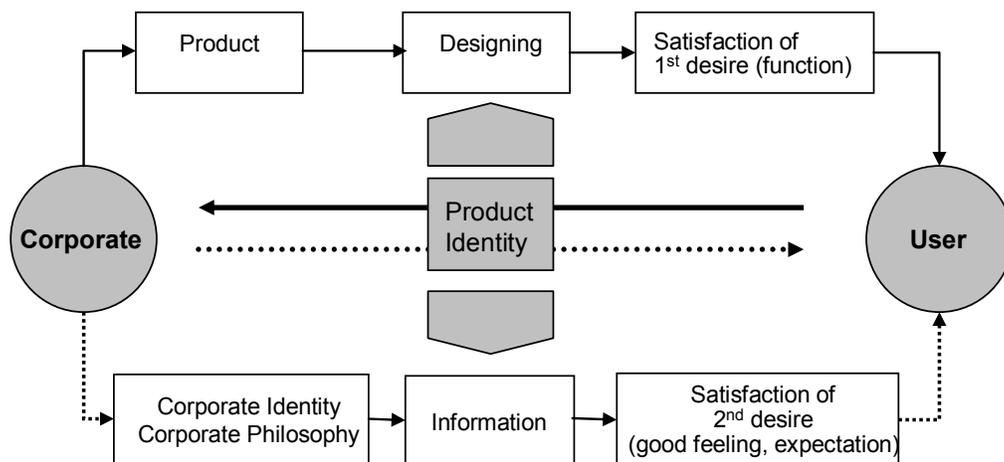


Figure 3-1 Function of Product Identity

Source: Sung-Wook Cha, A Study on Strategy of Product Identity for Improvement of Corporate Image, Chungang University, 2002, p 10.

Today's corporate strategy is to establish a comparative advantages in every aspect of production process, product development, product distribution, and etc.³⁹ Thus product image management without an efficient system would result in false communication between product

³⁹ Kenich Ohmae, Power and Strategy in Interlinked World (Haper Collins), 1991, pp 32-33

image, which would not reflect corporate image and, not influence consumer's future purchase behaviors on the corporate's products.⁴⁰ Thus, finding and developing an appropriate system for Product Identity management before applying it to production is essential.

In other words, the true meaning of Product Identity can be accomplished when a corporation is able to satisfy consumer's desire with its products, reflecting its ideology and philosophy; creating positive corporate image unity among its products thus establishing comparative advantage in industry's production competition.

3.1.2 Development Phase of Product Identity

The development phase of Product Identity is divided into the period of creation, development and innovation in terms of the moment of change and classified into the model of follower, dispersion, extension, compromise and extreme in terms of level.⁴¹ (See Figure 3-2) The development process is based on the creation of image of corporation originality and centered on the series of product variety for creation of trend.

Product Identity takes the phase of creation, innovation and development in the process of beginning and development of a corporation, and all activities in the process is reflected for the decision of management models.⁴² Product Identity is generally divided into the pursuit of originality and the acquisition of diversity. It is realized into different models according to the strategy of Product Identity. That is, it is differentiated according to the focus of originality by the integrated operation or the focus of customers' satisfaction through the diversification of the product item for their various needs.

These have been used for the corporation, product item and product plan with different distinctions respectively from each other. The corporation, which focuses on originality, usually has a simple product item and relatively new technology as a special corporation for a specific item. This corporation integrates the product image from the establishment and it becomes a tradition through its application for a long time based on the integrated management. Meanwhile, the corporation, which focuses on diversity, shows that it has comparatively complex product items and it develops a series of product items and flexibly changes for the integration of product items.

The models of dispersion and follower have a distinction that they adjust a common element of the various product items and easily take on identity. Those are generally applied to the series product or the design of a supply type. The model of follower means the level of Product Identity is in the basic process and in the beginning level just enough to understand the importance of Product Identity. The model of dispersion

⁴⁰ Peter Laundry & Susan Thornton Roger, Don't Image your Position, Express your Character, Design Management Journal, 1995, pp 10-11

⁴¹ Young-Ho Kim, A Study on Product Positioning and Establishment of Product Identity, Lecture Material of Korea Institute of Industrial Design Promotion, Korea Institute of Industrial Design Promotion, 1997, pp 100-101

⁴² Ibid.

has a distinction of variety and multilayered line up, and forms the concept of Product Identity in terms of level.⁴³

The models of compromise and extension are for the corporation with the management of trend creation and leading technology, and they are in the process of establishing concept of Product Identity. The models of extension and compromise use more flexible management than the models of principle and extreme, and they have a distinction that they accomplish the integration through the whole image, material, quality improvement of product and so forth.⁴⁴

The model of extreme is in the process that the Product Identity realizes the product itself and the image and those are for the corporations which continuously develop the concept of Product Identity as well as their tradition and technology.⁴⁵

In the case of the model of principle or extreme, the formative distinction through the philosophy of corporation and design is represented and it is in the process that the image is differentiated from reality. But in order to continuously apply the specific form, the product of the specific form must basically be similar so the two models are mostly for the corporations which professionally produce the small items of simple product.⁴⁶

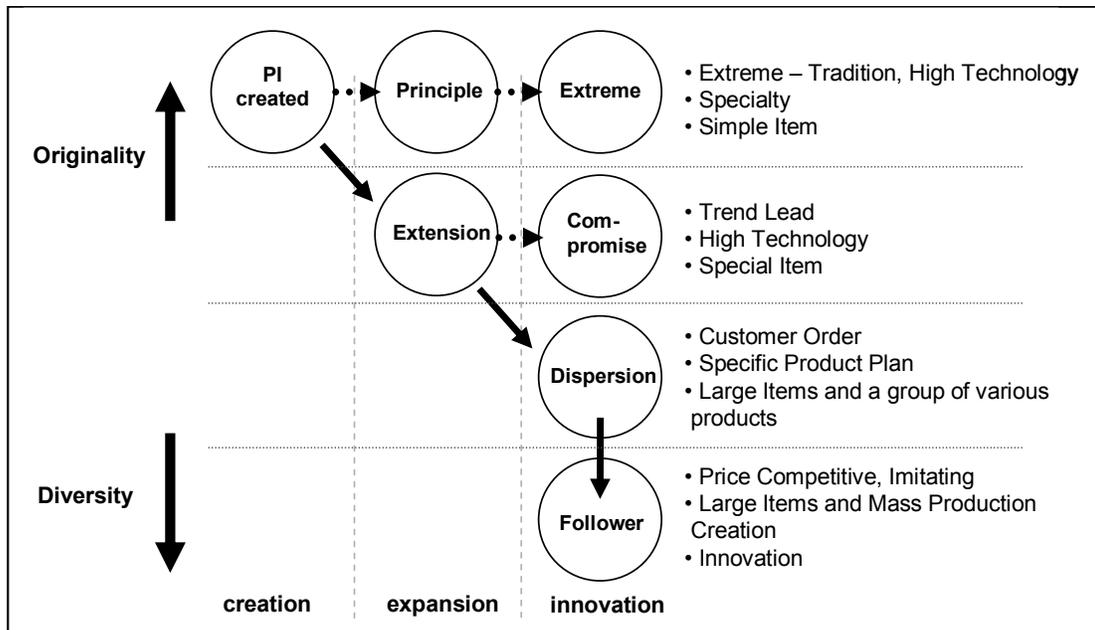


Figure 3-2 Development phase of Product Identity

Source: Young-Ho Kim, A Study on Product Positioning and Establishment of Product Identity, Lecture Material of Korea Institute of Industrial Design Promotion, Korea Institute of Industrial Design Promotion, 1997, pp. 100-101

These distinctions, however, are not absolutely invariable. Though integration plans of a product image takes a long time, it is gradually changed according to the corporation environment and in the case of

⁴³ Ibid.

⁴⁴ Ibid.

⁴⁵ Ibid.

⁴⁶ Ibid.

designing a various item group, and the integration management of more than two product images takes a subsequent process.⁴⁷ The distinctions of corporation, product planning and item group according to the type of integration management for all product images are as shown in figure Table 3-1.

Model	Distinction of Corporation	Distinction of Product Planning	Distinction of Item Group
Beginning, Fundamental, Extreme	Traditional, Technological	Special Field	Small Items and a group of simple items
Extensive, Compromise	Trend-Creative	Technology Lead	Special Item
Disperse	Customer Order	Classification	Large Items and a group of various products
Follower	Price Competitive	Follow	Large Items and Mass Production

Table 3-1 Distinction of corporation, product planning and item group according to model of management unification for Product Image

Source: Young-Ho Kim, A Study on Product Positioning and Establishment of Product Identity, Lecture Material of Korea Institute of Industrial Design Promotion, Korea Institute of Industrial Design Promotion, 1997, pp 100-101

Summing up the above, when the corporation image is evaluated to be low by the external audience and there is no substance and philosophy in a corporation, it is the lowest phase of recognizing the importance of Product Identity. The next phase is the constructing and shaping of the concept of Product Identity, which is the process of establishing and systematizing the substance, that is the philosophy and idea of a corporation. In addition, it is the phase of forming the awareness in the corporation to some degree by the external audience. The extreme process is that the corporation philosophy and the degree of corporation image by the external audience are at the highest level. This phase continues to develop the Product Identity and spreads the concept according to the change of circumstances.⁴⁸

3.1.3 Types of Design Strategy in Product Identity

Recently, the basic strategy of a corporation is mandatory work in Product Identity. In order to build Product Identity, the approach of phase and time is necessary and, at this moment, the structural elements of Product Identity must be strategically applied. In this regard, the operational strategy of Product Identity is required in terms of phases. For this purpose, Ganbe, a design consultant of B-Electronics in Japan, explains about the phases as follows.

⁴⁷ Tae-Sook Lee, A study on the corporate product identity management, Korea advanced Institute of science and technology, 1997, p 41

⁴⁸ Hyun Chung, A study on the development of product identity evaluation model for product design differentiation, Hongik University, 1998, pp 19-20

Phase 1 has the concept that the external image of a product can be unified when viewed as being in the same 'family'. In phase 2, is the concept of Same Taste Package setting a series of product items into the concept of the same taste in unity. Phase 3 is the idea that differentiation, originality and concept must continue to be developed. In that process, originality and advancement as well as the external appearance must be consistently held and developed for the highlight of the corporation image.

In addition, the strategy of Product Identity is divided into individual design strategy, family design strategy, and Corporate Design strategy.⁴⁹

First, the individual design strategy is to apply each individual item produced by a corporation or a separate design on each line. The reason that the corporation of various items uses individual design is to focus on sales with emphasis on individual character and image and to give priority to product over corporation brand. When the corporation reputation has no relation with the acceptability of product, this design strategy is applied. It has the distinction of emphasis on the awareness of product increases the market share of the product and causes the growth of a corporation.

Second, the family design strategy is the representative design of a corporation and it takes high effectiveness of consumer's familiarity or loyalty to the existing design by unifying the individual design. When the family design establishes the Product Identity, a new design can be introduced to the market and consumer without obstruction. It is the appropriate design strategy for the diverse and specific propensity to consume. A lot of systemization of design, however, enlarges the size of family product inflated. Accordingly, a full research must be done because the market size must be expanded and enormous expense will be spent on cultivating and developing the market.

Third, the Corporate Design strategy is to apply the same design to all products which are individually produced and sold without the individual design. It is the strategy to form only one design for all products in the aspect of corporate brand image. It has the strong power of influence that the image of all products is well recognized because the good image of an individual product is spread to the other products. Here, the corporation image must not be in contrast to the product image. It is good for the corporation which tries to continue effectiveness after success to develop the market or which wants to accomplish a definite distinction from the designs of other companies which overflow in market. That is, the corporation image creates a comprehensive identity including the product image. The unexpected mistake of a product, however, has a bad influence on sales of other products so that consistency of investment on the design management is required.

The design strategies mentioned above are different according to the size of a product group or pattern but the fundamental purpose is to take the process of focusing on the product development in any point in time and to control the image management of corporation in order to maximize the sales figures and to expand the market.

⁴⁹ Hyun-Chang Choi, A Study on All Corporate Image and Product Image, Korea Association of Industrial Designers, 1994, p 74

3.1.4 Process of Product Identity

Mark Oakley sets four phases for the standardization of corporation design in respect to the general image of corporation: the consideration of the different elements of a corporation, the artistic distinction of product, the style of a competing product, and the consistency of standardization.⁵⁰ Based on the fundamental concept of Oakley's four phases for the standardization of design, the phases for the Product Identity are shown in Figure 3-3.

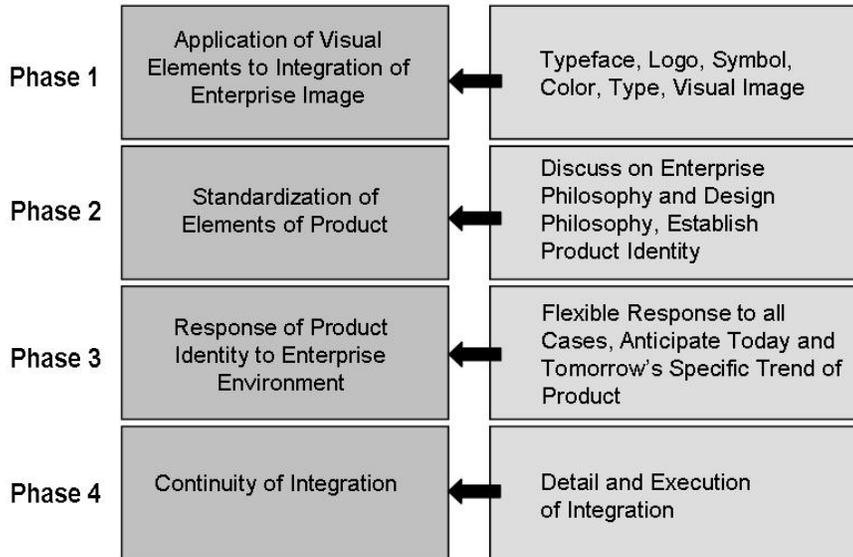


Figure 3-3 Standardization of Corporate Design

Source: Mark Oakley, *Polices, Objectives and Standards*, Blackwell Reference, 1990, pp 113 -114

As stated in the table above, Phase 1 is for the corporation which introduces the Product Identity for the first time. It is the process to apply the visual elements to the product for the integration of the existing corporation image. The phase has no guarantee of the fixed image to the product because there is no consideration of product elements such as design, philosophy, technology and marketing.

Phase 2 is the process of standardization for product elements. The corporation and design philosophy and Product Identity is established in this phase prior to the consideration of visual and aesthetic elements.

Phase 3 is the process of understanding and anticipating the present and future trend of product in order to respond flexibly to the circumstances around the corporation.

Last Phase is the process of the detail and execution of integration for the continual Product Identity.

⁵⁰ Mark Oakley, *Polices, Objectives and Standards*, Blackwell Reference, 1990, pp 113 -114

3.2 Necessity of Product Identity

As the number of products are becoming various in a corporation, the development of product group becomes more important for the corporate image. It is because that the consumers recognize and evaluate the corporate image by the direct use of its product. Particularly, in the case of a life cycle of the product is long, the consumer's consistent trust and positive image toward the product of a corporation is very important. Here, the corporation can win the corporation confidence by developing its philosophy consistently and expressing the concept and idea of corporation to the consumer through Product Identity.

The purpose of corporate program for Product identity is to deliver the consistent philosophy and ideas of corporation by permanent emphasizing the same image of product. This continuous image shows the identity of corporation and represents its culture, concept, image, environment, goal and representativeness in unity through product. This is a concept and a standard to make a product the consensus of corporation. This process of time cultivates a unity of culture and the consumer can understand it. By this process the corporation can win confidence in consumer and it is helpful for the corporation profit in the long term.

The necessity of Product Identity is more required of most home appliances which are generalized in technology and design. It is because the success of differentiation through Product Identity leads a customer to buy.

Likewise the importance of strategic value through Product Identity is in motivation of consumer's purchase. Product Identity is a strategic measure to build a positive image of corporation in the aspect of quality and to increase the effectiveness of business through sharing and spreading the design mind in the aspect of quantity.

The strategy of Product Identity includes the difficulty to change under integration. It is contrasting to apply heterogeneity to homogeneity.⁵¹ There are positives and negatives in the strategy of Product Identity as shown in Table 3-2.

Positive	Negative
<ul style="list-style-type: none"> • Predominance in competition by awareness of corporation and product • Customer confidence and satisfaction • Reduction of time in product development 	<ul style="list-style-type: none"> • Downsize of Market • Rigid flexibility in product planning • Limited response to customer's various needs (narrow trend)

Table 3-2 Positive and negative of Product Identity

Source: Sung-guen Cho, A study on corporate Product Identity, Hong Ik University, 1996, pp 11-13

⁵¹ Unami Akira, Tempting Object – Trans. Soon-Hyuk Lee, Kukje Publishing Co. 1994, pp. 30-31

There is no coincident success in Product Identity. The consistency of successful Product Identity is very important to the management target and brand strategy in a corporation. Product Identity must be continuously controlled through the intuitive vision for design, tactical and strategic policy, and program in total. These three elements are necessary for the success of Product Identity:

- product innovation from customer standpoint,
- consideration of user environment, and
- the systemization of design language.⁵²

At first, the product innovation from a customer standpoint is clearly important for visual reasons such as form and color. Superficial appearance without consideration of customer experience, however, is not a good design. Here the customer standpoint does not just mean to follow customer's requirements. The strategic innovation is not the follower but the leader to apply the innovative and epochal idea and technology for product to the requirements based on the comprehensive lifestyle research and potential needs for all customers' trends. It is possible to outdo the competitor by providing the customer with extraordinary and remarkable service through the strategic innovation from the customer's standpoint as well as good and harmonious Product Identity.

The second element is the consideration of user environment. Many large electronic corporations have traditionally developed products based on an individual area of technology such as camera, video, home appliance, computer, telecommunication, and so on. This kind of hardware approach based on technology is not appropriate to the purpose of most market-oriented corporations. Potential needs can be found and innovative products can be made only through a comprehensive approach to customer and user environment. The harmonious development of identity includes classification of product group, model, color palette, usability and OSD environment according to user environment.

The third element is the systemization of design language. As grammar is to language, so is rule to design. The design language is composed of various parts such as form, color, type face, pictogram, PushButton, indicator, function detail and so on like those of language. In addition, it is necessary to follow the fundamental concept of corporation design rule for the variety within the systematic consistency. The ultimate goal of design language is to create harmony. The harmonious system of design language gives not only free imagination without limitation but also a guide towards a discovery for new and unique ways of expression. Besides, in order to build a brand image, design language must be equally applied to product, package, and related material for the consistency meaning.

⁵² Samsung Product Identity 1996-1999, Samsung Electronics

3.3 Elements of Product Identity

The Elements of Product Identity are related to variety of areas, which are affected by conditional variables such as corporation, product, user, environment, and so on, and influence conditional variables as well.

Product Identity is generally divided into visible elements such as form and color, and invisible elements such as brand and marketing but it is very complicated in corporation documents and research papers as follows.

3.3.1 Elements of corporate Product Identity

Product Identity of LG Electronics divided into two elements, visual and non-visual.

Visual elements are

- Style,
- Control panel,
- Lay-out,
- Button,
- Color,
- Finishing, and
- Product Graphics.

Non-visual elements include

- Function & Structure,
- Operating, and
- Arrangement and Informational function.⁵³

Samsung Electronics divides Product Identity into a formal and internal element.

Formal elements include

- Corporate Identity,
- Product Graphic,
- Color, and
- Form

Internal elements include

- Technology, and
- Tradition and Existence.⁵⁴

Product Identity of Daewoo Electronics divided into two elements, Subjective Elements and Objective Elements.

Subjective Elements are 1st motivated Elements and they include

- Brand,
- Design,
- Behavioral Sciences, and
- Ergonomics

Objective Elements are 2nd motivated Elements and they include

- Function,
- Structure,
- Mechanism, and
- Price.⁵⁵

⁵³ LG Electronics, Research on Corporate Product Identity, 1991, p 66

⁵⁴ Samsung Electronics, Research on Corporate Product Design Identity, 1992

⁵⁵ Daewoo Electronics, Research on T.I.P.D Project , 1994, p 71

Sony, Matsushita, and Toshiba divide Product Identity into a formal and internal element. More elements of Product Identity of Corporations are shown in Table 3-3.

Companies	Elements of Product identity
LG Electronics	<ul style="list-style-type: none"> • Visual Elements : Style, Control panel, Lay-out, Button, Color, Finishing, and Product Graphics • Non-visual Elements : Function and Structure, Operating, Arrangement and Informational function
Samsung Electronics	<ul style="list-style-type: none"> • Formal Elements : Corporate Identity, Product Graphic, Color, Form • Internal Elements : Technology, Tradition, Existence
Daewoo Electronics	<ul style="list-style-type: none"> • Subjective Elements : 1st motivated Elements - Brand, Design, Behavioral Sciences, Ergonomics • Objective Elements : 2nd motivated Elements - Function, Structure, Mechanism, Price
Sony⁵⁶	<ul style="list-style-type: none"> • Formal Elements : Product graphic, Basic color • Internal Elements : Consistency of Design Concept
Matsushita⁵⁷	<ul style="list-style-type: none"> • Formal Elements : CI style, Product graphic, Color, Texture • Internal Elements : Concept
Toshiba⁵⁸	<ul style="list-style-type: none"> • Formal Elements • Internal Elements : Concept, Product Taste

Table 3-3 Elements of corporate Product Identity

⁵⁶ Toyoguci design institute in Japan, Research on C.I.P.D in Japan, 1989, p 7

⁵⁷ Ibid.

⁵⁸ Ibid.

3.3.2 Elements of Product Identity of mobile phones

Factors, which can occur from using products, must be considered to be important, because it affects, whether positively or negatively, Product identity. So Product identity can be a segment, which can locate the needs and demands of consumers and makes proper product positioning.

Elements of Product Identity of mobile phones, those relating with all factors in using mobiles are as shown in Table 3-4.

1st visual elements	<ul style="list-style-type: none"> • General Form of mobile phones • Main color of mobile phones • Type of mobile phones (bar, folder, slide, swivel)
2nd visual elements	<ul style="list-style-type: none"> • Partial Form of mobile phones <ul style="list-style-type: none"> - size and form of display - whole form and arrangement of key pad - form, size and position of main function button - form and position of Camera • Partial color of mobile phones <ul style="list-style-type: none"> - color of main function button - color of some buttons - color of a partial side • Surface texture • Printed pattern • Logotype • Package
Direct non-visual elements	<ul style="list-style-type: none"> • Functionality (Interface) • Product manual book • Technology • Quality of product • Shop Identity • Safety • Price
Indirect non-visual elements	<ul style="list-style-type: none"> • Corporate Philosophy • Design Philosophy • Tradition • Marketing elements • Servicing • Brand reputation

Table 3-4 Elements of Product Identity in mobile phones

Visual elements are divided again into two parts; 1st visual element and 2nd visual element. 1st visual element is first recognized by user and contains general form of mobile phone, main color of mobile phone, and type of mobile phone (bar / folder / slide / swivel type mobile phone). 2nd visual elements are not so direct and sometimes are first recognized as 1st visual elements. It contains some detailed parts of mobile phones like partial form of mobile phones (for example, size and form of display, general form and arrangement of key pad, form, size and position of main function button, form and position of camera), partial color of mobile phones (color of main function button, color of some buttons, color of a partial side), surface texture, printed pattern, logotype, and package.

Non-visual elements also divided into two parts as the visual part. There are direct non-visual parts and indirect non-visual parts. Direct non-visual parts are more directly recognizable than indirect non-visual ones. Most elements of direct non-visual part are things which a user can feel and recognize when they use mobile phones. Direct non-visual elements contain the functionality (Interface), product manual book, the technology of mobile phone, the quality of product, shop identity, safety which users can feel by using product and price. Indirect non-visual parts contain elements, which a user doesn't feel directly with products but can affect a user indirectly like corporate philosophy, design philosophy, tradition, marketing elements, servicing, and brand reputation.

The Product Identity of mobile phones is related with the distinction of the phone and Product utility, and the elements of Product Identity are different according to the product category. In addition, the Product Identity can be taken from the various points of view as follows.

- The Product Identity the company thinks it has
- The Product Identity the company actually has
- The Product Identity the company wishes to have
- The Product Identity the customer thinks it has

Therefore, the Product Identity can differ according to the point of view for both corporation and user.

4 Research Approach and Methodology

In this chapter, it will be explained what the approach and the methodology of this study are and how Product Identity of mobile phones are analyzed.

4.1 The area of research

At first, the general approach of this study is described.

4.1.1 Mobile phones and Product Identity

Even though the history of the mobile phone is short, it has become an essential and important item for consumers in many countries. As a personal item of communication, the user is in active interaction with the product, and the symbolic properties of product are rich. Until the 1990's in most markets, the mobile phone was characterised as a technological product. In the public context it was first used mainly for business purposes. For communication products, a critical mass of consumers is needed before a product becomes widely accepted.

Thereafter, with the mobile phone, the rapid development of technology enabled a new solution, and the product gradually became an essential device of everyday communication and one of the most personal objects for many consumers. As the number of products on the market increased, a detailed segmentation of users started to appear. An increasingly wider variety of products was developed accordingly. Soon, the mobile phone became a lifestyle product.

With the early models, basic functionality was an aspect of key concern. The focus eventually shifted, however, from pure functionality to usability. Manufacturers aimed at developing products that would be easier and more efficient to use, in other words, practical. The role of design in the face of this challenge was obvious. Design was, above all, needed to guide the user to perform the right tasks in the best possible manner. Soon, the focus spread from functionality and usability to desirability. It was no longer enough to develop superior products in terms of usability and technology. Manufacturers started to emphasize the symbolic aspects of products. Needless to say, to add the desirability aspect to products was a task targeted specifically by design. Various new software applications and functionalities also increased the appeal of the products.

In global markets, the biggest five mobile phone brands in 2005 included Nokia, Motorola, Samsung, LG, and Sony Ericsson. (Global handset market share; Nokia 31.9%, Motorola 17,9%, Samsung 12.8%, Sony Ericsson 6.2%).⁵⁹ Despite the short history of product category, these major manufacturers have developed rather recognizable design

⁵⁹ Global handset market share in 2005, Wireless Device Strategies (WDS) Service, 2006

languages for themselves. However, the number of different models provided by the manufacturers has been rapidly increasing, and, therefore, the variety of different designs has increased on the market. Furthermore, changes are fast due to the short market trends.

The mobile phone, which generally represents the rapidly changing technology and trend, needs Product Identity. It is generally said that it is hard to make a plan with consistency for Product Identity because the mobile phone has a short IT cycle and it is sensitive to trend but it is not possible to be successful by simply following the fashion without differentiating from other competitors. The mobile phone, which only tries to make a change by following a new trend, can make a short-term profit but it cannot attract various user groups without image consistency and it cannot make a long-term market share.

That is, the mobile phone must have a corporate image with unification and develop the unique image of differentiation and consistency while also following trend in order to satisfy consumers' desires and tastes. It is the strategy of Product Identity that can make it.

4.1.2 Case selection

Two mobile phone corporations are selected in order to understand how the Product Identity affects the mobile phones and how Product Identity is actually applied to mobile phones. Then, the Product Identity of these two corporations will be analyzed and compared.

Nokia is the market leading corporation with various product items for various user groups. Especially, Nokia is a leading corporation in Europe based on the tradition and design of Western Europe. It is not a temporary success but a long-term phenomenon for Nokia to lead the market. That is the reason that Nokia has been selected for finding out the major factor of its success in the point of Product Identity.

Samsung, which has firmly dominated the Asian market, has recently begun to grow very quickly in the European market. Especially, the youth prefer Samsung mobile phones which have a short IT cycle, and Samsung releases new models very rapidly. The Product Identity of Samsung mobile phone, which has correspondence with Nokia and shows a rapid growth in the European market, is analyzed in the study.

4.2 Survey of Product Identity of mobile phones

As shortly mentioned above, even though companies build unique identities with a strong strategy, those cannot always be transferred to consumers with strong images as they are because consumers accept identities from their own viewpoint. So it is important to check how consumers recognize identities, because their recognition of identity is often subjective. This survey purports to explore elements of Product Identity of mobile phones which are recognized by the consumers.

4.2.1 Contents of survey

1) Test persons

This consumer survey has been targeted specially at 50 people, who live in Germany and are between ages ten and forty-nine, because people in this age range are the main consumers of mobile phones. 12 of 50 people (24%, 10-19 years old) are students, 14 of 50 (28%, 20-29 years old) are university students, 12 of 50 (24%, 30-39 years old) varies as workers or housewives and the rest 12 of 50 (24%, 40-49 years old) also varies as the age group of 30's.

Personal data of respondents is as follows.

Average age of respondents is 31.05 (female respondents is 29.9 and male 32.2)

The most popular brand of mobile phone which test persons have used is Nokia. 28.9% of all mobile phones which respondents have used are Nokia. In contrast, 46% of respondents have ever used Nokia mobile phones. Samsung is the second most popular from the response test persons with 24% of all mobile phones. Third is SonyEricsson (12.4%). Percentage of popular mobile phone brand according to age is as seen in Table 4-1.

Unit: % Percentage

Group	Age	Nokia	Samsung	Motorola	Sony Ericsson	LG	Siemens	Alcatel	Others
Female	10-19	26.7	13.3	13.3	20.0	0.0	26.7	0.0	0.0
	20-29	45.0	30.0	5.0	15.0	0.0	0.0	0.0	0.0
	30-39	55.6	22.2	0.0	11.1	0.0	11.1	0.0	0.0
	40-49	37.5	25.0	12.5	0.0	0.0	25.0	0.0	0.0
Male	10-19	30.8	30.8	7.6	15.4	15.4	0.0	0.0	0.0
	20-29	18.5	29.6	14.8	7.4	18.5	0.0	0.0	11.2
	30-39	5.9	23.5	5.9	17.6	5.9	23.5	11.8	5.9
	40-49	33.3	8.3	25.0	8.3	0.0	8.3	8.3	0.0

Table 4-1 The most popular brand of mobile phone which test persons have used

Average number of mobile phones which test persons have used up to now is 2.4 per person. (Female respondents have ever used an average of 2.1 mobile phones per person and male respondents 2.8 per person.) The following table gives more details.

Age	The number of mobile phones which test persons have used per person	
	Female	Male
10-19	2.5	2.2
20-29	2.9	3.9
30-39	1.5	2.8
40-49	1.3	2.0

Table 4-2 Average number of respondent's mobile phone

Average time of usage for one mobile phone per person is 24.6 months. Female respondents use one mobile phone 23.3 months on average and male respondents 25.6 months.

Unit: Months

Age	Average time of usage for one mobile phone per person	
	Female	Male
10-19	24.2	25.5
20-29	22.2	24.7
30-39	22.0	28.4
40-49	26.1	23.4

Table 4-3 Average term of respondent's using mobile phone

Average time of using a mobile phone a day per person is 38.9 minutes. Female respondents use mobile phones 35.2 minutes a day and male respondents 42.6 minutes a day. Using includes, but is not limited to calling, receiving a call, messaging, playing game with mobile phones and so on.

Unit: Minutes

Age	Average time of using mobile phone per day per person	
	Female	Male
10-19	56.7	32.8
20-29	40.7	94.1
30-39	15.8	27.5
40-49	26.5	22.8

Table 4-4 Average time of respondent's using mobile phone per day

2) Selection of products with cards

A survey with visual cards is sometimes considered to have limitations because respondents cannot see and observe real products. Using

visual cards is not a new method and it can exclude some hindrances, which makes it more difficult to get important information.

In this study, a survey was carried out with mobile phone cards, because some hindrances (weight, texture-fine and so on), which confuse respondents to recognize important elements of Product identity, can be excluded by using two-dimensional visual cards.

Moreover, it makes it possible to extract the main components of Product Identity in mobile phones users will recognize. Also with visual cards respondents can put products into groups more easily.

Each card shows a mobile phone from one of six different companies (Nokia, Motorola, Samsung, LG, Sony Ericsson and BenQ Siemens) with a total of 30 cards. All 30 products are the top products from 2005 to 2006.⁶⁰

All pictures on cards are scaled to 50%, and they have no signs giving information about brand and company like brand names and logos.

3) Task

The task for the test persons was as follows.

1. Please group the 30 cards showing pictures of Mobile phones by any criteria. – You may build as many groups as you want, and each group can contain a different amount of cards. You may as well have cards which you do not wish to use at all.

2. Now please (once again) group the cards by some criteria except the one that you used beforehand. Again, you may choose how many groups you build and how many cards belong to each group; again, not all cards have to be used.

The cards should be arranged two times in order to gain information on what the most important factor for the customers is and what the second one is. Various combinations are possible and will be analyzed later on.

⁶⁰ Top products were researched through annual reports and email from consumer service centers.



Figure 4-1 Mobile phone picture cards for Questionnaire

4.2.2 Result of survey and data analysis

The most popular criterion for the first grouping task, an element of Product Identity respondents recognized, is the type of mobile phone (such as bar, folder, slide and swivel type). 42% of respondents (21 of 50) grouped cards by type of mobile phone.

The second is the rest, except type, color and form. 26% of respondents (13 of 50) grouped cards by other criteria like position of camera, personal taste, size of keypad, actuality of mobile phone, brand name, etc.

22% (11 of 50) of respondents used 'Color' for grouping.

The remaining 10% of respondents (5 of 50) grouped by form for a first task.

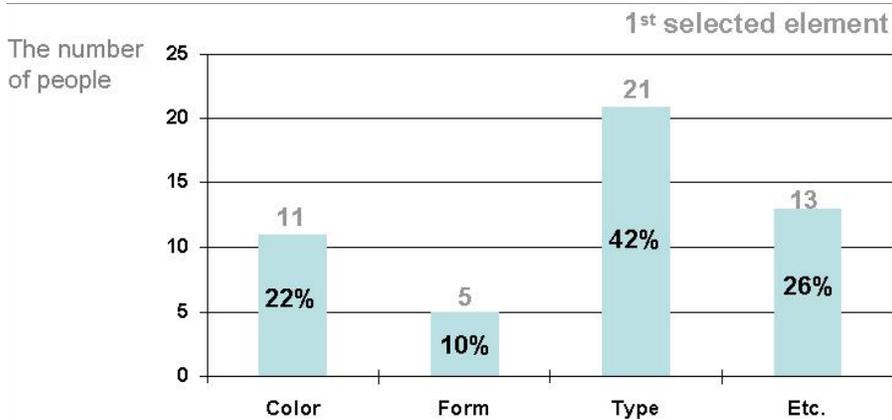


Figure 4-2 Respondent's first criterion in choosing mobile phone

Results of the second task grouping are as follows.

As with the first task, respondents grouped 30 cards once again. (But they cannot use the same criterion as before.)

The most popular criterion of grouping for this task is color, which 32% of respondents (16 of 50) chose. Second is type of mobile phone, used 30% (15 of 50). Next is the rest, except type, color, and form, chosen by 20% (10 of 50) of respondents. 18% (9 of 50) used 'Form' criterion for grouping cards.

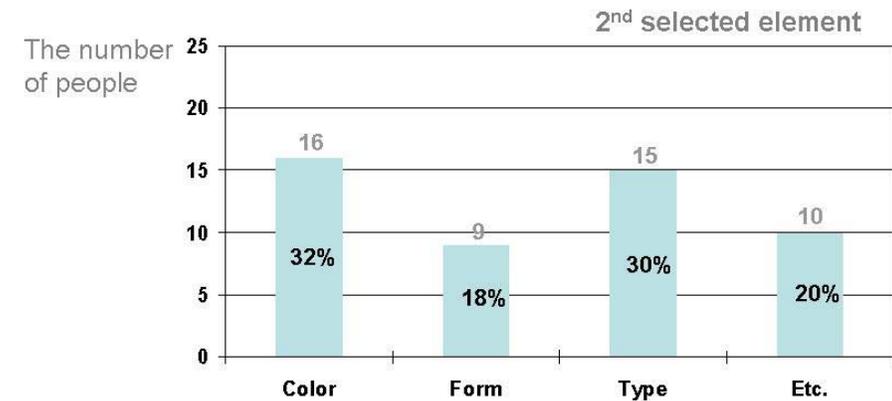


Figure 4-3 Respondent's second criterion in choosing mobile phone

The following table shows which criteria respondents used for the two tasks. While grouping twice the grouping criterion of the first task cannot be used for the second task. Hence, there are no figures in color-color, form-form, and type-type.

		1 st selected element			
		Color	Form	Type	Etc.
2 nd selected element	Color	•	6% (3)	14% (7)	12% (6)
	Form	2% (1)	•	14% (7)	2% (1)
	Type	16% (8)	4% (2)	•	10% (5)
	Etc.	4% (2)	0% (0)	14% (7)	2% (1)

Percentage% (The number of People)

Table 4-5 Respondent’s first and second criteria in choosing mobile phone

The next table also shows which criteria respondents used for the two tasks. But this time it does not take into account the order respondents used for grouping the first and second task.

For example, the figure of ‘Color+Form’ contains two numbers – the number of persons who used the ‘Color’ criterion at first task and the ‘Form’ criterion at second task and vice versa (‘Form’ criterion at first task and ‘Color’ criterion at second task).

As it is shown, color and type were the used most criteria by respondents. 15 of 50 respondents (30%) used both color and type for both grouping tasks.

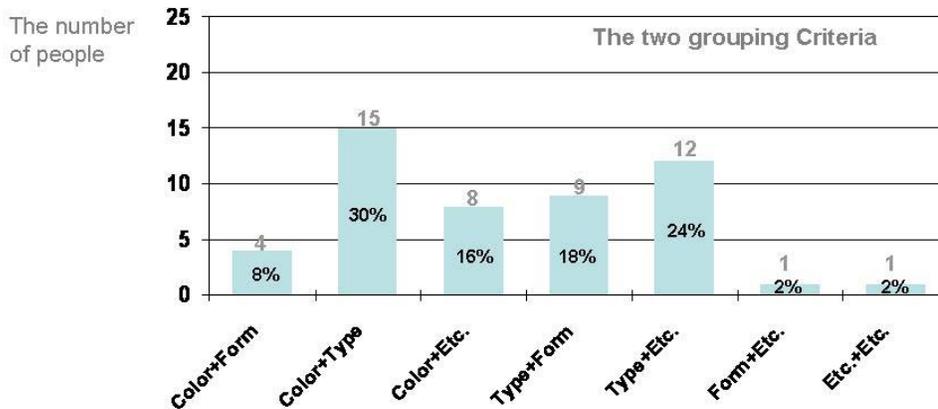


Figure 4-4 Respondent’s two grouping criteria

Then, how many groups are the respondents divided into?

In color part, 51.9% (14 of 27 persons, who grouped Mobile phone cards according to the main color of mobile phone) of respondents formed cards into three color groups. The most used color groupings for these respondents are silver, black and colorful.

22.2% of respondents (6 of 27) put cards into four groups: silver, black, colorful and multiple colors. 18.5% (5 of 27 respondents) simply formed

cards into two groups – bright (silver and bright gray) and dark (dark gray and black).

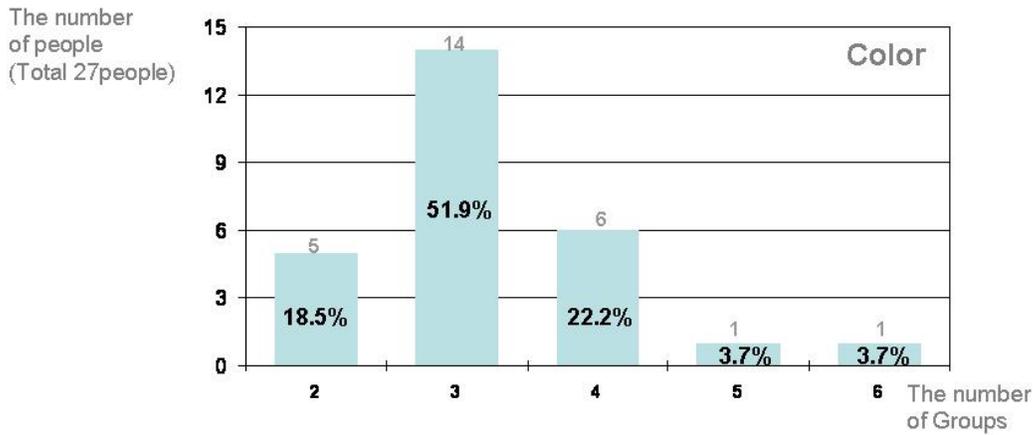


Figure 4-5 Number of group divided by respondents according to color

The most popular three color groups (silver, black and colorful) respondents grouped are as shown in Figure 4-6.

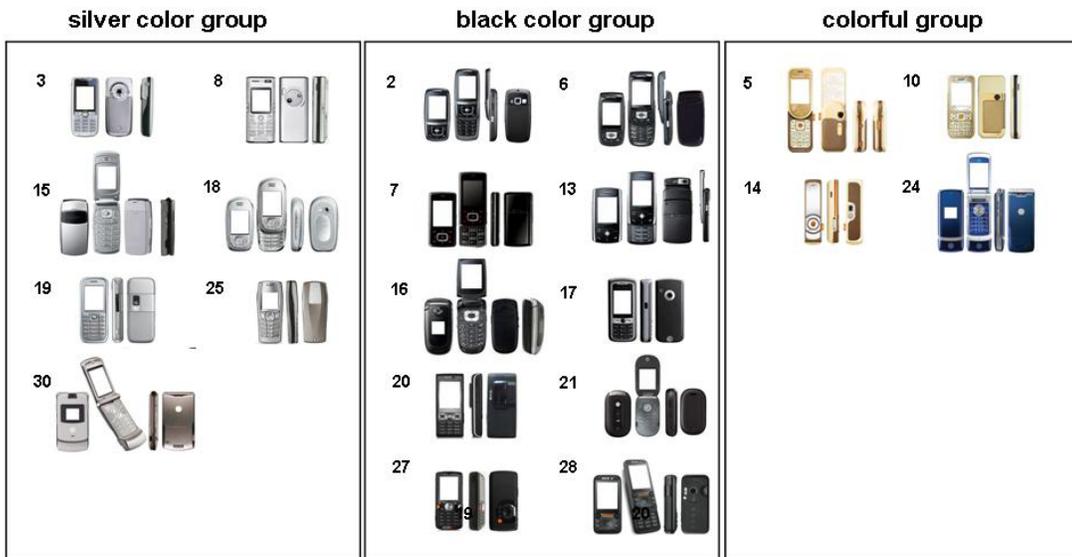


Figure 4-6 Example of color group divided by respondents

In Form, 35.7% (5 of 14 persons) of respondents formed cards into two groups. The most frequently used two groups are round, and square form. 28.6% of respondents (4 of 14) put cards into 3 groups - round, square, and bent form.

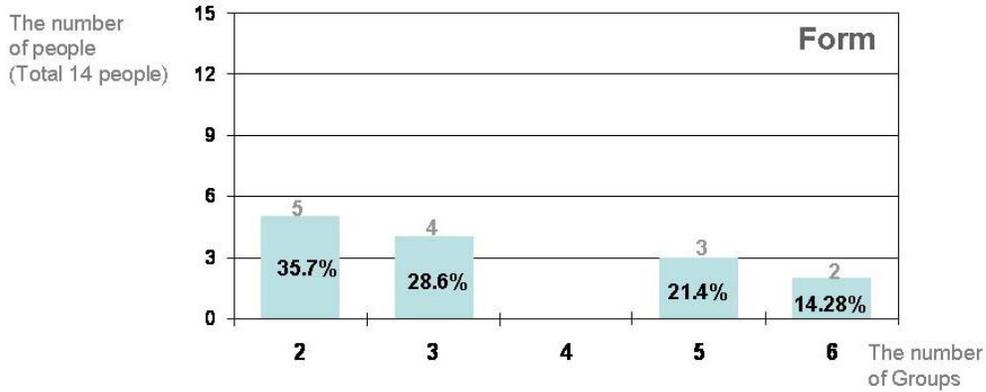


Figure 4-7 Number of group divided by respondents according to form

The groupings of the two form group respondents choose are as follows.

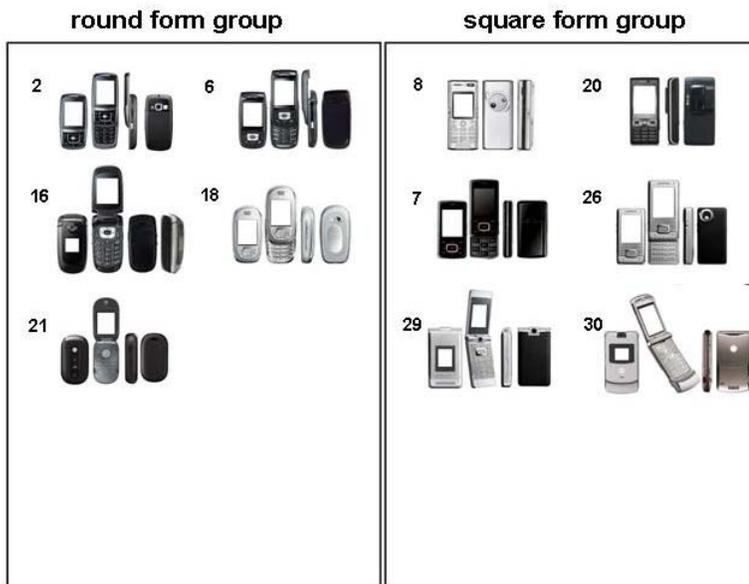


Figure 4-8 Example of form group divided by respondents

Most respondents choosing type as a criterion formed cards into three groups. 83.3% of respondents (30 of 36) made three groups: bar, folder, and slide.

11.1% of respondents (4 of 36) put cards into 2 groups – simply Folder and non-Folder groups. Finally, only 5.6% of respondents (2 of 36) formed 4 groups, recognizing between bar, folder, slide and swivel type of mobile phones.

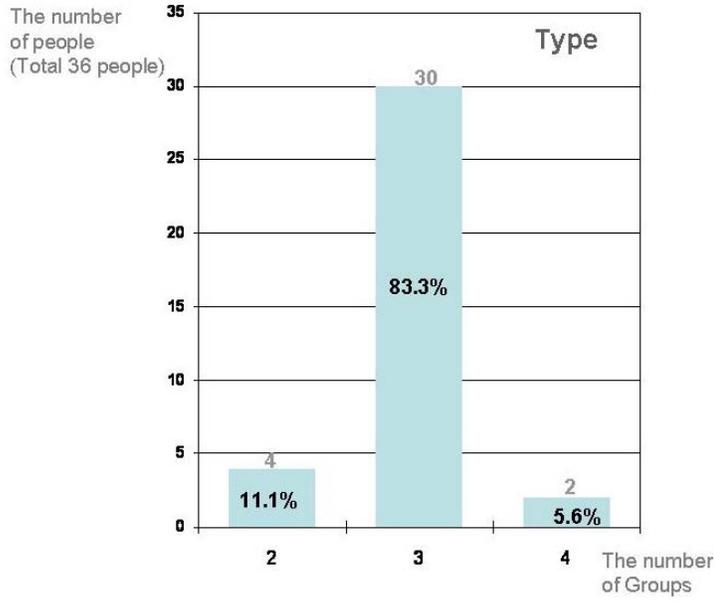


Figure 4-9 Number of group divided by respondents according to type

Those respondents choosing three type groups categorized phones in the following way. (See Chapter 4.3.2 for the definition and distinction of each type of mobile phones.)

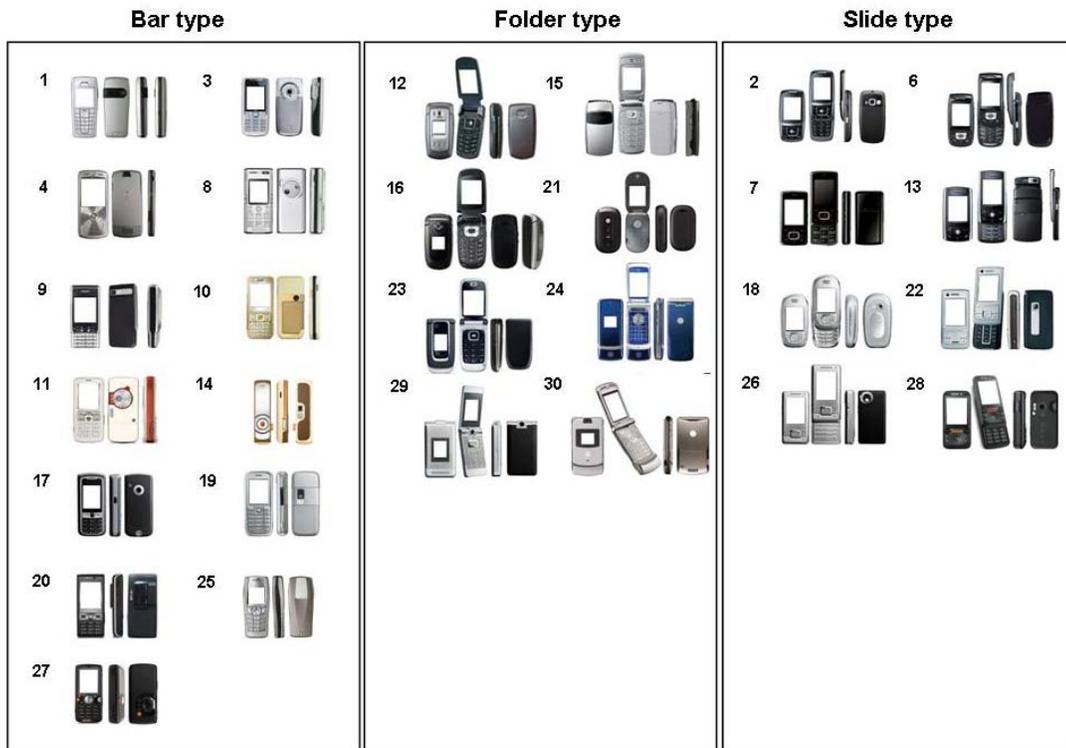


Figure 4-10 Example of type group divided by respondents

The most important three Product Identity elements of mobile phone are type, main color and general form of mobile phone. Respondents grouped mobile phone cards according to type, color and form of mobile phone. Type of mobile phone is an apparent element because there are no subjective factors. Also, color is an easily recognizable visual element, and the more complex an object is, the more color affects recognition. Form is one of most important design elements and not surprisingly is also true for mobile phones. But, for a complex object with many functions like mobile phones, general form is not easily recognized having many subjective factors and art of form like round, square, capsule shapes, one side round and so on.

4.3 Design Analysis of selected mobile phones

As examined in the above survey, the mobile phones of Nokia and Samsung will be analyzed and the Product Identity will be surveyed under three important elements of Product Identity: type, color and form. In the analysis, Product Identity will be analyzed in the horizontal diachronic line and vertical synchronic line.

That is, how the type, color and form of the Product Identity in Nokia and Samsung have developed in the diachronic line within a given period (1994-2005) will be discussed and how the Product Identity of the present product in Nokia and Samsung is shown in the synchronic line will be studied on the basis of type, color and form.

4.3.1 Diachronic Analysis and synchronic analysis

A certain phenomenon can alternate between the diachronic (time, or chronological – evolutionary) and the synchronic line (space, or descriptive – systematic). The two ways to analyze: first, by looking at changes taking place through time; and second, by looking at the language as a logical system. The two modes of analysis are different ways of dissecting the same object of study. They are generally visualized in terms of a diagram with two axes.⁶¹

⁶¹ John A. Walker, Design history and the history of design, Pluto Press, 1989, p 79-80

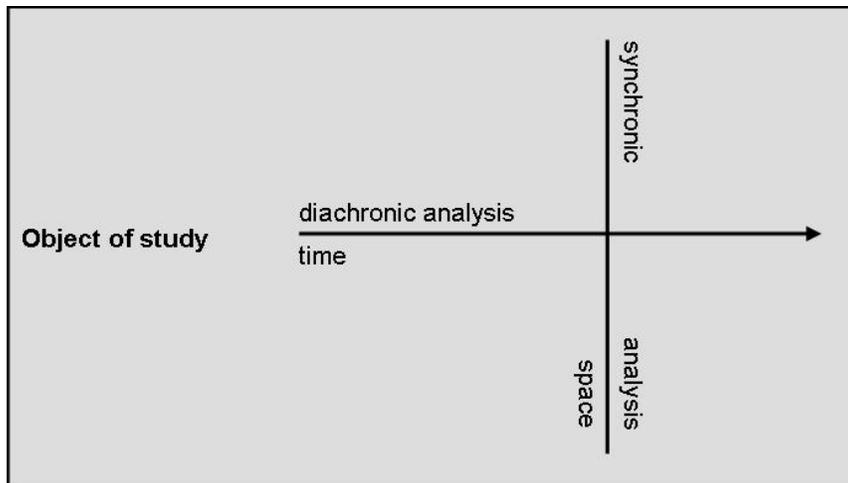


Figure 4-11 Diachronic and synchronic ⁶²

Source: John A. Walker, *Design history and the history of design*, Pluto Press, 1989, pp 79-80

Two perspectives were radically different: ‘One is relation between simultaneous elements’ (the synchronic); and ‘the other the substitution of one element for another in time, an event’ (the diachronic) ⁶³

The two modes of analysis are interdependent. So in this paper, diachronic analysis is used to analyze the type of mobile phones of Nokia and Samsung and also color and form of mobile phones in recent years. With this it will be shown, how Product Identity of mobile phones during the recent years has changed.

Synchronic analysis is used to analyze the present Product identity of selected mobile phone models. Three main mobile phone models from 2005 to 2006 (first-quarter) of Nokia and also three of Samsung will be analyzed and this paper purports to explore unique Product identity among these mobile phone models. ⁶⁴

⁶² These two terms were introduced by the linguist Ferdinand de Saussure in his influential text *Course in General Linguistics* (1916).

⁶³ Marshall Berman, *All that is Solid Melts into air*, 1985, pp 312-329

⁶⁴ Criteria for main model: Three models, which were released in 2005 and ranked in top three from 2005 to the first half of 2006, are respectively selected for Nokia and Samsung based on the sales volume recorded in official news and annual reports of Nokia and Samsung.

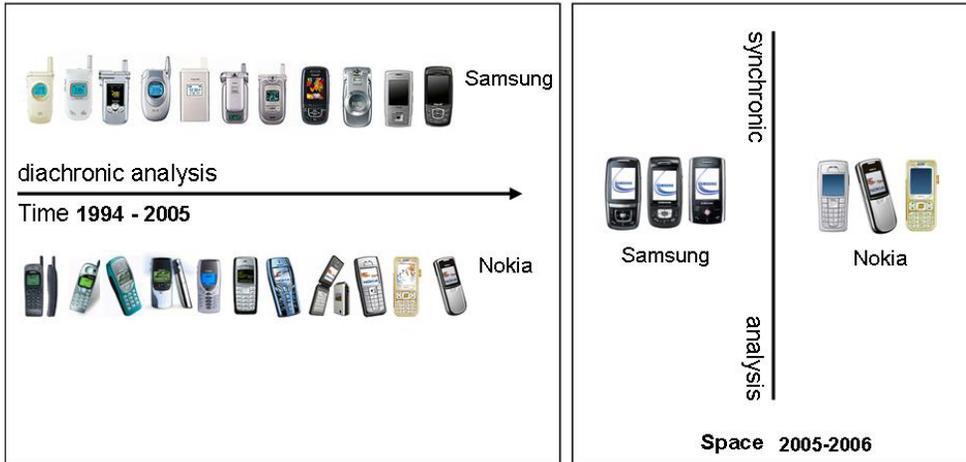


Figure 4-12 Diachronic and synchronic analysis of Product Identity of Nokia and Samsung mobile phones

4.3.2 Type Analysis

The resources used about the models of mobile phones by Nokia and Samsung are referred from company website, annual report, and the portal site of mobile phone (www.gsmarena.com) for the yearly-released type. In addition, the key types of mobile phone of both companies are researched and analyzed in connection with technology, market, culture and usability of the types.

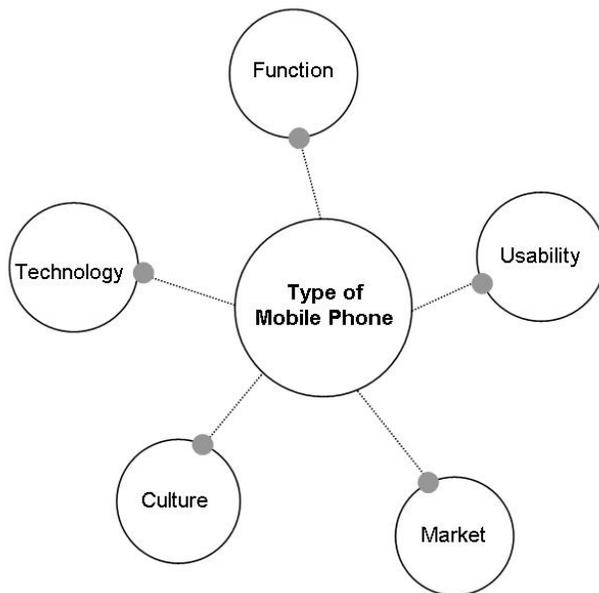


Figure 4-13 Type of mobile phone and related elements

“The reason why each company developed various types of mobile phone is due to the changing market, consumer’s needs, technology and a breakthrough patent. As the mobile phone has been developed and evolved, each company has to ensure its competitiveness with others by registration of design or patent for its unique models. The early mobile

phone models were bar types because they were evolved from home appliances. Its representatives are Nokia and Motorola. As the bar type market grew, Motorola launched 'StarTAC' folder, which is a new concept of machine and reformed the international mobile market. Afterwards, all newly emerging companies such as Samsung, LG, Japanese and European mobile makers concentrated on developing the folder types. With great expansion and competition in the mobile market, each company tried to apply for the patent of the machines and designs, and the market was flooded with new design models. It was also important to satisfy the consumers' changing needs and there were many choices because the new form and hinge such as Slide and Swivel were developed."⁶⁵

Primarily, however, the bar type mobile phone is the easiest and simplest for the user. It is superior to other types for the company in less developing expense and all reliability tests. The bar type still dominates more than 50% of the mobile market in Europe and other countries which have adopted GSM⁶⁶ configuration. In the Asian market, however, the types of folder and slide are more successful because of the consumer's immediate response to the rapidly changing trend and their taste for the smaller mobile phone model whereas the bar type was strangely unsuccessful in the market. Recently, the bar type is led by Nokia, the folder type by Motorola and Samsung, and the slide by Samsung. The size of market according to the type is bar>slide>folder in order.

The types of mobile phone have been evolved from bar type through flip and folder to slide type in order. The detail of each type is as follows.

Bar (candy bar) type - Literally it looks like a bar evolved from the usual home telephone. It was also very big in its early stage because the technology of integrating parts was not highly developed as it was expensive. Nevertheless, its higher durability is the character as bigger as it is.



Figure 4-14 Examples of bar type mobile phones

⁶⁵ Interview with a designer from KCM Design, Oct. 2005

⁶⁶ The Global System for Mobile Communications (GSM: originally from *Groupe Spécial Mobile*) is the most popular standard for mobile phones in the world. The ubiquity of the GSM standard makes international roaming very common between mobile phone operators, enabling subscribers to use their phones in many parts of the world. – source: <http://en.wikipedia.org/wiki/Gsm>

Flip type – Flip type was released following the bar-type. The Microtact2 released by Motorola in 1992 was the first type which had a flip to cover the keypad. The flip type, which succeeded the bar type, has a cover on the keypad. The flip can be unfolded when the keypad is used and it can be folded when it is used for call because ‘speak’ button is exposed on the outside without opening the flip like the bar type. The flip type has a good point in its very neat outfit. The role of flip, however, is to cover just the keypad and the hinge is also very fragile. In addition, it has a relatively small LCD⁶⁷ because it is just the revision of bar type.



Figure 4-15 Examples of flip type mobile phones

Folder (clamshell or flip-top) type– It was also Motorola that launched the folder type for the first time. Motorola launched ‘StarTAC,’ the first folder type in 1996, and two years later, Samsung introduced its folder type. The folder design made it possible to enlarge the LCD and to protect the LCD from the occasional bumps. Its advantage was the convenience to handle it in one hand because of its small size whereas the bad point was that it was relatively thick to carry in comparison with the previous type. Afterwards, the dual-folder type with the exterior LCD was introduced to decrease the inconvenience of the general folder-type. From this turning point, many folder types have consecutively been introduced and it has become a main stream.



Figure 4-16 Examples of folder type mobile phones

Slide type – The new slide type was innovatively released by Samsung in 2002. It is based on the bar-type but it is more convenient to carry. It can be thought of as the combination of bar and folder type. The upper panel and the keypad were separated like those of the folder type, and it can be used for a call like the bar-type. In addition, instead of covering the keypad with the upper panel like the folder, the bigger LCD can be mounted in the area. The big size LCD is now indispensable for the multitasking and information environment of the current mobile phones,

⁶⁷ A liquid crystal display (LCD) is a thin, flat display device made up of any number of color or monochrome pixels arrayed in front of a light source or reflector – source: <http://en.wikipedia.org/wiki/LCD>

for which the slide type is the most appropriate. Therefore, it is the key mobile phone model in all mobile manufacturing companies and it forms the biggest market.



Figure 4-17 Examples of slide type mobile phones

Rotation type – The slide type is the main lead in the design trend of mobile phones but manufacturers introduce various designs for the function and usage. 'V70' is the first rotation type which was introduced with GSM configuration by Motorola in Europe in 2002. Motorola V70 received a great deal of compliments for its design and innovation as the first rotation type. In this type, the upper pad or the keypad can be rotated to right or left in 180~360°.



Figure 4-18 Examples of rotation type of mobile phones

Swivel (swing) type – Swivel means to turn around the pivot and the swivel type makes a turn of LCD to 270 degrees and it can be used like a camcorder. 'KH5000' is the first swivel type mobile phone which was introduced by LG Electronics in 2004.



Figure 4-19 Examples of swivel type mobile phones

4.3.3 Color Analysis

The association of color enables identification and prompts particular images and emotions. Color strategy conveys crucial information to customers.⁶⁸ In addition, color is one of the major variables to increase consumer purchases and it is used as an important device for corporate marketing.

As stated in the questionnaire above, color also takes an important role in a mobile phone. Color is analyzed through the system of color image space (monotone image space and coloration image space) in the study. Centered on the color, which is mainly used for mobile phones, the meaning of colors is as follows.

 Red: Red has more personal associations than any other color. Recognized as a stimulant, red is inherently exciting, dynamic and the amount of red is directly related to the level of energy perceived. Red draws attention and a keen use of red as an accent can immediately focus attention on a particular element.⁶⁹

 Blue: Blue is the overwhelming "favorite color." Blue is seen as trustworthy, dependable and committed. Blue is also strongly associated with tranquility and calmness. As opposed to emotionally warm colors like red, orange, and yellow, blue is linked to consciousness and intellect. Blue is used to suggest precision when promoting high-tech products. Dark blue is associated with depth, expertise, stability, knowledge, power, integrity, and seriousness. Light blue is associated with health, healing, tranquility, understanding, and softness.⁷⁰

 White: White means safety, purity, and cleanliness. As opposed to black, white usually has a positive connotation. White can represent a successful beginning. In heraldry, white depicts faith and purity. White is associated with coolness and cleanliness because it is the color of snow. White can be used to suggest simplicity in high-tech products.⁷¹

 Black: Black is authoritative and powerful. Black denotes strength and authority; it is considered to be a very formal, elegant, technic, static, and prestigious color. Black gives the feeling of perspective and depth.⁷²

 Green: Green has great healing power. It is the most pleasing color for the human eye; it can improve vision. Green suggests stability and endurance.⁷³

 Silver: Silver, especially a shiny, metallic silver, is cool like gray but livelier, and more playful. Silver can be sleek and modern or impart a feeling of ornate riches. Also, silver is a precious metal and other metals

⁶⁸ Marc Gobé, Emotional branding, Allworth press, 200, p 77

⁶⁹ Erich Kuethe & Fabian Kuethe, Marketing mit Farben, Gabler, 2002, pp 24-27

⁷⁰ John McKean, Customers are people, John Willey & Sons, 2002, pp 174-176

⁷¹ Ibid

⁷² Erich Kuethe & Fabian Kuethe, Marketing mit Farben, Gabler, 2002, pp 24-27

⁷³ John McKean, Customers are people, John Willey & Sons, 2002, pp 174-176

are often described as silver in color. Silver creates a high-tech or industrial look.⁷⁴

Gray: Gray is a neutral, balanced color. It is a cool, conservative color that seldom evokes strong emotion although it can be seen as a cloudy or moody color. It is also considered to be a modern and simple color.⁷⁵

The following is the system of color image space which includes monotone image space and coloration image space. The main color of mobile phones of Nokia and Samsung, and the image expressed by the main color are analyzed.

1) Hue & Tone 898 is a color system which is divided into 120 colors of hue and tone from the color which appears in the market according to each area. 898 colors are composed of 880 chromatic colors and 18 achromatic colors. The 880 chromatic colors are composed of 40 tones and 23 hues. Hue & Tone 898 is a useful color system for the analysis of change of visibility between the related areas or the same areas in market.



Figure 4-20 Hue & Ton 898

Source: IRI Color Institute,
http://www.iricolor.com/04_colorinfo/colorsystem.html

2) Monotone Image Area

Monotone, coloration, and adjective image areas have their own coordinates on each two axes; X axis stands for softness and hardness, whereas Y axis for dynamic and static.

⁷⁴ Jacqui Howard Bear, It's a Colorful, Colorful World – Symbolism of Colors, Desktop Publishing, <http://desktoppub.about.com/>

⁷⁵ Erich Kuethe & Fabian Kuethe, Marketing mit Farben, Gabler, 2002, pp 24-27

Therefore, the abstract images can be translated into the concrete colors and vice versa.

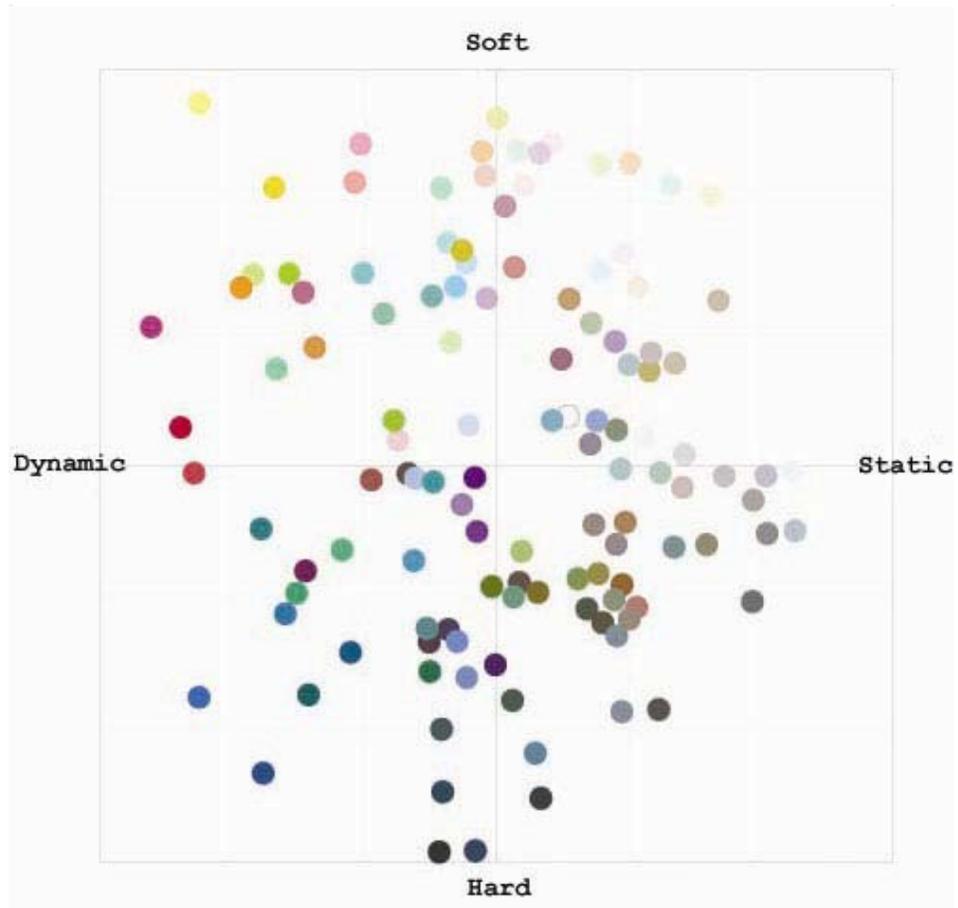


Figure 4-21 Color image space

Source: IRI Color Institute,
http://www.ircolor.com/04_colorinfo/colorsystem.html

3) Coloration Image Space

The entire array of color association is complex, and the subtle variations are endless.⁷⁶ The following is coloration image space combined with monotone.

⁷⁶ Marc Gobé, Emotional branding, Allworth press, 2001, p 78

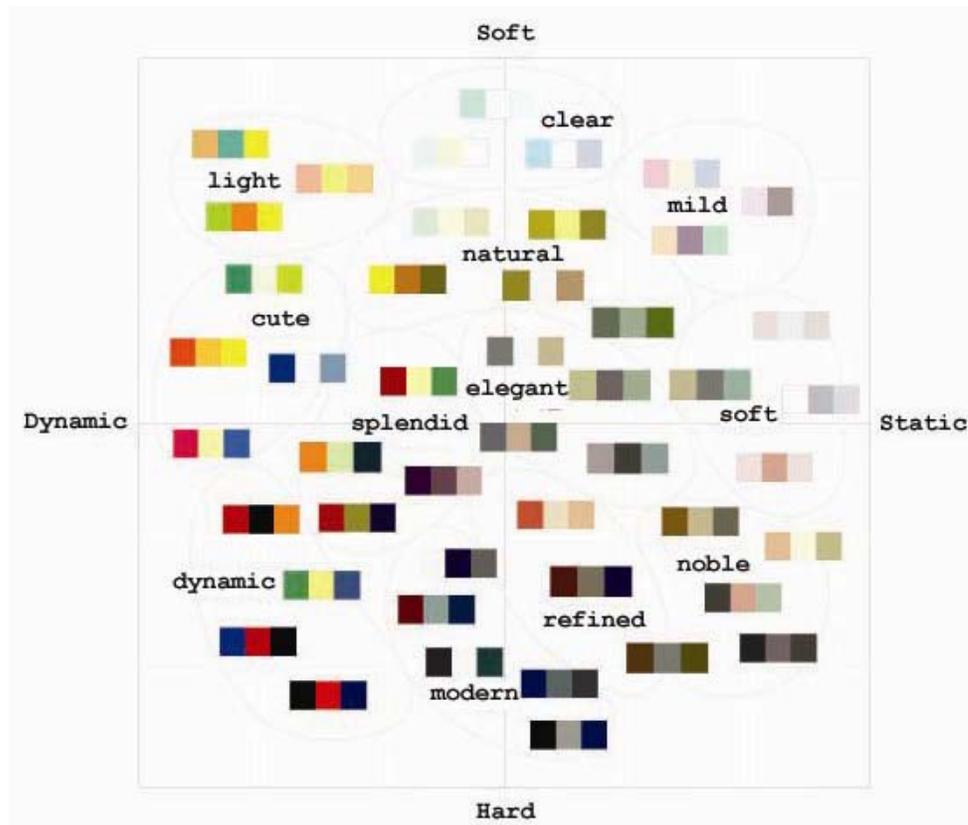


Figure 4-22 Coloration Image Space

Source: IRI Color Institute,
http://www.iri-color.com/04_colorinfo/colorsystem.html

4.3.4 Form Analysis

Hyun Kim's 'A Study on Form Trend'⁷⁷ and 'Product Form Alignment method based on the analysis of formative parameter disposition' are cited for the form analysis of Nokia and Samsung from 1994 to 2005.⁷⁸

The formative analysis of the selective mobile phone models of Nokia and Samsung is based on the form variables. Here, the form variables mean the elements which influence the form except color and texture.

First form factor includes

- curve,
- length,
- area(square measure),
- thickness,
- weight,
- size(bulk),
- volume (massiveness), and
- texture-fine (coarseness)

⁷⁷ Hyun Kim, A Study on Form Trend, The Federation of Korean Industries, 2001, pp 86-100, 107-109, 143-145

⁷⁸ Samsung began to produce its mobile phone since 1995 so Samsung mobile phone is analyzed from 1995.

2nd form factor includes

- complication (complexity),
- contrast,
- repetition,
- regularity (order),
- movement,
- emphasis (accentuation),
- stability, and
- defined form (set pattern, standard)

The first form variable is the standard of grasping the form as a whole, and the second variable is for the relationship among the structural elements.⁷⁹

	Form Factor	Feature
1st form factor (A)	A1: curve	Degree of curved line and surface
	A2 : length	Measurement or extent of something from end to end
	A3 : area, square measure	Extent or measurement of a surface
	A4 : thickness	How thick something is
	A5 : weight	Quantity of mass
	A6 : size, bulk	Degree to which something or someone is large or small
	A7 : volume, massiveness	Feeling of volume from three a dimensional perspective.
	A8 : texture-fine, coarseness	Feel, appearance, or consistency of a surface
2nd form factor (B)	B1: complication, complexity	Feel, appearance, or consistency of a surface
	B2 : contrast	State of being noticeably different from something else
	B3 : repetition	Action or instance of repeating or being repeated
	B4 : regularity, order	Same thing or situation at uniform intervals
	B5 : movement	Intensity of an act of moving
	B6 : emphasis, accentuation	Stating that something is particularly important or worth giving attention to
	B7 : stability	Condition of being steady and not changing
	B8 : defined form, set pattern, standard	It is in the extent of forming consistent shape and keeping in the range. It implies the opposite of liberality and it is generally close to the geometric form.

Table 4-6 Definition and feature of first and second form factor

Source: Hyun Kim, A Study on Form Trend, The Federation of Korean Industries, 2001, pp. 91-92.

⁷⁹ Hyun Kim, A Study on Form Trend, The Federation of Korean Industries, 2001, pp 86-100

A1: curve – It means the degree of the curved line and surface. It is in contrast to a feeling of a straight line in solid products. Curve in products is expressed by curved surface and generally relates to volume and mass.

A2: length – Degree of length and related to proportion of width and length. For example, something thin seems longer than something thick. Length can be measured by comparing shapes, because length is a relative factor.

A3: area, square measure – Area/square measure is the extent or measurement of a surface. It is an important factor for products of massive size. The difference between area and volume is that volume means the amount of space enclosed within an object or solid form but although volume is small, if it has a wide and flat form, it seems to have a large area.

A4: thickness – How thick something is relates to weight and size. This factor is also relative in that it can be measured by comparison with other products.

A5: weight – How heavy something is. In this study it means visual weight. A form, which is stable or has a fixed form, seems to be weighty. When a form is thin or has small area, although it has a fixed form, it doesn't seem to be that weighty. Generally, a thick, wide and hard form seems to be heavy. Nowadays, products have become light because of new materials; in this study weight means the degree of how heavy something is perceived to be.

A6: size, bulk – Degree to which something is large or small. Size must be compared to similar items and components. Size is an important factor which relates to curve and weight.

A7: volume, massiveness – Feeling of a three dimensional effect and almost expansion. When a form has a strong and outward curve, volume becomes heavy; and form with edge and a curved surface makes more volume.

A8: texture-fine, coarseness – Feeling, appearance, or consistency of a surface: containing texture-fine materials and gloss, and the degree of a surface's coarseness in products. It contains also texture-fine of material, gloss but degree of surface's coarseness is the main one.

B1: complication, complexity - How complicated something is. Many different features cannot be harmonized. On the other hand, contrast is the state of being noticeably different from something else. A complication / complexity can repeat the same or different patterns.

B2: contrast - Contrast means the state of being noticeably different from something else. It is the contrast between different in form like contrast between different in curve, contrast between different in size, contrast between difference of weight.

B3: repetition – Repetition is the action or instance of repeating or being repeated. In design one or more form can be repeated. In form, harmony can be conveyed by repetition of visual elements and this repetition creates regularity. Repetition contains repetition of form, size, color, texture, direction, position, space and gravity.

B4: regularity, order – Regularity means the same thing or situation at uniform intervals. Repetition is a repeat of visual elements and, in turn, regularity means these elements have order. Having a unique rule is important for regularity in order to make a form.

B5: movement – It is the intensity of an act of moving. If it is visually strong and has direction, movement increases. An important factor for movement is to have visual movement and to have a 'real' and physical

movement. Essential elements of movement are direction and strength of power. Strength of power in form relates to weight and balance.

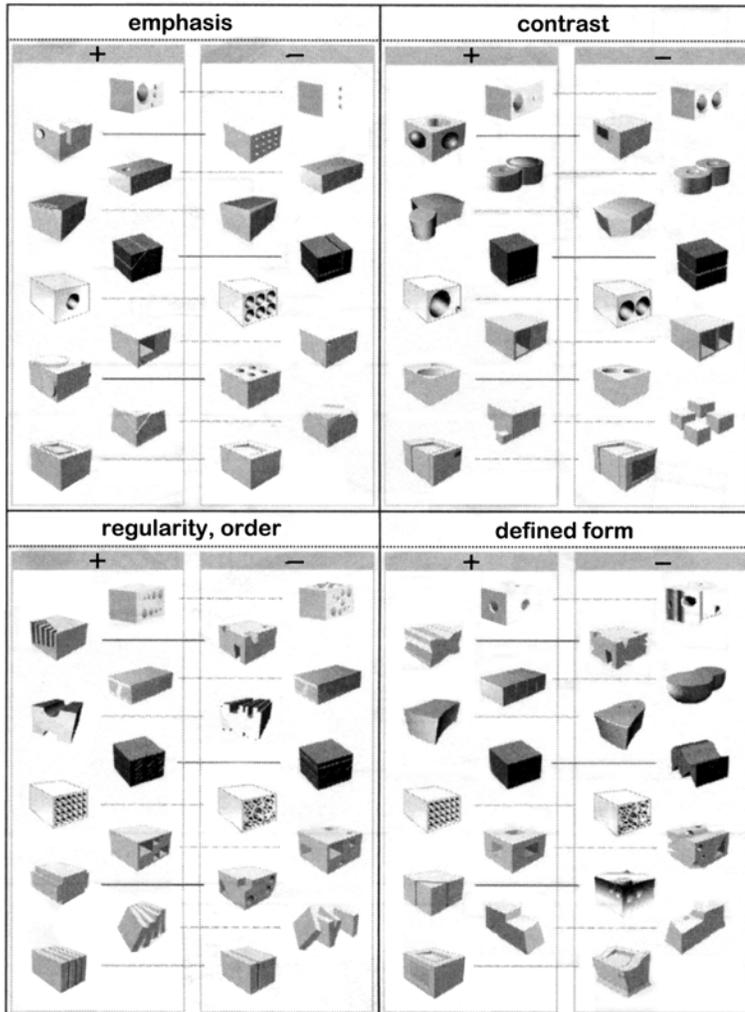
B6: emphasis, accentuation – Emphasis / accentuation is to show or state something is particularly important or worth giving attention to. Partial focus on heterogeneous elements in repeated form or non-harmonious elements in balanced form make emphasis. To avoid boring form emphasis,⁸⁰ a focal point is often used and this focal point happens when form is different from the other. That is, a focal point is used and the focal point happens when one element is different from others.

B7: stability – Stability is the condition of being steady and unchanging. Form, which has no emphasis, contrast, heavy weight, volume or density, might have strong stability, but no visual stability. So if a small product has little change or movement, it is said that it has stability.

B8: defined form, set pattern, standard - It is in the extent of forming consistent shape and keeping in the range. It implies the opposite of liberality and it is generally close to the geometric form.

The second form factor, which stands for the relativity and relationship of the structural elements, can be visualized as shown in Figure 4-23.

+ increase - decrease



⁸⁰ David A. Lauer, Design Basics, 1985, pp 27-40

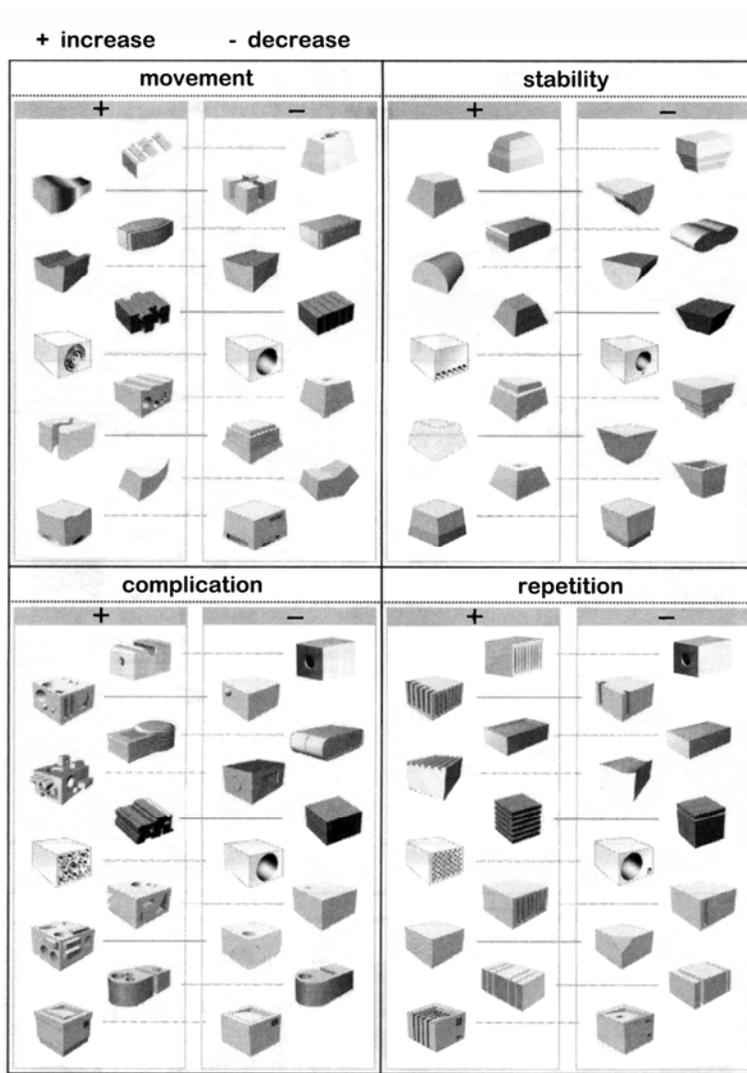


Figure 4-23 Visual Expression of Interrelated Shaping Variables

Source: Hyun Kim, Product Form Alignment method based on the analysis of formative parameter disposition, Journal of Korean society of design science, vol 17, 2004, p 285

Analysing the Third Form Factor, it is noticeable the mobile phone has had camera in its function and the LCD size has been enlarged in its form since 2001. Accordingly, the third form factors are added to the form analysis with the first and second form factors in this period like the analysis of the previous period from 1994 to 2000.

This form factor generally includes the camera, display and key button. Each characteristic and the classification in detail are seen in Table 4-7.

3rd Form factor		Feature
3rd form factor (C)	C1-1 : Position of Camera	Where the camera is
	C1-2 : Form of Camera	How the camera generally is formed
	C1-3 : Size of Camera	How big the camera is
	C2-1 : Form of Display	How the display is formed
	C2-2 : Size of Display	How big the display is
	C3-1 : Form of keypad	How the key pad generally is formed
	C3-2 : Arrangement of keypad	How the key pad is arranged according to character, order or space
	C3-2 : Size of keypad	How big the keypad is

Table 4-7 Definition and feature of third form factor

The form factors, which are importantly related to the form of mobile phones among first, second and third elements, are selected and analyzed.

Twelve selected form factors are

- Curve,
- Length,
- Thickness,
- Weight,
- Volume,
- Complication (complexity)
- Emphasis (accentuation),
- Stability,
- Defined form,
- Size of Display,
- Form of Keypad, and
- Size of Keypad

Among them, length, defined form, size of display, form of keypad, and size of keypad are the form factors only for analysis of mobile phones from 2001 to 2005 because those factors were focused and became important elements of mobile phones from 2001.

5 Case studies

Both, Nokia case study and Samsung case study, have a parallel structure. Each case study is divided into two parts: design strategy and analysis of mobile phones.

In the chapter on design strategy, guide and philosophy of each company will be examined. In the analysis of mobile phones the focus is on how both companies establish their Product Identity based on three elements of Product Identity such as type, color and form of mobile phone through the result of survey.

5.1 Nokia Case Study

As stated shortly above, Nokia case study contains two parts; design strategy of Nokia and analysis of Nokia mobile phones.

5.1.1 Design Strategy

Nokia's design strategy and philosophy are closely connected, as shown in this chapter.

5.1.1.1 Nokia Strategy

Nokia has built a unique and special position with a definitive value. Its corporation philosophy is 'Connecting People' which also means the motto of connecting people without obstruction of detachment through technology.

Nokia mobile phones were developed to communicate easier and to provide a good design. Product development was geared to "unsurpassed functional and technological design". Many of the standard features that are now considered generic are originally from Nokia, including large graphic displays, signal and battery indicators, colored covers, and ring tones.⁸¹ Nokia was able to boost profitability with its sleek, functional and extraordinary designs, which contribute to competitive differentiation.

Nokia acknowledged that the mobile phone is personal technology from the beginning and understood that its style as well as its function must satisfy customer's taste. Accordingly, they divided the customer into four categories: social contact seeker, self-expressionist, high-flyer, and trendsetter, and developed a differentiation strategy.⁸²

Social contact seekers are those that desire a phone that provides human connectivity, whether in the form of voice or text. Self-expressionists are those that desire a phone that reflects their image of their own lifestyle and place a premium on brand and exclusivity. High-

⁸¹ Dan Steinbock, The Nokia Revolution, American management association, 200, p 157

⁸² Nokia Annual Report 2000, p 26

flyers are those that desire a phone that ensures that they do not miss business opportunities and enhances work efficiency and performance. Trendsetters are those that desire a phone that incorporates the latest technology and enhances their busy lifestyles.⁸³

They still develop marketing with a product fitting each customer's taste and they design and differentiate their products according to each customer's taste for convenience and simplicity.

The main strategy of Nokia is as follows.⁸⁴

1) Understanding Customer's Needs

Nokia's fundamental concept of their motto is trying to understand customers' changing desire according to their lifestyle. They understood that the traditional market classification such as sex, age, and financial condition cannot satisfy. Therefore, they classified the customer's lifestyle into four models as follows.

- 1) Techno Follower: Always wants to have the most recent technology
- 2) Time/Info Manager: Important time effectiveness
- 3) Close Contact: Close contact with friends and family
- 4) Luxury Chaser: Appearance is more important than practicability

It is necessary to delicately understand and flexibly respond to customer's taste and personality which is different and always changing according to lifestyle in its philosophy.

2) Brand First Philosophy

Nokia use its 'brand first' philosophy to understand a product from a brand perspective. The traditional brand perspective is 'Product Plus Approach' to regard brand as a part of product but Nokia's is 'Historic Approach' to regard a product as a part of brand.

"A product is just a part of a whole brand which the customers recognize. Brand is the promise of specific characters which is sold and gives satisfaction." – C. Styles⁸⁵

3) Product in Fashion

Nokia mobile phone shows a philosophy that mobile phone is not just a simple way of communication but the expression of fashion and personality. For this philosophy, they do not spare efforts and expenses for developing their communication technology of WAP⁸⁶ phone accessible to internet in association with fashion companies because they understand personalization is necessary for the product.

4) Fast in Action

They showed a fast action to build Research&Development centers, manufacturing plants in a short period for global strategy. More than 50 Research&Development centers are located in 14 countries on 4

⁸³ Ibid.

⁸⁴ Quoted in Sung-Wook Cha, A Study on Strategy of Product Identity for Improvement of Corporate Image, Chungang University, 2002, p 76-77

⁸⁵ Ibid. p 76

⁸⁶ WAP (Wireless Application Protocol) is an open international standard for applications that use wireless communication. Its principal application is to enable access to the Internet from a mobile phone or PDA. – source: <http://en.wikipedia.org/wiki/Wap>

continents and about 10 manufacturing plants for mobile phones were built in 8 countries.

5) Balance of Localization and Centralization

The subsidiary companies localized around the world are properly empowered for management to control product development, recruiting, and so on. The brand management or achievements, however, are moderately controlled by the head office with a balance of localization and centralization.

5.1.1.2 Guide and Philosophy of Design in Nokia

Nokia design philosophy is based on the social-cultural and wholistic approach in order to foresee the future from a customer’s perspective.

Design Philosophy	Design Guide
Wholistic approach	<ul style="list-style-type: none"> • New • Beauty • Honesty • Consistency • Ecology • Communication with User

Table 5-1 Guide and philosophy of design in Nokia

Source: Hyun Bum Kim, A study on specific characteristic pattern of Product Identity, Kuk Min University, 2002, p 57

5.1.1.3 Design Principle of Nokia

Chief designer at Nokia, Frank Nuovo said, “The most important thing for mobile phone design is the whole concept.” Namely, all five elements - design, style, function, history and innovation - are important for designing mobile phones and these five elements must properly harmonize.

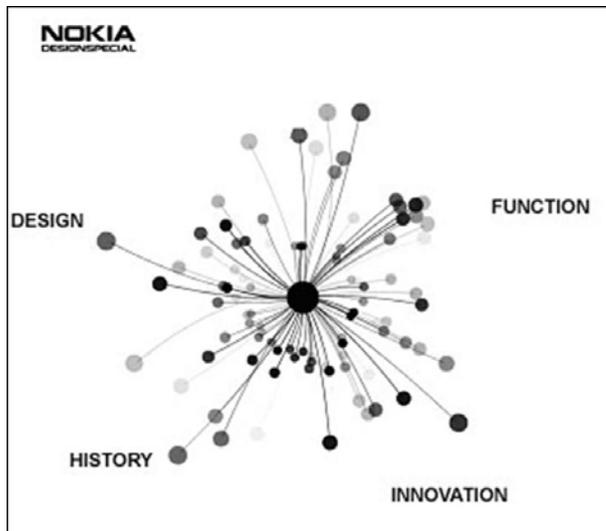


Figure 5-1 Nokia Design Special - Design, Style, Function, History, and Innovation

Source: Nokia Design Special, <http://www.nokia.de>

1) Design

Nokia sets trends and standards in design and function since the 1980s with mobile telecommunication devices, developed by designers with various cultural backgrounds - creative people who represent the desires and wishes of people all over the world. With a sharp sense of design trends and technology, Nokia design team develops broad concepts, always focusing on use and user - from additional equipment to mobile telecommunication device, from the design of packing to display.

Inspiration for design is stirring and different. There are no borders for inspiration and ideas. Nokia Design evaluates cultural and social development and lets these aspects lead to inspiration. Having this knowledge, Nokia designers can create concepts that actually touch the users, turning design into a more broad experience. The connection of technology and design, past and future, tradition and modern, touch the users emotionally. New and organic forms and unusual material such as fabric, leather, and metal are tempting to be touched. Mobile devices turn into stylish companions of a communicative living style. Nokia tries new materials and design in order to make new style.

Frank Nuovo, chief designer of Nokia, emphasizes design for individuality and says,

"Carry your mobile phone as a reflection of your individual style. Organize your world using smart fashion."⁸⁷

2) Function

"Basis of Nokia's product design is the user's needs. Using this knowledge, the Nokia design team creates new functions smartly enriching mobile life."⁸⁸ Nokia design team grasps needs of user and accordingly new mobile phones are designed.

Nokia emphasizes its mobile phones are more than 'just' mobile phones. Truly they have many more functions and users regard them as more than mobile phones.

⁸⁷ Nokia Design Special, www.nokia.de

⁸⁸ Ibid.

3) Innovation

For Nokia, innovation is important and they always keep it in mind; Innovation for a bright future. Duncan Burns, Senior Designer of Nokia says, "We always look to the future and develop concepts for the way we think people might live then." And Nokia designers continually develop new ideas. Personal preferences are more and more focused during the product development process, as well as the individual style and desires of each human being. "We will have even more variety in our products and functions. The goal is to develop products that represent the different ways of living of users - no standard solutions.", says Duncan Burns, Senior Designer of Nokia.⁸⁹ And Frank Nuovo, Chief Designer at Nokia, adds "In the future, there surely will not be mobile phones only but a broad variety of desires concerning communication, entertainment and services without limits."⁹⁰

Design, style and individuality - these words are valid for fashion as well as for Nokia mobile phones. Like fashion, the mobile phone is a tangible experience, influencing senses, mood and personality - no wonder fashion designers and Nokia go hand in hand.

In 1999, Nokia presented the Nokia 8210 during the Kenzo fashion show as the first mobile phone of the fashion category. Designer Zac Posen, fashion designer from New York, crowned his models with a special accessory during Olympus Fashion Week 2004 in New York City: the Nokia 7200 fashion phone. During the Totally Fashion Event in Shanghai in 2004, Nokia presented an unusual Nokia Fashion Collection: the Nokia 7280, the Nokia 7270 and Nokia 7260 mobile phones in the art déco look. Thus, Nokia mobile phones go with personality - Sportif or fashion beauty, business professional or free timer, game fan or music enthusiast. Nokia has a phone for every type.

Mobile phones are individual devices which express one's personality and help to interact with others. Nokia presents small, compact mobile phones with a fashionable and provocative outfit which are tempting accessories, befitting a fast and exciting life.

4) Style

Style of Nokia mobile phone consists of four main categories: fashion, classic, active and premium. Classic purports various mobile phones with decadent and elegant appearance, which are for ambitious people who attach an importance to efficiency and productivity. Active mobile phones are mostly robust for an active life, connecting modern technology, high durability and sporty design. Character of premium is the unique connection of elegant design and high valued materials. These are exclusive mobile phones for people with high expectations of themselves and their environment.

⁸⁹ Ibid.

⁹⁰ Ibid.



Figure 5-2 Style of Nokia Design
 Source: Nokia Design Special, <http://www.nokia.de>

5.1.1.3.1 Nokia Design Process

Product design has had a remarkable role in making the Nokia brand known worldwide. Specifically emphasis has been placed on getting users to feel that phones are personal items.⁹¹

The design process of Nokia illustrated gives only a general picture of the most important phases of the process. The Nokia design process consists of two main phases; conceptualisation and product design. Conceptualisation normally occurs prior to the official product program.

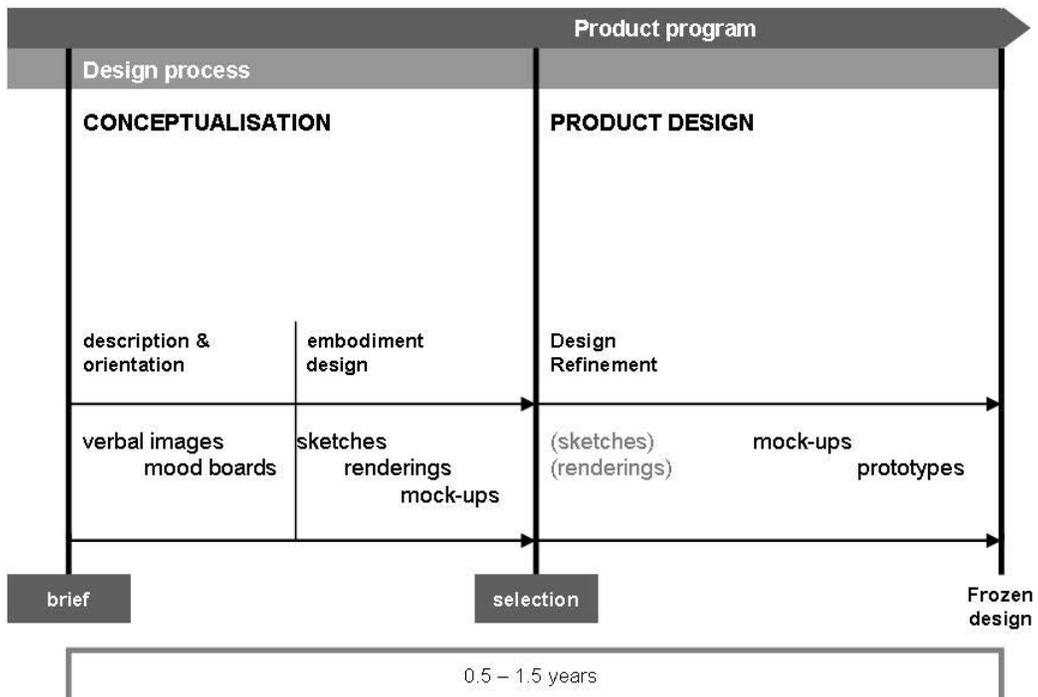


Figure 5-3 Design process of Nokia
 Source: Toni – Matti Karjalainen, Semantic Transformation in design, University of Art and Design Helsinki, 2004, p 148

⁹¹ Toni – Matti Karjalainen, Semantic Transformation in design, University of Art and Design Helsinki, 2004, p 148

Although Nokia has such a normal design process, it is utterly case-specific at the same time and constantly developing. In other words, Nokia has a flexible design process which can be changed according to the situation. The means of managing the practical aspects of the process are constantly changing, and this constant change is, in fact, often considered an indication of an innovative environment.⁹² The detailed design process of Nokia is as follows.

Starting point for the design; “the start of design work is also case-specific, as is the whole process.”⁹³ The first major phase is the conceptualisation period, and it is divided into two steps. One of them, descriptions & orientations, which involve ‘verbal images’ and ‘mood boards’, evolves towards the phase of embodiment design. “Initial concept sketches, renderings, and mock-ups of new products are produced during the embodiment design phase.”⁹⁴

“The level of maturity at the start of conceptualisation depends on prior work assigned to a particular project. Namely, prior to actual product development, there is often a ‘scanning period’, during which initial ideas are developed.”⁹⁵ The actual product program that leads to a production model is often preceded by initial design conceptualisation. Constant development of new technologies also leads to new concepts. The main direction of future development is written in the ‘road map’⁹⁶ Sometimes the starting point of the design process involves much preparatory work. Sometimes the design of a new product starts from scratch or an association of ideas. In fact, it is rather difficult to point out exactly where the design process actually begins.⁹⁷

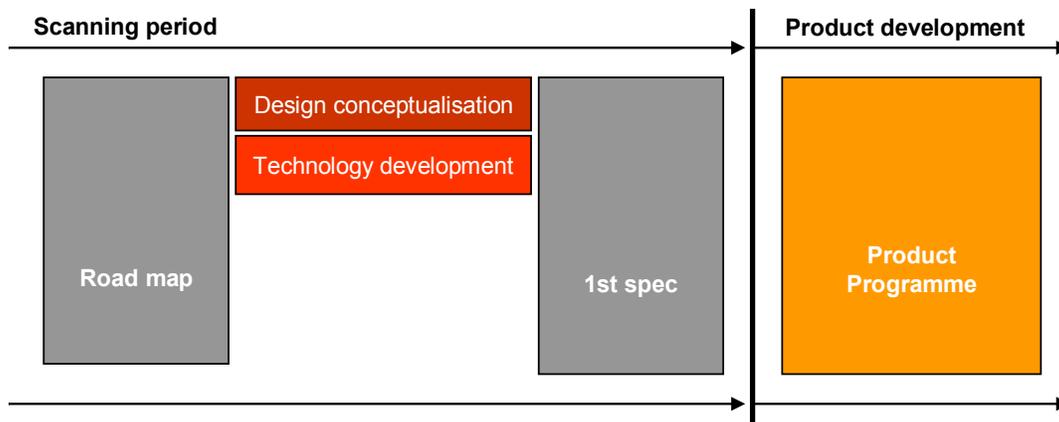


Figure 5-4 Scanning period of Nokia design process

Source: Toni – Matti Karjalainen, *Semantic Transformation in design*, University of Art and Design Helsinki, 2004, p157

Scanning period (Figure 5-4); there are constant research and development activities to seek future solutions in terms of technology and product concepts. These activities can involve research on lifestyles,

⁹² Ibid., p 148

⁹³ Ibid., p 150

⁹⁴ Ibid.

⁹⁵ Ibid.

⁹⁶ Ibid., p 157

⁹⁷ Ibid., p 150

visual trends, sociological research, and scenario building.⁹⁸ “As an overall guide to technology and design development, Nokia has ‘road maps’ for categories representing intended future directions. In practice, the road map consists of product types considered relevant for future markets. Some of these initial ideas will concretise to real products, and others will not.”⁹⁹

Product Categorisation; The increase in the mobile phone market has changed product portfolio management at Nokia. With a wide portfolio of different products, Nokia aims to provide something for every user. “In order to control the portfolio, Nokia has defined different product categories, each of which has its specific characteristics and requirements for their design.”¹⁰⁰ Categorisation also has a direct impact of briefing. (A deeper analysis of product categorisation can be found in chapter 5.1.1.3.2.)

Idea creation and briefing; “The initial product brief is normally made by a team consisting of designers and product manager.”¹⁰¹ The main product drivers are defined and brief outlines of what the product should be able to do – for example, what kind of functions the product has and how design of product is. “The ‘soul’ or the ‘intrinsic value proposition’ of the product is described. The brief may define what core technologies, designs, and materials are to be used in the product. Moreover before the process of idea creation and briefing, cost target, target customer and project scheduled are already defined.”¹⁰²

Mood boarding; mood board - sometimes called “story board” - are freely compiled collages and images with descriptions. Mood boards are used to capture the feeling of new products. Mood boards can be the inspiration for design in the initial phase of the design process and also be used as a checklist for designers.¹⁰³ Designers can check out the original idea from a mood board. In effect, a mood board serves as a design brief for the team.

Also it can be a method of communication for designers. Product development manager may use a mood board to explain the character of a new product to a team.¹⁰⁴ And designers use it to communicate with other co-workers in product development.

“Mood board is so brief and clear that once people see the mood boards, they can have a feel of what is being talked about”.¹⁰⁵ The aim of mood board is to arouse association to facilitate the finding of the right “spirit” for the product. And also aims to illustrate the product ‘spirit’ through various mental images; different atmospheres, persons, faces, and gestures.¹⁰⁶

Embodiment design; after grounding the basis for new product concept, embodiment design is gradually developed. However, the process does

⁹⁸ Ibid., p 157

⁹⁹ Ibid.

¹⁰⁰ Ibid., p 150

¹⁰¹ Ibid., p 152

¹⁰² Ibid., pp 152-153

¹⁰³ Ibid., p 153

¹⁰⁴ Ibid., p 154

¹⁰⁵ Ibid.

¹⁰⁶ Ibid.

not always proceed in such regular order.¹⁰⁷ “Conceptualisation may take place before the actual design process, during the scanning period.”¹⁰⁸

The first phase of the embodiment design is sketching. The purpose of sketching is to create diversity of manifestation of the product brief. Therefore, a large number of sketches are produced. In this phase, many designers work and discuss together to produce idea sketches.¹⁰⁹



Figure 5-5 Sketch of Nokia Design

Source: Nokia Design Special, www.nokia.de

The design process at Nokia is seen as a team effort involving many designers and aims to ensure different interpretations.

Within the conceptualisation phase, sketching is supported by rendering and mock-up (usually foam and clay models) production to visualize their ideas.¹¹⁰

Frank Nouvo, the chief designer of Nokia has commented.

“We do a lot of sketches. After that we aim to share the ideas with each other. We work like a jazz orchestra spurring and inspiring each other. My work as a head designer is to lead our creative group to right direction.”¹¹¹

“Teamwork gives birth to new ideas...You have to be able to explore openly and accept input from lots of people. It is very important to be flexible. There are many influences to our work, but we do not follow trends at Nokia. We try to set them. So where does the inspiration for inspired design come from? It can be anything from a beautiful tree to a motor car or a building. But the most inspiration comes from working in a good creative team with plenty of interaction.”¹¹²

Selection; “After different concepts resulting from conceptualisation phase have been reviewed and evaluated, the main design concept of the phone is established.”¹¹³ One main concept is selected to proceed to

¹⁰⁷ Ibid.

¹⁰⁸ Ibid.

¹⁰⁹ Ibid.

¹¹⁰ Ibid., p 155

¹¹¹ Frank Nouvo, www.nokia.com November 2001

¹¹² Nokia Annual Report 1999, p 18

¹¹³ Toni – Matti Karjalainen, *Semantic Transformation in design*, University of Art and Design Helsinki, 2004, p 155

further development, the actual product design phase.¹¹⁴ In this phase an array of colors, materials, graphic elements and production requirements are decided. Several interesting and innovative materials are available, but to mass produce phones limitations on materials may be set. “Moreover, the utilized technologies and user interface are basically known at this phase.”¹¹⁵

The role of experienced designers is often emphasized in the selection phase. Such experienced people can help things proceed. However, the evaluation and selection of concept for further development should be shared with an audience in order to maintain variety.¹¹⁶ In this phase “it is also important to ensure that technical and aesthetic quality requirements are met.”¹¹⁷

Product design phase and the product programme; Product design involves a more-detailed development of different design elements. “The product design phase can also contain new conceptualisation work, but main emphasis is on refining the selected concept. At the end of this phase, final materials and colors are decided and marketing materials, packaging, as well as other graphic works are also prepared.”¹¹⁸

“The product development process at Nokia is partly standardised. The task of the processes is to recognize the parts of product development that can be standardised and developed to become as efficient as possible. However, it is important to maintain flexibility to ensure constant renewal.”¹¹⁹

5.1.1.3.2 Product categorization

As technological development in the cellular market has accelerated, consumer needs have also become more varied. The immense increase in the mobile market, during which the product has become mainstream for a large number of people, has changed the product portfolio management of Nokia. “The aim of Nokia is to provide something for every user, which has resulted in a wide portfolio of different products. In order to control the portfolio, Nokia has defined different categories, each of which has its specific characteristic and requirements for design and technology. The increasing product palette and detailed segmentation means that the company has to differentiate products clearly from each other.”¹²⁰

Already in 1995, Nokia tried to have strong segmentation. The increased cellular use came both from business and private users which increased segmentation.¹²¹ Technical side like value-added services, data and advanced voice-based services are essential for business users and they emphasize the importance of them. Good design, easy-to-use, and affordable phones are more important for private users.

¹¹⁴ Ibid.

¹¹⁵ Ibid.

¹¹⁶ Ibid.

¹¹⁷ Ibid.

¹¹⁸ Ibid., p156

¹¹⁹ Ibid.

¹²⁰ Ibid., p 150

¹²¹ Nokia Annual Report, 1995, p 11

“Nokia has been the first company to go after the different user segments in various markets. This is reflected in our wide range of product offerings for different standards, which will be extremely important in the future. Even though this is a global business, market requirements and consumer segment needs vary significantly in different parts of the world. To address this challenge, in 1997, we launched more than 30 new products globally...” Pekka Ala-Pietilä, President of Nokia Corporation (1999-2005) and President of Nokia Mobile Phones (1992-1998), says.¹²²

Nokia’s competitive product portfolio consists of several categories catering to very diverse sets of values, needs, lifestyle, and preferences of different consumer segments. Products are often optimized for specific users.¹²³ Some are optimized for basic function like voice connectivity and others are optimized for digital assistants or viewing visual content from the internet. In 2000 Nokia’s mobile phone product portfolio consists of seven categories;

- basic,
- classic,
- fashion,
- premium,
- tough,
- media and
- communicator

The graphic illustrates the evolution of Nokia’s mobile phone categories up to 2000.

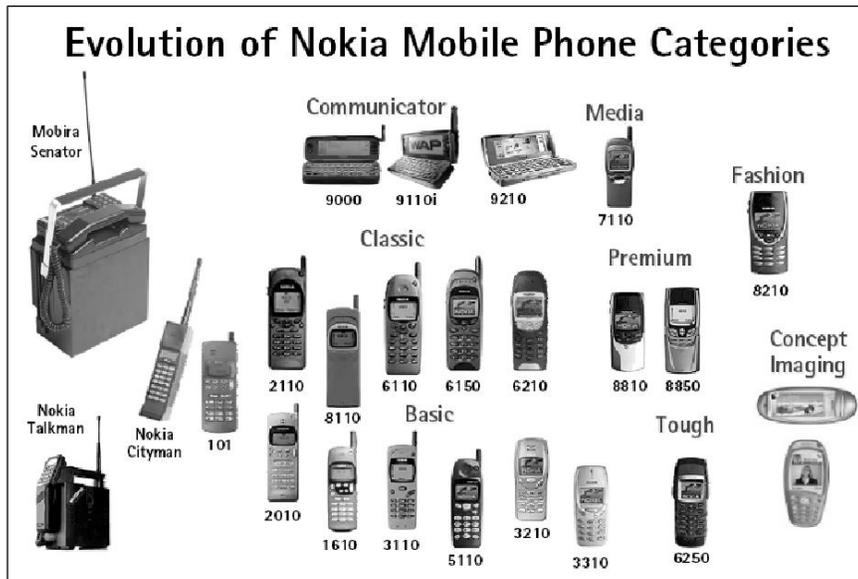


Figure 5-6 Nokia mobile phone Product Category Matrix in 2000
 Source: Nokia Annual Report 2000

The original division included basic, classic, and premium categories. Although the number of categories has increased, this basic division is still rather visible. The original three categories are rather prevalent. In

¹²² Nokia Annual Report, 1997, p 12

¹²³ Nokia Annual Report; 2000, p 24

fact, they reflect the overall categorisation of many other consumer products. Basic (also called “young” – cheap, entry level), classic (best possible product offering basic qualities and implying “neutral” appearance), and premium (extra functionalities needed) categories are often accompanied by fashion (corresponds to the dynamics of the fashion world) and “activity” (or “sport”) categories.

And Nokia product series are classified according to their first number of products. With the first number of product model number, it can be shown which product belongs to which series.

Nokia Model	Nokia Series
Nokia 1xxx Series	Ultrabasic Series
Nokia 2xxx Series	Basic Series
Nokia 3xxx Series	Expression Series
Nokia 5xxx Series	Active Series
Nokia 6xxx Series	Classic Business Series
Nokia 7xxx Series	Fashion and Experimental Series
Nokia 8xxx Series	Premium Series
Nokia 9xxx Series	Smartphone Series

Table 5-2 Nokia series categorization

Source:

http://en.wikipedia.org/wiki/List_of_Nokia_products#1xxx.E2.80.939xxx_Series and Toni – Matti Karjalainen, Semantic Transformation in design, University of Art and Design Helsinki, 2004, p 151

In 2002, Nokia mobile phones continued to renew its product line-up, launching a record 34 new products, incorporating color, imaging, multimedia, mobile games and polyphonic ring tones. Nokia’s product category in 2002, of course, became more complex according to expansion of various functions and consumer’s needs.

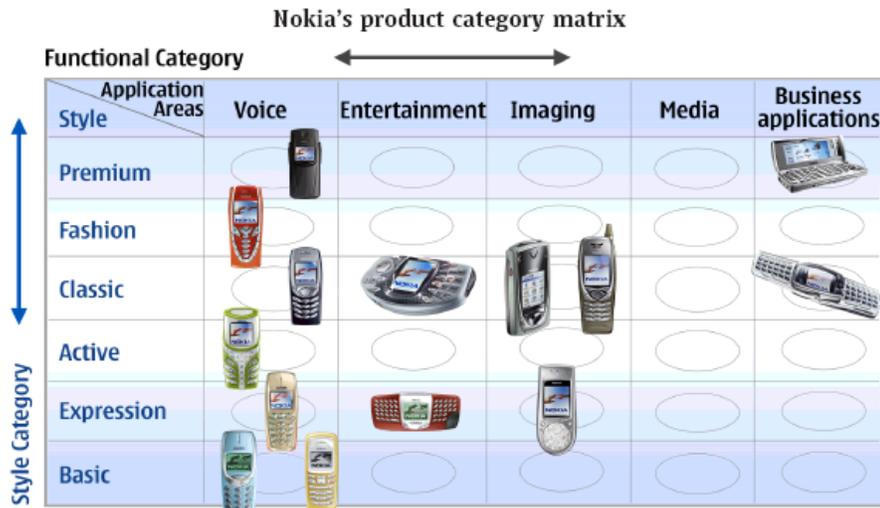


Figure 5-7 Nokia Mobile Phone Product Category matrix in 2002

Source: Nokia Annual Report 2002

Nokia's product matrix in 2002 has six style dimensions (premium, fashion, classic, active, expression, and basic) and five functional dimensions (voice, entertainment, imaging, media, and business applications). The matrix helps to identify potential new products in each cross-section between style and function.¹²⁴ Nokia can address specific user needs by combining each of the styles and each of the functions. Up to 2002, category evolution had revolved around voice-centric models, driven mostly by style related respect. They expected future product portfolio expansion would be driven by emerging functional categories, enabled by a number of new technologies.

Fashion has a "stylish appearance" as a key driver. The product should incorporate "visually enhanced value", as appearance is regarded as the main selling argument. Design should also be slightly provocative in order to appeal to trendsetters.

Classic, in turn, particularly targets professional users. Therefore, the product has to have well-balanced features. It should not evoke negative associations. Furthermore, it should be comfortable and reliable. Overall, a classic product has to represent its time in a modest manner by being at the same time modern but not annoying.

A premium product has to represent elegance, which is accomplished by use of fine materials, clean and pure design, and attention to detail. It should not be considered an actual luxury product, but designed for "assured" people. In addition to categorisation, design should stress the possible new technological functions of the phone. For instance, the introduction of the camera function has brought new dimensions to design. The users should be guided to use the new function.

Product category at Nokia has become even more complex and more and more difficult to follow the rule of product categorisation. This situation is for the expansion stage of product lifecycle. Firstly, some products exist which perform the basic function of new technology innovation. Secondly, basic categories emerge because technologies and markets make development of greater product variety possible. Thirdly, products are divided into multiple categories according to their different functions, style, or other aspects. Accordingly, new solutions and concepts are developed in order to execute a more-detailed segmentation or to enter new markets.¹²⁵

The categories at Nokia in 2003 have been slightly changed. Nokia's strategy is to continuously add new features and functionality to their phones. Nokia introduced new models within existing product categories, while at the same time developed new categories according to the development of new function and life style and needs of users.

As Nokia expected in the early 2000's, product portfolio expanded by emerging functional categories enabled by a number of new technologies.

¹²⁴ Nokia Annual Report, 2002, p 25

¹²⁵ Toni – Matti Karjalainen, *Semantic Transformation in design*, University of Art and Design Helsinki, 2004, pp 150-152

Application area Style	The Mobile Entry	The Broad Appeal	The Focused Appeal	The CDMA ¹²⁶	The TDMA ¹²⁷	Vertu
Premium			8910i			Luxury goods
Fashion			7200 7250i			
Classic				6225	6560	
Active			5140			
Expression		3100 3200		2200 3586	3520	
Basic	1100 2300					

Table 5-3 Nokia mobile phone category in 2003

Source: Nokia Annual Report 2003,
http://en.wikipedia.org/wiki/List_of_Nokia_products

Mobile phones of Nokia in the year of 2003 consisted of four business lines: Mobile Entry, Broad Appeal, Focused Appeal, and TDMA. It also includes the CDMA business unit and Vertu subsidiary. The Mobile Entry business line addresses markets where the greatest potential growth is and where mobile subscription rates are relatively low.¹²⁸ The Broad Appeal business line has leading consumer-focused product range in high volume segments. It is for the market where the key buying sectors are balance among price, functionality, and style. The Focused Appeal business line products are for image-conscious consumers. These consumers emphasize the basis of design or more specialized range of features. The CDMA business unit and the TDMA business line are for the demands of markets with these network technologies.¹²⁹ Vertu is an independent company, owned by Nokia that manufactures very high end mobile phones.¹³⁰ Vertu intends to pursue its high-end brand strategy in the luxury goods category.

¹²⁶ CDMA (Code division multiple access) is a form of multiplexing and a method of multiple access that divides up a radio channel not by time (as in time division multiple access), nor by frequency (as in frequency-division multiple access), but instead by using different pseudo-random code sequences for each user. CDMA is a form of "spread-spectrum" signalling, since the modulated coded signal has a much higher bandwidth than the data being communicated. – source: <http://en.wikipedia.org/wiki/CDMA>

¹²⁷ TDMA (Time division multiple access) is a channel access method for shared medium (usually radio) networks. It allows several users to share the same frequency channel by dividing the signal into different timeslots. The users transmit in rapid succession, one after the other, each using his own timeslot. This allows multiple stations to share the same transmission medium (e.g. radio frequency channel) while using only the part of its bandwidth they require. – source: http://en.wikipedia.org/wiki/Time_division_multiple_access

¹²⁸ Nokia Annual Report, 2003, pp 29-30

¹²⁹ Ibid.

¹³⁰ http://en.wikipedia.org/wiki/List_of_Nokia_products

In the year of 2005, Nokia had a tiny difference in mobile phone category matrix once again. The mobile phone business group shows five units: Broad, Entry, Lifestyle Products, CDMA, and Vertu.¹³¹

Application area Style	The Broad Appeal	The Mobile Entry	Lifestyle Products	The CDMA	Vertu
Premium			8800 5140i		Luxury goods
Fashion			L'Amour 7360 7370 7380		
Classic	6280 6230i			6265 6155	
Active					
Expression	3250				
Basic		1100 2600 2652			

Table 5-4 Nokia mobile phone category in 2005

Source: Nokia Annual Report 2005,
http://en.wikipedia.org/wiki/List_of_Nokia_products

The Broad Appeal unit includes the vast majority of Nokia's product portfolio. It is focused on mid-range products where balance among price, functionality, and style are key.

Towards the beginning of 2006, Nokia changed the name of their Focused Appeal to Lifestyle Products. This unit focuses on top-end products for consumers who want a premium product using high-quality materials, design and features. Products launched by this unit tend to command higher prices.¹³²

Nokia's comprehensive and competitive product portfolio is one of the main reasons that Nokia has succeeded as the world's leading mobile phone manufacturer offers attractive, personally relevant products to multiple user segment.

5.1.1.3.3 Mobile phone as fashion statements

A mobile phone reveals a lot about its owner and it is one of the most personal devices. People choose a model according to their personal lifestyle and taste, the ring tone is a favorite piece of music and in it people store their most personal data such as addresses and photos.

By 2000, Nokia Mobile phone had become Janus-faced. On one side, it was a critical personal communications device (function); and the other, it had aesthetic appeal (design). Initially, as long as business markets

¹³¹ Nokia Annual Report, 2005, pp 28-29

¹³² Nokia Annual Report, 2005, p 29

were more important than consumer markets, “function reigned over design.”¹³³

As momentum in mobile phones shifted closer to consumer markets, design began to reign over function. Because functions and features can not be singular apparent things and no longer distinguished mobile vendors, consumers purchased mobile phones that suited their different lifestyles. “Nokia understood that the phone would be as much a fashion accessory as a tool.”¹³⁴ So designers from Europe and California worked to give Nokia mobile phones their distinctive look and feel. “Of course, both function and design were important and essential to contribute to the rapid growth of the mobile subscriber base, but the transition of the mobile phone from a business centered market to a global consumer product required a new approach to producing and marketing mobile phones”.¹³⁵

Nokia 8860 is regarded as the first fashion phone. After introduction of the Nokia model 8860, Frank Nuovo, chief designer of Nokia, was praised as “the designer who made wireless technology a fashion statement”¹³⁶ and Vogue, a leading fashion magazine stated, “Nuovo’s newest phone is the big hit in the world of wireless communication, the hottest cell phone on the charts. It is the sleek, streamlined, and aerodynamic phone that’s a little Le Corbusier, a little Matrix – the first fashion phone...”¹³⁷

Nokia 8860 is praised for inventing a new niche in the market: an ‘exquisite accessory’ premium phone.¹³⁸



Figure 5-8 Nokia 8860

Source: www.nokia.de

The “first fashion phone” 8860 appealed to consumers with extraordinary design and new materials that make 8860 look cool. “That’s our haute couture phone” said Nuovo who described the objective of his design team as “humanized technology.” For him the goal was to meld style and reliability.¹³⁹

It weighs as little as 98 grams and was billed by its maker as the most elegant mobile phone ever. Unlike previous products, the Nokia 8860 was more about style than substance. This “Porsche of mobile phones” as the Wall Street Journal called it, came with a metal door that

¹³³ Dan Steinbock, The nokia revolution, American Management Association, 2001, p 268

¹³⁴ Ibid.

¹³⁵ Ibid., p 268-270

¹³⁶ Robert Sullivan, Ring Leader, Vogue, April 2000

¹³⁷ Ibid.

¹³⁸ Henrietta Thompson, Phone Book, Thames & Hudson, 2005, p 126

¹³⁹ Nokia Corporate Communications, <http://www.nokia.com>

protected a keypad, then slide down in order to better and closely position the microphone.¹⁴⁰

Recently Nokia launched several different fashion series with unique design, which contain various types of Mobile phone. The first Nokia fashion series, Nokia 7260/7270/7280 which were produced in the second half of 2004, combine Aldeco and modern style and break from normal design of mobile phone.

Fashion-based “Nokia 7260, Nokia 7270 and Nokia 7280 took their inspiration from the lavish and decadent 1920s. “ and “ Core style influences, such as flow and movement, color, geometry, detailing and graphics, were the inspiration for the collection”¹⁴¹



Figure 5-9 Nokia 7260, 7270, 7280
Source: www.nokia.de

Nokia released L'Amour, the second series, after it had made a success with its first fashion item series of Nokia 7280/7270/7260 above.

The L'Amour collection offers fashion-conscious consumers three trend-inspired mobile phones. Utilizing stainless steel, leather, fabric, plastics, paints and other decorative techniques, the designs infuse cultural and ethnic influences with luxurious touches from the unexpected. Each model offers a beautiful mix of contrasts: hints of vintage and craftsmanship are fused with natural materials, colors, and patterns.

The Nokia L'Amour series has a label as it is customary for fashionable clothes. All the L'Amour collection devices gained such a label, although it seems such a small decoration element. The handset is treated as a fashion item subconsciously.



Figure 5-10 Nokia L'Amour series (from left to right: 7360, 7370, 7380)

¹⁴⁰ Connie Ling and Wayne Arnold, “Stylish Mobile Phone from Nokia Becomes the Rage in Hong Kong.”, Wall Street Journal, Sep. 15, 1998

¹⁴¹ Ibid., p 174

Source: www.nokia.de

“ Nokia, one of the first manufacturers to really take fashion seriously as a design strand, still saw the future of phones as fashion accessories. “¹⁴² Nokia knows exactly that mobile phones would be absolutely individual consumer products. Mobile phones express users’ lifestyle and their individuality. People choose a model according to their personal lifestyle and taste and the mobile phone would be as much a fashion accessory as a simple phone or tool.

5.1.1.4 Nokia and four technology generations

How has Nokia benefited from technology cycles and what are their characters of Mobile phones? In the first generation (early 1980s), Nokia gained first-generation advantages in analog mobile and most phones during this time were heavy car phones. Also it focused on early-adopter business segment. During the second generation (late 1980s/ early 1990s), Nokia achieved an era of hyper growth, gaining advantages in digital cellular. Most mobile phones were smaller, lighter, and focused on late-adopter business segments and early-adopter consumer segments. In the third generation (early 2000), Nokia entered rapid growth and Mobile phones became smaller, lighter and wearable. During this time, Nokia focused on integrating business and consumer segments.¹⁴³ These four technology generations are pictured in Figure 5-11.

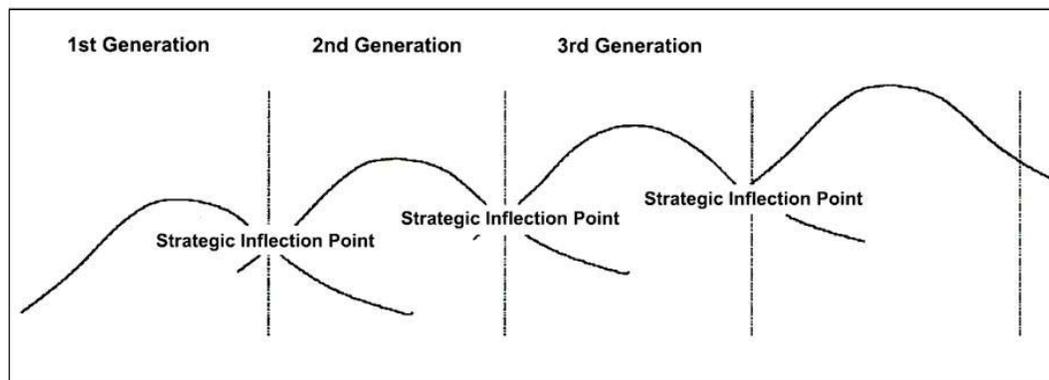


Figure 5-11 Nokia and four technology generations

Source: Dan Steinbock, The nokia revolution, 2001, American Management Association, p 181

“Since the 1960s, Nokia has sought to take advantage of not just each technology generation but in particular the strategic inflection points separating one from the other, at first instinctively and later through strategic management.”¹⁴⁴

¹⁴² Henrietta Thompson, Phone Book, Thames & Hudson, 2005, p 89

¹⁴³ Dan Steinbock, The nokia revolution, 2001, American Management Association, p 181

¹⁴⁴ Ibid., p 180

5.1.2 Analysis of Nokia mobile phones

Until the end of the 1980s, design was a largely neglected strategic tool. While some markets define design in narrow aesthetic terms, it should be considered more broadly as an integrative force, encompassing the totality of features affecting the product looks and functions in terms of consumer requirements.¹⁴⁵

In 1990 Nokia product marketing defined nascent design strategy on the grounds of three basic characteristics: identifiable, global, and soft design language.¹⁴⁶ In the process the company moved from geographic segmentation to customer segmentation classifications.

“Customers grab the most attractive product, whatever that means to him or her.” Nokia marketing director, Wilska explained, “We talk about sexy appearance. The next step is when you have the phone in your hand. It must feel good and it is only then that other issues become relevant... Products are no longer bought on the basis of functional values”¹⁴⁷

In the early 1990s, 50 competitors of Nokia were producing new products every 2 to 3 years (about 20 new products each year). As Nokia did not introduce any new products for 2 years in the late 1980s, motivation and enthusiasm decreased. That was enough to justify the increased role of design in Nokia. “To highlight the role of design, to indicate that something new has been launched, and to help our sales organization to sell”¹⁴⁸

How Nokia established its Product Identity, as the importance of design increased, will be analyzed based on three elements of Product Identity such as type, color and form of mobile phone through the result of questionnaire.

¹⁴⁵ Philip Kotler, Design: A powerful but neglected strategic tool, *Journal of business Strategy*, 1984, pp 16-21

¹⁴⁶ Dan Steinbock, The nokia revolution, American Management Association, 2001, p 271

¹⁴⁷ Quoted in Matti Pulkkinen, The breakthrough of Nokia Mobile Phones, Helsinki School of Economics and Business Administration, 1997, p 146

¹⁴⁸ Ibid.

5.1.2.1 Type Analysis

The type analysis is divided into two parts, the diachronic and the synchronic and analysis.

5.1.2.1.1 Diachronic Analysis

What kind of type does Nokia produce and does it affect Nokia's Product Identity? First, the following table shows the percentage of mobile phones produced according to each type.

Unit: % Percentage

Type \ Year	Bar / Flip type	Folder type	Slide Type	Swivel Type
1995	100.0	0.0	0.0	0.0
1996	100.0	0.0	0.0	0.0
1997	100.0	0.0	0.0	0.0
1998	94.1	5.9	0.0	0.0
1999	100.0	0.0	0.0	0.0
2000	100.0	0.0	0.0	0.0
2001	94.1	5.9	0.0	0.0
2002	97.5	0.0	2.5	0.0
2003	97.2	2.8	0.0	0.0
2004	85.4	14.6	0.0	0.0
2005	63.6	18.2	15.1	3.1

Table 5-5 Type of Nokia mobile phones¹⁴⁹

Source: Nokia Annual Report 1995 – 2005 & GSM Arena (www.gsmarena.com)

As shown in Table 5-5, Nokia has mainly produced bar type mobile phones. That is mainly because Nokia used a strategy to focusing on the low priced mass phone up to 2004. In addition, it is pointed out that Nokia responded to rapidly changing consumer taste carelessly while other competitors such as Motorola or Samsung produced various types of mobile phones.

Europeans' practical mind, however, could affect it as a stigma. Moreover, bar type mobile phones were more competitive because it was cheaper than other types eventhough it had similar functions and options. Thus it can be inferred practical Europeans steadily preferred the bar type mobile phones.

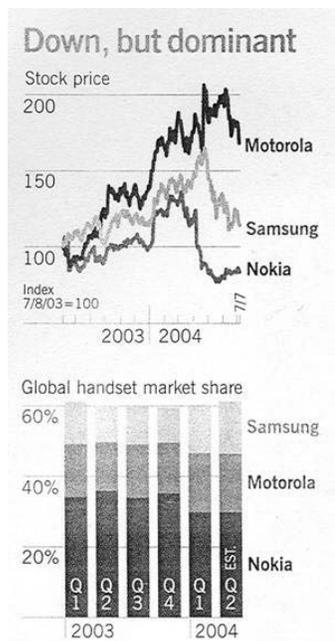
For those reasons above, Nokia dominated the market of mobile phone with bar type in Europe as well as around the world for a long time

¹⁴⁹ Flip type is a kind of bar type and thus it is included in bar type. In addition, Nokia produced folder type Nokia 282 in 1998 and folder type Nokia 8887, 8877 in 2001 but those were special models for the US and Korean market.

focusing on developing bar type design and promoting sales. Nokia, however, had a red light in sales and market share in April, 2004 and changed its strategy of focusing on bar type mobile phones.

„The troubles began in April, when the Finnish company announced that its first-quarter sales had fallen from the previous year and that market share had slipped--despite the fact that the overall market for cellphones was growing at a red-hot pace.”¹⁵⁰ Nokia has been reluctant to produce the folder type mobile phones that have become popular with consumers and are offered by its two largest rivals, Motorola and Samsung. They produce folder and slide type mobile phones in many various designs and have gradually succeeded in mobile phone markets.

Nokia had clung to its traditional bar type design and also “Nokia has placed too much emphasis on producing and selling low-priced, entry-level phones and hasn’t devoted enough attention to developing higher-margin products for mid and high-end segments of the marketplace, to which an increasing number of European and U.S consumers are now migrating.”¹⁵¹ For example, the US consumers preferred mobile phones with good design when they buy household appliances and manufacturers introduced various design concepts while they produced mobile phones from bar type to flip type. Although 70% of the mobile phones were bar type in 2002, that number had, decreased to 45% in 2005. While the number of flip type mobile phones increased from 7% to 52% within the same period.¹⁵²



“Nokia has likewise been able to keep production costs low by cranking out a huge volume of phones, all of which are variants of the same basic candy bar (bar type phone). But as consumer tastes have evolved, the strategy has backfired. Clamshells (folder type phone) now account for about 30% of all new cellular phones sold--more than double their share a decade ago” according to Mark Davies Jones, an analyst with J.P. Morgan Chase.¹⁵³

Therefore, as Nokia recognized those problems and other competitors such as Motorola and Samsung had a success with folder and slide types, Nokia began to produce folder and slide types as well as bar types beginning in the second half of 2004. It was hard for Nokia to focus just on bar type because consumers’ taste and mobile phone market rapidly changed and

¹⁵⁰ Janice Revell, “Why Nokia’s A Buy the cellphone leader has hit the rails, but there’s still plenty of hope for the Finnish line. And that’s a great opportunity for investors.” July 26, 2004, Fortune Magazine

¹⁵¹ Ibid.

¹⁵² J.D. Power Research Center, 2005, www.jdpower.com

¹⁵³ Janice Revell, “Why Nokia’s A Buy the cellphone leader has hit the rails, but there’s still plenty of hope for the Finnish line. And that’s a great opportunity for investors.” July 26, 2004, Fortune Magazine

competitors' response was very fast.

Figure 5-12 Stock Price & Global handset market share 2004

Source: Janice Revell, "Why Nokia's A Buy the cellphone leader has hit the rails, but there's still plenty of hope for the Finnish line. And that's a great opportunity for investors." July 26, 2004, Fortune Magazine

"In June, 2004 Nokia unveiled the first three of six clamshell (folder) models it plans to introduce to the market by year-end. And it is set to introduce the market another 10 to 20 phones, many aimed squarely at filling its product gap for mid-and high-end consumers" says Ed Snyder, co-founder of Charter Equity Research in San Francisco.¹⁵⁴

Nokia still led the market of bar type mobile phone but it tried to respond to the rapidly changing market and consumers' taste producing folder and slide types with various designs.

5.1.2.1.2 Synchronic Analysis

Nokia still leads the market of bar type mobile phone because the top 3 products from 2005 to the first half of 2006 – Nokia 6230i, 8800 and 7360 – are all bar types. Bar types constitute a large part of Nokia's mobile phone line-up.

Now the question has to be answered why Nokia's bar type has ceaselessly dominated the market of mobile phones from 2005 to the first half of 2006?



Figure 5-13 Nokia 6230i, 8800, and 7360

Source: www.nokia.de

At first, the biggest market for Nokia is Europe which accounts for the 30% of Nokia's total sales (the second is Asia-Pacific with 19% and the third is North America with 18%)¹⁵⁵ because the Europeans' practicality fits Nokia's bar type mobile phone. "Nokia favored the candybar type (bar type), which was simple and logical, and allowed for easier customization too."¹⁵⁶ As mentioned earlier, bar type has as much possibility for change and diversity in design compared with folder or slide type and Nokia has variously developed, specialized and itemized the bar type mobile phones for a long time. Therefore though it was

¹⁵⁴ Ibid.

¹⁵⁵ Nokia Annual Report 2005, p 46

¹⁵⁶ Henrietta Thompson, Phone Book, Thames & Hudson, 2005, p 99

somewhat out-of-date in technology and trend, Nokia's bar type was still up-to-date, sophisticated and modern in 2005, and even now it leads the mobile phone market in Europe with its distinctive firmness. Moreover, one of the reasons for its high market share competitiveness is the bar type's low price comparison with that of folder type or slide type.

As stated above, Nokia has led the market of bar type mobile phone and takes a firm position as it follows the trend in world market by producing a folder type in 2004 and a slide type in 2005.

The mobile phone type is affected by technology, culture, market trend, usability, corporate strategy, and so on, and the output of each type can be changed according to them. Therefore, although a corporation mainly produces a certain type of mobile phone it is hard to say that the type has a critical influence on the Product Identity of the corporation because one mobile type cannot represent the whole uniqueness of a corporation. That is, one mobile phone type, which is determined by various elements, does not greatly affect Product Identity because it cannot be directly connected to the Product Identity of the corporation.

5.1.2.2 Color Analysis

The color analysis is, like the type analysis, divided into two parts, the diachronic and the synchronic analysis.

5.1.2.2.1 Diachronic Analysis

As shown earlier, respondents regarded color as the second important element of Product Identity by questionnaire.

How much color is taken to Nokia's Product identity?

What kind of Product identity does Nokia establish by color? What is the main color of Nokia's product according to each product category and what kind of identity does Nokia establish by the main color?

The relation between Nokia's identity and color will be analyzed by analysis of color in the axis of time.

1) Color of Nokia Mobile Phone by year

The following shows percentage of color in Nokia mobile phone by year.

Unit: % Percentage

Color Year	Black	Silver	Gray	Plum	Red	Green	Blue	White	Orange	Beige	Brown	Gold	Yellow	Xpress -on™ Cover
1994 - 1997	36.8	5.3	36.8	5.3	0.0	5.3	10.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1998	27.0	8.1	13.5	8.1	5.4	2.7	24.3	2.7	5.4	2.7	0.0	0.0	0.0	0.0
1999	14.3	14.3	24.0	0.0	9.5	14.3	9.5	4.7	4.7	0.0	0.0	0.0	0.0	4.7
2000	14.3	7.1	14.3	0.0	14.3	14.3	21.4	0.0	0.0	0.0	0.0	0.0	14.3	0.0
2001	9.7	19.4	12.9	0.0	9.7	6.5	12.9	6.5	6.5	0.0	3.2	3.2	0.0	9.7
2002	21.6	4.4	8.7	0.0	0.0	8.7	8.7	4.4	8.7	0.0	4.4	4.4	4.4	21.6
2003	16.4	0.0	10.2	6.1	6.1	8.2	20.5	8.2	0.0	2.0	8.2	4.0	4.0	6.1
2004	17.2	10.3	20.7	0.0	17.2	6.9	20.7	3.5	0.0	0.0	0.0	3.5	0.0	0.0
2005	32.0	28.0	10.0	0.0	2.0	4.0	4.0	6.0	2.0	0.0	6.0	0.0	0.0	6.0

Table 5-6 Percentage of color in Nokia mobile phone by year

Nokia Annual Report 1995 – 2005 & GSM Arena (www.gsmarena.com)

Basically a combination of four colors is available to one Nokia model and thus there are various choices for color.

Nokia mostly had released mobile phones with black, gray and blue color from 1994 to 1997 and the color was limited without a variety of color options. Then, it had gradually released mobile phones with various colors such as green, orange and yellow by 2003. The model for Xpress-on™ Covers were increasingly produced. Xpress-on™ Covers can be changed to a user's favorite color and it can be used for Nokia Expression series (Model No. 3xxxx). It effectively represents the concept of Nokia Expression series such as individual or self-expression and a user can express his or her personality by mobile phone. In addition to the variety of color options, user could easily change the covers and keypads of his/her phones.¹⁵⁷ And Xpress-on™ Covers makes phone suit user's style with unique Nokia Xpress-On™ Covers.



Figure 5-14 Nokia Xpress-on™ Covers

Source: www.nokia.com

Nokia somewhat decreased the production of colorful mobile phone from 2004 and mainly produced black, silver, gray, red, blue and white. It is probably because the consumers prefer a more luxurious, professional, stable, and calm images.

Nokia mainly applied monotone color by 1997 and it started to apply 2 colors to one mobile phone from 1998. In addition, 3 or 4 colors were applied to one mobile phone from 2001 and monotone or 2 colors were strongly applied to that again from 2002. That means Nokia did not apply many colors to one mobile phone by using stable and calm colors. The following is the graph indicating the number of colors used for each product

¹⁵⁷ Ibid., p 159

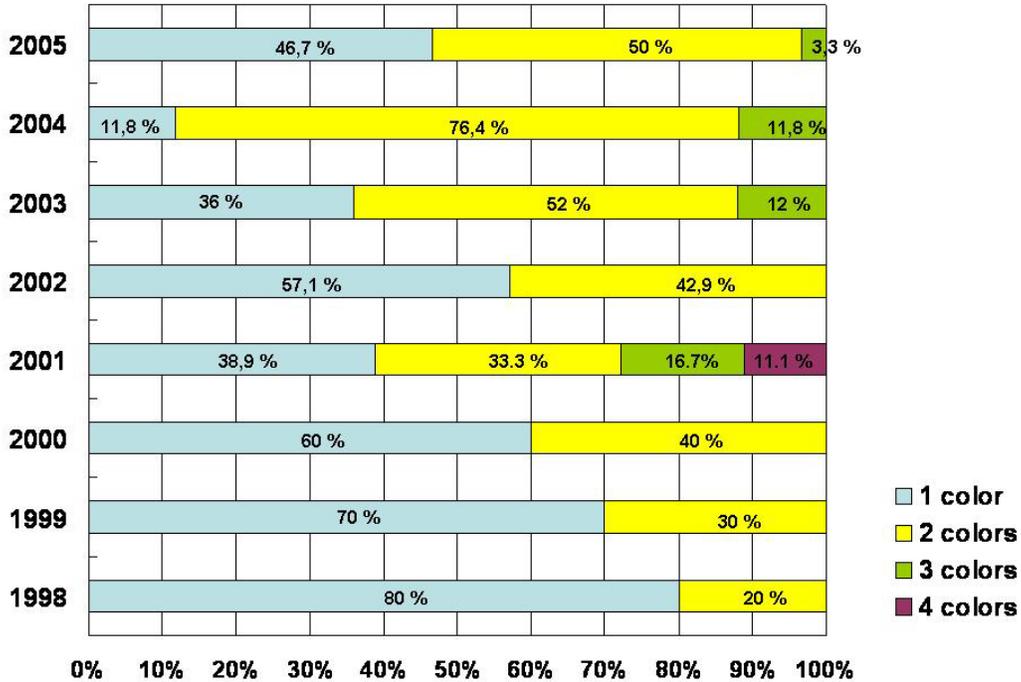


Figure 5-15 The number of colors used for one Mobile phone

Most mobile markets followed a similar trend and the mobile phone with one or two colors comprise 84% (52% and 32%, respectively) of the whole mobile market in 2004.



Figure 5-16 Color variation research 1

Source: KCM - KC mobile design institute, 2004

Blue and silver amount to 31.7% and 29.3% respectively in the whole mobile market in 2004. Red, gray and black represented the rest.



Figure 5-17 Color variation research 2

Source: KCM - KC mobile design institute

2) Color and Nokia product categorization

What color has been used for each Nokia product categorization? Does the color match with each categorized image? The following is the

position and image of the main color used for each categorization in color image table. (See chapter 4.3.3 for an explanation of main color image)

Nokia Series	Nokia Style Category	Main image of series	Main used color	Main color image
Nokia 1xxx	Ultrabasic Series	Personal, simple	Black Gray Nokia Xpress-On™	elegant, technical modern, simple, professional user changeable color
Nokia 2xxx	Basic Series	Personal, basic, young	Black Silver Gray	elegant, technical sleek, modern modern, simple, professional
Nokia 3xxx	Expression Series	Individual, self-expressive	Black Silver Gray Red Green Blue White	elegant, technical sleek, modern modern, simple, professional dynamical comforting cool, comforting, clean clean, pure
Nokia 5xxx	Active Series	Sportive	Black Red Green Blue Orange	elegant, technical dynamical comforting cool, comforting, clean vibrant, energetic, warm
Nokia 6xxx	Classic Business Series	Neutral, professional	Black Silver Gray Blue White Beige	elegant, technical sleek, modern modern, simple, professional cool, comforting, clean clean, pure calm, relaxed
Nokia 7xxx	Fashion and Experimental Series	Fashionable, stylish	Black Gray Blue	elegant, technical modern, simple, professional cool, comforting, clean
Nokia 8xxx	Premium Series	Premium, luxurious, elegant	Black Silver Gray	elegant, technical sleek, modern modern, simple, professional
Nokia 9xxx	Smartphone Series	Professional, smart technic	Black Silver	elegant, technical sleek, modern

Table 5-7 Color and Nokia product categorization

As shown in the analysis above, image of style categorization and product color image are almost an exact match with each other in Nokia mobile phones. The image of the Expression Series (Nokia 3xxx) is individual and self-expressive and its color is varies from black, silver, gray and white to red, green and blue. In addition, the Classic Business Series (Nokia 6xxx) has a neutral and professional image and its color is classical and gentle such as black, silver, gray, blue, white and beige. Black and gray are mostly used for the whole categorization and black is easily used for mysterious, sophisticated and elegant image.

The following is the mainly used color for each categorization arranged in color image space.

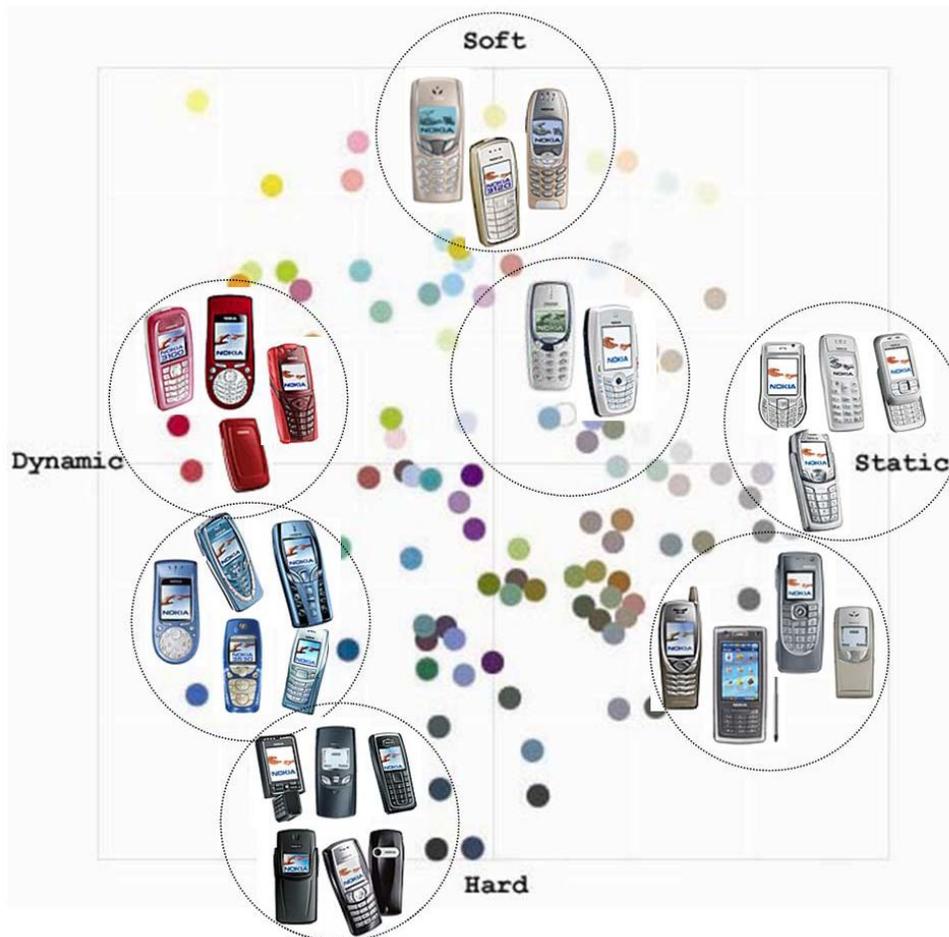


Figure 5-18 Color image space of Nokia Mobile phones

As shown above, the main colors of Nokia – Red, Blue, Black, Gray, Silver, White and Gold – are widely spread throughout the whole coloration image space except green and accordingly, the color creates various images.

The following is the coloration mainly used for Nokia product and it creates one image by mostly arranging the similar image color.

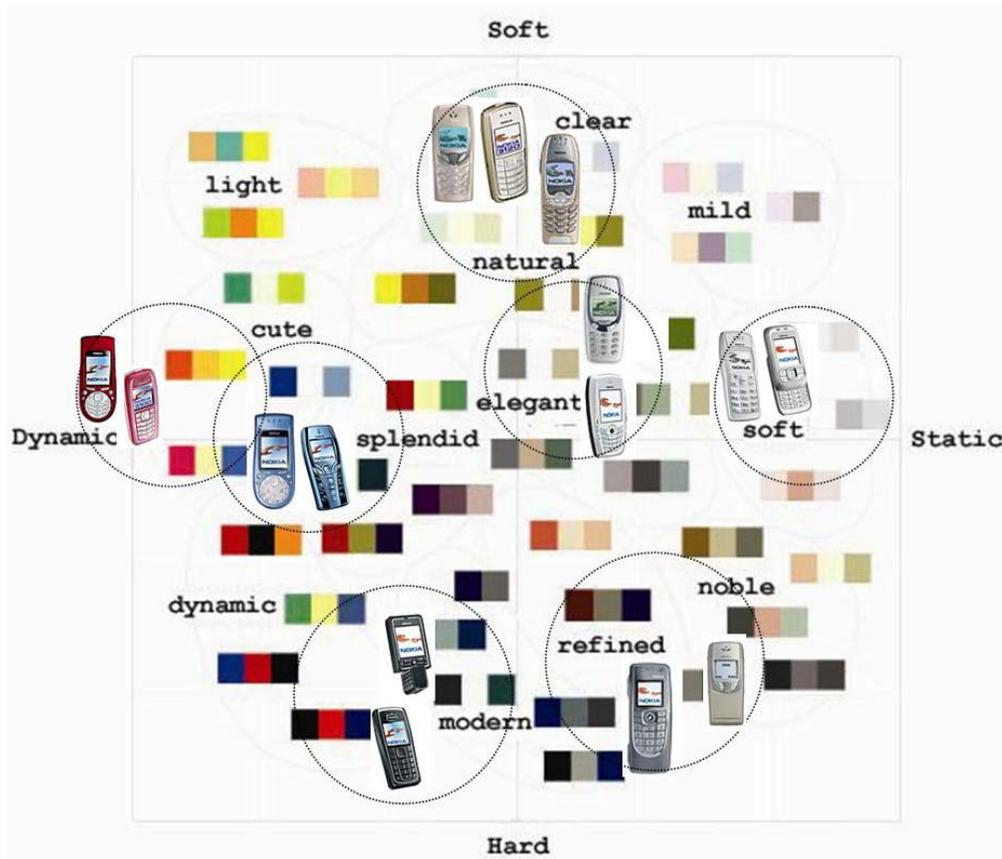


Figure 5-19 Coloration image space of Nokia mobile phones

As shown in the color analysis above, the distinction of categorization and the color used for the product of categorization almost match with each other. That is, the product color is intentionally selective for each image of categorization. Moreover, Nokia gives many various color options to consumers within color plan of each categorization.

5.1.2.2.2 Synchronic Analysis

The analysis of color image of Nokia 6230i, 8800 and 7360, Nokia's main product is as follows.



1) Silver and black were used for the Nokia 6230i which is one of Classic Business Series in order to get a classic, gentle and professional image for businessmen consumers. Nokia tried to express an elegant, modern and technical image for the business categorization through white and black.

Figure 5-20 Colors of Nokia 6230i: Silver and Black

Source: www.nokia.de



2) It is a model from the Premium Series for luxury and elegance through silver and black and each color expresses modern and elegant, luxurious and technical, respectively.

Figure 5-21 Colors of Nokia 8800: Silver and Black

Source: www.nokia.de

Silver is applied to both the Nokia 6230i and 8800. It is because silver is generally regarded a professional color which is usually used for home appliances and for professional businessmen.

3) The Nokia 7360 is categorized in the Fashion and Experimental Series which is fashionable and stylish. The designers of Nokia consider them to be the fashionable colors of 2005-2006. Nokia produces the 7360 with four colors such as Warm amber, Coffee brown, Poeder Pink and Black chrome. Warm amber and Poeder Pink are for female users and Coffee brown and Black chrome for male users, respectively. Fashions items are not just for female consumers for Nokia because Nokia applied various colors to the Nokia 7360 for male consumers as well.

Warm amber emphasizes softness with a calm and comfortable image and the one with Poeder Pink expresses femininity by emphasizing a soft, sweet, romantic, charming and delicate image. Coffee brown has a warm, neutral and rich image and Black chrome has a refined, primary and elegant image because both are produced for male users.



Figure 5-22 Colors of Nokia 7360: Warm amber, Poeder Pink, Coffee brown, and Black chrome (from left to right)

Source: www.nokia.de

Nokia designers decided not to show an excess of zeal with metal, a navigation button looks garishly, as well as a loudspeaker grate, on/off button on the top end. The color of the label and OK button integrated into the navi-button feature the same color. The color combination is selected very well, focuses of attention are present, and the model is interesting and attractive in appearance.

The distinction of color of the three mobile phone models above is illustrated in the following Table 5-8.

	6230i	8800	7360
Category of Model	Classic Business Series	Premium Series	Fashion and Experimental Series
Character of Category	Neutral, professional	Premium, luxurious, elegant	Fashionable, stylish
Available Colors	Silver, Black	Silver, Black	Warm amber, Coffee brown, Poeder Pink, Black chrome.
Image of colors	<ul style="list-style-type: none"> • Silver: elegant, technical • Black: sleek, modern 	<ul style="list-style-type: none"> • Silver: elegant, technical • Black: sleek, modern 	<ul style="list-style-type: none"> • Warm amber: calm, relaxed • Coffee brown: warm, neutral, honest, rich • Poeder Pink: soft, sweet, romantic, charming, delicate • Black chrome: refinement, primary, elegant

Table 5-8 The distinction of color of Nokia 6230i, 8800, and 7360

As shown in the color analysis below, three Nokia mobile phone models such as the 6230i, 8800 and 7360 have almost the same character and color of each categorization in relation with the colors in the axis of time. In addition, various colors were applied to three main mobile phone models. Especially, the Nokia 7360 in fashion categorization, which has 4 various colors and are completely different from each other and it is widely spread in the soft, hard and static area except dynamic in the color image space.

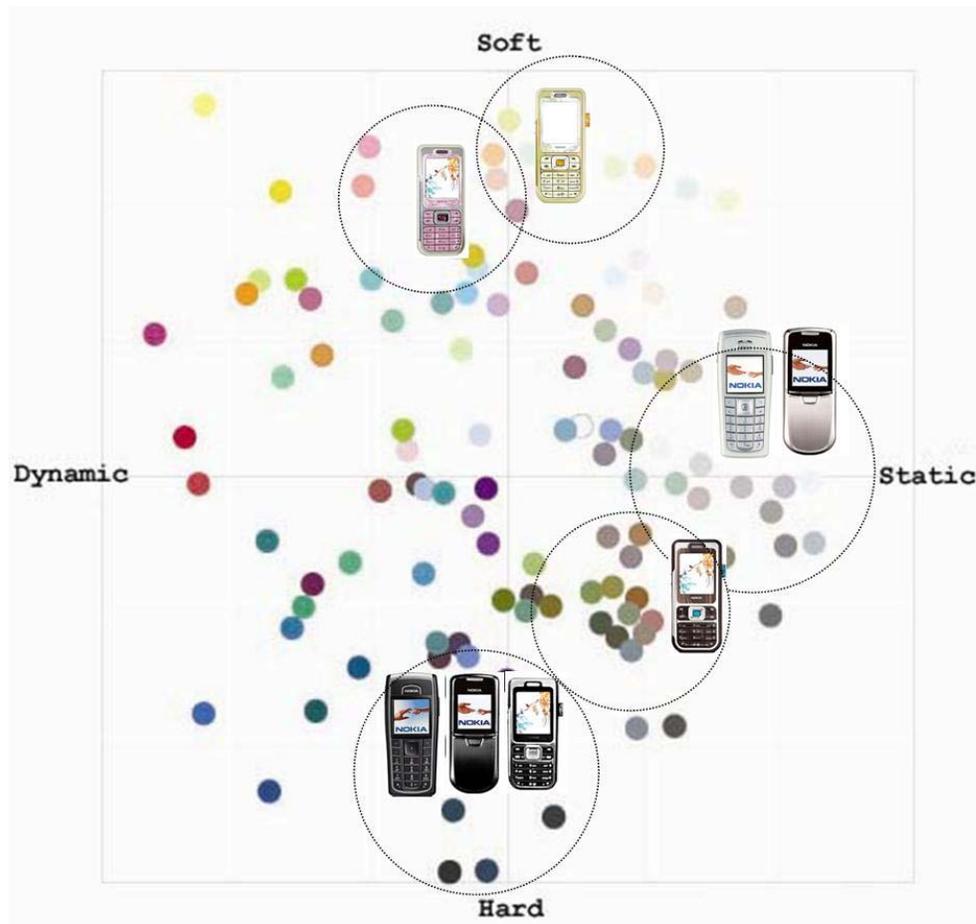


Figure 5-23 Color image space of Nokia 6230i, 8800, and 7360 mobile phones

As shown in the color analysis of time and space, Nokia mobile phones are intentionally selected according to the image and color of each categorization. Besides it provides a lot of possibilities in choosing very different colors for users mostly within a color plan according to categorization.

One single color or a group of colors, however, cannot represent all Nokia's identity with the color plan fitting each product according to categorization. It is because color is changing according to trend and the product material or product itself is planned to fit its image or target user in Nokia which has various product categories. Therefore it cannot be said that color greatly affects the Product Identity. That is, selection and arrangement of color are intentionally planned for the product of Nokia and help Nokia form its Product Identity but color does not have enough of an influence to establish to its own Product Identity.

5.1.2.3 Form Analysis

Following the known structure, the form analysis is also divided into two parts, the diachronic and the synchronic analysis.

5.1.2.3.1 Diachronic Analysis

Now it will be analyzed how the form, which is the third important element of Product Identity in the questionnaire, affects the Product Identity and what kind of form Nokia represents for its consistency and identity.

The development of Nokia's mobile phones' forms is arranged in Figure 5-24 and Figure 5-25.



Figure 5-24 Examples of Nokia mobile phones from 1994-2000

Source: Nokia website (www.nokia.com) and GSM Arena (www.gsmarena.com)

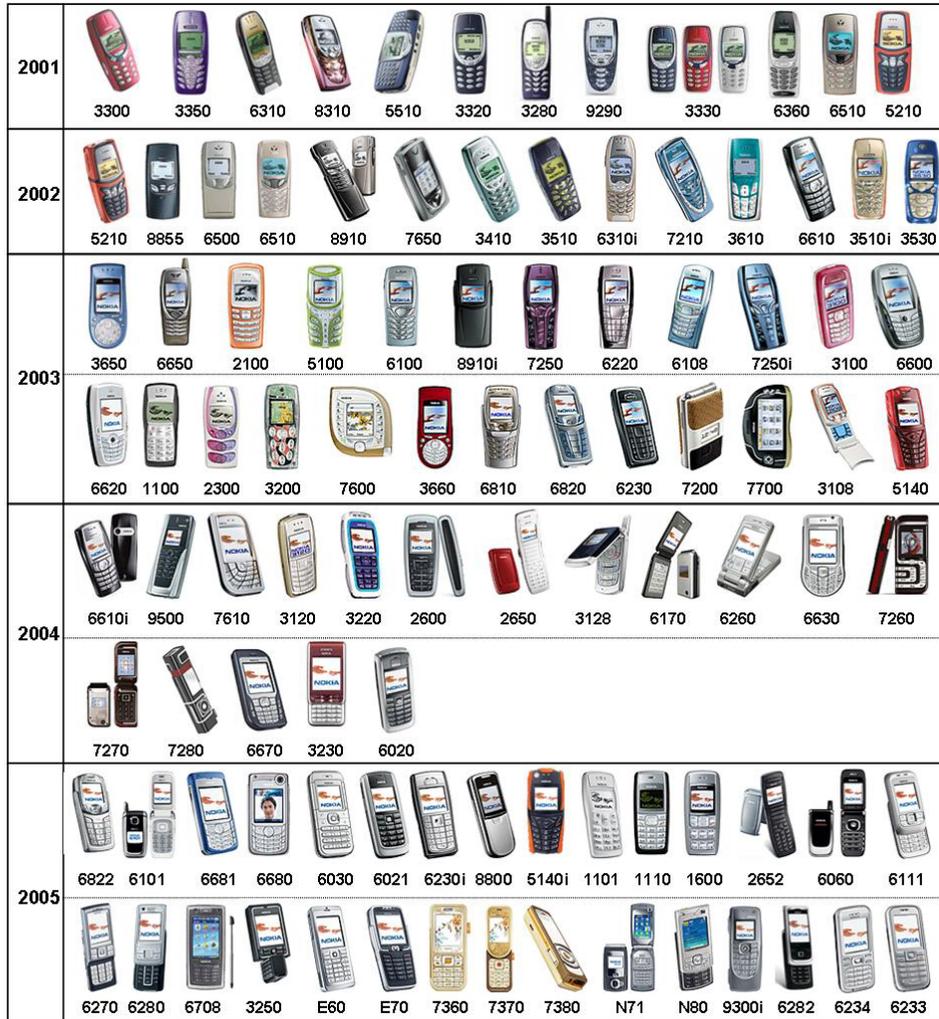


Figure 5-25 Examples of Nokia mobile phones from 2001 to 2005

Source: Nokia website (www.nokia.com) and GSM Arena (www.gsmarena.com)

The form analysis of Nokia from 1994 to 2000 is additionally investigated based on Hyun Kim's 'A Study on Form Trend.'¹⁵⁸

All the graphs below are the analysis of the form factors of Nokia mobile phones from 1994 to 2005, and it is analyzed according to the form factors of two separated groups. The analysis based in the more important form factors among those two groups regarding the form of phones. In addition, the 3rd form factor is additionally analyzed for the period of 2001 to 2005 because the function of a camera has been added and the size of display has been enlarged since 2001.

Moreover, the form factors, which are importantly related to the form of mobile phone among 1st, 2nd and 3rd elements, are selected and analyzed. (For a definition, see a chapter 4.3.4)

¹⁵⁸ Hyun Kim, A Study on Form Trend, The Federation of Korean Industries, 2001, pp 86-100, 107-109, 143-145

Here each form factor sets a reference point and it can be differentiated according to the degree of + (increase) / - (decrease) inclination.¹⁵⁹ The X-axis indicates the year and the Y- axis indicates the increase and decrease of inclination to each form factor.¹⁶⁰

1) Curve increases in tendency to its highest point in 1998 followed again by a gradual decrease. After 1998 Nokia mobile phones have defined form with decreased curve and after 2000, curve increases again in tendency to its highest point in 2003 followed again by a gradual decrease. It is analyzed that the organic and soft trend caused the curve in 2003.

Although curve in 2001 and 2005 have the same position in the graph, mobile phones in 2001 looked harder than those in 2005 and in 2005 mobile phones have a form with round edges, so mobile phones in 2005 look softer than those in 2001.

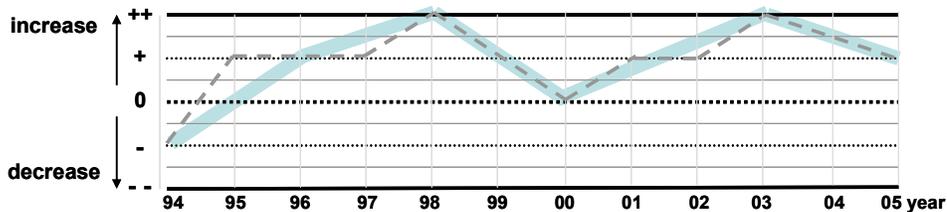


Figure 5-26 Changes of curve of Nokia mobile phones from 1994 to 2005

2) Length decreases gradually from 2003. Mobile phones seem to be getting smaller and shorter.

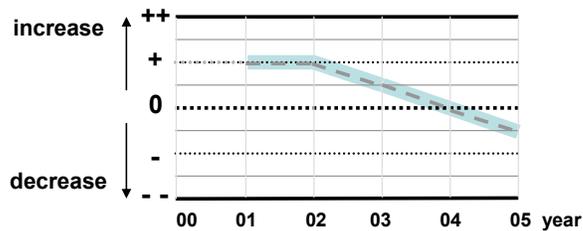


Figure 5-27 Changes of length of Nokia mobile phones from 1994 to 2005

This graph in Figure 5-28 shows a change of actual length. According to technology and need of consumer, length decreases every year.

¹⁵⁹ Hyun Kim, A Joint Research between Corporations on Industrial Design / The Federation of Korean Industries, 2001, p136

¹⁶⁰ Reference point and analysis of form factor are decided from the discussion with 5 professional product designers.

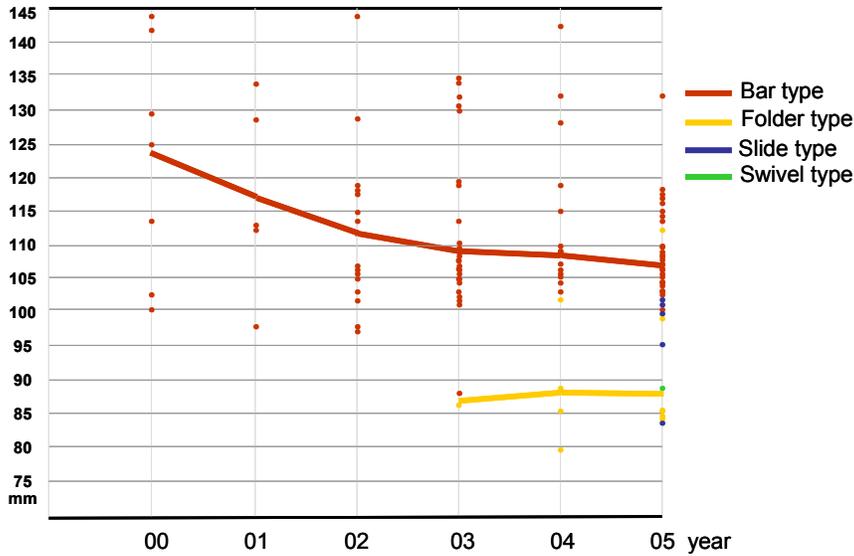


Figure 5-28 Changes of actual length of Nokia mobile phones from 2001 to 2005

3) Thickness: Lower than average. Accordingly, as technology developed, thickness of mobile phones gradually decreased. But from 2000 the whole size of mobile phones reduced and it made mobile phones look relatively thick. Also in order to get stability thickness increased in 2000. After 2000 there is a downwards tendency (-) to the lowest point in 2004. In 2005 it increases in tendency. Explaining why mobile phones in 2005 become smaller and more compact and then thickness relatively seems to decrease.

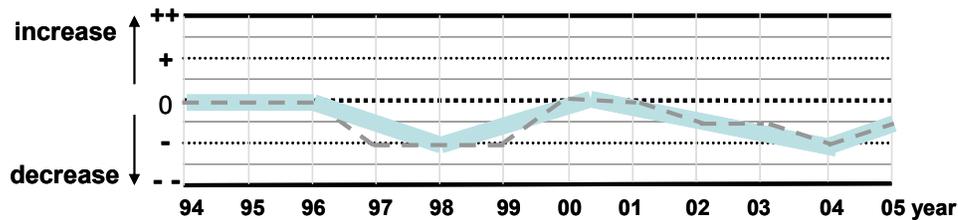


Figure 5-29 Changes of thickness of Nokia mobile phones from 1994 to 2005

The graph in Figure 5-30 shows actual thickness of mobile phones. It also decreases and in 2005 increases again.

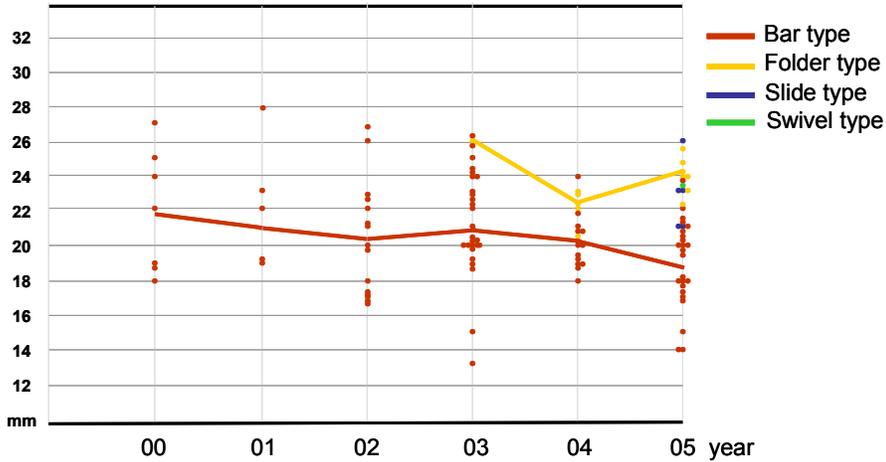


Figure 5-30 Changes of actual thickness of Nokia mobile phones from 2001 to 2005

4) Weight decreases from a + tendency and increase increases again from 1998 to 2001. From 1998 Nokia Mobile phones look heavy and so through this trend to have a solid image. After 2001, weight decreases every year. Its relation is opposite to 'curve'

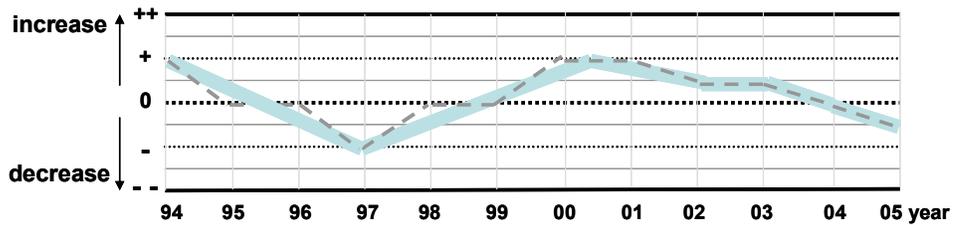


Figure 5-31 Changes of weight of Nokia mobile phones from 1994 to 2005

The graph in Figure 5-32 shows that actual weight also decreases at first and then in 2005 increases again.

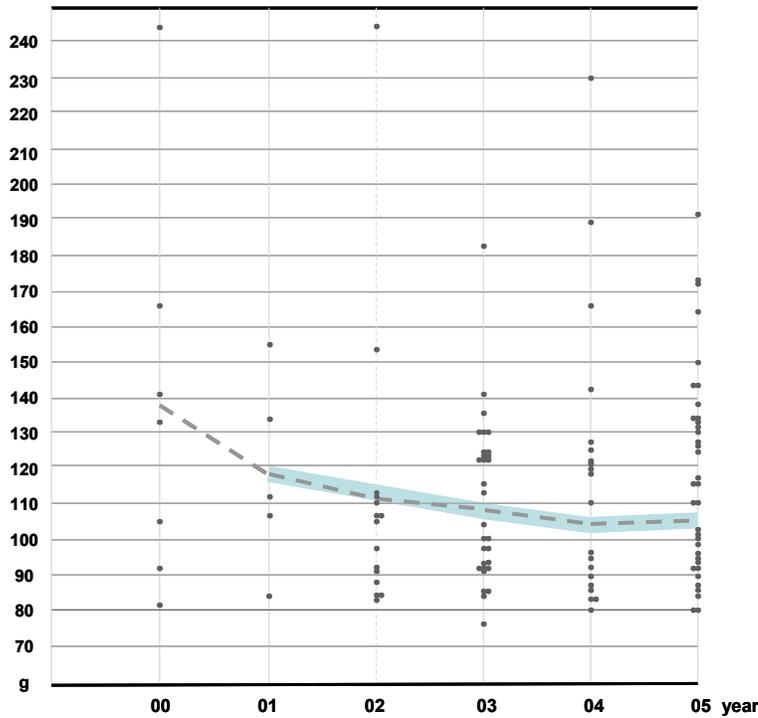


Figure 5-32 Changes of actual weight of Nokia mobile phones from 2001 to 2005

5) Volume, massiveness: From 1998 it increases in tendency to its highest point in 2003 followed again by a gradual decrease. Mobile phones in 2003 are the most round and have curved form. Compact and voluminous mobile phones were main products from 1998 to 2003 but they have been simple and less voluminous since 2004.

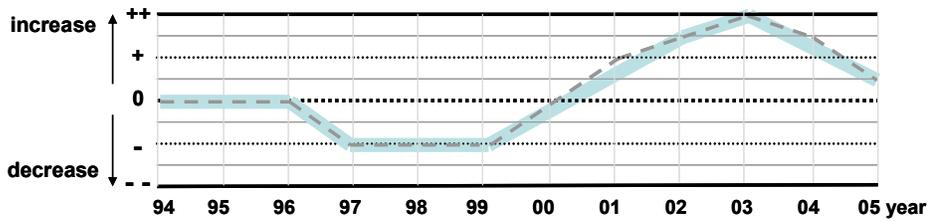


Figure 5-33 Changes of volume of Nokia mobile phones from 1994 to 2005

6) Complication, complexity: From 1994 to 2003 it changes from a – tendency to a + tendency. Accordingly as Mobile phones have many function buttons and become to be various, complication changes to a + tendency. After 2003 it gradually decreases. By 2003 mobile phones have complicated form because of newly developed functions, but form from 2004 becomes simpler.

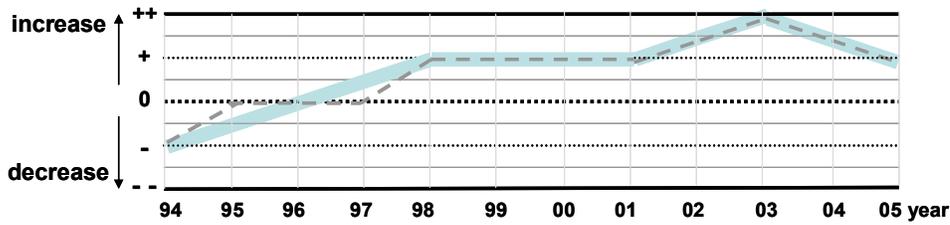


Figure 5-34 Changes of complication of Nokia mobile phones from 1994 to 2005

7) Emphasis, accentuation: It increases from a – tendency. As mobile phones become complicated, Nokia tries to emphasize a specific part of form.

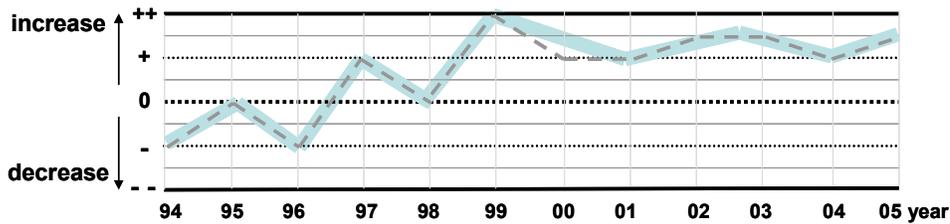


Figure 5-35 Changes of emphasis of Nokia mobile phones from 1994 to 2005

8) Stability: Higher than average, an upwards tendency (+). Nokia Mobile phones maintain stability above the average.

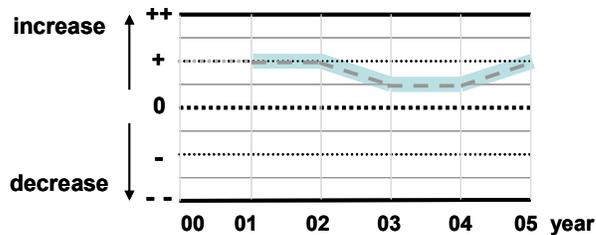


Figure 5-36 Changes of stability of Nokia mobile phones from 2001 to 2005

9) Defined form: Higher than average. Generally Nokia maintains Defined form. It repeats increase and decrease. From 2004 Nokia mobile phones have defined form without adornment. In 2005 it reaches the highest point.

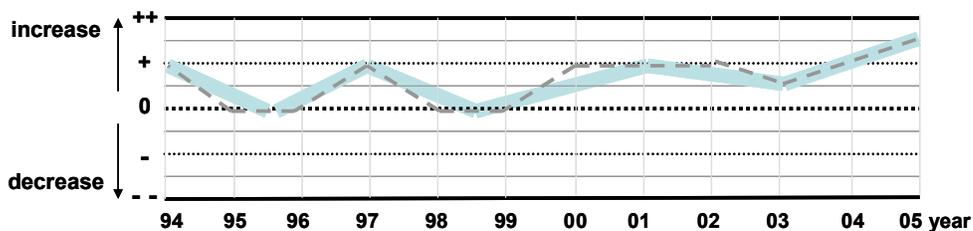


Figure 5-37 Changes of defined form of Nokia mobile phones from 1994 to 2005

10) Size of Display

Nokia, which had mainly produced bar type till 2003, released 5 to 6 lines LCD because of the space limitation of bar types in 2001 to 2002, and presented an 8 line LCD in 2003 because LCD was more enlarged. 35 x 41mm LCD was mainly produced because LCD window was still further enlarged in width as well as in length with the production of folder types in 2004 to 2005.

LCD is gradually enlarges because of advanced technology, game, various functions such as Email, consumer's desire for big LCD, separation of LCD from keypad with production of folder type, and so forth.

11) Form of Keypad

Keybuttons had been applied in a soft and smooth curve like  by 2002 and number buttons were independently arranged. In addition, the form of button was various such as parallelogram, oval, triangle, and so on. After 2002 keypad with the same smooth curve before 2002 appeared again with a square pattern keypad.

Besides, the keypad was mostly arranged with square button in 2004 and it had a slope on every keybutton in order to make it easy to put the button because the square buttons were adjacent to each other. Furthermore, sometimes, there was space between the lines.



Figure 5-38 Smooth curve and separated keybutton of Nokia mobile phone before 2002 (Left) Square keybutton in check of Nokia mobile phone from 2002 to 2003 (Center) Nokia's keybutton in 2004 – space between lines (Right)

12) Size of Keypad

The phone keypad of Nokia phone was relatively small because it was separately arranged before 2002. In addition, the main product was a bar type which had limited space for keys before 2002.

Since then, keys were arranged in check side by side and there was no empty space with relatively big keys.

To sum up, it is shown through diachronic analysis that Nokia made changes in form in 1997 and 2003.

There had been no curve in Nokia mobile phone for the emphasis of function until 1994 but it has shown in the design in fashion following personality since then. They completed the first prototype of Nokia mobile phone in design from 1994 to 1997. The Product Identity of systematic form and colorful variety in the design of Nokia mobile

phones were completed in those years. Since then, more classified design has been introduced for all users' tastes.

Nokia applied volume to its phone to make it soft and structural and the point of volume has been gradually emphasized every year for volume and compactness. Nokia continues to show stability and defined form as well.

Nokia design changed in form in 2003 once again. Whereas its design distinction was the increase in volume with curve and complication for the emphasis of a particular part before 2003, Nokia tried to make the increasing complication of new functions simple and clean after 2003. Besides, it increased stability with standardization and avoided the complication of form with decrease in curve and volume.

The most distinctive point of Nokia is to continue Family Look in spite of partial change of form elements. Its mobile phone from 1998 to 2003 emphasizes the frame of a U shape around a LCD with different materials and keybuttons with a smooth curve are independently separated and placed under the display. "Many Nokia products have had a typical key structure of four clearly visible horizontal lines"¹⁶¹ Function key is mostly included within the display space.

Nokia started to change its Family Look from 2004 because of producing various types of mobile phone, increasing importance of the function key according to various functions, making simple form contrasting with functional increase, and so on. At first, Nokia separated the function key from number buttons because of an increase of importance between number with function key (therefore, LCD, function key and keypad are generally divided). Moreover, Nokia standardized display into square/rectangle form and tried to remove curve in order to avoid complication as other elements were added. That is, it emphasized high technology and function-focused with square patterns to avoid complication, and overall expressed simple and hard feeling. Nokia's Family Look is applied to other types such as bar, folder and slide.

	- 1997	1998-2003	2004-2005
Feature	Early Development Establishment of Form	Softness with Volume	Simple with Technology
	- Structural image with increase of curve - Mid-level Volume - Complicated with various form	- Decrease in curve in 2000 like before 2000, increased curve after 2000 - Rapid increase in volume for massive and compact feeling - Keep definite stability - Keep defined form	- Decrease in curve for hard image - Decrease of volume for high-tech image - Decrease in complication for simple image - Keep definite stability - Increase of defined form for stability and simple

¹⁶¹ Toni-Matti Karjalainen, *Semantic Transformation in Design*, University of Art and Design Helsinki, 2004, p 175

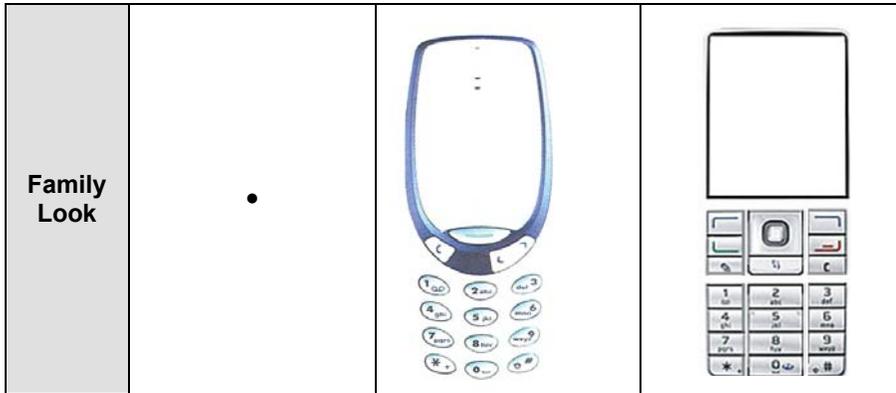


Table 5-9 Feature of form analysis of Nokia mobile phones

5.1.2.3.2 Synchronic Analysis

The form of Nokia's top mobile phone models from 2005 to 2006 will be analyzed based on space and the Product Identity of the mobile phone models will be examined. It is hard to say whether the formal Product Identity of the mobile phone models represents identity of all product groups.

1) Nokia mobile phone: 6230i

Nokia 6230i is from the classic business series and belongs to the Broad Appeal business unit, which focuses on mid-range products where the balance among price, functionality, and style are keys.

In 2005 Nokia released an updated 6230i model which includes a 1.3 megapixel camera, 208×208 pixel screen resolution, a slightly larger display, and a raised selection button in the midst of the scroll key.¹⁶² 6230i is a classical construction of a mobile phone with an unobtrusive design.



Figure 5-39 Four views and curve of front view of Nokia 6230i

¹⁶² http://en.wikipedia.org/wiki/Nokia_6230i

Source: Inside Handy (www.inside-handy.de) and GSM Arena (www.gsmarena.com)

Curve and volume: It has volume with the line around body and curves on top and bottom side. Though the angle of curve is not high, it looks active with proper curves.



Figure 5-40 The curve of Nokia 6230i

Source: Inside Handy (www.inside-handy.de) and GSM Arena (www.gsmarena.com)

Length: Its dimensions are 103×44×20 mm and it fits into the category of the small ones. Length looks relatively long because of the short breadth.

Thickness: It has reasonable thickness relative to length and breadth, and whole form and volume.

Weight: It weighs 99g and it can still be considered a medium-heavy phone. The covers are plastic, but its surface design resembles metal. So it seems a little bit heavier than it is in fact. In addition, it has volume and it looks light with less massiveness.

Complication: Complication of form can not be found, because emphasis and changes of form are little.

Stability and defined form: It has relatively low stability and defined form because of little activity caused by curves.



Figure 5-41 Camera lens legend on the back (left) 30×30 mm Display (right)

Source: Inside Handy (www.inside-handy.de) and GSM Arena (www.gsmarena.com)

Emphasis: The form of the camera lens is emphasized and the curve of the sides are emphasized as well.

Size of display: It is slightly bigger - it is 30×30 mm compared to old Nokia mobile phone models 27×27 mm. Although it is perceptible, some of the competitors have much bigger displays.

Keypad: The Keypad of Nokia 6230i is identical and easier to control. It has an accentuated confirm button. The keys are made of solid plastic

that are just brilliant. The middle column is twice as wide as the side columns, but it does not disturb the controlling at all. Also, each key is inclined, so a user can type easily.



Figure 5-42 The keypad of Nokia 6230i

Source: Inside Handy (www.inside-handy.de) and GSM Arena (www.gsmarena.com)

The keys' distribution has not changed. Under the display there are two function keys. The left one is reserved for the Menu with frequently used functions. The configuration can be changed by the user. As for the right one, it allows for selecting a quick choice among 27 functions.



Figure 5-43 The main button with the four function keys on as its sides

Source: Inside Handy (www.inside-handy.de) and GSM Arena (www.gsmarena.com)

2) Nokia Mobile phone: 8800

Nokia 8800 is a premium series and lifestyle products phone.



Figure 5-44 Four views and curve of front view of Nokia 8800

Source: Inside Handy (www.inside-handy.de) and GSM Arena (www.gsmarena.com)

Curve and volume: The phone looks compact and firm when closed. "Softly rounded forms - the organically rounded curves - made of stainless steel give the impression of flowing surfaces with a tension of

natural appearance.”¹⁶³ Soft and rounded curves can be seen at the bottom of Mobile phone and at the edge between upper side and a side. Even though general side lines are straight, 8800 has a soft and round image. Because of straight side lines it doesn't have much volume.



Figure 5-45 The curve of Nokia 8800

Source: Inside Handy (www.inside-handy.de) and GSM Arena (www.gsmarena.com)

Length: Phone's dimension is 107 x 45 x 15 mm. Straight side lines make the 8800 Mobile phone look longer than it is.

The Nokia 8800 is a phone with sliding construction and a user has to push down the cogged roller, which looks like a scroll button, in order to use the keypad.

Thickness: It looks a little bit thin and also real thickness (15mm) is thinner than with other mobile phone models. And Model 8800 looks long so it looks relatively thinner.



Figure 5-46 The thickness of Nokia 8800

Source: Inside Handy (www.inside-handy.de) and GSM Arena (www.gsmarena.com)

Weight: The whole body is made of steel and the result is the monstrous 134 grams. It's pretty heavy and it also looks durable, firm and heavy.

Emphasis and defined form: There is no noticeable emphasis on form. That's why model 8800 has a defined form and is simple.

Stability: The 8800 has defined form with soft and round edges and movement or changes on form cannot be found. It makes the 8800 model look heavy and stable.

Size of Display: Dimension of display is 31 x 31 mm and it seems rather small.

Keypad: The keypad is plastic and the buttons are placed where other phones usually have a display and this is due to the protrusion. The confirming button is tiny.

¹⁶³ <http://www.red-dot.de/>



Figure 5-47 The keypad of Nokia 8800

Source: Inside Handy (www.inside-handy.de) and GSM Arena (www.gsmarena.com)

3) Nokia Mobile phone: L'Amour 7360

In the beginning of 2006, Nokia presents a new product category, Lifestyle Products. This unit focuses on top-end products for consumers. The L'Amour series is one of fashionable and experimental style type. The L'Amour series presents a premium for high-quality in materials, design and features. Products launched by this unit tend to command higher prices.

The L'Amour series includes three mobile phone models; 7360, 7370, 7380.

It is all covered with flowers and has plenty of innovations. The size of the phone is 105x45x18 mm, which can be quite typical of today's phones.



Figure 5-48 Front view and curve of front view of Nokia 7360

Source: Inside Handy (www.inside-handy.de) and GSM Arena (www.gsmarena.com)

Curve, defined form and volume: The L'Amour 7360 has defined and square form but corners are round and edges at the bottom of are pretty round and soft. So, it can be said that it has a bit of curve. Also it doesn't have great volume, because whole form is mainly flat and has no changes in form.

Length: The L'Amour 7360 is a little wide and rather than looking long, it looks a bit short.

Thickness: It is 18mm thick and because of its width it looks much thicker.

Weight: The weight forms 92 grams, and because of its defined form it looks a little bit heavy.



Figure 5-49 Front and rear view of Nokia 7360

Source: Inside Handy (www.inside-handy.de) and GSM Arena (www.gsmarena.com)

Emphasis: Keypad is emphasized with distinguished form and curve, and the decorated projecting part of side is emphasized for the flat side line.



Figure 5-50 The emphasis of side line of Nokia 7360

Source: Inside Handy (www.inside-handy.de) and GSM Arena (www.gsmarena.com)

Complication: Complication of whole form cannot be found, because emphasis and changes of form are minute. But the keypad is complicated.

Stability: There's no movement or changes and it has defined form. It gives the L'Amour 7360 visual stability.

Size of display: Display's size is 29x36 mm and it is not so big.



Figure 5-51 The display of Nokia 7360

Source: Inside Handy (www.inside-handy.de) and GSM Arena (www.gsmarena.com)

Keypad: The keypad is made of plastic, which is rather rough by touch, and the keys are in relief (an eminence in the center, and a rim around it). The main button is comparatively small.



Figure 5-52 The keypad of Nokia 7360

Source: Inside Handy (www.inside-handy.de) and GSM Arena (www.gsmarena.com)

The Product Identity based on form elements of Nokia main mobile phone models such as 6230i, 8800, 7360 from 2005 to 2006 can be analyzed as follows in axis of space.

Form factor		Feature of Product Identity based on form elements of 6230i, 8800, and 7360
1st form factor (A)	A1: Curve	Fewer curves to connecting part between sides in the case of high curves in side line. Round effect to defined form such as a cube style for a certain level of soft image.
	A2 : Length	Generally looks a little long with regular ratio of breadth and length.
	A4 : Thickness	Reasonable thickness with regular ratio of breadth, length and thickness for whole body.
	A5 : Weight	Generally looks heavy because it generally looks stable.
	A7 : Volume, massiveness	Less volume with generally flat form of top part.
2nd form factor (B)	B1: Complication, Complexity	Generally less complicated except keypad.
	B6 : Emphasis, Accentuation	Emphasize particular small area in form to avoid flat and boring.
	B7 : Stability	Generally stable but 6230i has less stability.
	B8 : Defined form, Set pattern, Standard	Generally has defined form but 6230i has less defined form.
3rd form factor (C)	C2-2 : Size of Display	Good LCD size for mobile phone with almost 1:1 ratio in length and breadth.
	C3-1 : Form of Keypad	Slope or slant to button because of square button according to model.

	C3-2 : Arrangement of Keypad	Square button in line without curve between lines.
	C3-2 : Size of Keybutton	Relatively small keybutton except 6230i

Table 5-10 Feature of Product Identity based on form elements of Nokia 6230i, 8800, and 7360

Nokia takes a firm position in the mobile phone market through the systematic design strategy in consideration of users and its own form language.

As shown above, the change of Nokia's form factor is clearly divided into three parts and there are common points within each other. The most important distinctions are the stable curve and defined form in average, soft from general form and Nokia's distinguished Family Look.

Here soft is not from the simple increase in curve or volume but from harmony of general form factors, and thus the product with less curve of hi-tech and hard style has a certain level of softness. In addition, it tries to avoid extreme complication by control of change and variety of form within the limit of defined form.

The form represents Nokia's distinction very well in consideration of Product Identity and it makes a difference to other competitors. Nokia tries to change its form factor in consideration of general trend of mobile market and it shows its own product and keeps the consistency of its form language through the differentiation of form.

5.1.3 Summary of the Nokia case study

The distinction of Nokia mobile phone resulted from this case study can be summarized as follows.

Concerning design strategy, Nokia has a clear product category representing specified design to satisfy various users' desire and taste. In addition, the category is well classified in style and function to provide users with various products.

And also users want to express themselves through their mobile phones as the mobile phone represents an individual life style, taste and character, and it is more personalized. Therefore Nokia concentrates on design and produces mobile phones with various colors by making it more fashionable.

Fitting to the design strategy, Nokia creates its mobile phones in type, color, and form. Nokia led the bar type mobile market for a long time but it also concentrated on folder type from 2003 and slide type from 2005 to satisfy users' desire for various designs. It still, however, mainly produces bar type because it has taken a firm position in mobile market in the world (especially in Europe) by releasing various bar types and by itemizing bar type design.

The definite category affects the color plan of Nokia products and each image of category almost matches with the color image of the product of category. Moreover, Nokia provides users with many choices of various colors according to user classification.

Nokia changed its form in 1997 and 2003, respectively:

Before 1998, it was the early development period to establish form.

Curve gradually increased and volume takes mid-level. Nokia tries to apply a round image in volume. Complication is gradually increased because of an increase of various function keys and buttons as well as form change whereas massiveness is gradually decreased.

In 1998 to 2003, it was the period of form development and its distinction is softness with volume.

The softness of form is also increased and peaks again in 2003 because of conspicuous curve and volume appeared from 2001. Nokia releases experimental design form with soft curve from 2001. In addition, Nokia mobile phone keeps a certain level of defined form. As volume and complication as well as curve increase and decrease.

In the design from 2004 until now, Nokia covers complication and variety caused by advanced technology with simple form.

It tries to make up for complication caused by an increase in importance of the function button due to technology by decreasing curve and volume, and by defined form. It, however, tries to avoid a boring image by a certain level of curve in the connection area between sides or the whole body line. In addition, its defined form increases in stability while it decreases massiveness in order to make it look light.

It also developed family look, so from 1998 to 2003 it emphasized the border line of a U frame around the LCD with other material and made a

smooth curve. The individually separated keys affect the identity of Nokia design. Creating a recognizable family look of Nokia.



Figure 5-53 Nokia family look from 1998 to 2003

Source: Toni-Matti Karjalainen, *Semantic Transformation in Design*, University of Art and Design Helsinki, 2004, p 175

After 2004, Nokia produced various types of mobile phone. The importance of the function key is emphasized. Nokia Family Look changes from 2004 for a more simple form even though functions increase.

The importance of the function key increases and thus, is independently separated due to the increase (generally, it has three parts such as LCD, function key and keypad).

Nokia makes a defined form in the shape of a square/rectangle and tried to remove curve as much as possible. It emphasizes high technology and function-focused with square pattern to avoid complication, and overall expresses a simple and hard feeling. Nokia Family Look is applied to other types such as bar, folder and slide in common.



Figure 5-54 Nokia family look from 2004

Nokia takes a firm position in mobile phone market through the systematic design strategy in consideration of users and its own form language.

The form represents Nokia's distinction very well in consideration of Product Identity and it makes a difference to other competitors. Nokia tries to change its form factor in consideration of general trends in the mobile market and it shows its own product and keeps the consistency of its form language by the differentiation of form.

5.2 Samsung Case Study

Samsung case study has the same parallel structure of Nokia. Samsung case study also divided into two parts; design strategy of Samsung and analysis of Samsung mobile phones.

5.2.1 Design Strategy

5.2.1.1 Samsung Strategy

The purpose of Samsung Electronics¹⁶⁴ is to provide a customer with the easy, rich and enjoyable value and service by a leading Digital convergence and creating a new life style from customer's perspective and all management focuses on the business strategy (product), brand strategy (market), corporation culture (customer) and technology strategy (technology). In addition, the management is generally based on the catch phrase of 'information for customer' for the philosophy and management from customer's perspective, 'best mind' for the core business, 'cooperative spirit' for the harmony with the community and culture and 'creative spirit' for flexibility, challenge, open culture in order to realize the vision of 'the corporation leading the innovation of digital convergence.'

As an example, Samsung Electronics held digital collection to suggest 23 concepts and life scenarios for the future product in anticipation of user's life style according to the change of future environment by the digital innovation in order to try actively to discover the new product area and market opportunity as well as the existing market through design. The major strategy of Samsung Electronics is as follows.

1) Global Brand Strategy

Samsung Electronics strongly pushes on with brand strategy by CEO's emphasis on the importance of brand. It made a master plan for the importance of brand in 1996, understood that the design is the core motive for the brand power and promoted not only brand but also design as well.

2) Assign Identity Program

Samsung Electronics basically defines the concept of Product Identity as Intuitive (the design intuitively understood by user), Identifiables (the unique design of Samsung Electronics), Creative Lifestyle (design to create a new life style) in order to deliver its vision and philosophy in communicative language and build corporation image creating brand value by product design. Besides, they apply the concept of Simplicity and Resonance to make a product easy to understand and convenient to use through visual positioning strategy in a specific project.

They established the interface of product use, the compatibility of product technology and human experience in the process of visual positioning, and in the case of product of the global market they built network centers around the world for the basic data including the local market condition and cultural information which a designer can effectively use through user's form and technology application.

¹⁶⁴ Samsung Design Guideline, Samsung Electronics, 1999, pp 4-10

5.2.1.1.1 Samsung's Analysis of Trend & Customer¹⁶⁵

As shown in Table 5-11, Samsung classified the customer according to their lifestyle based on the keywords from the analysis of mega trend about the product and society.

They defined five keywords of mega trend based on the changes of product, personality and lifestyle: progressive, feeling, neo-rational, environmental and communal.

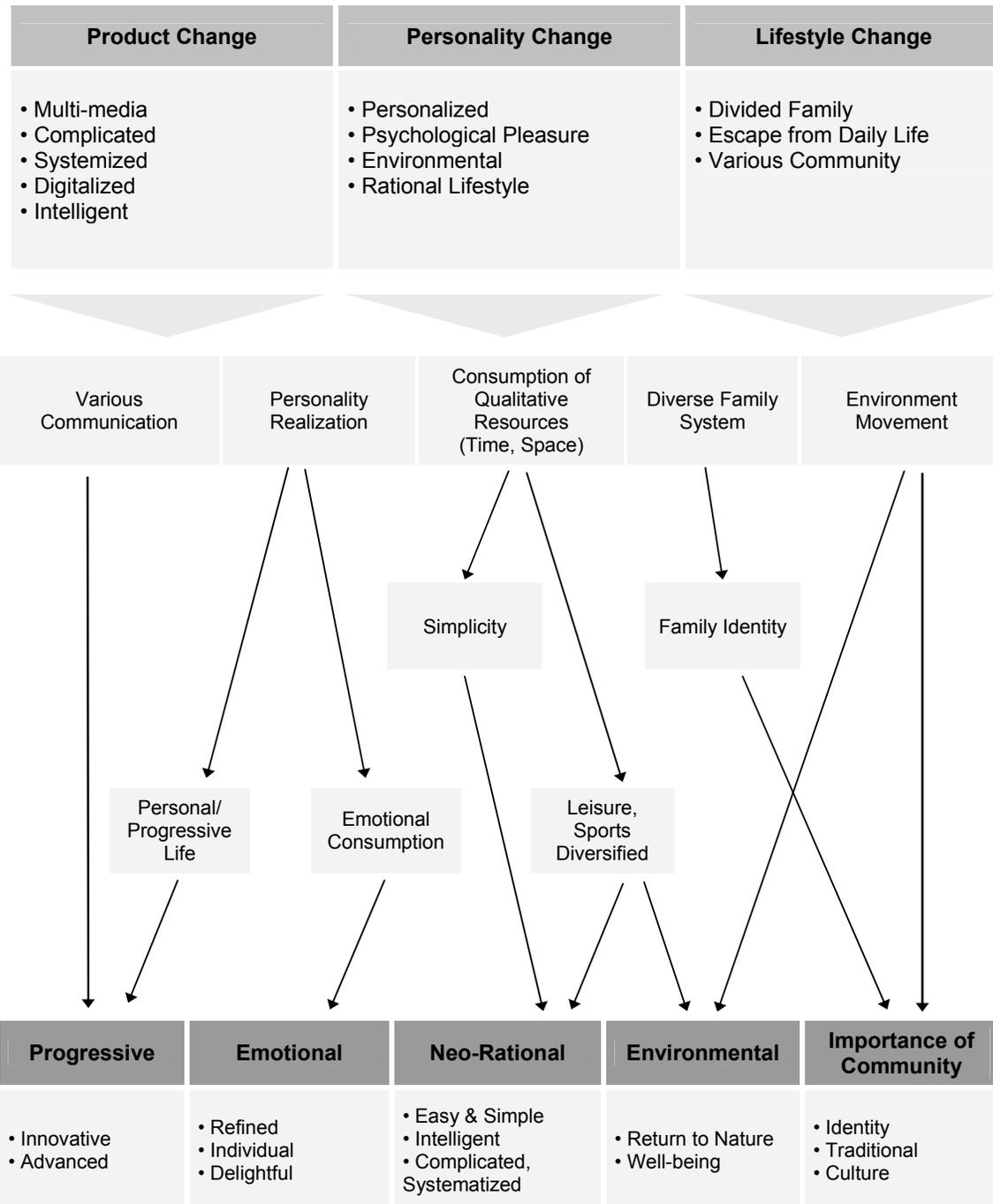


Table 5-11 Analysis of trend of Samsung

¹⁶⁵ Ibid., pp 11-15, 20

Source: Samsung Design Guideline, Samsung Electronics, 2002, p 11

The Table 5-12 shows customers into 5 groups according to their lifestyle by Samsung.¹⁶⁶

- The Techies, at first, focus on hi-tech and like innovative and advanced design. They are expected to be the core consumers in the near future and the number of those consumers is gradually increasing at present.
- The Opportunists are attracted to the electronics but they rationally buy them from the point of service and use.
- The Expeditors are now major customers with the Opportunists.
- The Resistors are against technology and categorized in 40s and 50s who hesitate to buy a product until they have a great decision.
- The Unconnected are a group of people who irregularly buy just a product with simple function.

Group	Lifestyle/Value Standard	Job	Market Scale	Age	Etc.
The Techies	<ul style="list-style-type: none"> • Hi-Tech • Consumption • Prefer Advanced Design and buy Innovative Product 	Professional Manager Students	20%	Early 10s - Early 30s	<ul style="list-style-type: none"> • Core Customer in the near future • Market size is getting larger
The Opportunists	<ul style="list-style-type: none"> • Stable, Independent Life • Attracted to Electronics but Prefer Service, Use, Effectiveness • Rationally buy 	Manager	22%	30s - 40s	<ul style="list-style-type: none"> • Major customer at present
The Expeditors	<ul style="list-style-type: none"> • Family Man • Practical • Carefully buy • Buy a product with high awareness 	Various jobs	25%	40s	
The Resistors	<ul style="list-style-type: none"> • Focus on Human value • Negative to technology • Sociable • Buy a product in full secure • Buy a product with high awareness 	Various jobs of low income	18%	40s - 50s	
The Unconnected	<ul style="list-style-type: none"> • Indifferent to the change of society • Prefer leisure • Irregular purchase • Buy a product with high awareness and simple function 	Low Income Part timer Jobless	15%	All ages	

¹⁶⁶ Ibid., p 20

Table 5-12 Customers of Samsung

Source: Samsung Design Guideline, Samsung Electronics, 1999, p 20

5.2.1.2 Guide and Design Philosophy of Samsung Electronics

The purpose of design management in Samsung Electronics is 'to lead the change and to show the corporation vision.' For this purpose Samsung Electronics declared 'Year of Design Innovation' in 1996 and tried to manage a strategy for design. They avoided the subsidiary function of design in the product development and they applied it to the leading management strategy which increases the brand value and establishes the corporate image in connection with the Samsung brand strategy.

Samsung Electronics introduced the concept of 'Smart & Soft' to imply the social-cultural value and meaning of the balance of reason and feeling from customer perspective. Likewise, the design guide includes the key words drawn from customer needs and the mega trend of social change, and the comprehensive terms of design in balance of reason and feeling as a key principle for design activity.¹⁶⁷

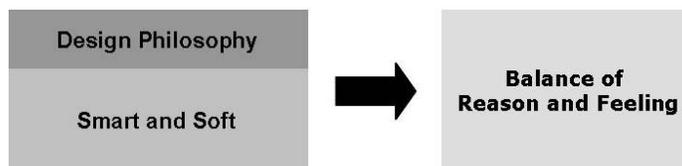


Figure 5-55 Design philosophy of Samsung

Source: Samsung Design Guideline, Samsung Electronics, 1999, p 14

In addition, Samsung set up a design guide with the key words drawn from customer needs and the mega trend of social change, and the comprehensive terms of design including the design concept of 'Smart & Soft.' It is summarized into 6 concepts as follows.

1. Lifestyling, which means to create a new lifestyle, is to experience future multimedia and information technology.
2. Innovative includes the new idea, new concept and new material which are beyond the user's expectation.
3. Coherence means to feel dignity.
4. Harmony includes the size, weight, color, systematic in consideration of the environment of user and nature.
5. Intuitive means to understand easily without explanation and it includes the clear expression of concept, and Easy & Simple concept.
6. Interactive is to communicate with a user and it includes the concept of texture or touch, human interface and convenience, and so on.

¹⁶⁷ Ibid., p 14

Design Philosophy		
Principles	Descriptors	Alternatives
Lifestyling	Perceive & comprehend lifestyle trends	<ul style="list-style-type: none"> • Refined • Forward • Desirable • Modern
Innovative	One step ahead	<ul style="list-style-type: none"> • Innovative • Advanced • Inventive, Pleasant • Novelty
Coherence	Consistency & variety	<ul style="list-style-type: none"> • Identifiable, Integrity • Maintaining • Samsungness • Uniquely Samsung • Samsung – like • Versatility, Elegant
Harmony	Harmonize with environment	<ul style="list-style-type: none"> • Fitting • Perfect Fit • Appropriate • Holistic
Intuitive	Agreeable use & meaning	<ul style="list-style-type: none"> • Talking Design • Friendly • Straightforward
Interactive	Design for experience	<ul style="list-style-type: none"> • Fun • Delight • Pleasing

Table 5-13 Design philosophy and design principle of Samsung

Source: Samsung Design Guideline, Samsung Electronics, 1999, p 14

5.2.1.2.1 Image Position of Samsung Electronics

Samsung Electronics regards its general image position as follows.

The comparatively good points are

1. Hi-Tech technology
2. Young, Luxurious and Modern Image
3. New and Innovative
4. Rational

These four concepts stated above can be combined into one word, Smart.

5.2.1.2.2 Product Identity Positioning of Samsung Electronics

The Product Identity of Samsung Electronics is continued by using product positioning and it is positioned based on the image map of the concept of simple, complex, feeling and reason. The strategy of the visual positioning of Samsung identity is as seen in Figure 5-56¹⁶⁸.

¹⁶⁸ Design Magazine, 'Identity War', 2002, p 88-89

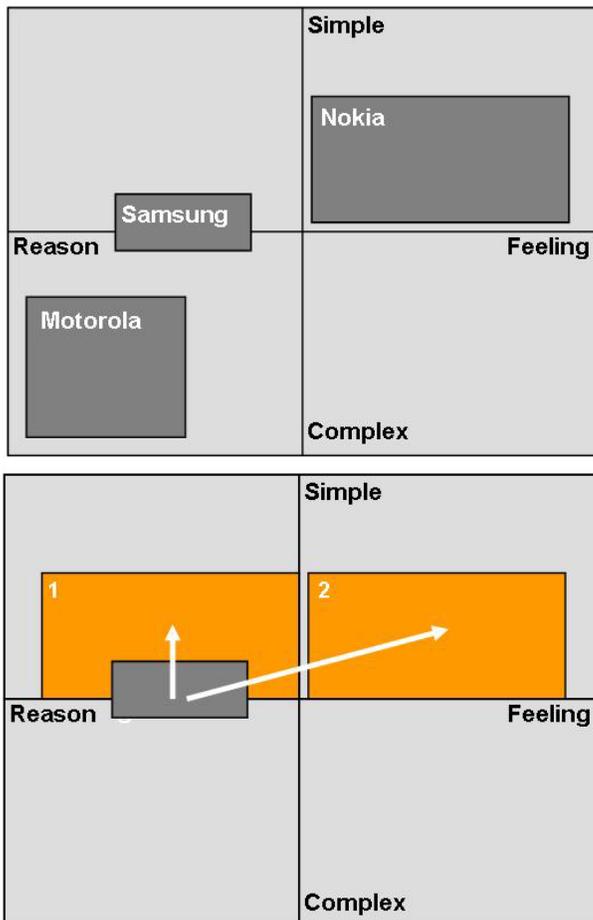


Figure 5-56 Product Identity positioning of Samsung (the top), Visual direction of Samsung

Source: Design Magazine ,Identity War', 2002, p 88

The image of Samsung mobile phone is converged on rationalism in the aspect of the present, future and strategic technology. The wireless group is largely divided into two groups such as high-end group and mass group in Samsung visual positioning. The high-end group leads the image to strengthen the image of Samsung technology and to make the brand image more luxurious. The mass group is the middle-high product group to secure the public for profitability as the market leading group.

“Samsung spent a lot of efforts to strengthen the design identity contacting a customer. The visual strategy program created the distinguished and unique design of Samsung and, moreover, it is programmed for specializing Samsung products through design. Samsung’s direction of design is the philosophy of customer first and rational process of thinking ahead. Additionally, the simplicity is emphasized for the customer to use and understand easily but it is also concerned to evoke a visual curiosity when it is use.” says Hyunjoo Song, Senior designer, in the Design Identity Group of Samsung¹⁶⁹

¹⁶⁹ Ibid.

As shown in Figure 5-57, development of Samsung's Product Identity continues by using Product System Design (PSD), like development of other elements of Corporate Design: Visual Communication Design (VCD), Space Design (SD), and Cyberspace Design (CSD).

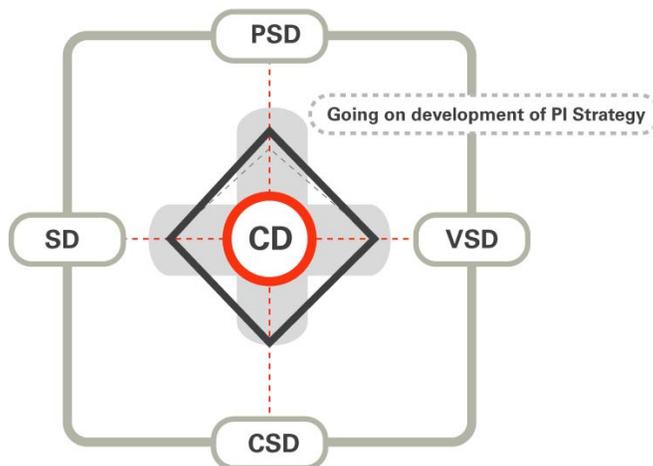


Figure 5-57 Product Identity strategy of Samsung

Source: Young-Gul Gwon, A Study of Strategic Model of Corporate Design for Improvement of Corporate Competitiveness in Korea, Ministry of Commerce, Industry and Energy, 2000, p 270

The process of the Product Identity in Samsung Electronics is divided into three phases: Phase 1 (1996-1998), Phase 2 (1999-2001) and Phase 3 (2002-). Phase 1 focused on family looking by shaping and the phase 2 built the systematic process to separate the internal and external elements for the product value. Finally, the ultimate purpose of the phase 3 has focused on creating business culture globally professionalized and strategized. Identity is the cultural value that a corporation or a product can consistently achieve for a long time. Therefore, the distinction of Samsung Electronics identity is to consistently manage the tactical and strategic policy and program in connection with the perspective of business by rather macroscopic identity for creating a new cultural value than microscopic attempt.

5.2.1.3 Design Principle of Samsung Electronics

Samsung mobile phone – New Digital Leader

The Samsung mobile phone is intended to acquire the visual consistency providing user with the trustworthy usability. Accordingly, the direction of identity concerning Samsung mobile phones is not to define the enforced image by fixing the form of all products. It does not enforce the user to get the fixed image for the consistency but rather tries to lead the user to remember the image and to be aware of it as a language for a long time. For this reason, Samsung mobile phone is defined within the integrated identity of Samsung design and gets the flexibility according to the market condition at the same time. This means that many models are beyond the simple integration and are applied to the global market for the purpose to provide more advanced identity. The individual direction applied to a product is to make a high price

product with high quality, luxurious material and perfect detail. Then the product is revised in the visual consistency by user interface or GUI but the customer feels the same identity from Samsung mobile phone. The consistency, however, is not unconditionally applied but it is represented in the differentiated consistency from the effective distinction of each family product.

5.2.1.3.1 Image of Samsung mobile phones

Samsung Electronics analyzed the customer's needs for its mobile phones by questionnaire.¹⁷⁰ The two key words can be defined from customer's needs: Hi-Technology & Advanced, and Easy & Casual, both shown in Table 5-14. Furthermore, the customer wanted that the design to express visually the function and technology. In general, they wanted the mobile phone to be fun, simple, easy, convenient, natural and harmonious according to the research.

Mobile Phone	
Hi-Tech. & Advanced	Easy & Casual
<ul style="list-style-type: none"> • Convenient • Hi-Technology • Luxurious • Modern • Futuristic • Multi-Functional 	<ul style="list-style-type: none"> • Easy • Simple • Bright • Young • Fast • Light

Table 5-14 Image the customer wants for mobile phones

Source: Samsung Design Guideline, Samsung Electronics, 1999, p 8

Samsung has developed the direction of image for mobile phone by customer's needs. The direction is established in the same way that the customers basically want. The detail image of each key word is as follows.¹⁷¹

Key Word	Detail Image
Hi-Tech. & Advanced	<ul style="list-style-type: none"> • Expressing High-Technology • Leading Change • Ahead of Trend
Easy & Casual	<ul style="list-style-type: none"> • Simple • Convenient • Small & Compact • Light & Slim

Table 5-15 Image for Samsung mobile phones

Source: Samsung Design Guideline, Samsung Electronics, 1999, p 8

¹⁷⁰ Samsung Design Guideline, Samsung Electronics, 1999, p 8

¹⁷¹ Ibid.

5.2.1.3.2 Product Categorization

The categorization of Samsung is classified according to the style or megapixel of mobile phone. In addition, the higher the number of mobile phone, the closer it is to premium phone. The product category below, however, has some exceptions. Moreover, it is more limited compared with that of Nokia because it has no categorization related to function.

Model No.		Ultra	Supra			Extra	
		Premium	Performance	Style	Youth	Mass	Color
		•	2-5 Megapixel	1.3-2 Megapixel	VGA 1.3 Megapixel	Entry VGA	Non-Camera
Bar type	100						
	200						
Folder type	300						
Slide type	400						
	500						
	600						
Folder type	700						
Slide type	800						

Table 5-16 Product categorization of Samsung

Source:

http://de.wikipedia.org/wiki/Samsung_Electronics_Telecommunication_Network, Samsung website(www.samsung.com)

The models of blue area of Table 5-16 are the ones in categorization.

D series is in Deluxe Category which tries premium image and it produces only slide type of model number 400 to 600. The models with high function are in this category.

E series is in Style category and it is composed of stylish models. Also it includes the folder type of model number 300 and 700, and the slide type of model number 800 at the same time.

X series is almost all folder type and it is widely spread from 100 to 800 and thus it is not in the above product category. It is also the most popular category as a standard model for young users.

C series is in Classic category and the bar type mobile phone from 100 to 200 is included in this category which has class and basic image.

The product category of Samsung product is not clearly divided according to style and function as that of Nokia, and the model number

confuses because Samsung changed a rule to classify the type of early mobile phones.

5.2.2 Analysis of Samsung mobile phones

5.2.2.1 Type Analysis

The type analysis of Samsung mobile phones, like the type analysis of Nokia, is divided into two parts, the diachronic and the synchronic analysis.

5.2.2.1.1 Diachronic Analysis

Mobile phone design has continuously changed with newly added functions. Especially Samsung concentrates on producing new products with new functions because of the distinction of Korean market where the cycle of mobile phone change is relatively fast as a new model is rapidly released compared with other countries.

First, it will be evaluated what kind of mobile phone type Samsung mainly produces and how the type affects Product Identity of Samsung. At first, the percentage of each product type of mobile phone is as follows.

Unit: % Percentage

Type Year	Bar / Flip type	Folder type	Slide Type	Swivel Type
1994-2000	97,7	2,3	0.0	0.0
1998	96.8	3.2	0.0	0.0
1999	71.4	28.6	0.0	0.0
2000	56.8	43.2	0.0	0.0
2001	25.5	74.5	0.0	0.0
2002	10.5	84.2	5.3	0.0
2003	9.7	80.6	9.7	0.0
2004	6.1	65.1	27.3	1.5
2005	11.4	41.8	43.0	3.8

Table 5-17 Type of Samsung mobile phones¹⁷²

Source: Samsung website (<http://www.samsung.com>) and GSM Arena (www.gsmarena.com)

As shown in the above table, the main product type of Samsung is folder and slide but Samsung recently concentrates on the slide type because Asian people think folder type is going out of fashion. In addition,

¹⁷² Flip type mobile phone is a kind of bar type mobile phone so it can be included in bar type mobile in the Table 5-17.

Samsung prefers more advanced slide type because it desires for premium image.

Users' preferences for folder or slide types show the culture and trend of Asia, especially in South Korea or Japan. First of all, using mobile phones in public, such as on the street, in a restaurant or in the subway train, is more common and accepted than in Europe where making a phone call on a bus, for example, may be considered as an impoliteness. Asian people spend a lot of time on calling, sending text messages, playing games, taking photos and so on, and mobile phones became living appliances to them. "The number of Mobile phone users in South Korea is predicted to reach 39.43 million, 81 percent of the population, by 2008."¹⁷³ And also Korea and Japan "have the best cellular service and the biggest choice of phones in the world."¹⁷⁴ It shows how important the mobile phone is to the Koreans and Japanese and how much they are interested in mobile phones.

Samsung prefers products led by technology under the influence of trend and taste of the US, seeking for fast change, and it started to produce folder type mobile phones from 1998 and slide type from 2002.¹⁷⁵ That is, Korean consumers' rapidly changing desire and the design mind of Samsung influence on producing continuously new products.

On the other hand, Samsung also partially produces also bar type to target the European market because it is possible to put many functions to a slim bar type due to the software development of technology.

5.2.2.1.2 Synchronic Analysis

Samsung mainly produces folder type and slide type whereas Nokia concentrates on bar type, and recently slide has become a main type of Samsung mobile phone.



Figure 5-58 Samsung SGH-D500, SGH-D600, and SGH-D800

Source: <http://www.samsungmobile.com> and GSM Arena (www.gsmarena.com)

Many people think bar type mobile phone is out of date in function and fashion because the Korean market especially has very short IT cycle comparing to European market (Korea releases new products very fast

¹⁷³ Henrietta Thompson, *Phone Book*, Thames & Hudson, 2005, p 60

¹⁷⁴ *Ibid*, p 56

¹⁷⁵ *Ibid*

as it has a very fast cycle of mobile phone change). So it can be said that Korean consumers' rapidly change desire and the design mind of Samsung influences on the continuously new production.

In addition to that, the main strategy of Samsung is to promote the premium, and it makes the plan of function and price with premium strategy. Bar type mobile phones; however, are not appropriate to the strategy. In order to achieve the premium strategy, new functions must be put into a mobile but the more new functions are put into bar type, the smaller LCD gets in bar type compared to slide or folder type mobile phone. That's why Samsung tries to avoid producing bar type.¹⁷⁶

In comparison to the folder type mobile phones, the upcoming slider type mobile phones offer an easier and more comfortable way of operating whereas the advantages are one and the same - a possibility to use big display and comfortable keypad in a small phone. The users prefer slide to folder type because of the comfort in use.

So now, Samsung changes its mobile strategy into a new 'Slim' strategy with new products as Motorola releases 'Razor' Slim. Samsung also applies the slim strategy to bar type while it produces not only slide or folder type but also bar type which is popular on European market. It is because it has recently become possible to put many functions to a slim bar type due to the software development of technology and the bar type is steadily sold in Europe market as well.

As it is mentioned in the above analysis of Nokia type, it is hard to define Product Identity through types because a type is the result of technology. When we say Samsung represents slide mobile phone type it is not recognized by Samsung Product Identity but generally recognized by leading the market with one distinguished type. Therefore, Samsung Product Identity cannot be expressed through the mobile phone type.

¹⁷⁶ Interview with Designer from Samsung, Sep, 2005

5.2.2.2 Color Analysis

The color analysis of Samsung mobile phones is, like the color analysis of Nokia mobile phones, divided into two parts, the diachronic and the synchronic analysis.

5.2.2.2.1 Diachronic Analysis

In the following part, it is going to be evaluated how important the color to Samsung's Product Identity. This is the second important element of Product Identity. Also, how Samsung establishes Product Identity through color will be also examined.

The relation between the identity of Samsung and color will be analyzed by the following color analysis.

At first, the percentage of color in Samsung mobile phones is shown in Table 5-18.

Unit: % percentage

Color	Black	Silver	Gray	Plum	Red	Green	Blue	White	Orange	Gold	Pink	Bronze
Year												
1994-1997	47.8	23.7	11.3	0.0	2.7	0.0	3.3	0.0	0.0	2.2	0.0	0.0
1998	32.1	14.3	14.3	0.0	7.1	0.0	3.6	3.6	0.0	25.0	0.0	0.0
1999	35.8	21.4	21.4	0.0	0.0	0.0	0.0	7.1	0.0	14.3	0.0	0.0
2000	6.4	32.3	19.4	0.0	3.2	3.2	3.2	19.4	0.0	3.2	9.7	0.0
2001	11.4	20.5	13.6	0.0	9.1	2.3	13.6	29.5	0.0	0.0	0.0	0.0
2002	3.6	46.4	3.6	0.0	10.7	3.6	7.1	14.3	0.0	7.1	0.0	3.6
2003	2.4	44.0	4.9	2.4	7.3	2.4	22.0	7.3	0.0	7.3	0.0	0.0
2004	9.8	46.3	11.1	3.7	3.7	5.6	18.5	0.0	0.0	0.0	1.9	0.0
2005	43.2	27.2	3.4	0.0	5.7	1.1	9.1	8.0	1.1	0.0	4.5	1.1

Table 5-18 The percentage of color in Samsung mobile phones

Source: Samsung website (<http://www.samsung.com>) and GSM Arena (www.gsmarena.com)

Samsung generally has a limited variety of color and it shows concentration on one or two colors.

Black, silver, gold and gray dominated in 1998 and 1999, and red, green or pink were a little restriction released from 2000. Silver, gray, and

white were the main colors in 2000 and 2001, and blue was emphasized from 2001.

Silver was the most main popular color and took 46.4% on the whole in 2002, but also red and white took big percentage. Silver was still emphasized and blue and gray were the main colors in 2003 and 2004. Suddenly, in 2005, black was emphasized and took 43.2% of the whole product. In addition, the percentage of gray was decreased and silver still took the position of the main color though the whole percentage was decreased.

Samsung has concentrated on black, silver and gray in its premium strategy since 2002 and it has tried to use various colors such as white or blue but it has almost not released the primary color range such as red, green, orange or pink.

Samsung uses the limited color such as black, silver and gray but it uses various kinds of those colors. That is, more than 5 colors exist to each black, silver and gray.

	Black	Silver	Gray
Kind of Color	Black Blue Black Onyx Black Ebony Black Noir Black Modern Black	Silver Metallic Silver Ice Silver Cloud Silver Shadow Silver Light Silver, Black Silver	Gray Charcoal Gray Deep Gray Silver Gray Mirror Gray
Color Image	Elegant, technical	Sleek, modern	Modern, simple, professional

Table 5-19 Kind of main color in Samsung mobile phones

In an interview with KCM mobile phone designer, it is said that “The color of early mobile phone started with black color (resin color) and it gradually changed into silver, red and blue but when Samsung struck a mega hit with ‘blue black’ slide type in Europe, black trend started to make a success. Until now, black is generally a basic color and silver and white have a big response from market.”¹⁷⁷

The image according to each main color of Samsung mobile phone and the arrangement of main color in color image space are as follows. (See chapter 4.3.3 for an explanation of main color image)

¹⁷⁷ Interview with a designer from KCM Design, Oct. 2005

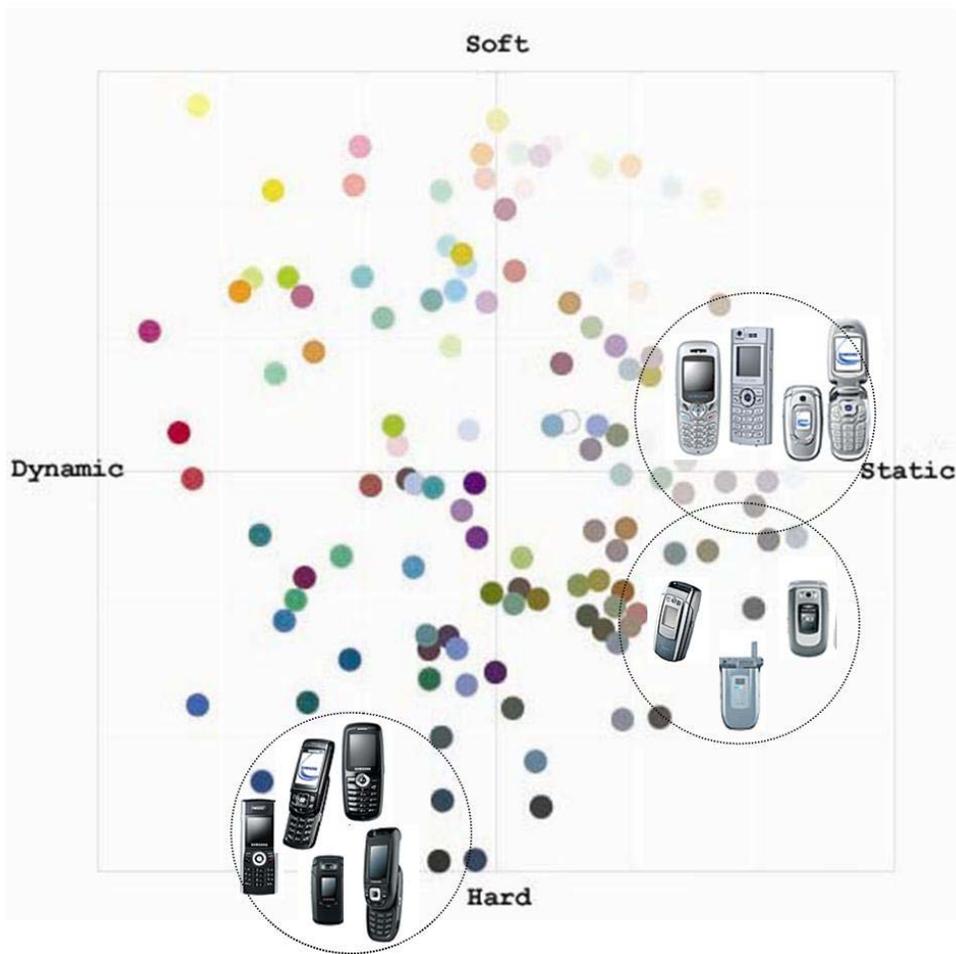


Figure 5-59 Color image space of Samsung mobile phones

Samsung generally combines and arranges similar color images and makes the same color image from different colors. Moreover, the combination of silver and gray or the combination of gray and blue are frequently applied. It is, however, problematic that Samsung has a very limited product color and the colors are not widely spread on the color image table.

The main color arrangement of Samsung product is shown in Figure 5-60.

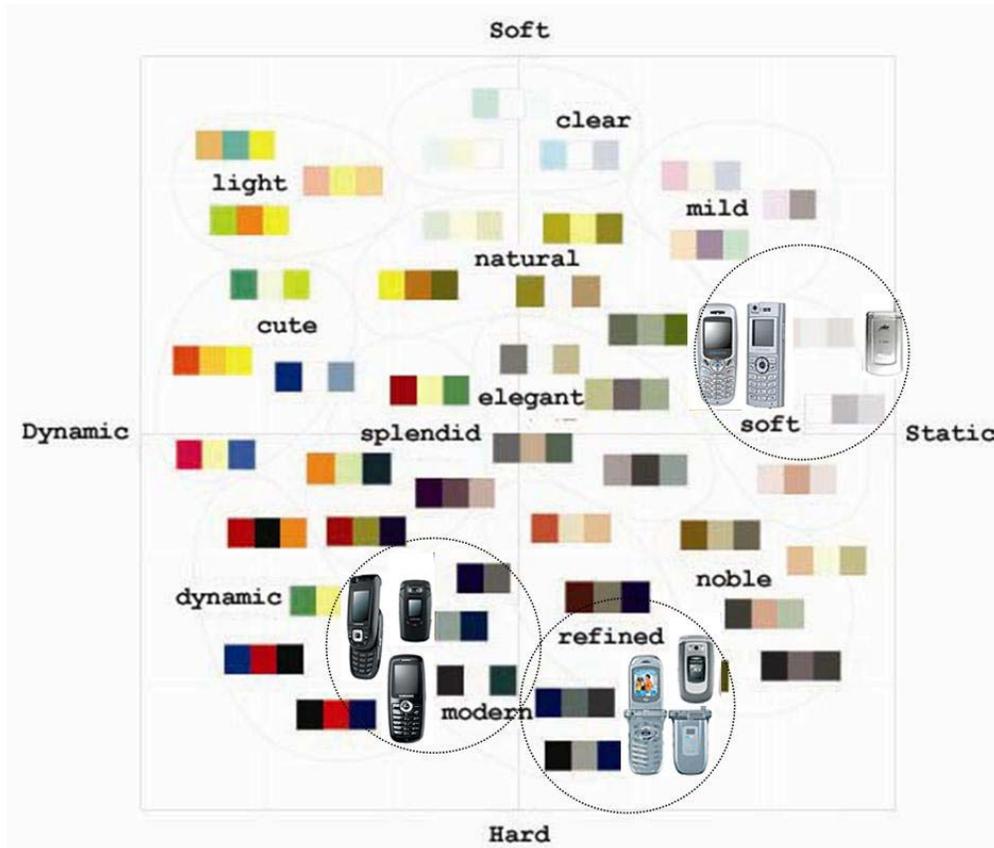


Figure 5-60 Coloration image space of Samsung mobile phones

Blue and silver takes 31.7% and 29.3%, respectively, on the basis of the whole mobile market in 2004, and red, gray and black are mainly used excluding blue and silver. Whereas its competitors usually use fresh, comfortable and clean blue, Samsung mainly uses black or silver for premium strategy. (See Figure 5-16 and Figure 5-17 for the graph of whole market table including Nokia case.)

Samsung mainly used monotone until 1997 and it started to apply two colors to one mobile phone from 1998, whereas Nokia applied three or four colors to one product from 2001, Samsung did not apply more than two colors to one product. That is, Samsung tried to express a clean and sophisticated image or luxurious premium image by calm and stable color as regards color use and combination. The number of color to each product of Samsung in graph is as pictured in Figure 5-61.

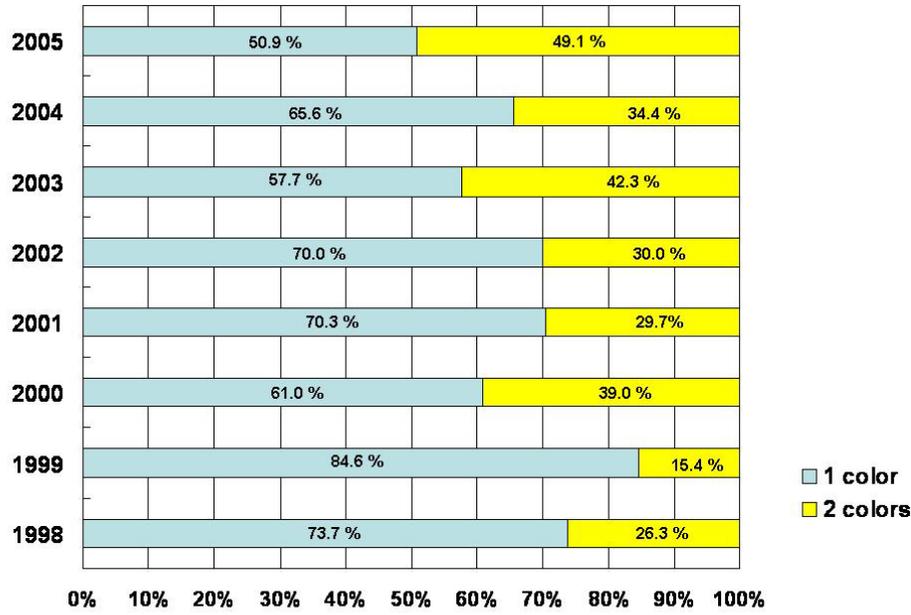


Figure 5-61 The number of colors used for one mobile phone

As shown in the analysis above, Figure 5-61, the color range of Samsung mobile phones is very limited and the choice of color is very limited as well. It must be related to the strategy of Samsung for premium image in the analysis. Samsung desires for premium image and it defines the color such as silver, black and gray which represents premium image. Therefore, it doesn't make sense to apply various colors.

Besides, each category is classified based on technology and it is very hard to analyze the color and image according to each category.¹⁷⁸

5.2.2.2.2 Synchronic Analysis

The main concept of Samsung mobile phone is premium design emphasizing luxurious image with blueblack color avoiding the existing silver color trend.

SGH-D500 is a business phone composed of silver, blueblack and black for deluxe and premium product image. At first, blueblack is in the middle of black tidiness and silver elegance. Its target is both men and women with elegant, friendly and refined feeling. Generally blueblack is the color of blue+black under sunshine. It is less black than typical black and it is also less blue than typical blue. It can be said that blueblack is the color between black and blue.

¹⁷⁸ Samsung product category is different from Nokia fashion category because it is classified based on technology and mobile type and so it is meaningless to analyze color use of each product category and it is impossible to analyze the color of each category. (See chapter 5.2.1.3.2 for Samsung category classification)



Figure 5-62 SGH-D500 Silver, BlueBlack, Black

Source: Samsung website (<http://www.samsung.com>) and GSM Arena (www.gsmarena.com)

SGH-D600 is also in deluxe category with premium product image but it is not a business model different from SGH-D500 and thus it is produced with more various colors such as wine red and with more various images.



Chrome has a feeling of tidiness and luxury and Charcoal Gray gives a smoother feeling of modern and sophistication. Charcoal Gray is mixture of black and metallic gray and it is for presenting an elegant form. Wine Red has royal and precious image targeting female users.

Figure 5-63 SGH-D600 Chrome, Charcoal Gray, Wine Red



SGH-D800 is produced in White, Pink and Black. White shows a clean and high-tech product image and Pink shows a soft, delicate and fresh image. In addition, Black is basically produced and Samsung seeks for an image with more brightness and calmness than Black.

Figure 5-64 SGH-D800 White, Pink, Black

Source: Samsung website (<http://www.samsung.com>) and GSM Arena (www.gsmarena.com)

SGH-D600 and SGH-D800 show brighter and calmer image with unpolishedness different from SGH-D500.

“The brightest colors are metal colors, such as the cool look of chrome as well as the warm character of red-gold. Naturally matte colors can be brightened up and become luminous and more attractive for the viewer.”¹⁷⁹ As shown in Figure 5-65, the unpolished Matte in left looks more calm, bright and luxurious though it is the same color as the right. Therefore, when Black is applied to the product, the unpolishedness is also applied at the same time to avoid the extreme black.

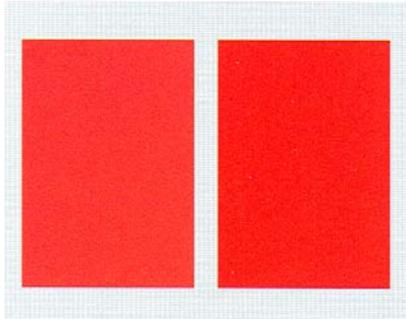


Figure 5-65 Matte vs. Shiny

Source: Erich Kuethe & Fabian Kuethe, Marketing mit Farben, Gabler, 2002, p 83

The distinction of the three mobile phone models above is seen in Table 5-20.

	SGH-D500	SGH-D600	SGH-D800
Category of Model	Deluxe Series	Deluxe Series	Deluxe Series
Character of Category	Deluxe, luxurious and of very high quality	Deluxe, luxurious and of very high quality	Deluxe, luxurious and of very high quality
Available Colors	Silver, BlueBlack, Black	Chrome, Charcoal Gray, Wine Red	White, Pink, Black
Image of colors	<ul style="list-style-type: none"> • Silver: elegant, technical • BlueBlack: elegant, friendly, refined • Black: sleek, modern 	<ul style="list-style-type: none"> • Chrome: strong, • Charcoal Gray: modern, pure, refined • Wine Red: royal, precious 	<ul style="list-style-type: none"> • White: pure, clean, high-technic • Pink: soft, delicate, playful • Black: sleek, modern

¹⁷⁹ Erich Kuethe & Fabian Kuethe, Marketing mit Farben, Gabler, 2002, p 83

Table 5-20 The distinction of color of Samsung SGH-D500, SGH-D600, and SGH-D800

As shown in the color analysis below, the three models of Samsung, SGH-D500, 600 and 800, are released with various colors different from the color analysis based on the time axis. Samsung basically produces Silver, BlueBlack and Black for premium image strategy but it appeals to female users through soft image produced by Wine Red or Pink. Therefore, its color image is widely spread except the axis of dynamic and soft.

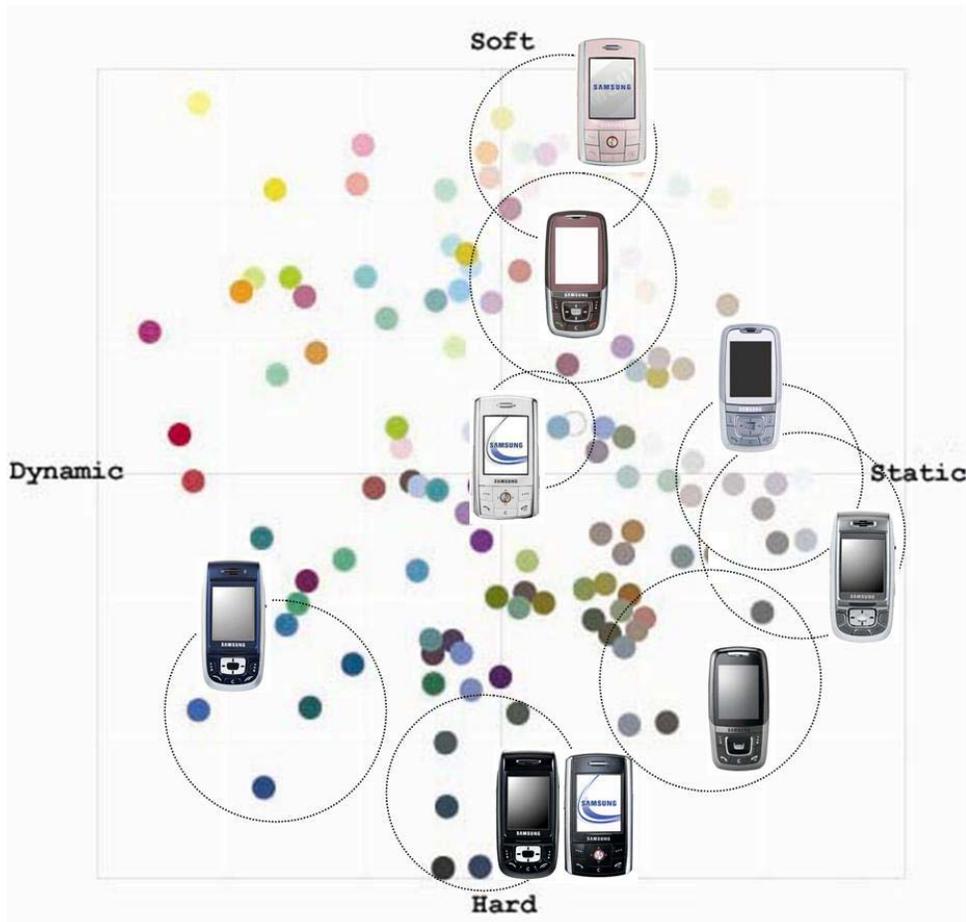


Figure 5-66 Color image space of Samsung SGH-500, 600, 800 mobile phones

As shown in color analysis of time and space above, there is no exact category based on style and function in Samsung mobile phone and thus it is impossible to analyze the color and image according to the category. Samsung concentrates on a certain color according to trend or fashion and it mainly produces Silver, Black and Gray for luxurious image though it generally gives limited choices for premium strategy. Besides, Samsung develops various kinds of color based on one primary color. (For example, Black, Blue Black, Onyx Black, Ebony Black, Noir Black, Modern Black and so forth.) Samsung also releases a certain model of soft color image.

Although the main colors of Samsung are Silver, Black and Gray it cannot be said that those colors represent Samsung Product Identity. The distinguished colors based on one primary color give a common point to Samsung products but it can hardly be said that the color affects Product Identity very much because the color sensitively follows trend and it is not the element to establish distinguished Product Identity of Samsung.

5.2.2.3 Form Analysis

The form analysis is, like all other analysis, divided into two parts, the diachronic and the synchronic analysis.

5.2.2.3.1 Diachronic Analysis

It will be analyzed in the aspect of form how the form affects the Product Identity of Samsung mobile phones, and what kind of consistency Samsung has for its identity.

The development of Samsung's mobile phones' forms is arranged in Figure 5-67 and Figure 5-68.



Figure 5-67 Examples of Samsung mobile phones from 1995 to 2000

Source: Samsung website (<http://www.samsung.com>) and GSM Arena (www.gsmarena.com)



Figure 5-68 Examples of Samsung mobile phones from 2001 to 2005

Source: Samsung website (<http://www.samsung.com>) and GSM Arena (www.gsmarena.com)

The form analysis of Samsung mobile phones from 1995 to 2005 is additionally investigated based on Hyun Kim's 'A Study on Form Trend'¹⁸⁰ as the one of Nokia and, in addition, the 3rd form factor is additionally analyzed for the period of 2001 to 2005. The criteria of analysis are the same with that of Nokia. (For a definition, see a 4.3.4)

The graphs below are the analysis of the form factors of Samsung mobile phones from 1994 to 2005.

¹⁸⁰ Hyun Kim, A Study on Form Trend, The Federation of Korean Industries, 2001, pp 86-100, 107-109, 143-145

1) Curve increases – tendency and decreases from 1998. The increase in curve is not significant because Samsung mobile phones in 1995 and 2000 focuses on function and are sensitive to trend. And from 2001 curve has an upwards tendency (+) to 2004. In 2005 mobile phones have defined form, and curve in tendency decreases.

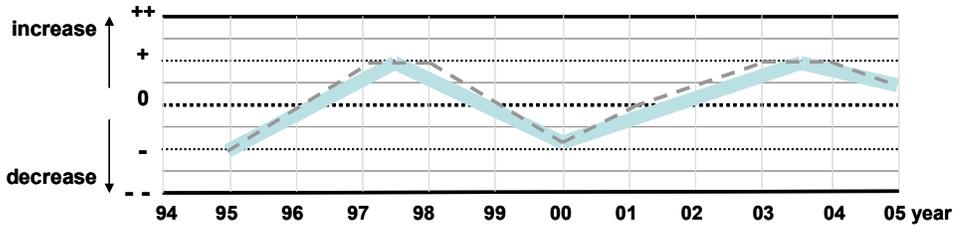


Figure 5-69 Changes of curve of Samsung mobile phones from 1995 to 2005

2) Length: Length shows downwards tendency. From 2002 to 2004 there's no change but in 2005 mobile phones of Samsung become smaller and shorter.

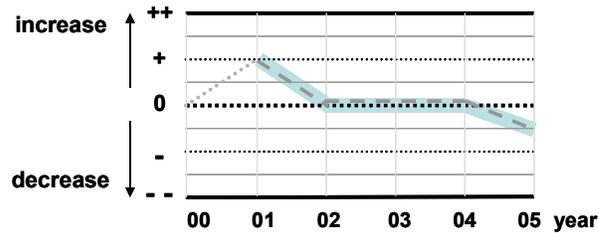


Figure 5-70 Changes of length of Samsung mobile phones from 2001 to 2005

This graph in Figure 5-71 shows a change of actual length. There is no change of length bar type mobile phones and slide type mobile phones but folder type mobile phones show more increase in length in that early period because of loading various functions and the feeling of grip.

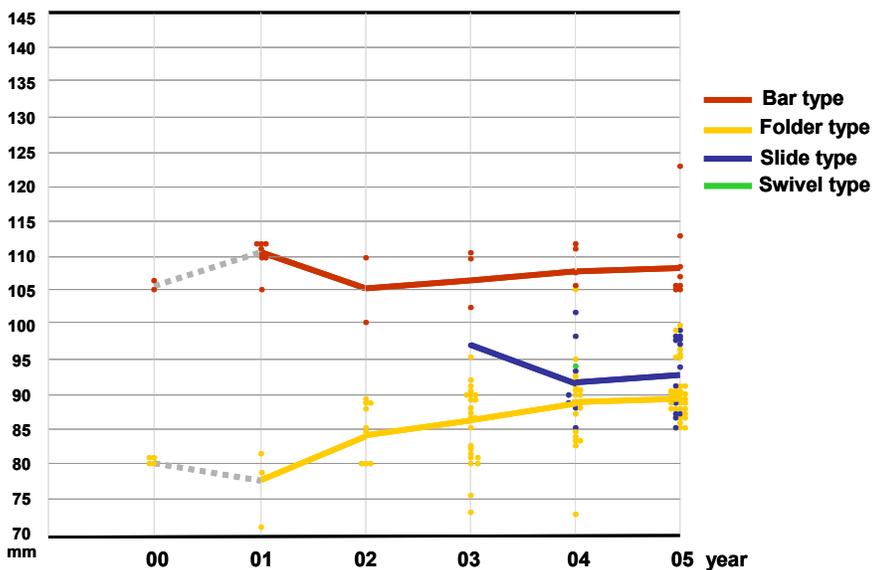


Figure 5-71 Changes of actual length of Samsung mobile phones from 2001 to 2005

The above analysis shows that Samsung mobile phones almost have no change in real length but it make users feel they are shorter and more compact through form factors such as ratio of length and width, volume and size.

3) Thickness: thickness decreases every year because of miniaturization and lightening. From 2004 Samsung seeks to get stability through increase in thickness.

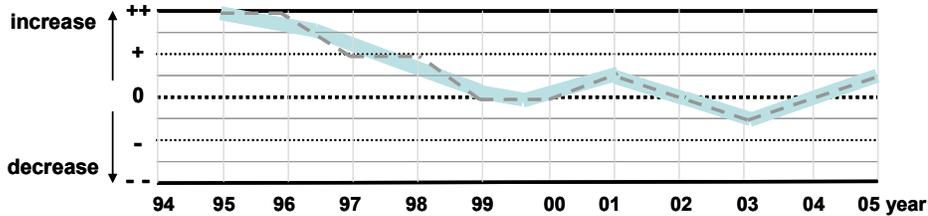


Figure 5-72 Changes of thickness of Samsung mobile phones from 1995 to 2005

The following Figure 5-73 shows the actual thickness of Samsung mobile phone from 2001. Folder and slide type are generally thicker than bar type because of separation between LCD and keypad. Gradually, however, the two types are getting slimmer and slimmer to the thickness of bar type and the thickness of bar type shows extreme decrease from 2002 to 2004 and, since then, it shows a little increase for stability.

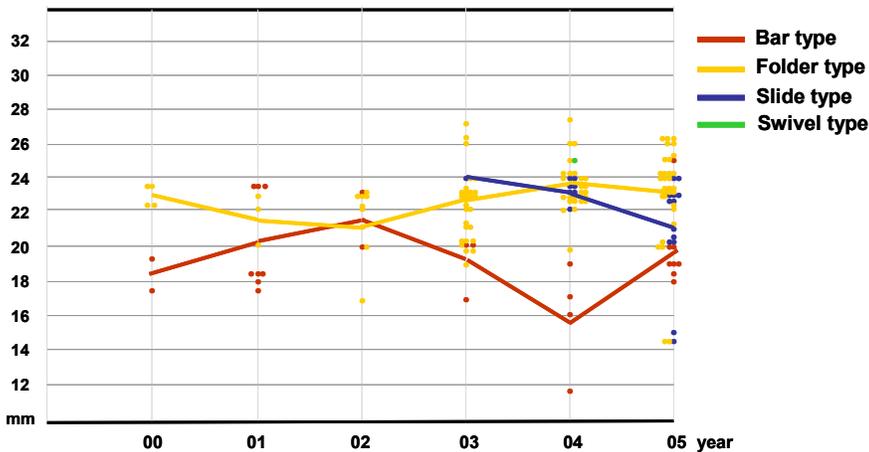


Figure 5-73 Changes of actual thickness of Samsung mobile phones from 2001 to 2005

4) Weight: Weight is irregular and changes extremely. After 1999, it has been lower than average and shows a downwards tendency (-). Samsung mobile phones pursue lightness according to need of consumers in Asia.

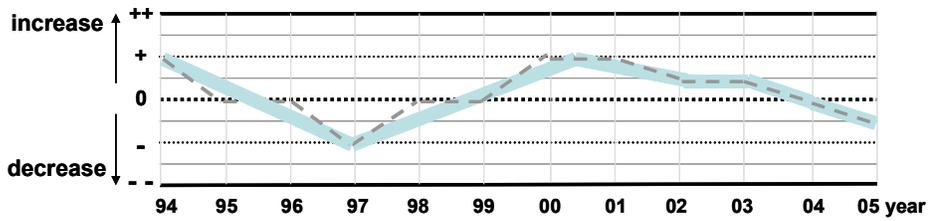


Figure 5-74 Changes of weight of Samsung mobile phones from 1995 to 2005

In this graph shown in Figure 5-75, actual weight shows decreasing tendency.

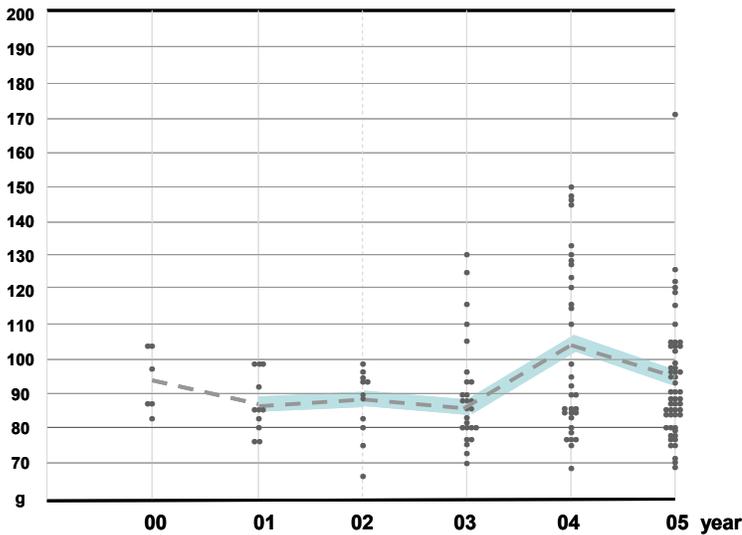


Figure 5-75 Changes of actual weight of Samsung mobile phones from 2001 to 2005

The above Figure 5-75 shows that the weight of mobile phones has been consistent within a certain level but in 2004 it shows a slight increase of the weight because of releasing game phones and mobile phones with various functions. Due to the decrease of size and volume of those phones, however, users feel they are less heavy.

5) Volume, massiveness: Volume (massiveness) has increased from a – tendency and after 1996 it is higher than average. In 1997 and 1998 Samsung mobile phones have round forms with curves and it makes volume in tendency increase. Since then, it continues a certain level of volume but from 2004, the curve starts to increase and the product changes into more massive with volume.

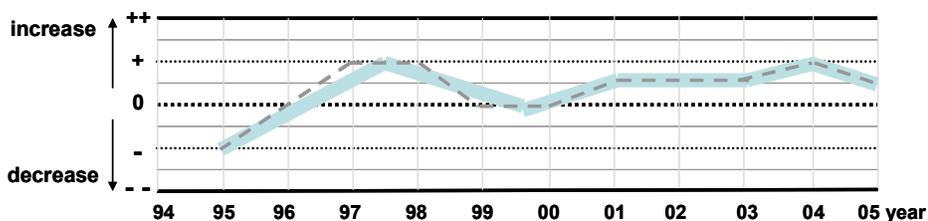


Figure 5-76 Changes of volume of Samsung mobile phones from 1995 to 2005

6) Complication, complexity: Figure 5-77 shows complication hits highest point in 1997 and 1998 but it has decreased until 2000. The complication increased because of many various functions of form in 1997 and 1998 but it went back to simplicity. From 2001 it has changed from a decreasing tendency to an increasing tendency. As technology advances and many functions are added, form looks more complicate and mobile phones have different various form factors. But from 2005 Samsung pursues to get simplicity.

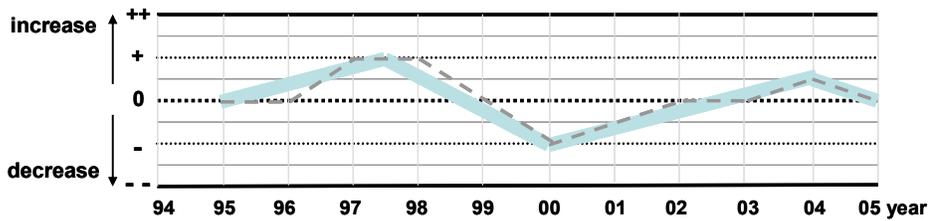


Figure 5-77 Changes of complication of Samsung mobile phones from 1995 to 2005

7) Emphasis, accentuation: Emphasis increases from a decreasing tendency and from its highest point in 1998 followed again by decrease. The emphasis hits the highest point in 1998 because of emphasis on one specific part of form but it immediately decreases again by 2000. And Emphasis increases in tendency from 2001 to 2005. During the period, the emphasis increases again because of complicated form with various function buttons and of form changes.

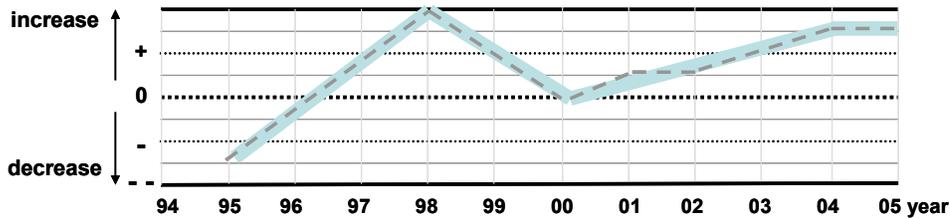


Figure 5-78 Changes of emphasis of Samsung mobile phones from 1995 to 2005

8) Stability: It changes from a increasing tendency to average. In 2003 and 2004 mobile phones have less stability, because mobile phones have less volume, less size and more movement.

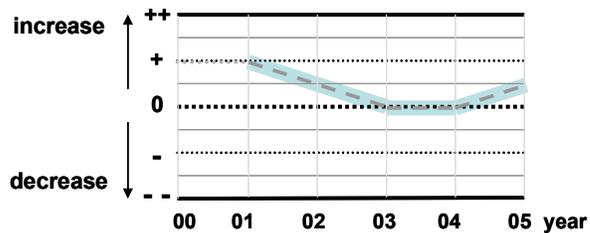


Figure 5-79 Changes of stability of Samsung mobile phones from 2001 to 2005

9) Defined form, set form: Defined form rapidly decreases by 1998 and increases from 1999 by 2000 again. And from 2001 it decrease gradually again. Defined form of Samsung mobile phones is irregular and changes extremely.

Samsung mobile phones in 2005 don't have a defined form but an organic one. Samsung tries to change many form factors and it releases different forms of mobile phones.

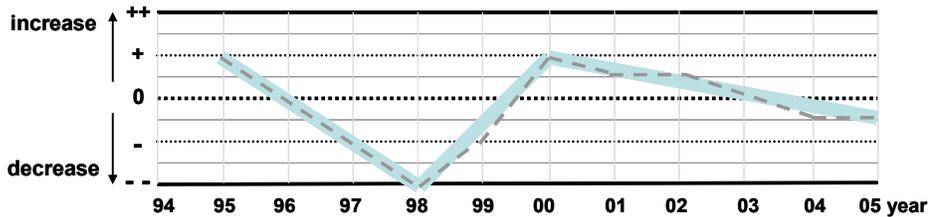


Figure 5-80 Changes of defined form of Samsung mobile phones from 2001 to 2005

10) Size of Display

Samsung, which mainly produced folder type from 2002, initially released big LCD while Nokia did differently. In 2002, 12 line LCD was mainly produced, and in 2004, 14 line LCD was released through folder type and slide type. In 2005, it was still more enlarged in width as well as in length and 35 x 46mm was the main product.

11) Form of the Keypad

Keybuttons were mainly arranged in lines in 2001 and they were also separately arranged. The form of the keybuttons was mostly oval. Bar type mobile phones have small buttons because of the limited space and folder type mobile phones have relatively small buttons as well.

Mostly, folder type mobile phones mainly produced in 2002 and 2003

and keybuttons were applied with soft and smooth curve like  following the round form of function key. In addition, keybuttons were independently arranged and their form was bended oval. In 2004, wave form keypads were once released and chess board keybuttons also appeared. In 2005, the separated keybuttons disappeared and usually the keybuttons were arranged in a group and took the form of smooth curve.

The slope of the whole keypad in Samsung mobile phones is very slight and also there is no big slope in individual button.

12) Size of Keypad

The keypad of Samsung mobile phones was relatively small because it was separately arranged before 2001. As the folder phone was massively released in 2002 LCD window was separated from keypad space and the general size of keypad and each button were enlarged.

In addition, as chess board keybutton was mainly produced from 2004, the empty space between keybuttons was decreased and the keybutton became relatively big.

The analysis of twelve form factors showed that the design of Samsung has been possibly changed. Especially, it had been irregularly changed from 1997 to 2000 and 2000 to 2003. There was a lot of difference in form.

The change of form variables for Samsung mobile phones is largely divided into four phases.

The first phase started from 1995 and ended in 1997. In the early period the simplicity of function was shown and in the later period the luxurious simplicity was shown with multi-function which was affected by the concept of digital design, fashion and wearability, and so on. There was a big change in the sense of weight but it was supposed to be closely related to the fashion trend. The curve pattern suggested massiveness and it looked more active with the emphasis of mobile-wearability.

The second phase was from 1998 to 2000. The emphasis of image was extremely highlighted in 1998 and it was related to the fact that the mobile phone market in Korea was saturated with the mobile phone supply and the establishment of five telecommunication companies. In addition, the standard model had increasingly disappeared under the influence of fashion trend. It appeared with the birth of flip, new usability, customer trend, fashion and lifestyle. Besides, the flip type was made in 1998 for the first time and since then, the product size has become smaller and smaller every year. In addition to that, the curve and volume decreased at the same time and complication also decreased with no big change in form. Emphasis was on its highest point in 1998. Since then, emphasis was more or less unstable with decreasing tendency.

In the third phase from 2001 to 2002, the curve increases from a smooth form image and its volume maintained on a certain level. Moreover, the complication of form continuously increases and also emphasis continues to increase with a certain part of emphasis.

In the fourth phase from 2003 to 2005, the curve decreases for high-tech product image but the form changes a lot and the emphasis continuously increases for a particular part of mobile phones while the defined form increases.

The design of Samsung Electronics irregularly changes to more or less complicated forms in the analysis. In the four phases above, there is no regularity between form factors such as curve, volume, type, complication and emphasis and the relation is rather low between them.

In the fourth phase from 2003 to 2005, however, there is a little regularity to show that the curve decreases without softness for the high-tech product image and also the form has volume to avoid bore.

Samsung tried to continue the Family Look by its own form language from 2002 but the Family Look was a little differently applied according to type and style of mobile phones. Nonetheless, it affected Samsung identity.

LCD is in defined form of square/rectangle and function key surrounds the main function key in center in a smooth and wide U. Along the U curve, the keypad is independently arranged in smooth curve.

	1995 - 1997	1998 - 2000	2001 - 2002	2003 - 2005
Feature	Early development Soft image	Generally hard in form	Soft and Complicated	High-tech product image, Simple
	- Curve increase in volume - Emphasis increase	- Curve decrease - Volume decrease - Emphasis at highest point in 1998, since then decrease	- Soft image with increase in curve - Complication of form with increase in function - Emphasis increase - Decrease in defined form	- Decrease in curve for high- tech image - Relatively high volume - Increase in emphasis with particular part - Decrease in defined form - Increase in stability
Family Look	•	•	•	

Table 5-21 Feature of form analysis of Samsung mobile phones

The most important point in the form of Samsung is that the form factor has irregularly changed for the image they want. Therefore, the form factor changes without relation between regularity or form factors and it is hard to find Samsung's unique identity in Samsung mobile phones by 2001. From 2002, Samsung tries to apply differentiation and consistency in the form. There are some common points between some products of Samsung but they are simply applied to the product and thus they look like the same product without any differentiation. Other different products have no common point and they are recognized as a totally different product. So, it is hard for Samsung to get differentiation with its own unity of form from competitors. This is why Samsung product is released in variety of form based on trend.

5.2.2.3.2 Synchronic Analysis

The form of top Samsung models from 2005 to 2006 will be analyzed based on space and the Product Identity of the models will be examined. But it is hard to say that the formal Product Identity of the models represents identity of all product groups.

1) Samsung mobile phone: SGH – D500

Samsung SGH-D500 is a business phone and a mid big and a mid heavy phone.



Figure 5-81 Four views and curve of front view of Samsung SGH-D500

Curve and defined form: There are many curves in the bottom line, the side between top and bottom, and the area of main button. Therefore, the defined form is not very high in mid level.

Length: It is generally small with volume and it has compact feeling and so it looks short in length and width.

Thickness: It is thick compared to the whole size. It is actually 24mm thick.



Figure 5-82 The thickness of Samsung SGH-D500

Weight: Its size is 94 x 46 x 24 mm and it weighs 99 grams. It looks reasonably heavy because of defined form and massiveness.

Volume: It is big with many curves.

Complication: Front side looks relatively complicated because LCD and functional key legend are clearly separated with sides and slopes.

Emphasis: Functional key legend is relatively emphasized but generally there is no big emphasis.



Figure 5-83 Block of soft keys below the display

Stability: It is generally stable though it looks a little unstable because of small curves at bottom side.

Size of display: Size of the display is 30 x 39 mm and it is normal size.

Keypad: Keypad is with white illuminated legends and silver stripes, separating single rows from each other. The silver stripes in keypad separate the buttons above and below and keypad is flat with no curve.



Figure 5-84 The keypad of Samsung SGH-D500

2) Samsung mobile phone: SGH – D600

Samsung SGH-D600 inherited from it the whole design conception. Its body dimension is 96 × 47 × 22. It weighs 103g and in order to reduce weight, D600 is made of engineering plastic and it makes the mobile phone maintain intensity.

Curve, defined form and volume: Comfortable round form makes mobile phone softer. There is no big curve in corners but the top side itself is round. Because of the round form, its stability is low. There is reasonable volume with curves.





Figure 5-85 The curve, the defined form, and volume of Samsung SGH-D600

Length: Generally it does not give feeling of volume and looks flat. The actual length (96mm) is not short but length looks relatively longer than width.

Thickness: It is suitably thick with no massiveness and volume.



Figure 5-86 The thickness of Samsung SGH-D600

Weight: It looks a little heavy because it looks stable without activity or change.

Complication: It looks less complicated with generally flat sides different from those of D500.

Stability: Defined form is not high but it looks stable with reasonable thickness, width and ratio.

Emphasis: Emphasis is on camera area. In the upper part of the back side there is camera lens in silver background, supplemented by a LED flash at one side and by a convex mirror for easier self portrait on the other. The whole backside of the phone is as though rubber and due to this fact Samsung lies chained to the desk even during vibration. The soft surface doesn't allow fingerprints.



Figure 5-87 The emphasis of Samsung SGH-D600

Size of display: The front part consists of a big display (30 x 40 mm), embedded under dark protecting glass. A silver fillet highlights the slot for headphones above the display; under it - the engraved name of the manufacturer in a silver field. It divides the part of the display from the functional keys and serves as a finger stopper when sliding due to the soft appearance.

Keypad: The functional keys are five and together with the pair of soft keys under the display they control the calls. All these keys are situated around a four-way cursor button which has also a confirming center.



Figure 5-88 The functional key of Samsung SGH-D600

The keys are big enough (10-15mm) and are slightly embedded under the edge of the surrounding casing. They are distinguishable by touch. The key stroke is optimal, the buttons are stable. Main keypad is treated with curve and is designed to maximize key applicability, recognition and touch feeling.



Figure 5-89 The keypad of Samsung SGH-D600

3) Samsung mobile phone: SGH – D800

Samsung SGH-D800 is marked by its slimness. This slim slider is with chromium-plated edges and glossy black cover.



Figure 5-90 Four views of Samsung SGH-D800



Curve, defined form, stability, volume: There is almost no curve except the corners of top and bottom. The front cover is completely flat, except for the slightly elevated area beneath the display. Therefore, defined form and stability is high with low curve in flat square form and volume is very low.



Figure 5-91 The curve, defined form, stability, and volume of Samsung SGH-D800

Length: Phone's dimensions are 97 x 52 x 14.9 mm. Width looks relatively long and length looks comparingly short. Size looks big as well.
Thickness: Considering the fact that Samsung D800 is a sliding phone, its thickness of 14.9 mm is remarkable. It does not look thick compared to size.



Figure 5-92 The thickness of Samsung SGH-D800

Weight: It weighs 98 g. The size looks small and it does not look heavy with low volume in a flat square.
Complication and emphasis: There is no uplift. All sides are almost flat. Therefore, there is no complication or emphasis.
Keypad: The functional part of the keypad is even and flat. No uplifts. The numeric keypad revealed by the sliding part of the phone is level, as well. And horizontal chromium streaks dividing the keypad lines are easy to recognize by touch.



Figure 5-93 The keypad of Samsung SGH-D800

The Product Identity based on form elements of Samsung main models such as SGH D-500, SGH D-600, and SGH D-800 from 2005 to 2006 can be analyzed as follows in axis of space.

Form factor		Feature of Identity based on form elements of SGH D-500, SGH D-600 and SGH D-800
1st form factor (A)	A1: curve	There is almost no curve in the whole body. It looks slightly curved with curves between sides.
	A2 : length	Each product has different ratio of length and width. Length looks different according to size and length.
	A4 : thickness	Each product gives very different feeling on thickness according to size and volume. SGH D-800 has comparatively low thickness because it has less thickness than size.
	A5 : weight	It generally looks heavy because of volume but SGH D-800 looks light with less volume in flat form.
	A7 : volume, massiveness	Big difference is in volume because the whole form and flatness as well as curve are very different. D500 in small and compact form shows highest volume while D800 in big and flat size shows lowest volume.
2nd form factor (B)	B1: complication, complexity	Each model has different complication. D600 and 800 show no complication because they have no curve or change of form while D500 shows high complication with many changes on front side.
	B6 : emphasis, accentuation	There is no big emphasis on the whole body.
	B7 : stability	Stability is very high due to the general defined form.
	B8 : defined form, set pattern, standard	Defined form is in mid level with curves between sides.
3rd form factor (C)	C2-2 : Size of Display	Generally LCD is big due to slide type.
	C3-1 : Form of Keypad	Keybutton is almost flat with smooth curve.
	C3-2 : Arrangement of Keypad	Therefore, it is comfortable to use each button.
	C3-2 : Size of Keypad	Size of keypad is reasonably comfortable to use. (10-15mm)

Table 5-22 Feature of Product Identity based on form elements of Samsung SGH D-500, SGH D-600 and SGH D-800

To sum up the above, three top models of Samsung from 2005 to 2006 are not exactly the same with Samsung identity. At first, while Samsung

product continues a certain level of volume from 2003, each top model has different volume. Three models have mid level defined form while Samsung products generally have low defined form. In addition, three models have low emphasis while Samsung products have high emphasis. But three models have the same average level of curve, complication and stability with Samsung product.

After 2000, Samsung Product Identity shows no short cycle of change as it did before 2000 but still it generally shows possibility of change in form factors without unifying regularity.

5.2.3 Summary of the Samsung case study

The distinction of Samsung mobile phones resulting from case study can be summarized as follows.

Concerning design strategy, Samsung does not have a clear category according to style and it classifies categories to mix style with some functions. So it has no clear product category and that kind of product category is confused and unclear. In addition, it is hard for users to choose a product because product category is irregular with no system. And also Samsung tries to create luxurious image through premium strategy. Moreover, it produces various mobile phones with high-tech function because it always tries to release new high-tech products for modern and luxurious image.

Samsung mainly produces folder type mobile phones and slide type mobile phones. And it recently focuses on slide type mobile phones. It is related with Samsung's desire for premium strategy and it prefers slide type mobile phones which are more advanced than bar type or folder type mobile phones. Samsung, however, partially produces bar type mobile phones targeting for European market and the bar type is slim bar to represent the current trend.

Generally, color of Samsung mobile phones is limited and it mainly focuses on black, silver, gray and blue. It is also affected by premium image strategy of Samsung which tries to create high-tech and luxurious image through those colors. It gives, however, limitation of choice for users.

Samsung changed its form three times in 1997, 2000 and 2002, respectively.

Samsung mobile phones hit the chart in 1997 and volume is also increased and the emphasis of form and complication are increased at the same time. On the contrary, defined form hits the lowest point in 1997. That is, Samsung mobile phone was curved with some emphasis and complication in form.

After 1997, however, that trend has gradually decreased and in 2000, simple and mobile phones with defined form are mainly produced while curve, volume, complication and emphasis hit the lowest point.

After 2000, smooth curve, volume and complications have increased again.

And from 2003, high-tech image with decrease of curve is shown for technology-led and premium image but Samsung applies volume in order to avoid flatness.

As shown in Figure 5-94, Samsung family look produced from 2004 has the same curve line of function key and separated keypad, and it plays as Samsung identity although it is applied a little bit differently according to type and style of mobile phones.



Figure 5-94 Samsung family look from 2002

Samsung mobile phones show rapid growth to emphasize that it is high-tech product image with new type of mobile phones or various function. It has a firm position with the image of trend leading product releasing early folder type mobile phones, slide type mobile phones and recently swivel type mobile phones. While it tries to change rapidly focusing on trend, it has no strong image of its own. Technology always changes very fast and there is no big difference in technology between mobile phone companies. Thus, it is hard for Samsung to establish its own strong Product Identity. Besides, it is good to concentrate on trend for short term profit but the trend must always be changed and it is not possible to establish identity different from competitors by the trend.

5.3 Comparative Analysis of Product Identity of Nokia and Samsung

As shown in the questionnaire of chapter 4, three important factors for mobile phone identity are type, color and form.

Still Nokia mainly produces bar type and presents possible choices of color with various color plans through specific product category and fashion. Moreover, it has established its own form language through form change in 1997 and 2003, respectively. As mentioned in the analysis of each Product Identity above, form factor is the most representative element of Nokia and Nokia shows high point in its market share with its own firm position for Product Identity through form.

In comparison with Nokia, Samsung has responded fast to the trends with its strategy of premium products and it introduced various types of mobile phones in the beginning, producing folder type and slide type mobile phones mainly. The product category of style and type of mobile phones, however, are not clear and Samsung has unclear plan for color according to category. Thus, the choice of color is limited within a few main colors. Besides, there is no regularity among product form factors with extreme changes but a part of form factor recently shows continuity. Still, it is not enough for Samsung's own product.

Now how differently Nokia and Samsung have establish their product identities and what are important factors to them? The product identities of Nokia and Samsung will be generally compared according to the case studies above in the aspect of technology and design. At first, the criteria of the analysis in the aspect of technology and design are as follows.¹⁸¹

- 1) Differentiation by form: Differentiation by form means form factor different from other form factors with no connection to fashion or trend. The distinct form or color is included in this category and it creates difference from one another.
- 2) Form consistency: Form consistency is an important factor which makes Product Identity. The consistency can be divided into two types, consistency with no form change and consistency with form change, and mobile phone is closer to the latter because it is sensitive to trend.
- 3) Variety of form: Variety of form can be considered in two aspects. The first one is the variety with consistency and the second one is to give new form to product every year.
- 4) Trend response: Trend response is to measure how much each product can respond to change of fashion. It has two aspects; how fast it responds to trend and whether, it can create a new trend or not.

¹⁸¹ Of course, the evaluation factor for Product Identity includes the aspects of user and corporation as well as technology and design. Here, however, it is limited within the aspect of design in the study.

- 5) Leading trend: Leading Trend is related to market share and user attraction, design must have consistency and change at the same time. That is, identity factor must continue with trend and fashion.

According to the criteria of the analysis in the aspect of technology and design, comparative analysis of Product Identity of Nokia and Samsung are as seen in Table 5-23.

		Nokia	Samsung
Design Strategy		- clear plan of product category - Product fashion	- Unclear product category - Premium strategy of technology leading
Form	Differentiation by form	Nokia's own Family Look (Existing U type → changes into simplicity of straight line, recently)	Family Look started from 2002 (Unified smooth U curve in function key and separated keypad)
	Form consistency	Partially keep form consistency through keybutton or certain level of curve use in change	It shows a partial consistency but it is still weak.
	Variety of form	Various form and change	Very various and changeable form
Type Color	Trend response	Not high	Type of trend response
	Leading Trend	Type of trend leading	Mid level
Other features		- Design item through users - Various peripherals and accessories - Various choices of product - Various color marketing	- Various choices of products - Various functions added - Concentration on popular model - Concentration on popular color

Table 5-23 Comparative analysis of Product Identity of Nokia and Samsung

The distinction of Product Identity of Nokia mobile phones can be summarized as follows.

Nokia continues its own Family Look with square pattern of straight line by producing various types of mobile phones and increasing various functions shown in U type Family Look between 1998 and 2003.

Nokia seeks for consistency and variety of form at the same time. It maintains consistency by giving variety to forms. While it maintains variety through a LCD display, Family Look in keybuttons, and use of curve in a certain level, it continues to keep its distinct feeling and form language from the form.

Nokia has no fast response to the trend because it produces limited types of mobile phones but it releases products for various kinds of consumers through many systematic product categories. In addition, it increases trend leading in balance with consistency and variety of design through high market share and market dominance.

As shown in the figure Figure 5-95 to sum up the above, the most important differentiation of Nokia is form aspect. And Nokia concentrates on form element with broad varieties like trend, family look, design strategy, form language, function, target user, and product category. Nokia establishes the clear Product Identity through form factors very well.

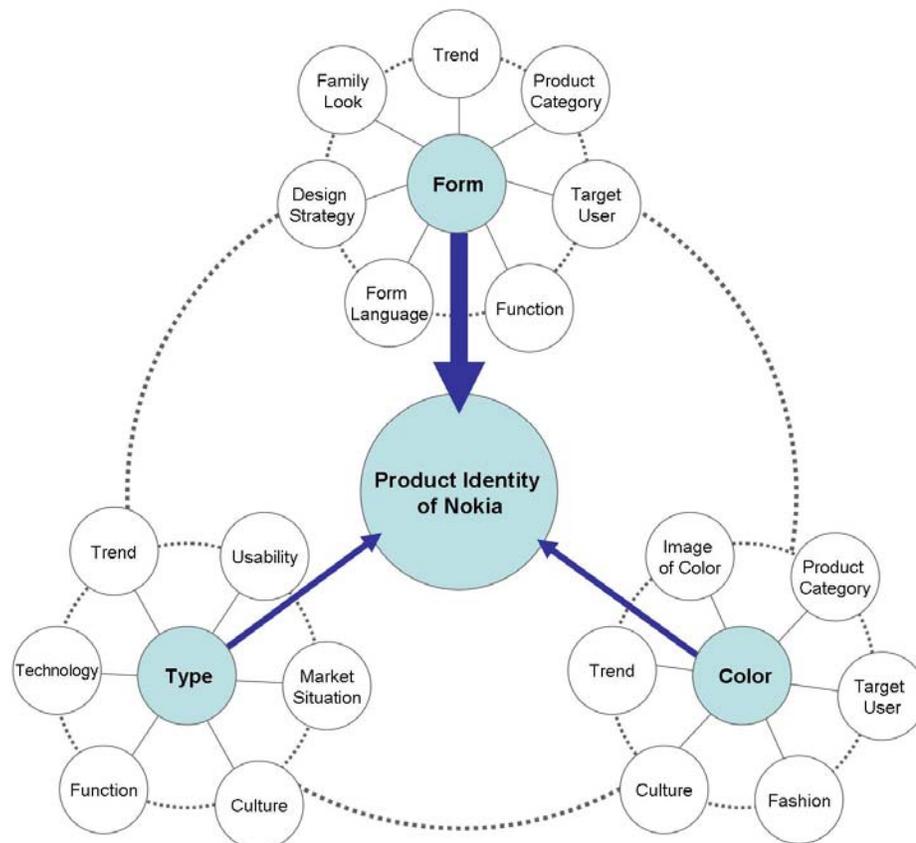


Figure 5-95 Influences on Product Identity of Nokia

The distinction of Product Identity of Samsung mobile phones can be summarized as follows.

There is no regularity between form factors before 2002 but regularity has started to appear in keypads and function key and so on trying to get Samsung Family Look through differentiation from 2002. Its own identity, however, has been low in balance of general form factors and differentiation of form was not high enough. Also, as seen in Figure 5-96, trend, family look, design strategy, form language, and function in elements of Samsung are not as complicated as those of Nokia. In addition, it has tried to show rapid change and mainly released experimental design with fast response to trend but it showed just simple form change without clear consistency. Samsung shows a partial consistency from 2002 but it is still low.

Samsung increases market share to satisfy users' new taste with variety of forms. It has recently achieved rapid growth in market share and user attraction but its trend leading is in mid level because of low consistency in design and low identity to follow trend and fashion.

As shown in Figure 5-96 to sum up the above, a mobile phone type is an important factor to show Product identity of Samsung. Mobile phone type is affected by trend, technology, usability, market situation and so on, and thus it is hard to establish its own clear Product Identity because it has limited factors to differentiate its identity.

Samsung has devoted its efforts to establish its own form language by form factor from 2002 but its result is not clear. Moreover, compared to Nokia, it has no system of product category and so product itemization is not clear to various users.

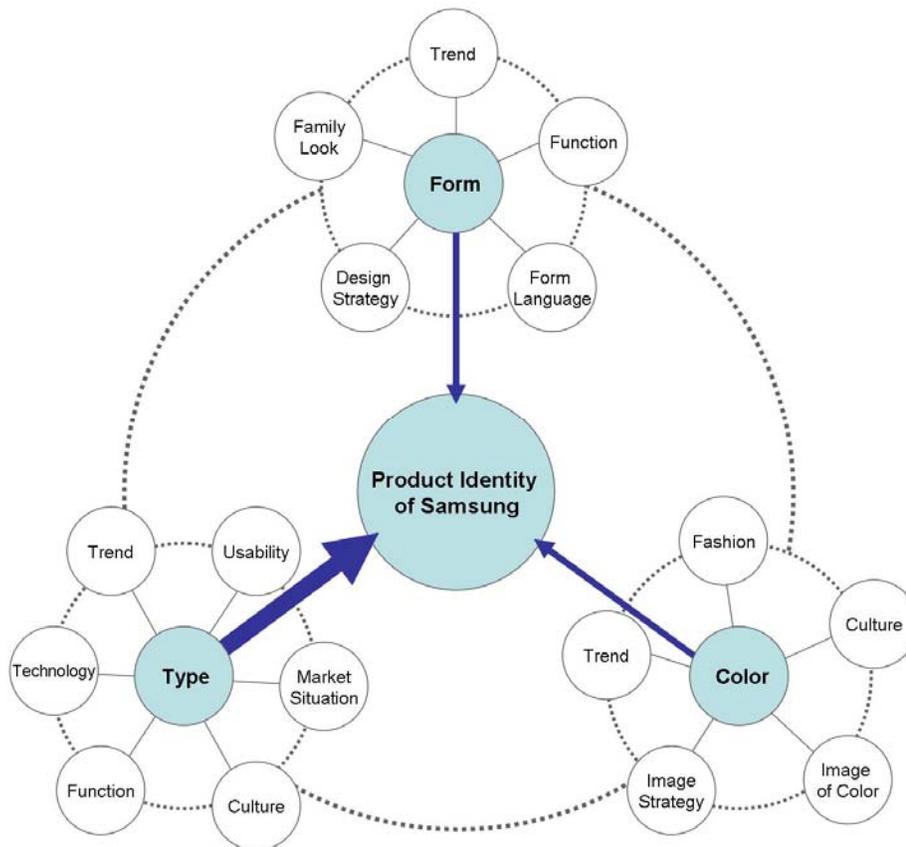


Figure 5-96 Influences on Product Identity of Samsung

That is, Nokia establishes its own Product Identity based on form factors related with design strategy, product category, target user, trend, function, family look and form language. On the other hand, Samsung has some difficulties in differentiating its own identity because it concentrates on producing new types of mobile phones based on the trend for technology.

6 Suggestion

As shown in the questionnaire of chapter 4, three important factors for Product Identity of mobile phones are type, color and form. It is also shown by the comparative case study of Nokia and Samsung that the form factor is the most influential force to establish the most differentiated Product Identity.

In order to achieve the strong Product Identity, mobile phone corporations must devote much more differentiation to form factor and consider form factors in advance. Accordingly, the Product Identity model of mobile phones with emphasis on form factor will be suggested based on the result of the comparative analysis of case study of Nokia and Samsung.

The following Figure 6-1 shows the process of Product Identity and its first process is to recognize the importance of Product Identity. It is the most fundamental process. Thus corporation itself must understand the importance of Product Identity. After that, it is necessary to understand and analyze the existing Product Identity of corporation because they can find the present problems and answers through the process. In order to do that, two steps are needed. The first is to analyze competitors. So it is necessary to analyze competitor's consumer, dominating market share, Product Identity and positioning to compare the Product Identity of two corporations. The second process is to analyze our Product Identity. In order to do that, at first, it is necessary to exactly understand our Product Identity and positioning. After that, the problems of Product Identity strategy, security, importance of strategy will be shown. There are many factors to understand product positioning. For example, there are corporate rareness, brand awareness, price, color, form and technology. Understanding Product Identity is the most important segment in product positioning, and clear Product Identity representing consumers' needs and desire is necessary for superior product positioning.

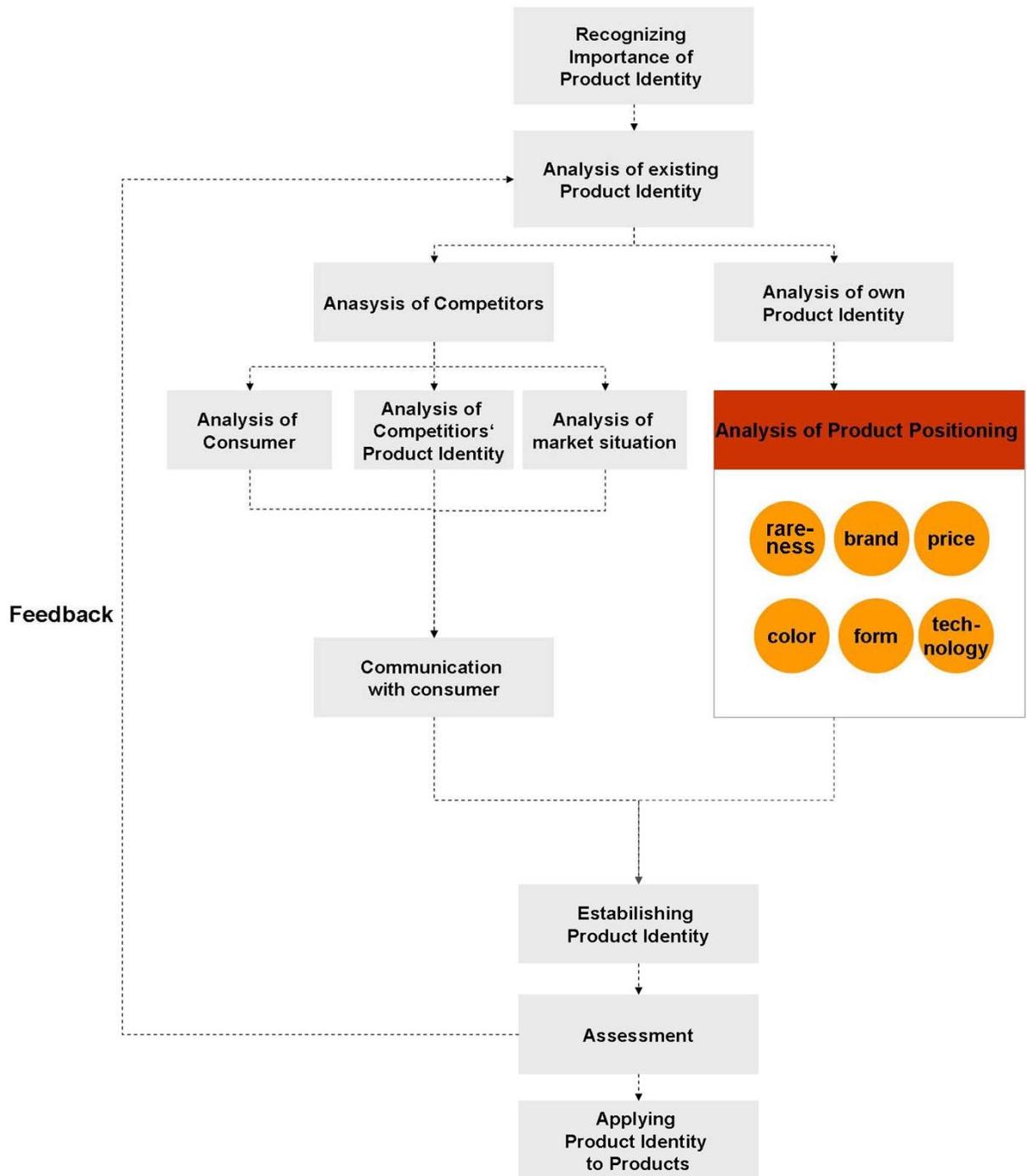


Figure 6-1 The process of Product Identity

The analysis of product positioning such as rareness, brand, price, color, form and technology, says what kind of Product Identity is applied to positioning segment.

The types of Product Identity can be divided into A, B, and C as shown in Figure 6-2.¹⁸²

¹⁸² The types of Product Identity used in the figure as based on the theoretical part of 'Development phase of Product Identity'.(See a chapter 3.1.2)

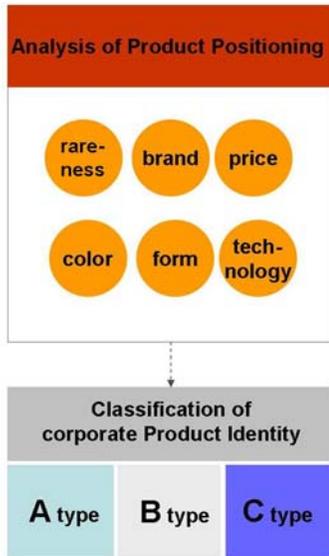


Figure 6-2 Classification of corporate Product Identity according to analysis of Product Positioning

The distinction of each type is simply mentioned according to Product Identity and the problem is shown in the following Figure 6-3.

	Design		User	Technology	Trend	Brand	Position in Diagram
A type	Various design	Difficulty of getting coherence of form and differentiation by form	Difficulty of subdivision of Design according to user type	Great technology and innovative products	Correspondence to new trend	Occupying wide market	I
B type	Coherence of design	Taking differentiation by form	Various Design according to different user type	Great technology	Trend lead	Enhancing brand image	II
C type	High standard of coherence of design	Taking differentiation by form	Various and high quality Design according to different user	High technology	Trend lead	Stable brand image	III

Figure 6-3 Distinction, problem, and position of each type of Product Identity

Product Identity has various types and complicated factors in different corporate situations. Thus it is hard to suggest just one guide line. As shown in Figure 6-3 above, however, the common problem of each type of Product Identity can be solved by the form factor as a common denominator.

The main axes of form factor can be divided into differentiation by form (axis X), variety of form (axis Z) and leading trends (axis Y). Differentiation by form is based on form consistency and it makes differentiation based on the consistency of other mobile phone corporations. The variety of form responds to various products and various kinds of users with clear product category. The leading trend

means to secure various kinds of users through various product groups and to lead the market.

The positions of three types of Product Identity are shown in the three-dimensional graph based on the axis of form as shown in Figure 6-4.

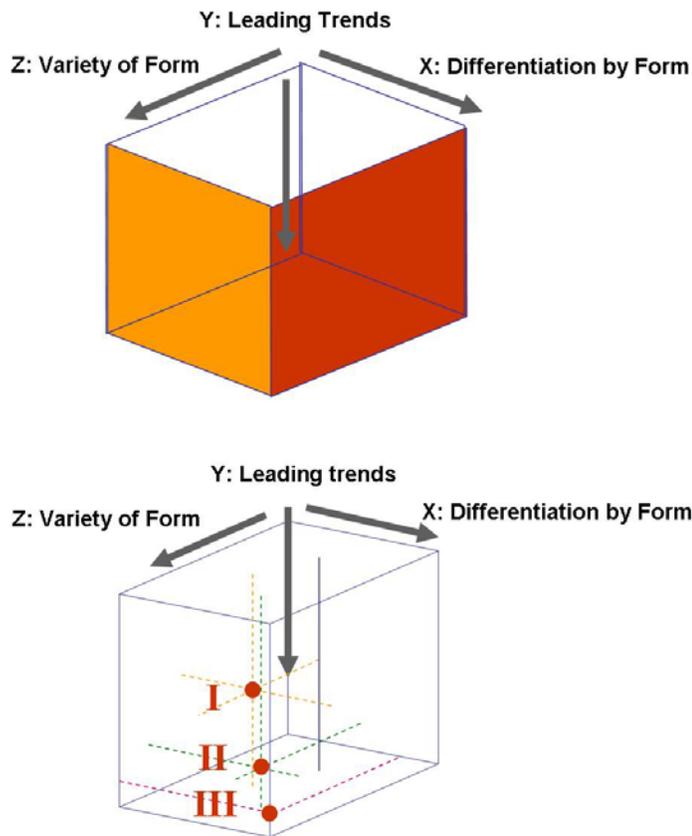


Figure 6-4 Three dimensional graph in the axis of form

In

Figure 6-4 above, the point I for type A of Product Identity indicates that the type has difficulty in differentiating its form from other products because it follows rapid change of trend and fashion and it doesn't have much variety of consistency though it has various designs. In addition, the type responds fast to trend but it is hard to dominate market, to attract users and to lead trend. The type has all mid level in form differentiation, form variety and trend leading and thus the form language is not clear although it has reasonable Product Identity.

To this type it is suggested that,

- 1) Concentrate on getting coherence of form. They can build own form language with various form factors like curve or defined form or emphasis and so on.
- 2) On the basis of coherence of form try to take a differentiation by form. For example, with their unique Family Look differentiation by form can be formed.

The point II for the type B of Product Identity has its own form factors to differentiate its products from other products, and it has variety based on consistency between form factors. The type B can respond slowly to trend in order to continue its strong form language but it can lead trend with high user attraction and market share.

To this type it is suggested that,

- 1) Keep the present differentiation by form
- 2) Consider more variety of form
- 3) Consider to lead trends. Maybe products of the company which belongs to this type are not so trendy or fashionable. Company can response to trends according to needs of consumers.

The point III for type C of Product Identity is based on high level of design consistency and it identifies the whole image with a little change of independent form regardless of trend and fashion and achieves form differentiation and variety at the same time. In addition, it shows high market share to satisfy users' needs through itemized product groups in consideration of usability. The type C shows that it is limited in a few kinds and simple products.

To this type it is suggested that,

- 1) Try to produce various products category. Companies of this type can have small quantity and simple products. With this stable variety of form and differentiation by form they can try to develop much more product lines.
- 2) Consider trend and fashion. It can be said that they already lead trends because they have a high level of market share, variety of form, and differentiation of form. But their products are regardless of trend and fashion, so they can be trendier.

This kind of process of Product Identity, however, is not absolute and it has limitation to exclude other influences of Product Identity because it is based on the most influential form factors.

7 Conclusion

A corporation communicates with the public mostly by its products and its purpose is to increase its profit through the communication. In order to achieve the purpose of profit more effectively, the corporation must have the consistency of Product Identity. The Product Identity enables consumers to be aware of the corporate philosophy and image through product design. As a result, consumers become interested in the corporation, and this favorite impression and expectation can be the guarantee of future profit of the corporation.

It is the same with the mobile industry where rapid change in technology and trend exists. If the mobile phones always try to follow new trends with various types, they can make a success in short term profit but it is hard to make a success in long term market share and to attract users continuously.

So corporations must establish their own unified image in mobile phones responding to consumers' desire of product and it must also keep the consistency of image for a long time. The strategy of Product Identity makes it possible.

It is analyzed through survey and case study in this study how the Product Identity is composed based on the importance of Product Identity and what factors are for strong Product Identity.

To sum up the specific results based on the purpose of the study are as follows.

Firstly, it is analyzed why Product Identity is needed for mobile phone and how it is composed.

Product Identity is related with various areas such as corporate philosophy, design idea, brand image and so on, and it is affected by different situational variables such as corporate, product and user while it affects them at the same time. The most important factor in Product Identity, however, is the unique distinction of the product itself because the Product Identity can be happened when it is considered with different factors in use.

The elements of Product Identity in mobile phones are largely divided into visible and invisible elements. The visible elements are divided into the first visible element such as general form of mobile phone, main color of mobile phone and type of mobile and so on, and second visual element, which is additionally recognized in more detail, such as partial form of mobile phone, partial color of mobile phone, printed pattern and so on.

The invisible elements are divided into the direct invisible elements which affect the Product Identity by product use such as interface, technology, quality of product and safety, and indirect invisible elements such as corporate philosophy, design philosophy and brand awareness.

Secondly, the use of picture cards is suggested through the survey to analyze users' recognition of factors of Product Identity of mobile phones and the most important factor to users. Product Identity from the point of users must be different from the one of the corporation because users do not accept the Product Identity directly and unmodified from the corporate Product Identity but they understand it from their experience of the product with various value systems.

As shown in the survey, users accept the first visible elements such as type, general color, and whole form of mobile phones for their Product Identity among other elements of Product Identity in mobile phones.

Thirdly, the difference of strategies in Product Identity between Nokia and Samsung is analyzed from the points of corporations. Here, the main elements of Product Identity such as type, color and form are analyzed in the aspect of time and place.

Nokia classifies users by the system of clear product category and product fashion. It secures various users providing them with item groups of various styles and functions. It is possible because Nokia establishes the strong Product Identity to differentiate itself from competitors. Also Nokia continues the Family Look using its own form language in the change of forms following the trend and fashion.

On the other hand, Samsung introduces many experimental designs directly representing Asian culture for new change and technology. It tries to deliver 'high technology' and 'advanced functions' to consumers by releasing folder and slide type in the early period and now it leads the market of folder and slide types. It has, however, a difficulty in attracting consumers with limited group items because of its strategy for premium Product Identity of high technology with no system of product category. Furthermore, it is hard to establish strong Product Identity because of frequent change of design without consistency. Samsung Product Identity focuses on type but the type does not greatly affect the differentiation from other products in Samsung's competitiveness.

Finally, the process model for strong Product Identity of mobile phone is suggested.

At first, in order to understand the problem and position of the present Product Identity, the type of corporate Product Identity is analyzed by elements for product positioning such as rareness, brand awareness, price, color, form and technology. The problems of Product Identity of each type are analyzed and tried to be solved through the common form factors. The situations of Product Identity are divided into three positions in order to suggest the problems and solutions for the most influential form factors through three axes (variety of form, and differentiation by form, and leading trend).

As examined by the case study of Nokia and Samsung, the form factors most effectively represents the corporate Product Identity among other Product Identity elements and it gives differentiation to corporation.

It is hard to continue a form without change in mobile phone sensitiveness to trend but if there is no consistency for change, it leads to losing Product Identity. Therefore, it is important to get trend leading through form differentiation and variety using the form language in harmony of various form factors such as curve, length, thickness, volume, complication, repetition, emphasis, stability, defined form, and so on.

Product Identity is not just a design element which is limited in forming image but rather it is an absolute factor to affect the whole process such as production, marketing and consumer desire.

It is not coincidental to create a successful Product Identity. The Product Identity must be continuously managed through tactical and strategic policy and program combined with insightful design sense because the consistency of Product Identity is very important to the purpose of corporation and brand strategy.

The ideal product can be made when a corporation establishes its own Product Identity and communicates with consumers through it.

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