INTRODUCTION

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1. Introduction

1-1. The Background of the Study

Since the emergence of the Second World War, our lives have been transformed in many ways that appear to diminish the importance of national borders. Ideologically, with the cold war ended, there are no longer political allies but only economic blocks: nations have been created (Germany) and dissolved (Soviet Union) at a great rate than at any time. Trade between nations has multiplied by a factor of thirteen since 1950.\(^1\) In addition, breakthroughs of technology, particularly computer technology, have served physical and mental distances between people far closer than ever. Everybody around the world is increasingly being networked and one fingertip of click can connect virtually almost everywhere around the world. Capital is held internationally and, as a consequence, economic and political events in one country affect those in another more than ever: American stock index, DOW and NASDAQ exert significant influences all over the world's stock markets. As a result, so-called 'globalization' has come into being. Japanese social scientist, Kenichi Ohmae succinctly described four major forces behind this globalization phenomenon: the growing capital-intensity of manufacture, the accelerating tempo of technologies, the emergence of a growing body of universal users on a much more mass market scale than in the past, and finally the emergence of neo-protectionist pressures.\(^2\)

Webster's Dictionary defines 'globalism' as 'a national policy of treating the whole

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\(^2\) Ohmae, Kenichi. Triad Power: The Coming Shape of Global Competition, New York, 1985
world as a proper sphere for political influence”. In many cases, the term, globalization is misunderstood only as universally monopolized homogenization. However, globalization has two meanings: “imperialism” and “internationalism” terms that represent the negative and positive extremes of globalists behavior in trade and politics. Imperialism tries to market the same goods (like IBM, creator of monolithic design language) to the greatest number of people and sees global brands as the way of forward. However, in the mean time, internationalism is interested in ensuring their competitiveness by accompanying the wishes of consumers in regional segments within their market (for example, large automobile manufacturers that try to embrace local demands within standard platform). However, many leading scholars emphasize that global marketing should not mean providing the same product in all countries, but offering local adaptations around a standardized core.4 Global marketing may well require a standardized marketing strategy, but the program for executing that strategy can vary from market to market.

In turn, the globalization makes the culture one of the most important assets to work with. As mentioned above, corporations now can on longer solely rely on domestic market and they need to reach out externally to global market, which makes understanding different cultures as key success factors in highly competitive global economic arena. For example, all major companies in the computer industry have 50 percent or more of their sales outside their native countries, and it’s now common for major software products to be released simultaneously in ten to twenty different

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languages. On the other hand, in terms of domestic views, local industries which must defend domestic market from ever-coming foreign trade waves need to use their cultural identities as strong competitive advantages over foreign competitors. However, for even local people, it is not so easy to understand their own cultural identities because they have long been taking them for granted. The other factor, particularly in design, that made culture as critical element is the general shift from modernism to post-modernism. In the age of modernism, Western values including America and other industrialized European countries predominantly prevail all over the world and all the cultures tend to blindly follow universal value. For example, the Asian economies had grown by imitating Western modern products: platonic geometric form, functional transparency, and minimal decoration solidly rooted in the tradition of the Bauhaus, and these countries’ own product cultures had been largely discarded. However, as post-modernism emerges, these culture-free, universal value has been devaluated and modern sense of vernacularism has been emphasized. Besides, some countries like Japan and other rapidly developing countries, having reached maturity as a manufacturing power, they can no longer imitate American and European design, relying upon a low wage base to undercut similar products made in their home markets. They found the one of most efficient ways of coping with this difficulty as rediscovering a distinctive culture of their own. Nations began to recognize their own different value and regard them as important assets. Different cultures have realized the fact “there is no better or worse culture but only different culture”.


As culture becomes critical issue, designers are no exception from this paradigm. After all, it is designer’s ultimate role that shapes people’s everyday culture by creating new design. Regardless with whether designers consciously intended to create cultural object or not, all the artifacts they designed will be eventually those which reflect the culture in that time. With culture assigned as to designer’s task, it gives opportunities and threats as well. At first, as an opportunity, culture strengthens the myriad of influences which are prompting a growing number of companies to stop treating designers as mere stylists, and, instead, to start exploiting their potentials to the full. For example, Sony, Ford, Philips and the other new design ‘converts’ have gained a distinct competitive advantage by allowing their designers unprecedented involvement in a whole range of decisions about product and market strategy. However, if designers do not act properly and promptly to this newly required role, design would then be pushed back to the dark ages of skin-deep styling. This opportunistic notion of designer as culture-former accordingly requires the totally different roles, processes and methods of conventional designer. In other words, it extends the responsibilities of designers far beyond merely form-giving or generating sheer marketing gimmicks. As Childers said “The designer emerges as having far more pivotal role than has generally been realized. If we look along the entire sequence of effort involved in modern living, it is in fact the design profession that provides the essential links in the chain.”

Nowadays designers have begun to understand the role of design in culture and to develop the method and process such as ethnography, user-observation, scenario-based design, and the like for applying cultural factors on design. However, major topics in cultural design are still

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limited only around identifying aesthetic stereotypes such as national shape or color preferences: for example, 'rigor' for German, 'flair' for Italian, 'compactness and cuteness' for Japanese, and 'tail fins' for American. Whereas aesthetic difference among different cultures are obviously one of very important issues in cultural design, the design in culture should be extended beyond material and phenomenal culture.

Equally, perhaps more important issue is culture's invisible and intangible aspect in design such as user's interaction with product. This invisibility has become more important as products become more intangible than ever and software in product takes major part in product. In many product areas, especially consumer electronics, technology has become so miniaturized and standardized that it amounts to little more than a few microchips – what the electronics industry calls a 'black box'. As a result, the product's function no longer has much, if any, influence on form. However, with the some few exception of HCI (Human Computer Interaction) field, there have been almost no trials to integrate invisible aspects of culture into design. Even in cultural studies in HCI they remain merely around differentiated icon metaphor, national format, language, symbol and taboos and so on.

Furthermore, major methods of cultural design were limited only in designer's personal intuition or pencil and paper survey that requires time and effort. These conventional methods cannot effectively used for identifying cultural characteristics and applying them for design for two major reasons. At first, culture is not something that people can easily and explicitly talk out and show only by behavior because culture is deeply hidden in people's sub-conscious level. And the other reason for ineffectiveness of conventional method lies in its time, effort, and expense. Cultural survey, even small scale of survey, takes tremendous time and expense because it needs to sample different
cultural subjects who are living in far remote locations. Internet as surveying tool and other computer aided tool has become quickly feasible and affordable as computer technology is rapidly developed and, accordingly, the number of Internet users increases fast. However, even in Internet survey or computer-aided tool, its major contents are mainly constrained in subjects' opinions against series of standard questions. However design survey needs very dynamic study such as observing user's behavior or user's interaction with product. There have been only few trials to use internet as dynamic surveying tool like usability testing in which computer captures users' interaction with product.8

The background of study is summarized and diagrammed as follow: (Figure 1-1).

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Figure 1-1: The Background and the Need of the Study

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1-2. The Objective of the Study

Considering backgrounds and needs of the study stated so far, the study sets the overall goal and specific objectives of the study. At first, overall goal of the study is set “to understand comprehensive cultural influences on human interaction with design through computer-aided tool and to explore its application for design process”. More specific objectives are listed as follows:

• To understand the nature of culture.

At first it needs to understand the general nature of culture including historical point of view on culture, the meaning and definition of culture, diverse theoretical perspectives on culture, and methodologies of cultural study. The answers of this objective would set the overall boundary conditions to this study.

• To identify the frameworks of cultural study.

What are the basic frameworks used in the cultural study? Particularly, it needs to define some culture-free frameworks to understand characteristics of certain culture, to develop the model of culture, and to compare different cultures. The answer to this objective would be also used as a important tool to interpret the backgrounds and reasons of other variables within design such as people’s interaction with product, subjective preference on specific design, and people’s mental population stereotypes.

• To understand the structure of design with the cultural perspectives and to identify appropriate design methods for design attributes.

The study mainly aims to understand the relationship between culture and design. It requires to identify the structure of design so that culture can be compared the relationship with different attributes of design. In addition, most appropriate design
methods for each design attribute are identified for using them in the development of tool for understanding the relationship between culture and human interaction with design. The answers to this objective would be implemented to develop different levels of design stimuli for main experiment.

- To develop the tool for understanding the relationship between culture and design. Actual tools to understand the relationship between culture and design are required by considering all the answers to objectives mentioned above. According to the answers to this objective, main experiment would be able to be constructed and other tools for cultural design can be developed.

- To identify the effects that culture make on human interaction with design.

Finally, as a main objective, actual attempts of how culture makes an effect on human interaction with design are required to be tried. Tools developed and other theoretical findings would be used for conducting actual cross-cultural case study. Findings from the answers to this objective would be major theoretical conclusions of this study.

- To explore the application of the relationship between culture and human interaction with design for design process.

As final objective, findings from the effects of culture on human interaction with design are integrated as general model for exploring their application for design process. It is sought for how different cultural elements and design attributes are related in each stage of design process.

The objectives of the study are summarized and diagrammed as follows: (Figure 1-2)
1-3. The Scope and the Method of the Study

Having identified the objectives of the study, in order for accomplishing for the objectives of the study, appropriate scope of the study and its methods are laid out. Basically the scope of the study comprises of the answers of the objectives stated at the previous section of 'the Objective of the Study' with the additions of introduction and conclusion. The methods of the study are differentiated according to the nature of each chapter. However, the study tries to adopt practical methodologies so that the study orients for not just theoretical study but also for practical one. Scopes of each chapter in detail are following.

At first, in the chapter of introduction, the background and the need of the study are outlined. Major factors forming background of the study are listed up in detail, which
results in arguing the emerging importance of culture. Problems of existing cultural design are identified and needs of the study are specified. Based on the needs of the study, the comprehensive goal of the study and its objectives in detail are stated. The chapter of introduction is ended up with generating the scope and the methods of the study. Mainly literature study is used for forming the background of study and setting up the objective of the study.

In the second chapter, the nature of culture, one of the key topic issues of the study is discussed. Various theoretical perspectives on culture are reviewed: how the meaning of culture has been changed into current concept of culture; the culture is defined and a meaning of culture in this study among diverse meanings of the culture is selected; methods of cultural study in related fields are outlined, and differences and similarities of methods are summarized. Last part of the second chapter is consisted of the description of the structural characteristics of culture, which will be specified in detail at the following chapter. Major methods of the study in this chapter also heavily rely on literature study.

In the third chapter, based on the findings of preceding chapter, theoretical frameworks of understanding culture are attempted to identify. The notion of ‘cultural variable’ are defined and explained as the means of culture-free universal variables that can be used to profile the certain culture, and to compare different cultures. Various existing models of cultural variables from different researchers are introduced. Finally the models are compared and clustered to generate the summarized version of cultural variable. In additions, the way of applying cultural variables for the study will be also explored. The summarized one will be employed in later chapter for generating list of questions for identifying subject’s cultural characteristics in main experiment. Later, this
will be also compared with subject's other design characteristics such as interaction behavior, subjective preference and population stereotypes so that the reason for specific design characteristics are interpreted with the relationship with cultural characteristics. Literature study will be major method for this chapter too.

In the fourth chapter, having identified the way of understanding cultural characteristics in preceding chapter, it is the turn to figure out to identify the way of human interaction with various design attributes. As culture is explained in terms of structural layer and cultural variables, design is also analyzed to identify different structural design attributes. The nature of different attributes of design is discussed and appropriate methods to study each attribute are found. Among different methods, most appropriate methods fit to each attribute are selected and fully reviewed including processes and case studies. Some computer-aided tool is actually developed and demonstrated in detail. The findings of this chapter will become the foundation of designing main experiment. Both of literature study and case study are used as main method for this chapter.

In the fifth chapter, by synthesizing all the findings from preceding chapters, main experiment is designed. The experiment is oriented for cross-cultural study so that subjects participating in the experiment are those with different cultural background. And pilot experiment is conducted for evaluating the validity of the experiment. Based on the results from the pilot experiment, final experiment will be set up by improving the problems and difficulties from pilot experiment. Method employed in this chapter is fully actual experimental case study.

In the sixth chapter, main experiment is developed by improving problems found in pilot experiment. Main experiment is actually conducted and all the results from
experiment are gathered by computer. Various hypotheses regarding the relationship between culture and design are set up and they are proven through diverse analyses between cultural characteristics and design attributes. Experiment is cross-culturally conducted in Korea and Japan for understanding cultural differences and their effects on design. Here also actual case study is employed as study method and partially some literature study for supporting analyzed results.

In the seventh chapter, the final one, all the findings are summarized and conclusive remarks are drawn. In additions, some model of cultural effects on design is formed. Finally, some further prospects are outlined through identifying limits of the study and further works to be done.

In the appendix all the papers presented and published for this study are listed up and comment mails from participants of experiment via Internet survey are attached. Additionally, some raw data from the experiment are attached.

The scope of the study is summarized and diagrammed as shown in Figure 1-3.
Figure 1-3: The Scope and the Flow of the Study