

1 Actual Conditions of Graphic Design Development Methods ^(*)

In recent years, due to rapid progress in IT introduction and digitization as well as media diversification, the importance of graphic designs has grown dramatically higher than ever. Under such circumstances, graphic design development methods are likely to have changed drastically. In January, 2014, the Design System Subcommittee, Intellectual Property Committee, Industrial Structure Council pointed out, as review of the development of operational infrastructure that supports the design system, the need to indicate the examination standards on graphic designs more clearly and the need for the Japan Patent Office (JPO) to provide necessary information for enabling business operators to determine whether or not clearance searches must be conducted. In particular, since determination of creative difficulty is carried out on the basis of a person ordinarily skilled in the art of the design, it is necessary to reveal the actual conditions of graphic design development in order to make clearer the standard for determining the creative difficulty of graphic designs in the Design Examination Standards. Based on the above, this research was conducted to investigate the latest graphic design development methods or the like and to collect basic information so as to study how the Design Examination Standards can be revised to make them clearer and better suited to the latest conditions of design development.

I Introduction

In recent years, due to rapid progress in IT introduction and digitization as well as media diversification, the importance of graphic designs has grown dramatically higher than ever, with increasing moves to differentiate products or improve the usability of equipment through active use of graphic designs. Under such circumstances, graphic design development methods are likely to have changed drastically with the emergence of tools for easily developing advanced graphic designs and the spread of license-free design materials among other factors.

To date, discussions have been held on the desirable system for protection of graphic designs. On January 31, 2014, the report “Support for Japanese Companies to Expand Their Businesses Overseas by Protecting Rights on Creative Designs”¹ was compiled at the third meeting of the Design System Subcommittee. The report indicated the future direction for studying the development of not only the legislative framework, but also operational infrastructure that supports the design system. The report also pointed out the need to indicate the examination standards on graphic designs more clearly than before and the need for the Japan Patent Office (JPO) to provide necessary information for enabling business operators to determine

whether or not clearance searches must be conducted.

In particular, since determination of creative difficulty is carried out on the basis of a person ordinarily skilled in the art of the design (hereinafter referred to as a “person skilled in the art”), it is necessary to reveal the actual conditions of graphic design development in order to make clearer the standard for determining the creative difficulty of graphic designs in the Design Examination Standards.

Based on the above, the following research was conducted so as to investigate the latest graphic design development methods, etc. of a person skilled in the art and to study how the Design Examination Standards can be revised to make them clearer and better suited to the latest conditions of design development.

The actual conditions of graphic design development were investigated and analyzed through research on information published in and outside Japan including books, academic articles, reports and Internet information.

In addition, in order to ascertain information on matters such as the entities engaged in graphic design development, the specific products, functions, design creation methods and tools, and determination of creative difficulty by a person skilled in the art, a questionnaire survey was conducted on 3,275 samples (3,069 companies,

(*) This is an English summary by the Institute of Intellectual Property based on the FY2014 JPO-commissioned research study report on the issues related to the industrial property rights system.

175 design firms and 31 universities in Japan), and responses were obtained from 618 samples.

Also, in order to identify such details as the actual conditions of graphic design development and the background of determination of creative difficulty, interviews were held with 34 samples extracted from the respondents to the domestic questionnaire survey.

II Current design system relating to determination of creative difficulty of graphic designs

1 Outlines of the Current System

(1) Design Act²

In Japan, Art. 2(1) and (2) of the Design Act provide for the definition of a “design.”

As the requirements for design registration, the respective items of Art. 3(1) of the Design Act provide for novelty, and Art. 3(2) Act provides for creative difficulty.

(2) Design Examination Standards³

(i) Graphic image subject to protection and requirements for description of the design (application and drawing)

In Japan, graphic images subject to protection and requirements for description of the design are specified in the Design Examination Standards as follows.

(a) Graphic image subject to protection

1) Graphic image displayed

A graphic image complying with the requirements under Part VII Individual Applications for Design Registration, Chapter IV Design Including a Graphic Image on a Screen, 74.1(1) and (2) is regarded as subject to protection under Art. 2(1) of the Design Act.

2) Graphic image that is provided for use in the operation of the article

A graphic image complying with the requirements under Part VII, Chapter IV, 74.2 (1), (2) and (3) is regarded as subject to protection under Art. 2(2) of the Design Act.

(b) Requirements for Description of the design (application and drawing)

When applying for design registration for a design including a graphic image, the applicant must pay attention for the statement in the application, especially to the following: 74.3.1 (3) Statement in the column of “Description of the Design” and (4) Statement in the column of

“Description of Article to the Design”

(ii) Examples of a design that could have been easily created listed in the current Design Examination Standards

In 74.5.3 Creative difficulty of the Design Examination Standards, the following examples of a design that could have been easily created are listed:

(a) Design of replacement

(b) Design of aggregation

(c) Design constituted by changing the layout

(d) Designs constituted by changing the component ratio or by increasing or decreasing the number of units of a continuous constituent element

(e) Design that merely represents shapes, patterns or colors, or any combinations thereof, that were publicly known, almost as they are

(f) Design that is constituted merely by changing the mode of frame division

(g) Design that merely represents a mode of change by an ordinary technique, based on shapes, patterns or colors, or any combinations thereof, that were publicly known

III Actual conditions of graphic design development

1 Positioning of graphic designs in product development

Graphic designs are becoming more and more important in product development. As a result, today the staff in charge of design often participate in the product development process from the planning phase. There is also a trend that, in graphic design development, particular focus is placed on an easily-to-understand structure, easy operation, and easily-to-understand notation. On the other hand, in the survey results, relatively few respondents opined that they pursued originality. This suggests the reality where business operators are developing graphic images by prioritizing better operability and usability over decorative expressions, in order to achieve the user-friendliness sought by users.

One of the matters that are taken into account in the development of graphic designs, particularly graphical user interfaces (GUIs), is that they are created with consideration to their function and usage. This is because a GUI is not a mere display of an image, but an interface for performing the sought function. It is found that

developers first consider the purpose of use of the GUI and the purpose of the operation, and then consider the specific graphic design based on those purposes.

2 Influence of environmental changes on development

(1) Tools for graphic design development

In graphic design development, so-called graphic software is generally used when developing graphic designs from scratch, that is, when starting from the creation of graphic data. Such software has various functions for making a variety of expressions (e.g., a rectangle drawing tool, a coloring tool and an object-aligning function), and a developer creates graphic data by applying multiple functions.

There are also cases where a developer develops graphic designs by combining already available GUI components as needed. For instance, software called an “integrated development environment” provides a tool for drag-and-drop arrangement of GUI components, enabling development to illustrate the same GUIs as users will see.

(2) Influence of the spread of mobile terminals

The diffusion rate of mobile terminals, particularly smartphones, has surged over the past few years, and users have become familiar with smartphones with touch display panels. Users who became accustomed to that operational feeling began to seek a similar operational feeling in other products as well. In response, companies have come to secure user-friendliness by adopting this type of popularized user interface. In addition, the performance of smartphones themselves has also improved, and the variation of expressions has expanded.

(3) Design guidelines

Here, design guidelines refer to the guidelines offered by an OS supplier which clarify designs that are easy for users to use in line with the appearance and specifications of the OS. In order to provide such ease of use, companies that develop and provide applications on a certain OS platform have tended to carry out development while referring to design guidelines.

With regard to the influence of design guidelines, a majority of respondents in this survey indicated that design guidelines were only a guide, and there was room for them to

demonstrate creativity, rather than stating that design guidelines restrained design development.

(4) Other environmental changes

In addition to the above, some respondents mentioned that the modes of dynamic expression and screen transition have become more important than in the past as a presentation technique, and some others opined that the emergence of cloud services resulting from the development of web technology has also influenced the development of graphic designs.

3 Summary

Graphic designs serve as a major factor that contributes to enhancing product appeal and corporate image and differentiating one’s product from the products of others. With the expanding use of information equipment, such as smartphones, graphic designs have become more important than ever in product development in recent years.

Meanwhile, since graphic designs function as an interface between equipment and humans, they are being actively created with consideration to improved operability and usability rather than decorative expressions. There is common awareness that this aspect will be the key in differentiating one’s product from the products of others.

As for the actual conditions of development, many companies carry out development using GUI components and development complying with design guidelines provided by the supplier of the OS or platform. In particular, with regard to design guidelines, many companies comply with the guidelines in order to make their graphic designs consistent with the operational interface that users are familiar with, and add their original creations thereto. At the same time, there are also companies that develop graphic designs by themselves from scratch and achieve both improved operability and originality in appearance, and use this aspect as a strong point of their product.

Both the former companies and the latter companies carry out design development in line with the usage and function that are sought in graphic designs as a premise. Therefore, companies desire that the evaluation and determination required for graphic design protection be conducted while taking into account such usage and function of the graphic designs. Also, many companies hoped that there was a means to highlight any new unconventional

feature of the graphic design upon filing a design application for it.

IV Assumed categories of creativity of graphic designs and opinions obtained

1 Survey method and assumed categories

In the questionnaire survey, case examples were prepared by combining the following seven categories of creativity and case examples given in the conventional Design Examination Standards, and opinions were collected by indicating those case examples.

- (1) Category 1 “Digitization of a real object”
- (2) Category 2 “Making the mode of change of a real object into a GUI”
- (3) Category 3 “Conversion of the graphic design of an article/function to another article/function”
- (4) Category 4 “Mode of change in form”
- (5) Category 5 “Constitution of a screen image by only using existing GUI components”
- (6) Category 6 “Simplification of display elements”
- (7) Category 7 “Addition of colors or patterns”
- (8) Category combination 1 “Constitution of a screen image by only using existing GUI components + addition of colors or patterns”
- (9) Category combination 2 “Change in the component ratio + addition of colors or patterns”
- (10) Category combination 3 “Making the mode of change of a real object into a GUI + addition of colors or patterns”
- (11) Category combination 4 “Simplification of display elements + change in the component ratio or increase or decrease in the number of units of a continuous constituent element”
- (12) Category combination 5 “Simplification of display elements + conversion to another article + change in the component ratio or increase or decrease in the number of units of a continuous constituent element”
- (13) Category combination 6 “Conversion to another article or to multiple usages + mode of change in form”
- (14) Category combination 7 “Making a real object into a graphic image + conversion to another article or to multiple usages + aggregation”
- (15) Category combination 8 “Simplification of display elements + change in the component ratio or increase or decrease in

the number of units of a continuous constituent element + change in layout”

2 Survey result

For each question, the percentages of those who responded “easily conceivable” and those who responded “not easily conceivable” and the percentages of the respective reasons selected for each response were organized and their tendencies were analyzed.

The tendencies that were present or absent in the responses and the reasons therefor were sorted out and summarized for each question.

(1) Questions for which many respondents answered that the graphic design was regarded to be easily conceivable by any person skilled in the art, and the tendencies in the answers given

- (i) Making a real article into a graphic image
- (ii) Conversion of a graphic image to another article
- (iii) Constitution of a screen image by only using existing graphic image components
- (iv) Simplification by partial omission

(2) Change that is regarded to be easily conceivable by a person skilled in the art

- (i) Addition of a drop-down menu to the part for making a selection
- (ii) Insertion of gaps between elements or change of the gap width
- (iii) Partial deletion of constituent elements
- (iv) Rounding of corners
- (v) Change in the component ratio
- (vi) Change or addition of color
- (vii) Compliance with the specifications of the default design guidelines

(3) Mode of change that is regarded to be easily conceivable by a person skilled in the art

- (i) Enlarged display of the selected part
- (ii) Embossed display of the selected part
- (iii) Engraved display of the selected part
- (iv) Display of detailed information, etc. in a balloon
- (v) Change of color
- (vi) Compliance with the specifications of the default design guidelines

(4) Mode that is not regarded to be easily conceivable by a person skilled in the art

- (i) Mode of change that is not normally seen or

- a mode of change that involves ingenuity
- (ii) Making a mode of change that differs from reality into a graphic image
- (iii) Color expression that involves ingenuity
- (iv) Pattern expression that involves ingenuity

V Conclusion

1 Viewpoint of evaluation of creative difficulty considering the actual conditions of graphic design development

Considering the actual conditions of graphic design development, evaluation of the creative difficulty of a graphic design needs to be conducted after precisely identifying its usage and function. In addition, if an unconventional visual effect has been created as a new characteristic of a graphic design based on such usage and function, such unconventional effect should be appropriately evaluated. In doing so, one idea is to encourage more active use of the feature statement voluntarily submitted by the applicant, in addition to the statement in the application and drawings.

2 Suggestions concerning evaluation of creative difficulty (whether or not an ordinary technique is used) of graphic designs

When evaluating the creative difficulty of a graphic design, that is, a design including a graphic image on a screen, the following indicators could be used in addition to the current examination standards.

(1) Examples of newly assumed designs that are found to be designs of a graphic image on a screen that would have been easily created

(i) Making a real article into a graphic image

Design that merely represents the appearance of a real object almost as it is

(a) Target of application

Design in which all or part of the graphic image merely represents the appearance of a real article or the mode of change in its form

(b) Requirements for application

The usage and function of the original article (including a part of an article) and those of the graphic image must be the same.

When the original article (including a part of an article) evokes a general-purpose usage (e.g., a numerical input button or a selection/determination

button), the question of whether or not the detailed usage of the original article and that of the graphic image are the same is irrelevant.

(ii) Conversion of a graphic image to another article

Design that has merely converted a graphic image of a certain article to a graphic image of another article almost as it is

(a) Target of application

Design that has merely converted a graphic image displayed on the display part of a certain article to all or part of a graphic image of another article.

(b) Requirements for application

The usage and function of the original graphic image and those of the converted graphic image must be the same.

The question of whether or not the art of the design (field of the article) of the original design (article to the design) and that of the converted design (article to the design) are the same is irrelevant.

(iii) Constitution of a screen image by only using existing graphic image components

Design that has merely been constituted by using existing graphic image components and by adopting a regular layout

(a) Target of application

Design that has merely been constituted by using existing widgets (GUI components) or rectangular sections and by adopting a regular layout according to the use and function (required function) of the graphic image.

(b) Requirements for application

The design must use existing widgets (GUI components) or rectangular sections as constituent elements of the graphic image. The design must adopt a layout that is ordinary for the same type of graphic images, a regular layout according to the usage and function (required function) of the graphic image (including a layout that has been applied as a metaphor) or a mere vertical or horizontal alignment (including multiple rows).

(iv) Simplification by partial omission

Design that has merely deleted partial collective section elements from a graphic image constituted by multiple section elements

(a) Target of application

Design that has merely deleted partial collective section elements from a graphic image that was publicly known and that was constituted by multiple section elements.

(b) Requirements for application

The original graphic image that was publicly known must be constituted by multiple section elements, and only partial collective sections must be deleted therefrom.

The usage and function of the original graphic image and those of the graphic image in question must be the same.

The question of whether or not the art of the design (field of the article) of the original graphic image and that of the graphic image in question are the same is irrelevant.

(2) Examples of change of a detailed part, etc. by an ordinary technique

Considering the actual conditions of creating designs of a graphic image on a screen, the following changes in form may be regarded to be ordinary techniques and to be easily conceivable by a person ordinarily skilled in designs of a graphic image:

- (i) Change in the shape of a detailed part
- (ii) Addition of color
- (iii) Others
 - Simple compliance with the specifications designated by the default design guidelines
 - Simple combination of elements (i) and (ii) above

(3) Examples of formative change by an ordinary technique

Considering the actual conditions of creating designs of a graphic image on a screen, the following formative changes may be regarded to be ordinary techniques and to be easily conceivable by a person ordinarily skilled in designs of a graphic image:

- (i) Change in shape
- (ii) Change in color
- (iii) Others
 - Simple compliance with the specifications designated by the default design guidelines
 - Simple combination of elements (i) and (ii) above

As points to consider in all of cases (1), (2) and (3), there are multiple viewpoints based on which new, unconventional visual effects should be recognized when determining that a design cannot be regarded to be easily conceivable.

3 Opinions of users concerning protection of designs representing a graphic design

The respondents were highly interested in designs representing a graphic design, and various opinions were obtained. The respondents were generally in support of clarifying the Design Examination Standards. Also, many respondents desired that not only the simple drawings, but also the purpose, intention and background of creation be taken into consideration in determination of creative difficulty.

Meanwhile, many respondents expressed hopes that protection of graphic designs would not be implemented in a manner that would hinder development activities, suggesting their wish to secure freedom of product development.

Various other opinions were also mentioned in relation to the scope of a design right and design ingenuities that could become Japanese companies' forte.

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¹ http://www.jpo.go.jp/shiryu/toushin/toushintou/design_chizai.htm (Japanese only)

² [http://www.japaneselawtranslation.go.jp/law/detail/?ft=2&re=01&dn=1&yo=&ia=03&x=11&y=13&kn\[\]=%E3%81%84&ky=&page=6](http://www.japaneselawtranslation.go.jp/law/detail/?ft=2&re=01&dn=1&yo=&ia=03&x=11&y=13&kn[]=%E3%81%84&ky=&page=6)

³ JPO Design Examination Standards
http://www.jpo.go.jp/tetuzuki_e/t_tokkyo_e/design_es.htm