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Intellectual Property Protection of Graphical User Interface

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ABSTRACT

It is well recognised fact that GUI has become an emerging area for countries to contribute to the economy by investing in the technology driven smart devices and its protection as an intellectual property. In the recent years, there can be seen an incredible growth in the use of GUI incorporated devices and so in the legal battles. GUI can be protected under Copyright, Trade Dress, Patents and Design Rights under different jurisdiction. Overlapping of protection is not the issue as each IP is independent in its nature and has different eligibility criteria. The paper has also dealt with copyright protection of GUI but basically focused on claim of industrial design rights for the protection of aesthetic properties of GUI in developed and developing nation like United States and India by analysing the substantive and procedural procedures. India being a developing nation is still reluctant to protect GUI under India Designs Act, 2000 because the nature of GUI does not establish the eligibility criteria required for acquiring design rights. The paper also suggests indicative problems in grant of protection of GUI in India and suggests changes to make the legislation more flexible and broader in scope for such kind of application. The legal situation is unsettling and creating lacunas in the area of protection of interfaces that is promoting the economical and technological texture of every nations of the world.

Keyword: *Graphical User Interface, Design rights, Aesthetic, Intellectual property, Copyright*

I. INTRODUCTION

GUIs evolved in the era of complex technology to meet the demands of the user for making the process of interaction with computer system or any other electronic devices easier and smarter. GUI applications have gained popularity and correct response by the public in general with respect to its appearance, flexible working, fluency in operation in comparison to traditional DOS and UNIX systems. The two objectives of the UI are to display information and acquire knowledge and information through its working. The pre-determined event

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designed by written codes is being operated by the commands given by the user. This helps the user to interact with interface and accomplish the program that he/she wants to perform. Each and every action in the screen is directed to some programs that are designed by the programmers with an objective of providing some result.

Before arrival of GUIs, there had been other mediums and interfaces to interact with the computer system such as command line interface (MS DOS). The innovation and research in the field lead to the existence of Graphical interface which is more convincing and desirable. We need to explore the historical data that called for the birth of GUIs. Regula Stopper (2012)² explained the series of event that embarked the origin of GUI. Till 1970, Command line interfaces, such as MS DOS were used in which the user had to write the command for the function to get operated. In 1973, 'Alto' Computer was developed at the Xerox Palo Alto Research Center (PARC) and laid down first operational logistics for modern Graphical User Interface with features of 3-button mouse, Bit-mapped display and use of graphical window. Then in 1981, Xerox introduced Star, the successor of Alto with more enhanced features like double-clicking, overlapping windows, dialog boxes, etc. Lastly, Apple introduced Lisa with features of pull down menus and menu bars and Macintosh in the year 1983 and 1984.

Now GUIs are used in diverse smart devices and forms the basis of running applications of playstore and is very common amongst the users. The graphical representation that increases the usability and diversity of the software application need to get legal protection as capture of market share can be seen with tremendous growth. The look and feel of software has more commercial value than the coded algorithms and its protection provides competitive advantage to the first mover companies.³

II. GUI AND ITS IP PROTECTION

Protection of intellectual property is not just an investment to earn profit, instead it is recourse to get your skills and effort protected from illegal imitation and copying. It also covers the incentive theory of economics where the intellectual property holder requires capital to continue his work of art and promote research and development. GUI is a composition of wide number of elements and different aspects demands different type of protection. Patents protect the utility and functional areas of user interface with novel and industrial applications, Copyright protects the subject code and object code of the computer program i.e. algorithms and programming languages which allows user to interact with the system. Industrial Design

² Regula Stopper, *Graphical User Interface - Layout and Design*, (Jan 26, 2012).

³ Lauren Fisher Kellner, *Trade Dress Protection for Computer User Interface Look and Feel*, 61 U. Chi. L. Rev. 1011 (1994).

rights protect the aesthetic and ornamental aspects of the user interface which is the positioning and structuring different elements in the display screen with the balanced form of colours, style and pattern. Trade dress protection requires the

The idea is to provide incentive to the creators for their hard work and skills put up in an innovation and encourage them to develop more such creations filled with advanced technologies. The disclosure of information regarding new things is just to motivate public to broaden their thinking and apply their skills to produce something beneficial for the economy. Innovators expect to exercise exclusive rights over their creation because they make an investment of time, money, skills, risk and expertise whereas the end users want to have wide variety of choices at varying prices so that they can get an opportunity to pull out best from their investment.

III. COPYRIGHT PROTECTION OF GRAPHICAL USER INTERFACE

Copyright is granted to the work of authors own intellectual creation which is original and expressed in some form and manner. UI is the product of the algorithms used in the software and protected in the form of object code and subject code. "Video games are copyrightable works because they are complex final expressions involving various art forms, such as computer programming, graphic and visual design, voice acting, screen writing, and directing. Often video games are created in a collaborative process with teams of developers working on graphics, game mechanics, storyline, and voice acting."⁴ There are certain limitations to copyright protection such as scenes-a-faire⁵, merger doctrine⁶, lack of originality and functionality.

US has encouraged protection of graphical user interface under audiovisual work as it depicts the animation, movement, change of colour, pattern, style etc. But still it is nowhere written specifically about user interface. US has entertained the issue of non-literal elements of user interface in the case of *Whelan Associates, Inc. v. Jaslow Dental Laboratory, Inc.*,⁷ and held that the structure, sequence and organization of software code is protectable if it is expression of idea instead of merger with idea. Further the scope of protection was extended to look and feel of software graphics in the case of *Broderbund Software, Inc. v. Unison World, Inc.*⁸ First case to address the issue of Copyrightability of careen display was *Mfrs. Techs., Inc. v. CAMS*,

⁴ Benjamin C. R. Lockyer, *Trying on Trade Dress: Using Trade Dress to Protect the Look and Feel of Video Games*, 17 J. Marshall Rev. Intell. Prop. L. [i] (2017).

⁵ Expressions embodied flows from commonplace idea.

⁶ Only one way to express thing.

⁷ 797 F.2d 1222, 1240 (3d Cir. 1986).

⁸ 648 F. Supp. 1127 (N.D. Cal. 1986).

Inc.,⁹ where the court listed some measures to review GUI elements by separating expression from idea and then finding out the extent of copying of the screen. Further 3 step test of abstraction, filtration and comparison was laid down for determining the Copyrightability of GUI.¹⁰ Then in the year 1994, Apple and Microsoft fought the legal battle that gave birth to the true case of GUI. Apple filed suit against Microsoft for copying the unlicensed part of the Apple's GUI including "design and appearance of application windows; design and appearance of dialog boxes; menu design and appearance; design and appearance of individual applications; icon design, appearance, and manipulation; and arrangement and manipulation of application windows."¹¹ The court ruled out that the copied part were mostly the licensed element and the other were denied protection because of idea merger doctrine. The appellants cannot be provided patent like protection, copyright protection can be claimed only against the exact copies.

Copyright protection of GUI as a whole is still not encouraged by the jurisdiction but the individual elements can file for protection under artistic or literary work.¹² In my opinion, GUI as an artistic work should be acceptable when expressed in some form as it indicate the artistic skills of the author and the arrangements of non-literal elements to form some pattern is an art that facilitate certain functions when applied on the software.

IV. INDUSTRIAL DESIGN RIGHTS PROTECTION OF GUI

Design rights protect the aesthetic appeal of the article and novelty with pinch of originality directing it to the objective of providing legal stability and identity to the article. The condition precedent for design rights consist of article of manufacture requirement, novelty of the article, non-obviousness, originality and appeal to eye. The look and feel of the display screen helps in market growth as the customers nowadays are prone to technical update and want to have interactive and supportive user interface. Apple, Samsung, Microsoft, Huawei, SONY, LG, etc. are few giants in grabbing the market share of attractive user interfaces and give tough fight to their competitors. "Edward Furey (N.d.) summarized on his website that *Colour, contrast, graphics, photos and layout are aesthetic elements that enhance communication of information. These elements in the website design play an essential role in communicating with potential users, which give information about "trust this company", "buy this product", "read this information", "explore this area", etc.*"¹³ Earlier, user interface were limited to mobile

⁹ 706 F. Supp. 984 (D. Conn. 1989).

¹⁰ Computer Assocs. Int'l, Inc. v. Altai, Inc., 982 F.2d 693, 711 (2d Cir. 1992).

¹¹ Apple Computer, Inc. v. Microsoft Corp., 35 F.3d 1435 (9th Cir. 1994).

¹² India acknowledged copyright protection of GUI in the Standard Committee report of WIPO, 2017.

¹³ FU, SIQI, *User interface design by applying theories of Aesthetics*, Bachelor's Thesis in Business Information

phones and computer but now it has extended its scope to watches, refrigerators, camera, cars, TV, etc.

The layout of GUI is the arrangement of the elements of user interface that reflects the relationship and action statements for the elements and allows user interaction. D699259¹⁴, D723054¹⁵, D619614¹⁶, D725662¹⁷ are few examples of GUI layout granted design patents to their design. Icons are the graphical representation of the brand and the subject matter associated with it. For instance, Recycle Bin¹⁸ icon depicting all the deleted files or irrelevant material is stored here, Microsoft word icon is depicted through document picture that convey its usage.

Animated GUIs are also one such category that is disputable in jurisdictions because of its dynamic nature. Computer generated icons that include images that change in appearance during viewing may be the subject of a design claim.¹⁹ Music player interface and pattern of transition recorded while answering phone calls is one such animated design protected under US.²⁰ Generally typefaces are protected under Copyright Law as artistic work and can be protected as a part of screen layout providing disclaimer of it if it forms the essence of the design.

V. LOCARNO CLASSIFICATION RELATING TO GUIs

Locarno classification is used as an international classification of designs used by the different nations and established through Locarno Agreement of 1968. The Agreement is open to States party to the Paris Convention for the Protection of Industrial Property (1883). The Locarno Classification is “solely of an administrative character” and does not bind the contracting countries “as regards the nature and protection afforded to the industrial design classified in a certain manner”.²¹ The Graphical User Interface is basically virtual design on screen display having colours, text, pattern, icons on it.

Technology, LAHTI UNIVERSITY OF APPLIED SCIENCES, (Spring 2012).

¹⁴ Application by Sony Computer Entertainment titled Display panel or screen with graphical user interface.

¹⁵ Nissan Motors registered for the title ‘Display panel or screen with GUI’ for Cars.

¹⁶ Google LLC filed application titled ‘User interface for display device’.

¹⁷ Samsung Electronics Ltd. file application titled ‘Display screen or portion thereof with graphical user interface on mobile device’.

¹⁸ D536,002.

¹⁹Section 1504.01(a)-1V of the Manual of Patent Examination Procedure, 9th ed., rev. 10.2019.

²⁰ USD675638S1.

²¹ Article 1 of Locarno Agreement, 1968.

The recommended class for GUI designs is Class 14-04. Class 14-04 indicates GUI and computer screen layout and icons for computers²² and it is the globally accepted class under which GUIs are registered as it specifically says 'Screen Displays'.

Various jurisdictions have also registered the designs for GUI and Icons under Class 14-99 and Class 32-00. Few countries allow registration of Design under Class 32-00²³ when the question in hand relates to the protection of design or ornamentation independent of article on which it is to be applied. Countries like Ecuador, Georgia, Peru, Serbia protects designs under the product indication 'graphical symbols'.²⁴ Class 14-99 listed as Miscellaneous had recorded registration of icons earlier but at present nations avoid registration under this class.

Class 14-02²⁵ includes computer interfaces, computer screens, touch screens etc. and had registration related to GUIs. DM/103151²⁶, DM/103210²⁷ etc. are international registrations under this class for UI.

VI. DESIGN PATENTS IN UNITED STATES OF AMERICA

United States of America has always been advanced in terms of development and appreciation of technology. They consider everything protected under IP rights if fallen under the required criteria. The laws are little flexible and adapted to amendments in case of preservation of knowledge and creativity. US has started protecting GUIs under design patents since 1970s by establishing the precedent in the case of *Ex Strijland*⁹, the examiner affirmed the status of article of manufacture where it was held that the design must be represented with the display on which design has to be embedded. The ornamental design is for the article/product and does not refer to the standalone design. After this case, GUI became the statutory subject matter of the design and new protection guidelines were introduced for legal protection of digital designs with a display panel. Computer generated icons are mere surface ornamentation in the absence of the article.²⁸ Designs are protected under 35 USC 171 with the condition precedents of novelty, ornamentality, article of manufacture, originality and non-obviousness. Manual of Design Patent Examining Procedure laid down the protection of computer generated icons with defined statutory requirement. Top applicants for GUI Design Patents can be seen by Microsoft,

²² India inserted Class 14-04 through Designs (Amendment) Rules 2008.

²³ Graphic symbols and logos, surface patterns, ornamentation under Locarno Classification

²⁴ Insights from WIPO's Standing Committee Report on the Law of Trademarks, Industrial Designs and Geographical Indications, Thirty-Sixth Session Geneva, October 17 to 19, 2016.

²⁵ Data Processing Equipment as well as peripheral apparatus.

²⁶ Japan registered design with indication of product as 'Display screen with icons'.

²⁷ Japan registered design with indication of product as 'Display screen with animated graphical user interface'.

²⁸ *Ex parte Strijland*, 26 USPQ2d 1259.

Google, Apple, Samsung, LG Electronics, and Tencent Technology Co.²⁹

VII. REQUIREMENTS FOR GUI DESIGN PROTECTION

The industrial design rights protect the look and feel of the article and expect the design to be aesthetically attractive and convincing. Article of manufacture, Ornamentality, Non-obviousness, Originality and individual character (under the EU law) are the requirements for grant of design protection. Further, the features of shape, pattern, configuration and colours depicts the design characteristics in either two dimensional or three dimensional, also the article on which the design is embedded must be capable of being sold. All these criteria may vary from jurisdiction to jurisdiction depending upon the statutory laws of the concerned nations. The detail discussion on all these points is highlighted below:

(A) Article of Manufacture

Graphical user interface is software for user interaction and result of the subject code and object code. The UI is designed for the smart devices such as computer system, smartphones, automobiles, watches, electronic appliances etc. so these product act as an article of manufacture for the design of user interface. Many jurisdictions encourage the legal protection of design only if it is linked with the article because they contend that the design is 'for the article of manufacture'. So the representation of design without the depiction of article is not acceptable. The unclaimed part in the design can be shown in broken lines and fulfill the criteria under the law. On the other hand, EU does not believe in this concept of dependency of design on the article for its existence. The only representation of design is sufficient for grant of protection under their legal system. In *re Hruby*³⁰, it was laid down that "We do not see that the dependence of the existence of a design on something outside itself is a reason for holding it is not a design for an article of manufacture."

(B) Ornamentality

Judicial precedents affirmed that the ornamentality of the design cannot be interlinked with the functionality as both the aspect are totally different and claims different legal protection. If a design claiming patent is solely judged by its functional nature then it would not be the subject matter of design patents. The functionality and ornamentality are two different concepts and has an independent existence.

²⁹ Tracy-Gene G. Durkin, *Leveraging Design Rights to Protect Graphical User Interface*, August 23, 2016, 1pm Eastern | 12pm Central | 11am Mountain | 10am Pacific, Sterne Kessler Goldstein & Fox, <http://media.straffordpub.com/products/leveraging-design-patents-to-protect-graphical-user-interfaces-2016-08-23/presentation.pdf>.

³⁰ 373 F.2d 997, 1001, 153 USPQ 61, 66 (CCPA 1967).

(C) How functionality is different from ornamentality?

Ornamentality is the main ingredient fulfilling aesthetic requirement that should not be the result of any mechanical process as by-product. Ornamentation of design must be a different process with the intention of creating it. It should be a conscious and well-framed act of the inventor. What matters is the appearance of the article as a whole. We cannot judge the individual feature incorporated in the product to justify the aesthetic part. Overall impact of the article marks the fulfillment of design patent protection. It does not depend on the quantitative analysis, instead looks into the total contribution of design embedded in the article.

Lack of ornamentality due to the primary functional character of the article is not defence under the design patent protection process. “But if it is purely ornamental and had some functional elements then it cannot be denied protection”.³¹ The USPTO guidelines have granted design and utility patents to the same article for the fact that it comprised of both the functional and aesthetic approach as they are independent in nature.³²

(D) Novelty

The criteria for novelty lie same for design and utility patents under 35 USC 102. The application for registration can be rejected on anticipation based on prior art. Prior Art search is done by USPTO by assessing the design search database where quick search, advance search and publication number search is facilitated. The anticipation and prior art needs to be substantially similar for finding anticipation.³³

After few rulings “The ordinary observer test”³⁴ was considered as the test for proving anticipation. This is basically the test used for examining infringement cases. The following requirements lay down the ordinary observer test:

- Whether two designs are substantially same,
- The receiver might be deceived through resemblance, believing it be the other design.
- The deceiving product infringes the patented product.

The test perceives design of the product as a whole. Determine whether the deception that arises is a result of the similarities in the overall design not of similarities in ornamental features in isolation.³⁵ The Supreme Court described a claimed design as “not new unless it embodies a

³¹ Mygatt v. Zalinski, 138 F. 88, 89 (C.C.D.N.Y. 1905).

³² *In re Webb*, 916 F.2d 1553, 1558; 16 USPQ 2d 1433, 1436 (Fed. Cir.1990).

³³ Door-Master Corp. v. Yorktowne, Inc., 59 USPQ2d 1472.

³⁴ Gorham Mfg. Co. v. White, 81 U.S. 511, 528 (1871).

³⁵ Richardson v. Stanley Works Inc., 93 USPQ2d 1937, 1941 (Fed. Cir. 2010).

new impression or effect produced by an arrangement or configuration of lines which introduces new elements of color or form”.³⁶ Apple was compensated in the litigation relating to the Apple design patent: U.S. D604, 305. with more than one billion dollars by Samsung for infringing its design and utility patent.³⁷ The test for conducting infringement cannot cater the idea of segmenting each element of GUI design to examine the functional aspect of it.³⁸

If the user interface provides specific arrangement that is an improvement of an earlier version and not just the abstract idea of index then it can be granted protection.³⁹

VIII. UNDECIDED CASE OF INDIA

The usage of smart devices and advanced technology is making the consumers more and more dependent on the working of user interface. The look and feel of user interface acts as a central point of attraction amongst the consumers and also helps in differentiating the features of GUIs of one product from the other. The aesthetic and ornamental aspect of GUI can be protected by the Designs Act as followed in developed nations but Indian Patent Office denied protection to GUI under Design Act, 2000 and made it clear by the latest executive order of 2019. The Indian Act is not flexible and broad to entertain the applications of computer generated icons and their changeable nature. The Act simply protects the 2D and 3D designs of permanent visual appeal and reluctant to protect computer program oriented designs because of its nature and features. Total of 800 applications of GUI have been refused by the examiner on the grounds of incapable to fulfilling requirement criteria under the Act.

(A) Amazon Case

The proposed design titled “Graphic user interface for providing supplemental information of a digital work to a display screen” under class 14-04 was rejected on the grounds of sec 2(a) and 2(d) of Indian Designs Act. Controller held that GUI on computer screen is an application of computer program that is purely functional and its existence depend on the switch on mode of the computer system. There is no permanent appeal to eye of user interface and it cannot be considered as an article of manufacture. The user interface cannot be sold as a commodity separately. “Manufacturing is the production of merchandise for use or sale using labour and machines, tools, chemical and biological processing, or formulation.” But earlier registration evidences that there had been design registration of user interface under Class 14-99 miscellaneous for screen displays and icons. Few examples are: Design no. 201993, 207261,

³⁶ New York Belting & Packing Co. vs New Jersey Car Spring & Rubber Co., 137 U.S. at 449.

³⁷ Apple, Inc. v. Samsung Electronics Co., 786 F.3d 983, 998, 114 USPQ2d 1953, 1962 (Fed. Cir. 2015).

³⁸ *Ibid.*

³⁹ Core Wireless Licensing S.A.R.L. v. LG Electronics, Inc., (Fed. Cir. 2018).

and 203426.

IX. LEGAL DRAWBACKS

(A) Interconnection of Article and its Design

Mostly jurisdictions have favoured the protection of design on the condition of it being attached to some article. The physical relation must be established for grant of protection. EU does not follow this condition and allow design protection without representing the article. The smart devices are just a useless article in the absence of user interface. GUI is the essence of any smart devices as its working, functionality and identity is dependent on it. The display screen of online games, websites, operations of our smartphones, etc. everything is directly linked with UI. The Court held that “the term ‘article of manufacture’ is broad enough to embrace both a product sold to a consumer and a component of that product, whether sold separately or not.”⁴⁰ GUI is an undetachable component of the smart devices and so eligible subject matter. The CCPA held that “the dependence of the existence of a design on something outside itself is not a reason for holding it is not a design ‘for an article of manufacture.’”⁴¹ “Dependency, ephemerality, and permanence do not preclude design patentability.”⁴²

(B) Finished Article

The concept of finished article under designs law determines the overall end appearance of the article after the design is embedded in it. The aesthetic and ornamentality of the article must be appealing to the eye for the customers. Indian designs office concludes that the display screen with user interface do not form a part of finished article and hence not subjected to design protection. But the judging criteria must be amended when dealing with digital designs where the aesthetics of a display screen is dependent on the design of a user interface.

(C) Features of Shape, Pattern, Configuration, Colour

User interface is a blend of graphical patterns, colours, style, artistic software windows having different 2 dimensional shapes. All these properties and features of computer generated designs must be acknowledged and must be provided design protection as the look and feel of display screen is directly proportional to the inclination of customers to the smart devices.

⁴⁰ Sarah Burstein, *THE “ARTICLE OF MANUFACTURE” TODAY*, 31, Harvard Journal of Law & Technology, Number 2, Spring 2018.

⁴¹ Hruby, 373 F.2d at 1001, also John R. III Boule, *Redefining Reality: Why Design Patent Protection Should Expand to the Virtual*, World, 66 Am. U. L. Rev. 1113 (2017).

⁴² *Ibid.*

X. CONCLUSION

The objective of the study was to analyse the legal structure among the developed and developing nations for grant of protection to GUI under design rights. The USPTO, EPO, KIPO and other jurisdictions has a wide range of registrations in the area of GUI protection and they have maintained the flexible structure of the legal system very intelligibly through providing space to future ventures in the area of technology. In India, the Act is more of a traditional approach ignoring the new ventures and innovations in the market. The rigidity of the Act does not allow protection of computer generated elements and due to which large number of applications have been rejected. This rejection is not only demotivating for the designers but also make India, a place where imitations can easily be done due to lack of legal protection. Improvement in IP management, performance and administration in the past few years along with amendments of Patents and Trademarks Rules, more techno-oriented reforms reforms and reengineering of IP procedures has resulted in better technology driven performance, decreased pendency and higher rates of disposal of IP applications. The growth rate can further be increased in the light of exploring new areas and providing legal stability to it by implementing the suggestions discussed in the above unit. The nation that explores new dimension and take precautions and measures is always in the direction of success and progress that helps in competing with other developed nations.
