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"EXPANDING THE SCOPE OF DESIGN PROTECTION IN INDIA: A CRITICAL ANALYSIS OF GUI AND VIRTUAL DESIGNS UNDER THE DESIGNS ACT, 2000"

Abstract

The rapid growth of digital technologies has fundamentally transformed the nature of design, shifting it from tangible, physical products to intangible, screen-based interfaces. Graphical User Interfaces (GUIs), icons, and other virtual designs have become central to consumer interaction in a digital economy driven by smartphones, software, and artificial intelligence. However, the existing framework under the Designs Act, 2000 continues to reflect a traditional and restrictive understanding of "design", primarily limited to physical articles, thereby creating uncertainty regarding the protection of purely digital or virtual designs.

This paper critically examines whether GUI and virtual designs can be accommodated within the current statutory definition of "design" in India. It analyses the requirement of "article" and "visual appeal", and evaluates the limitations that

arise when these concepts are applied to non-physical and digital environments. The study further undertakes a comparative analysis of jurisdictions such as the United States and the European Union, where legal frameworks have evolved to recognise and protect GUI-based designs.

The paper argues that the continued insistence on physical embodiment under Indian design law is outdated and inconsistent with modern technological realities. It highlights the urgent need for a purposive interpretation of existing provisions or, alternatively, legislative reform to explicitly include digital designs within the scope of protection. By advocating a technology-neutral and forward-looking approach, this paper aims to contribute to the development of a coherent and future-ready design protection regime in India, aligned with global standards and responsive to the demands of the digital era.

Keywords: Graphical User Interface (GUI), Virtual Designs, Design Protection, Designs Act, 2000, Intellectual Property Law, Digital Economy, Industrial Design, Visual Appeal, Article Requirement, Comparative Design Law.

Introduction

The law relating to industrial design protection has traditionally evolved around the safeguarding of aesthetic features applied to physical articles. In India, this protection is governed by the Designs Act, 2000, which defines a “design” as features of shape, configuration, pattern, ornament, or composition of lines or colours applied to an article, judged solely by the eye.[1] This statutory framework reflects a product-oriented and manufacturing based understanding of design, where legal protection is closely tied to tangible and physical embodiments.

However, the emergence of the digital economy has significantly transformed the way designs are created, perceived, and utilised. Today, Graphical User Interfaces (GUIs), icons, animations, and virtual layouts form the backbone of user interaction in devices such as smartphones, computers, and other digital platforms. These elements are not merely functional; rather, they represent creative expressions with

substantial commercial value, influencing consumer behaviour and brand identity.[2] Despite their growing importance, such intangible and screen-based designs do not comfortably fit within the traditional legal framework established under the Designs Act, 2000.

A major issue arises from the statutory requirement that a design must be applied to an "article." Indian courts have generally interpreted the term "article" to mean a physical object capable of being manufactured, thereby excluding purely digital or virtual designs from protection.[3] This restrictive interpretation has created a significant legal gap, particularly in an era where innovation is increasingly driven by software, digital interfaces, and virtual environments. As a result, creators of GUI-based designs often remain unprotected under design law, forcing them to rely on alternative and often inadequate forms of intellectual property protection.

The limitations of Indian law become more evident when compared with developments in foreign jurisdictions. In the United States, design patents have been granted for GUI elements, recognising their ornamental and visual significance.[4] Similarly, the European Union, under the Council Regulation (EC) No 6/2002 on Community Designs, has adopted a more flexible and technology-neutral approach, allowing protection for screen displays and digital icons.[5]

[1] Designs Act, 2000, No. 16 of 2000, § 2(d) (India).
[2] See Susy Frankel, The Overlap of Design and Patent Law, 15 J. Intell. Prop. L. 1 (2010). [3] See Bharat Glass Tube Ltd. v. Gopal Glass Works Ltd., (2008) 10 SCC 657 (India).
[4] 35 U.S.C. § 171 (2018).
[5] Council Regulation (EC) No. 6/2002 of 12 December 2001 on Community Designs, 2002 O.J. (L 3) 1.

These developments highlight a growing divergence between Indian law and global standards.

In light of these challenges, it becomes necessary to critically examine whether the existing framework under the Designs Act, 2000 is capable of addressing the realities of the digital age. This paper seeks to analyse the conceptual and legal limitations of the current regime and to explore whether GUI and virtual designs can be accommodated through judicial interpretation or whether legislative reform is required. It argues that the continued insistence on physical embodiment is increasingly obsolete, and that a modern, technology-neutral approach is essential to

ensure effective protection of design innovation in India.

2. LEGAL FRAMEWORK UNDER THE DESIGNS ACT, 2000

The protection of industrial designs in India is governed by the Designs Act, 2000, which seeks to safeguard the aesthetic and visual features of articles while promoting innovation in industrial production.[6] The Act represents a shift from the earlier colonial framework to a more modern statutory regime; however, its underlying structure continues to reflect a physical and product-centric understanding of design.

At the heart of the legislation lies the definition of "design" under Section 2(d), which includes features of shape, configuration, pattern, ornament, or composition of lines or colours applied to any article by an industrial process, judged solely by the eye.[7] This definition makes it clear that visual appeal is the central criterion for protection, distinguishing design law from patent law, which focuses on functionality.[8] At the same time, the definition expressly excludes modes or principles of construction and functional features, thereby reinforcing the idea that design protection is limited to non-functional aesthetics.

A crucial element of this definition is the requirement that the design must be applied to an "article." The term "article" has been interpreted to mean a tangible object capable of being manufactured and sold separately, which creates inherent limitations when dealing with digital or virtual designs.[9] This requirement reflects the traditional industrial context in which the law was conceived, where designs were inseparable from physical products such as textiles,

[6] Designs Act, 2000, No. 16 of 2000, pmbl. (India).
[7] Id. § 2(d).
[8] See B.L. Wadehra, Law Relating to Intellectual Property 312 (5th ed. 2016).
[9] See P. Narayanan, Intellectual Property Law 427 (4th ed. 2017).

furniture, or consumer goods. However, in the modern digital landscape, many valuable designs exist independently of any physical form, raising questions about the continued relevance of this requirement.

The judicial interpretation of design law in India has further reinforced this traditional

approach. In Bharat Glass Tube Ltd. v. Gopal Glass Works Ltd., the Supreme Court emphasised that design protection is concerned with the visual appeal of an article as perceived by the eye, and not with its functional or mechanical aspects.[10] While this interpretation provides clarity in the context of physical products, it offers limited guidance for addressing intangible or screen-based designs, where the notion of an "article" itself becomes ambiguous.

Another limitation arises from the requirement of novelty and originality, which must be established for a design to be registered.[11] Although this requirement is essential to prevent duplication and ensure genuine innovation, its application to GUI and virtual designs becomes complex due to the rapid and iterative nature of digital design development. Unlike traditional designs, digital interfaces often evolve continuously, making it difficult to determine the threshold of originality within the existing legal framework.

Thus, while the Designs Act, 2000 provides a structured mechanism for the protection of industrial designs, its emphasis on physical embodiment and traditional notions of design creates significant challenges in addressing the realities of the digital age. The framework, as it currently stands, appears ill-equipped to accommodate GUI and virtual designs, thereby necessitating a re-examination of its scope and interpretation.

3. CONCEPT AND SIGNIFICANCE OF GUI AND VIRTUAL DESIGNS

The emergence of Graphical User Interfaces (GUIs) and virtual designs represents a significant shift in the way design is conceived and experienced in the modern digital environment. A GUI refers to the visual interface through which a user interacts with a digital device or software, including elements such as icons, menus, buttons, layouts, and animations.[12] Unlike traditional industrial designs, which are applied to physical objects, GUI

[10] Bharat Glass Tube Ltd. v. Gopal Glass Works Ltd., (2008) 10 SCC 657 (India).
[11] Designs Act, 2000, No. 16 of 2000, §§ 4, 5 (India).
[12] See Sarah Burstein, The "Article of Manufacture" in Design Patent Law, 31 Berkeley Tech. L.J. 1 (2016).

designs exist primarily in a screen-based and intangible form, making them fundamentally different in nature.

In today's digital economy, GUIs play a crucial role in shaping user experience and determining the commercial success of digital products. Applications, websites, and software platforms rely heavily on visually appealing and intuitive interface designs to attract and retain users.[13] Companies invest significant resources in developing distinctive interface layouts and visual elements, as these often serve as key identifiers of brand identity and market differentiation. For instance, the layout of a mobile application or the design of an icon can become instantly recognisable, contributing to both consumer loyalty and competitive advantage.

The importance of GUI and virtual designs extends beyond mere aesthetics. These designs often embody a combination of creativity, usability, and innovation, blurring the traditional distinction between form and function.[14] While design law traditionally excludes functional elements from protection, GUI designs frequently integrate visual appeal with interactive functionality, making it difficult to separate the two. This hybrid nature presents a challenge to existing legal frameworks, particularly those that rely on a strict distinction between aesthetic and functional features.

Moreover, the rise of emerging technologies such as artificial intelligence, augmented reality, and virtual reality has further expanded the scope of virtual design. In such environments, users interact with entirely digital spaces, where the concept of a physical "article" becomes increasingly irrelevant. Designs in these contexts are dynamic, adaptive, and often responsive to user behaviour, thereby challenging the traditional understanding of static and fixed designs under the Designs Act, 2000.[15]

From a legal perspective, the growing significance of GUI and virtual designs highlights a clear mismatch between technological advancements and existing design law. While these designs are economically valuable and widely used, their protection remains uncertain under the current statutory framework in India.[16] As a result, creators are often compelled to seek

[13] See Dev Gangjee, Design Law and Innovation in the Digital Age, 10 Oxford J. Legal Stud. 1 (2015). [14] See Susy Frankel, The Overlap of Design and Patent Law, 15 J. Intell. Prop. L. 1 (2010). [15] Designs Act, 2000, No. 16 of 2000 (India).
[16] See WIPO, Industrial Design Law and Practice – International Perspective (2018).

protection through alternative mechanisms such as copyright or trademark law, which may not adequately address the unique characteristics of interface-based designs.

Therefore, GUI and virtual designs are not merely a technological development but represent a paradigm shift in the nature of design itself. Their increasing relevance in commerce and innovation necessitates a reconsideration of traditional legal concepts, particularly in jurisdictions like India, where the law continues to emphasise physical embodiment. Recognising the significance of these designs is a crucial step towards developing a more inclusive and future-oriented system of design protection.

4. CHALLENGES IN PROTECTING GUI AND VIRTUAL DESIGNS IN INDIA

The protection of Graphical User Interfaces (GUIs) and virtual designs under Indian law presents several doctrinal and practical challenges, primarily due to the traditional and restrictive framework of the Designs Act, 2000.[17] While the Act was designed to regulate industrial designs in a manufacturing context, its application to digital and intangible designs remains uncertain and problematic.

One of the most significant challenges arises from the statutory requirement of an "article." As discussed earlier, the definition of design under Section 2(d) necessitates that the design be applied to a physical and tangible article.[18] This requirement becomes difficult to satisfy in the context of GUI designs, which exist only in a virtual or screen-based environment. Unlike traditional designs, GUIs are not attached to a standalone physical object; instead, they are displayed on digital devices, often independent of any specific hardware. This creates a conceptual mismatch between law and technology, leading to the exclusion of such designs from protection.

Another major issue lies in the distinction between aesthetic and functional elements. The Designs Act, 2000 explicitly excludes functional features from the scope of design protection, limiting it to aspects judged solely by the eye.[19] However, GUI designs inherently combine visual appeal with functionality, as their purpose is to facilitate user interaction. Elements

[17] Designs Act, 2000, No. 16 of 2000 (India).
[18] Id. § 2(d).
[19] Id.

such as buttons, icons, and layouts are designed not only to look appealing but also to perform specific functions. This overlap makes it difficult to determine whether a GUI element qualifies as a protectable design or an unprotectable functional feature.[20]

Judicial interpretation in India has not yet provided sufficient clarity on this issue. Courts have traditionally focused on physical products and conventional designs, leaving a significant gap in the jurisprudence relating to digital interfaces. In Bharat Glass Tube Ltd. v. Gopal Glass Works Ltd., the Supreme Court reiterated that design protection is concerned with visual features applied to an article, but the case did not address the complexities associated with non

physical or virtual designs.[21] As a result, there remains a lack of authoritative judicial guidance on whether GUI designs can be accommodated within the existing legal framework.

Additionally, the requirement of novelty and originality poses practical difficulties for GUI based designs. In the digital domain, interface designs often evolve through incremental and iterative changes, making it challenging to establish clear boundaries of originality.[22] The rapid pace of technological development further complicates the registration process, as designs may become outdated or modified even before protection is granted.

Another important concern is the inadequacy of alternative intellectual property regimes. While copyright law may protect certain artistic aspects of GUI designs, it does not provide comprehensive protection for their industrial and commercial application.[23] Similarly, trademark law may protect distinctive icons or trade dress, but

only to the extent that they function as source identifiers. These alternatives fail to fully address the unique hybrid nature of GUI designs, leaving a gap in effective legal protection.

Therefore, the challenges in protecting GUI and virtual designs in India stem from a combination of statutory limitations, conceptual ambiguities, and judicial silence. The continued reliance on a physical and product-centric model of design protection renders the existing framework inadequate in addressing the realities of the digital age. This calls for a re

evaluation of the current legal approach, either through progressive judicial interpretation or comprehensive legislative reform.

[20] See Susy Frankel, The Overlap of Design and Patent Law, 15 J. Intell. Prop. L. 1 (2010). [21] Bharat Glass Tube Ltd. v. Gopal Glass Works Ltd., (2008) 10 SCC 657 (India).
[22] See Sarah Burstein, The "Article of Manufacture" in Design Patent Law, 31 Berkeley Tech. L.J. 1 (2016). [23] See B.L. Wadehra, Law Relating to Intellectual Property 318 (5th ed. 2016).

5. COMPARATIVE ANALYSIS WITH FOREIGN JURISDICTIONS

A comparative analysis of foreign jurisdictions reveals that several legal systems have already adapted to the challenges posed by Graphical User Interfaces (GUIs) and virtual designs, adopting a more flexible and technology-neutral approach than India. These developments highlight the limitations of the current Indian framework under the Designs Act, 2000 and provide valuable guidance for potential reform.

In the United States, GUI designs are protected primarily through design patents under the 35 U.S. Code § 171.[24] The U.S. Patent and Trademark Office (USPTO) have recognised that screen displays, icons, and graphical interfaces can qualify as ornamental designs, provided they are embodied in an article of manufacture, such as a display screen.[25] Importantly, U.S. practice allows applicants to claim GUI designs as shown on a screen, even though the design itself is not physically tangible in the traditional sense. This interpretation reflects a pragmatic and evolving understanding of "article", enabling protection for modern digital designs. Judicial decisions such as Apple Inc. v. Samsung Electronics Co. have further reinforced the

significance of GUI elements, recognising their role in determining the overall visual impression of a product.[26]

Similarly, the European Union has adopted a progressive framework under the Council Regulation (EC) No 6/2002 on Community Designs, which allows for the protection of two dimensional and screen-based designs, including GUIs and icons.[27] The European system does not strictly require physical embodiment in the same manner as Indian law; instead, it focuses on whether the design produces a distinct overall impression on the informed user.[28] This approach enables a broader interpretation of design, accommodating both physical and digital manifestations. The EU Intellectual Property Office (EUIPO) has consistently accepted applications for GUI designs, thereby recognising their growing commercial importance in the digital marketplace.[29]

These jurisdictions demonstrate a shift away from rigid, physical-centric definitions towards more inclusive standards that recognise the realities of technological advancement. In contrast,

[24] 35 U.S.C. § 171 (2018).
[25] See U.S. Patent & Trademark Office, Manual of Patent Examining Procedure § 1504.01(a) (9th ed. 2020). [26] Apple Inc. v. Samsung Elecs. Co., 580 U.S. 53 (2016).
[27] Council Regulation (EC) No. 6/2002 of 12 December 2001 on Community Designs, 2002 O.J. (L 3) 1. [28] Id. art. 6.
[29] See European Union Intellectual Property Office (EUIPO), Guidelines for Examination of Registered Community Designs (2021).

Indian law continues to emphasise the requirement of a tangible article, thereby excluding or at least casting doubt on the protection of purely virtual designs.[30] This divergence places India at a disadvantage in the global innovation landscape, particularly in sectors driven by software development, user interface design, and digital platforms.

The comparative analysis also reveals that foreign jurisdictions have successfully addressed the aesthetic-functional overlap inherent in GUI designs by focusing on the visual aspects of the interface, rather than its underlying functionality.[31] This nuanced approach allows for the protection of the ornamental features of digital designs without extending protection to their functional elements, thereby maintaining the balance between innovation and competition.

In light of these developments, it becomes evident that India can benefit from adopting a more flexible and adaptive approach, either by reinterpreting existing provisions or by introducing explicit recognition of GUI and virtual designs within its legal framework. The experiences of the United States and the European Union provide a useful roadmap for reform, demonstrating that design law can evolve to accommodate the changing nature of creativity in the digital age.

6. NEED FOR REFORM AND THE WAY FORWARD

The foregoing analysis clearly demonstrates that the existing framework under the Designs Act, 2000 is increasingly inadequate to address the realities of the digital age.[32] The law's continued reliance on physical embodiment and traditional notions of "article" creates significant barriers to the protection of Graphical User Interfaces (GUIs) and virtual designs, which are now central to modern innovation and commerce. In this context, there is an urgent need to rethink and reform the Indian design law regime.

One of the most immediate reforms required is a reconsideration of the definition of "article." The current interpretation, which limits the term to tangible objects, fails to accommodate the existence of screen-based and intangible designs.[33] A more technology neutral definition should be adopted, one that recognises digital displays and virtual environments as valid mediums for the application of design. This could be achieved either

[30] See Designs Act, 2000, No. 16 of 2000, § 2(d) (India).
[31] See Sarah Burstein, The "Article of Manufacture" in Design Patent Law, 31 Berkeley Tech. L.J. 1 (2016). [32] See Designs Act, 2000, No. 16 of 2000 (India).
[33] See P. Narayanan, Intellectual Property Law 430 (4th ed. 2017).

through legislative amendment or through a purposive judicial interpretation that aligns the law with contemporary technological realities.

Further, the law must address the aesthetic-functional overlap inherent in GUI designs. Rather than excluding such designs altogether, the focus should be on protecting only the visual and ornamental aspects of the interface, while leaving

functional elements outside the scope of protection.[34] This approach, already adopted in jurisdictions such as the United States and the European Union, ensures a balanced protection framework that encourages creativity without stifling competition.

Another important reform involves the introduction of explicit statutory recognition of GUI and virtual designs. The absence of clear provisions creates uncertainty for designers and businesses, discouraging innovation in the digital sector. By incorporating specific provisions or guidelines for the registration of GUI designs, the law can provide clarity, predictability, and legal certainty, which are essential for a robust intellectual property regime.[35]

In addition, there is a need to streamline the registration process to accommodate the dynamic nature of digital designs. Given the rapid pace of technological change, procedural delays can render design protection ineffective. Introducing faster examination procedures and flexible filing requirements would ensure that the law remains responsive to industry needs.[36]

Judicial intervention can also play a crucial role in bridging the existing gap. Indian courts, through progressive and purposive interpretation, can expand the scope of design protection without waiting for legislative change. By recognising the commercial and aesthetic significance of GUI designs, the judiciary can contribute to the development of a more adaptive and forward-looking legal framework.[37]

Ultimately, the goal of reform should be to move towards a modern, innovation-oriented, and technology-neutral design law regime. Such a framework would not only align India with global standards but also foster creativity, investment, and growth in the digital economy. Without such reforms, the Indian design law risks becoming obsolete and

[34] See Sarah Burstein, The "Article of Manufacture" in Design Patent Law, 31 Berkeley Tech. L.J. 1 (2016). [35] See WIPO, Industrial Design Law and Practice – International Perspective (2018). [36] See European Union Intellectual Property Office (EUIPO), Guidelines for Examination of Registered Community Designs (2021).
[37] See Bharat Glass Tube Ltd. v. Gopal Glass Works Ltd., (2008) 10 SCC 657 (India).

disconnected from contemporary technological developments, thereby undermining

its fundamental objective of promoting innovation.

7. CONCLUSION

The transformation of design from physical, product-based forms to digital and interface driven expressions has fundamentally challenged the traditional foundations of design law. As this paper has demonstrated, the existing framework under the Designs Act, 2000 remains largely rooted in a tangible and manufacturing-centric understanding of design, which is increasingly incompatible with the realities of the digital economy.

The analysis reveals that Graphical User Interfaces (GUIs) and virtual designs occupy a critical space in modern innovation, combining elements of creativity, usability, and commercial significance. Despite their growing importance, these designs continue to face legal uncertainty and inadequate protection under Indian law, primarily due to the rigid requirement of an "article" and the strict separation between aesthetic and functional features. This has resulted in a significant gap in the intellectual property framework, leaving digital designers without effective legal safeguards.

The comparative study of jurisdictions such as the United States and the European Union highlights that it is both possible and necessary to adopt a more flexible and technology neutral approach. These systems demonstrate that design law can evolve to accommodate non-physical and screen-based designs without undermining its core principles. In contrast, India's continued reliance on outdated concepts risks placing it at a disadvantage in a rapidly evolving global innovation landscape.

In light of these findings, this paper argues that the insistence on physical embodiment is no longer sustainable. There is a pressing need for legislative reform and progressive judicial interpretation to expand the scope of design protection to include GUI and virtual designs. Such an approach would ensure that the law remains relevant, adaptive, and aligned with technological advancements, while also promoting innovation and protecting the interests of creators.

Ultimately, a modern and forward-looking design protection regime is essential for India to fully participate in and benefit from the opportunities of the digital age. By embracing change and addressing existing legal gaps, Indian design law can evolve

into a comprehensive and

future-ready framework, capable of effectively safeguarding the new forms of creativity that define the contemporary world.

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