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Extended subject – matter under intellectual property law: The paradigm of copyright, trademarks and patents regarding Computer Icons and Graphical User Interfaces

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Abstract:

Purpose – Intellectual property law has developed legal rules that carefully balance competing interests. It is a fact that the main goal has long been to provide legal protection to maximize incentives to engage in creative and innovative activities, while also providing rules and doctrines that minimize the effect on the commercial marketplace and diminish interference with the free flow of ideas in general. This article examines the extension of the subject - matter that can be protected under intellectual property law. The extensive view of protectable subject - matter via intellectual property has blurred the clear delineation between patent, copyright, and trademark law. This has led to overlapping protection which allows multiple means to protect the same subject - matter. Such protection is problematic because it interferes with the carefully developed doctrines that have evolved over time to balance the private property rights against public access to creations protected by intellectual property.

Approach and Originality/value - This article discusses a new topic concerning the extension domain of subject - matter protected by patents, trademarks and copyright law regarding computer icons and graphical user interface. Furthermore, it examines the overlaps that exist and the resulting problems regarding these specific areas of intellectual property law.

Findings - The extension of the subject - matter protected under patent, copyright, or trademark law should only occur if it does not subvert the balance of intellectual property law per se. The reason is that uncareful expansion could cause unintended over-protection of the rights of creators and innovators in contrast to the public interest. The paradigm of CIs and GUIs fits perfectly with the view expressed above.

Index Terms — intellectual property, subject – matter, extension, Computer Icons, Graphic Users Interface.

I. INTRODUCTION

Intellectual property refers to creations of the mind that have been granted property law protection [1]. The main scope of intellectual property law is to distinguish between mental creations that are legally protected as property and those that are not protected as such. The importance of such intangible property creates a dilemma, however. Proponents of broad legal protection for intellectual property generally argue that such protection is necessary to incentivize investment in creative and innovative activities that ultimately benefit society [2]. Failure to provide property protection “may negatively impact the ability to generate a return on investment and hence substantial capital outlays for such activities might be diminished” [3]. In contrast, proponents of more limited intellectual property rights argue that in a free society any state granted property rights in intellectual creations should be minimized. This will enable the free flow of ideas and information for the benefit of society [4]. This argument has merit because allowing private parties to own ideas and information can interfere with marketplace competition and with public access to intellectual property. Such access is important to enhance creative and innovative advances. The free flow of information and ideas is also necessary for a robust free society to flourish¹ [5], [6].

The last few decades legislative enactments and judicial decisions have adopted an extensive view of intellectual property. The subject - matter eligible for protection has continued to extend significantly. This extension has erased the clear delineation between patent, copyright, and trademark law. It has also led to overprotection of intellectual property in the form of overlaps that allow multiple bodies of intellectual property law to simultaneously protect the same subject - matter. Such overlapping protection, according to our opinion, is

¹ In the United States the importance of preventing the government from interfering with the free flow of information is exemplified by the First Amendment to the Constitution, which prohibits the government from abridging freedom of speech and of the press. U.S. See Virginia State Bd. of

Pharmacy v. Virginia Citizens Consumer Council, 425 U.S. 748,760-62 (1976) (holding First Amendment free speech rights extend to commercial speech). See also New York Times Co. v. Sullivan, 376 U.S. 254, 270 (1964).

problematic because it interferes with the carefully developed doctrines that have evolved over time to balance the private property rights in intellectual creations against public access to such creations. These overlaps, arguably, are “the unintended consequence of the fragmented nature of the field of intellectual property law”².

This article will examine the policies that underlie the various branches of intellectual property law. It will discuss the extension domain of subject - matter protected by patents, trademarks and copyright law regarding computer icons and graphical user interface. Finally, it will examine the overlaps that exist and the resulting problems regarding these specific areas of intellectual property law.

II. COMPUTER ICONS (CI)

Computer icons are the “functional buttons” on contemporary desktop computer screens. As computing devices with graphical user interfaces become more and more popular, computer icons are increasingly in the eyes and minds of consumers. Although many are generic and primarily functional, some of these icons can embody trademarks, copyright, inventions and other protectable intellectual property rights. In highly competitive fields such as software, internet and portable electronic device industries, computer icons can be important and valuable financial assets.

A. Computer icons as trademarks

Trademarks are used to distinguish the goods or services of one source from those of others³ [7]. They can include words and designs and often include logos. Consequently, trademarks are a common form of protection for computer icons. For example, Microsoft registered the now-familiar design for the Windows “Start” button as a trademark in association with computers and other goods and Apple registered the “settings icon” design for managing user system settings and preferences.



Figure 1. Microsoft “Start” button (early design).



Figure 2. Apple’s “settings icon” design.

Trademark protection can extend to a variety of designs, including numerous registrations for icons that represent applications or other components of graphical user interfaces. However, trademark rights can be infringed on if

a third party (competitor) uses a mark that is likely to mislead consumers into believing that the competitor’s goods or services originated from the trademark owner. Therefore, where computer icons can distinguish one source of goods or services from another, trademark protection can be very valuable to prevent confusion with competitors.

B. Copyright in computer icons

Copyright can be used to protect original artistic works. Computer icons that include original artistic works can therefore be protected by copyright. In the early days of graphical user interfaces, Apple sued Microsoft [8] in a United States court for alleged infringement of copyright that Apple claimed in its Macintosh displays. In that litigation, United States courts recognized that Apple had copyright in a trash can icon in its Macintosh displays. It is to be noted, copyright only protects original works, and infringing copyright requires copying a protected work. Therefore, competitors can often design around protected works to avoid infringement, and copyright has rarely been asserted in court cases involving computer icons.

C. Patents in computer icons

Trademark, copyright, and industrial design protection are all limited in the extent to which they can protect functional features — this is where patents concur. Patents protecting functional aspects of computer icons can be very valuable because their claims do not need to be limited to particular appearances. For example, a patent was granted to IBM with claims to methods for using an icon to inform a user of the progress of a task on a computer system. An example of such an icon from that patent is shown below, but the claims of that patent extend to icons of many different appearances [9], [10].

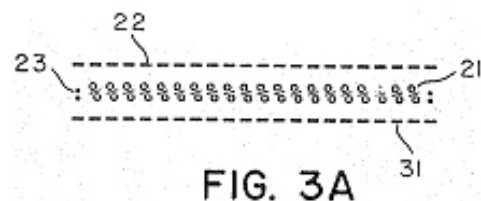


Figure 3. Figure 3A from patent no. 1317678 (Canadian Patent Office) - Icon to inform a user of the progress of a task on a computer system.

Looking at another example, although Apple registered the appearance of its slide-to-unlock design in an industrial design registration, a series of United States patents also claim the slide-to-unlock function — thereby illustrating that different forms of intellectual property can be used to

² See Beckerman – Rodau A., *The problem with Intellectual Property Rights: Subject Matter Expansion*, Yale Journal of Law and Technology, vol. 13, issue 1, 38-39.

³ The term trademark covers any sign capable of being represented graphically which is capable of distinguishing goods or services of one

undertaking from those of other undertakings. See Cornish W.R. *Intellectual Property: Patents, Copyright, Trade Marks and Allied Rights*, 3rd edition, Sweet & Maxwell, London, 1996, 581.

protect the same computer icon⁴.



Figure 4. Patent No. D675,639

III. GRAPHICAL USER INTERFACE (GUI)

The graphical user interface is a form of user interface that allows users to interact with electronic devices through graphical icons and audio indicator such as primary notation, instead of text-based user interfaces, typed command labels or text navigation. GUIs were introduced in reaction to the perceived steep learning curve of command-line interfaces, which require commands to be typed on a computer keyboard⁵. The actions in a GUI are usually performed through direct manipulation of the graphical elements. Beyond computers, GUIs are used in many handheld mobile devices such as MP3⁶ players, portable media players, gaming devices, smartphones and smaller household, office and industrial controls. The term GUI tends not to be applied to other lower display resolution types of interfaces, such as video games or not including flat screens, like volumetric displays because the term is restricted to the scope of two-dimensional display screens able to describe generic information, in the tradition of the computer science research.

There are certain mechanisms that are commonly used to legally protect GUI. The most common is copyright and patents.

A. Copyright

Software code can and should be copyrighted, however copyright is not a very powerful way to protect a GUI. Many years of legal copyright precedents were established before anyone envisioned the need to copyright graphical user interfaces, so the courts are still sorting out the application of copyright law to modern software development. This means that there is still uncertainty as to how any UI copyright protection you obtain will be interpreted in court.

In general, the expression of an idea can be copyrighted, but not the idea itself. So, one can copyright the idea of a clickable button, but not the artistic design of a specific button; for example, Apple's original Trashcan icon is protected by copyright. Similarly, one cannot copyright use of a pop-up dialog box to explain a concept but can copyright a specific written explanation.

⁴ The USPTO granted Apple's application for Patent No. D675,639. The patent describes the "ornamental design for a display screen or portion thereof with a graphical user interface".

⁵ The first features of graphical user interfaces appeared as early as in the 1960s within the project of Doug Engelbart's augmentation of human intellect at the Stanford Research Institute. This project was called "On-Line System (NLS)" and contained hardware devices and the basic structure of GUI software. Until the 1970s, the computer was not anything but a huge calculator. However, since then a major technological achievement has occurred: the transition of the interface from command lines (based on the

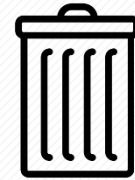


Figure 5. Apple's original Trashcan icon

The more artistic and original a design is, the more protection copyright may offer. But protection offered by copyright is limited and, while copyright may protect some individual design elements, copyright is not a good way to protect an overall user interface.

B. Patents

Patents are the best tool for protecting a GUI. Legally, patents are better suited for protecting things that perform a function (copyright was originally intended to protect non-functional art, literature, etc.). Individual patents can also be written in a way to protect overall look and feel as well as individual design elements. Secondly, the infringement threshold is lower. Copyright infringement requires copying, while patent infringement can be proven if a design is sufficiently similar but is not a copy. Thirdly, patents do not have a fair use provision. Fair use allows limited use of copyrighted material without asking for permission; for example, directly quoted sources in an article are permissible under fair use, but there is no right to reuse patented material in a similar way. Consequently, software developers have accumulated thousands of patents and most court cases over user interface intellectual property are patent infringement cases. Apple vs Samsung⁷ is the best-known example.

GUIs can be protected by design or utility patents:

-Design patents are "issued for a new, original, and ornamental design embodied in or applied to an article of manufacture." Design patents are issued for designs that are novel, non-obvious, and non-functional.

-Utility patents are "issued for the invention of a new and useful process, machine, manufacture, or composition of matter, or a new and useful improvement thereof." Utility patents are evaluated based on the "operability of the invention, a beneficial use of the invention, and practical use of the invention".

IV. THE EXTENSION DOMAIN OF INTELLECTUAL PROPERTY LAW

The existence and recognition of property is a

communication with the device through various written commands) to a graphical interface made computers accessible to the general public.

⁶ MP3 (or mp3) as a file format commonly designates files containing an elementary stream of MPEG-1 Audio or MPEG-2 Audio encoded data, without other complexities of the MP3 standard.

⁷ In 2011, Apple sued Samsung in US court for patent infringement over design similarities between the iPhone and various Samsung Android phones. This was the opening shot in a series of legal battles fought in multiple countries over three years, costing the two companies nearly a billion dollars. When the dust settled, Apple was largely the winner, the courts finding that Samsung had copied Apple design features.

fundamental aspect of a free market economy. The difficulty of extending property protection to intellectual property lies in striking a proper balance between granting enough protection to spur innovation, while not impinging too greatly on the public benefits arising from the creation of intellectual property. Development of creative and innovative products will occur even in the absence of any property protection for intellectual property. However, absent without such legal protection, less investment in creative and innovative development will occur because a lack of economic benefits will create a disincentive to engage in certain types of creative and innovative activities. This can be a detriment to the public by reducing the public storehouse of knowledge. The goal of any legal protection is to find the optimum balance so that enough protection is provided by the law to maximize investment of time, energy, and capital in creative endeavors while minimizing any restriction on the public's freedom to use products resulting from such creativity.

Historically, law has categorized creations of the mind into different types of property. Typically, patent law, copyright law, and trademark law have provided the main legal regimes under which property status is granted to intellectual creations. Each of these bodies of law, at its most fundamental level, is designed to protect different types of products of the mind.

A. Patent Law

The most common type of patent - a utility patent - protects things that are primarily functional as opposed to things that are primarily aesthetic in nature. The patent law states that "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof" is patent-eligible subject matter⁸. Granting of a patent provides typical property rights. These rights include the right of the patent owner "to exclude others from making, using, offering for sale, or selling the invention throughout the United States or importing the invention into the United States". On the other hand, design patents provide property rights analogous to the rights granted to utility patent owners. In contrast to utility patents, however, design patents protect the non-functional exterior aesthetic or ornamental appearance of an object rather than its functional aspects.

The main question lies in the categories of subject - matter eligible for utility patent protection. In the landmark Supreme Court decision *Diamond v. Chakrabarty* the court,

quoting from the legislative history of the current patent law, stated that subject -matter "include anything under the sun that is made by man"⁹ [11], [12]. Other courts have recognized the need to limit the scope of patent-eligible subject matter in order to prevent undermining the policies upon which patent law is based¹⁰ [13], [14]. Historically, judicial decisions have stated that printed matter, methods of doing business, naturally occurring things, mental processes, scientific principles, mathematical algorithms, laws of nature, physical phenomena, software and abstract ideas were not eligible subject - matter even if the invention or discovery literally fell within one of the statutory categories of eligible subject - matter¹¹.

B. Copyright law

The core focus of copyright is the extension of property rights to artistic and literary works, including books, music, and works of art [15]. Once a work of authorship is protected by copyright, the owner of the work is granted typical property rights in the work that entitle someone to control use and distribution of the work. However, copyright law specifically does not protect "any idea, procedure, process, system, method of operation, concept, principle, or discovery". Therefore, ideas and information, as well as functional aspects of a copyrighted work, are not protected via copyright law.

In principle, copyright law originally protected printed material. As the subject - matter of copyright expanded, it was historically oriented -in contrast to patent law- toward protecting primarily aesthetic works rather than primarily functional works. Additionally, copyright can extend protection to the "writings" of authors. In our days, however, the scope or definition of writing has evolved to such extent that it incorporates a large category of subject - matter that is not limited to primarily aesthetic works. The result is that today computer software, building designs, 3-D commercial products such as jewelry, directories, compilations of facts, financial reports, photographs, sound recordings, even the barristers' examinations among other things, are subject - matter within the domain of copyright law¹².

Lately, mass produced commercial products, such as

⁸ See Title 35, part II, Chapter 10, subsection 101 of the United States Code, which reads: "Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title."

⁹ See Lefakis L.K., *Biotechnology Patents* (in Greek), Sakkoulas Publications, Athens – Thessaloniki, 2004, 98. For the case see *Diamond v. Chakrabarty*, 447 U.S. 303, 317 (1980) ("The grant or denial of patents on micro-organisms is not likely to put an end to genetic research. The large amount of research that has already occurred when no researcher had sure knowledge that patent protection would be available suggests that legislative or judicial fiat as to patentability will not deter the scientific mind

from probing into the unknown any more than Canute could command the tides.").

¹⁰ See *Diamond v. Chakrabarty*, 447 U.S. 303, 309 (1980) ("[L]aws of nature, physical phenomena, and abstract ideas" are not patent eligible subject - matter. neither a newly discovered mineral or a newly discovered wild plant is patent eligible subject - matter; a mathematical relationship such as $E=MC^2$ is not patent eligible subject - matter). See also *Bilski v. Kappos*, 130 S. Ct. 3218, 3221 (2010) (citing and agreeing with *Chakrabarty* that "laws of nature, physical phenomena, and abstract ideas" are not patent eligible subject - matter).

¹¹ Beckerman – Rodau A., *ibid*, 56-57 and especially fn. 78-86.

¹² Beckerman – Rodau A., *ibid*, 63-64 and especially fn.119-130.

computer software¹³, which are primarily functional or useful, exemplify subject - matter embraced by copyright law that should be more appropriately limited to the domain of patent-eligible subject - matter. Nevertheless, the beginning of a disturbing trend towards extending specialized copyright protection to specific useful products or articles may be in its infancy¹⁴.

C. Trademarks

Trademark law focuses on the relationship between symbols, words, and short phrases that are associated with or identify products or services sold in the marketplace. Over time consumers in the relevant marketplace associate a particular symbol, word, or phrase with a product or service. This mental association, which is protected by trademark law is protectable property interest. A trademark owner is entitled to control use of a trademark in the commercial context against unauthorized third-party use that is likely to cause confusion, or to lead to an error, or to deceive. Violation of the trademark owner's rights can result in monetary damages or injunctive relief¹⁵.

However, a recent extensive view of trademarks, has created a shift in how trademarks are viewed today. The black letter rule that a trademark can only be assigned with the goodwill it encompasses reflects the traditional view that the property interest in a trademark is the mental association that arises in consumer's minds when a trademark is associated with a particular product¹⁶ [16]. Although this rule continues to be cited by courts, it is often ignored as trademarks are increasingly viewed as property without regard to a particular mental association existing between the trademark and the product on which it is used. This can be seen in the marketplace, where well-known trademarks are often the subject of naked licensing for use by other non-competing and unrelated industries. This is reinforced by dilution law, which focuses on recognizing the trademark per se as a protectable property interest that can be protected from third party use even in the absence of any likelihood of consumer confusion or competition.

V. THE ISSUE OF OVERLAPPING PROTECTION

It has been a common practice for different aspects of a

product to be protected by different branches of intellectual property law. For example, "if a sculpture is made into a lamp the sculpture is still protectable via copyright law [17]. The functional aspects of the lamp's illumination circuitry could receive utility patent protection. A name or logo placed on the lamp could be protected by trademark law if it indicates the source or producer of the lamp. Likewise, the non-functional ornamental exterior appearance of a functional product such as a camera is within the domain of design patent protection, while the optics and electronics that enable the camera to take pictures are within the domain of utility patent law"¹⁷.

In the United States, simultaneously protecting the same aspect of a product, as opposed to different aspects of the product under different branches of intellectual property law, had been disallowed by the courts [18], [19]. However, most recent case law has allowed such simultaneous protection [20], [21]. To some extent, the historical rejection of simultaneous protection was consistent with and a result of the clear distinctions between the subject - matter protected by patent, copyright, and trademark law. The broad modern extension of subject - matter protectable by each of these bodies of law has made significant overlaps inevitable. Therefore, the same creative innovation may be simultaneously protected by different branches of intellectual property law. In some circumstances, these overlaps can create overprotection by "undermining rationales on which a particular body of law is based and by avoiding some of the carefully developed doctrines designed to limit protection under a specific body of intellectual property law"¹⁸.

The EU law, on the other hand, provides a special *sui generis* regime of protection which is established on different principles than the patent protection. The European system is not based on the examination of novelty, but it may be characterized as the registration system where the criteria of novelty and "individual character"¹⁹ are examined only if the invalidity proceedings have been initiated by a third party.

The legislative work on the EU design protection system commenced in 1990s. In 1998 the EU Design Directive²⁰ which requires the EU member states to adjust their national design laws to the harmonized requirements was adopted.

¹³ Computer programs or software are merely instructions that enable a computer to operate. Software is an integral part of a computer that has limited value other than to enable computer hardware to operate.

¹⁴ The copyright law currently contains specialized protection for boat hulls or decks. Pending legislation would amend this section of the copyright law to provide a protection for certain fashion designs. See Beckerman – Rodau A., *ibid*, 66, who states "[s]uch a product or industry-specific approach, if expanded, could result in an endless legislative process that would continually enact new laws to protect new products or industries. The resulting morass of law would create ever expanding complexity and inefficiency and might also cause overprotection of some intellectual property."

¹⁵ For more see Cornish W.R. *ibid*, 614 – 639.

¹⁶ The scope of what can be a trademark today has expanded beyond the typical word, phrase, or unique design that comprises most trademarks. In *Qualitex Co. v. Jacobson Products Co.*, the U.S. Supreme Court, adopted a

descriptive approach to determining what can potentially be a trademark in lieu of limiting marks to specific categories. Almost anything, including a specific characteristic of a product, can potentially be a trademark if it signals to consumers that the product comes from a specific producer or seller. See *Qualitex Co. v. Jacobson Products Co.*, 514 U.S. 159 (1995).

¹⁷ This example was taken from Beckerman – Rodau A., *ibid*, 73.

¹⁸ For example, protection of the ornamental appearance of a consumer product under design patent law lasts for 14 years. 35 U.S.C.A. § 173 (West 2010). However, under certain circumstances, protection of the ornamental appearance can be extended by simultaneously obtaining copyright protection that typically lasts for the life of the design creator plus 70 years after his or her death.

¹⁹ See Art. 4 and 5 Design Directive; See also Art. 5 and 6 of Community Design Regulation.

²⁰ 98/71/EC.

Later, in December 2001, the Community designs system was established by the Community Design Regulation²¹. It was put into practice during 2002 and the first design applications were filed in January 2003. Nevertheless, the Community designs system has not been developed with the intention to replace the existing national systems of the design protection. Instead, both systems exist together and independently of each other. The main advantage is also the fact that these systems are based on the same principles (e.g., the substantive criteria for the legal protection are identical) [22].

VI. OVERLAPPING PROTECTION REGARDING COMPUTER ICONS AND GRAPHICAL USER INTERFACES

As illustrated above, there is no single mechanism to achieve complete protection for a CIs and GUIs. Instead, each intellectual property right provides a different form and term of protection for the different elements of an application. In order to receive the broadest possible protection, it is important for someone to choose the most effective right for each element, in order to achieve as complete a protection as possible for the whole. This can be a time-sensitive and potentially costly process.

Design patents and copyrights both cover nonfunctional intellectual property. Specifically, design patents cover the ornamental appearance of products. Copyrights today cover the non-functional appearance of utilitarian or functional products. Hence, the U.S. Patent and Trademark Office takes the following position: "There is an area of overlap between copyright and design patent statutes where the author/inventor can secure both a copyright and a design patent. Thus, an ornamental design may be copyrighted as a work of art and may also be subject - matter of a design patent. The author/inventor may not be required to elect between securing a copyright or a design patent"²².

The result of this overlap is that the same intellectual property may simultaneously be protected by both patent and copyright law. This can allow a manufacturer to obtain a design patent covering the unique appearance of a product". However, when the patent term ends, the ornamental appearance will not pass into the public domain because copyright protection has a substantially longer term than design patent protection²³. As a result, the appearance of the product can be protected against any third party copying or independently creating the same product appearance during the patent term, since patent infringement does not require copying. After the patent expires, the design creator can no longer object to a third party independently creating the same product appearance but he or she can continue to object to a third party copying the product appearance for many additional years under copyright law. Additionally, the

extension of the subject - matter within both patent law and copyright law has lessened the traditional divide between industrial product design traditionally covered by design patent law and the protection of artistic works under copyright law. For instance, Google claimed copyright protection for the following layout of their search engine page interface as it appears on a computer screen. Additionally, they sought and obtained a design patent that protects the same subject - matter (with the exclusion of the words and numbers that are shown)²⁴.



Figure 6. Google search engine portal

Icons used on a computer screen, as shown below in figures have also been protected by design patents²⁵.

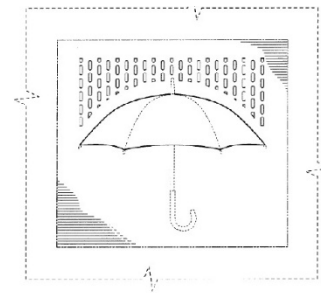


Figure 7. Icon protected by design patents example

Copyright protection is also asserted for computer icons such as the following weather icons²⁶:

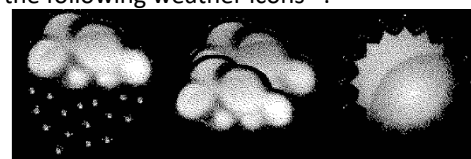


Figure 8. Icon protected by design patents example

Any creativity contained in the above graphical interface and in the icons is more appropriately protected by copyright law rather than design patent law. Icons are pictures that are appropriately protected as pictorial or graphic works of art under copyright law provided they meet

²¹ Regulation (EC) No. 6/2002.

²² U.S. Patent & Trademark Office Manual of Patent Examining Procedure § 1512 (8th ed. 2001 rev. July 2008).

²³ A general term is author's life plus 70 years.

²⁴ See U.S. Design Patent No. D599,372 (filed Mar. 7, 2006) (issued Sept. 1, 2009); U.S. Design Patent No. D454,354 (filed Aug. 25, 1999) (issued

March 12, 2002); U.S. Design Patent No. D401,231 (filed Aug. 12, 1996) (issued Nov. 17, 1998).

²⁵ See U.S. Patent No. D697,530.

²⁶ These icons are copyright (2003) by Stardock Corporation. They are available at <http://www.stardock.com/weather.asp> (last visited September 22, 2020).

the required creativity standard. The medium in which the icon is created (drawing, painting, printing or display on a computer screen) should not affect whether copyright protection is available. Likewise, computer interfaces, such as the Google interface shown above, “are more appropriately protected as literary works, compilations, pictorial, or graphical works”²⁷.

VII. CONCLUSION

Intellectual property law is premised on incentivizing innovative and creative activities by providing limited property rights for the fruits of such activities in order to increase the creative and innovative knowledge for the improvement of society. A careful balance has been developed under each major body of intellectual property law (patent, copyright, and trademark) in an effort to provide property rights that promote creative and innovative conduct without such rights interfering greatly with public access to the results of such conduct.

It is common knowledge that protectable subject - matter under intellectual property law has greatly expanded in recent years. To some extent, this expansion reflects “an excessive or unitary focus on protecting the property rights of innovators in an effort to incentivize investment in creative and innovative activities”²⁸. This approach leads to overprotection when it fails to properly balance the resulting property protection against the right of the public to use the results of such creative and innovative activities. Additionally, this extension of covered subject matter - under each specific area of intellectual property law has occurred with little regard to its effect on the other areas of intellectual property law. The unintended result has been the ability to protect certain subject - matter simultaneously under patent, copyright and/or trademark law. Such overlapping protection undermines the careful balance individually developed under each separate branch of intellectual property law. For example, patent law is based on the premise that upon expiration of a patent the covered subject - matter passes into the public domain. However, simultaneous protection under copyright law means limitations on public access will continue after patent expiration since the term of copyright protection significantly exceeds the length of protection under patent law. Likewise, simultaneous trademark protection can further exacerbate the problem because trademark rights are not time-limited like patent and copyright rights.

Solving the issues due to overlapping protection -or at least not compounding any pending issue by further subject-matter extension- requires both legislation and jurisprudence to have a better comprehension of the balancing policy that ensures the implementation of intellectual property law. Legislative enactments and judicial decisions that extend the reach of intellectual property law should not be made *in vacuum*.

Therefore, my opinion is that the extension of the subject - matter protected under patent, copyright, or trademark law should only occur if it does not subvert the balance of

intellectual property law *per se*. The reason is that uncareful expansion could cause unintended over-protection of the rights of creators and innovators in contrast to the public interest. The paradigm of CIs and GUIs fits perfectly with the view expressed above.

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VIII. REFERENCES

- [1] Hylton J.G., Callies D.L, Mandelker D.R., Franzese P.A., *Property Law & The Public Interest: Cases and Materials*, 3rd ed., 2007, 52.
- [2] Karny G., *In Defense of Gene Patenting*, *Genetic Engineering & Biotechnology News*, April 1, 2007, 1, <http://www.genengnews.com/gen-articles/in-defense-of-gene-patenting/2052/> (Accessed October 9, 2020).
- [3] Beckerman – Rodau A., *The problem with Intellectual Property Rights: Subject Matter Expansion*, *Yale Journal of Law and Technology*, vol. 13, issue 1, 38-39.
- [4] *Moore v. Regents of the University of California*, 51 Cal. 3d 120, 135-36 (1990).
- [5] *Virginia State Bd. of Pharmacy v. Virginia Citizens Consumer Council*, 425 U.S. 748,760-62 (1976) (holding First Amendment free speech rights extend to commercial speech).
- [6] *New York Times Co. v. Sullivan*, 376 U.S. 254, 270 (1964).
- [7] Cornish W.R. *Intellectual Property: Patents, Copyright, Trade Marks and Allied Rights*, 3rd edition, Sweet & Maxwell, London, 1996, 581.
- [8] *Apple Computer, Inc. v. Microsoft Corporation*, 35 F.3d 1435 (9th Cir. 1995).
- [9] patent no. 1317678. <https://www.ic.gc.ca/opic-cipo/cpd/eng/search/number.html> (Accessed October 9, 2020).
- [10] Gifford J., *Computer Icons: Multiple Protection Options, one valuable IP asset*, available at <https://www.smartbiggar.ca/insights/publication/computer-icons-multiple-protection-options-one-valuable-ip-asset> (Accessed October 9, 2020).
- [11] Lefakis L.K., *Biotechnology Patents* (in Greek), Sakkoulas Publications, Athens – Thessaloniki, 2004, 98.
- [12] *Diamond v. Chakrabarty*, 447 U.S. 303, 317 (1980)
- [13] *Diamond v. Chakrabarty*, 447 U.S. 303, 309 (1980)
- [14] *Bilski v. Kappos*, 130 S. Ct. 3218, 3221 (2010)
- [15] Goldstein P., *Copyright, Patent, Trademark and Related State Doctrines: Cases and Materials on the Law of Intellectual Property*, 4th edition, 1999, 556.
- [16] *Qualitex Co. v. Jacobson Products Co.*, 514 U.S. 159 (1995).
- [17] *Mazer v. Stein*, 347 U.S. 201 (1954).
- [18] *Louis De Jonge & Co. v. Breuker & Kessler Co.*, 182 F. 150, 151-152 (S.E.D. Pa. 1910).

²⁷ Beckerman – Rodau A., *ibid*, 83.

²⁸ *Ibid*.

- [19] *Jones Bros. Co. v. Underkoffler*, 16 F. Supp. 729, 731 (M.D. PA. 1936).
- [20] *In re Yardley*, 493 F.2d 1389, 1393 (C.C.P.A. 1974).
- [21] *J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred Int'l*, 534 U.S. 124 (2001).
- [22] Koukal P., *Graphical User Interfaces and Their Protection in the European Union*, Horizons in Computer Science Research, 2018, 145, 149.

IX. ADDITIONAL BIBLIOGRAPHY

- [1] Benkard G., et al., (2015), *Patentgesetz, Gebrauchsmustergesetz*, München, C. H. Beck Verlag
[Patent Law, Utility Model Law. Munich, C. H. Beck Publishers.
- [2] **Saffer D.**, (2010), *Designing for Interaction, Second Edition: Creating Innovative Applications and Devices*, Berkeley, New riders.

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