



المعهد القومي للملكية الفكرية

The National Institute of Intellectual Property  
Helwan University, Egypt

## المجلة العلمية للملكية الفكرية وإدارة الابتكار

دورية نصف سنوية محكمة يصدرها

المعهد القومي للملكية الفكرية

جامعة حلوان

العدد الخامس

ديسمبر ٢٠٢٢



**الهدف من المجلة:**

تهدف المجلة العلمية للملكية الفكرية وإدارة الابتكار إلى نشر البحوث والدراسات النظرية والتطبيقية في مجال الملكية الفكرية بشقيها الصناعي والأدبي والفني وعلاقتها بإدارة الابتكار والتنمية المستدامة من كافة النواحي القانونية والاقتصادية والإدارية والعلمية والأدبية والفنية.

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- تعبر كافة الدراسات والبحوث والمقالات عن رأى مؤلفيها ويأتي ترتيبها بالمجلة وفقاً لإعتبارات فنية لا علاقة لها بالقيمة العلمية لأى منها.
- تنشر المقالات غير المحكمة (أوراق العمل) فى زاوية خاصة في المجلة.
- تنشر المجلة مراجعات وعروض الكتب الجديدة والدوريات.
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- تصدر المجلة محكمة ودورية نصف سنوية.

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- في حالة قبول البحث للنشر، يلتزم الباحث بتعديله ليتناسب مع مقترحات المحكمين، وأسلوب النشر بالمجلة.



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### المراسلات

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**Research paper on the copyright in the digital era  
Abdelrahman khaled Ahmed Rafaat**





**Research paper on the copyright in the digital era****Abdelrahman khaled Ahmed Rafaat****Introduction**

Intellectual property refers to the ownership of intangible goods. These include ideas, designs, symbols, writings and creations. It also refers to digital media such as audio and video clips those are accessible through the electronic media. Since intellectual property is intangible, if it is stolen, it may be difficult to recover. The influence of digital technology on information technology is phenomenal. The present millennium is witnessing a new culture that is cyber culture. IPR awareness is the key to technological innovations and in the emerging knowledge-based economy; the importance of IPR is likely to go further.

The awareness among the creators of information and knowledge about IPR has become essential in the digital environment because in the digital environment it is becoming difficult to prove rights' violation whenever they occur. With the enhancement of technology the importance of intellectual property has also increased. Information Technology is growing faster than any other communication vehicle in the history of mankind. Invention of digital technology was the most important revolution in the last century. This new technology may be in the field of Patent, trade mark, Copyright etc.

Copyright is generally granted to original literary, musical, dramatic or artistic works. But the growth of new technology has given rise to new concepts like computer programs, computer database, computer layouts, various

works on web, etc. Copyright protects rights related to creation of human mind in the fields of literature, scientific, music, art and audio-visual works etc. The basic rights of ownership of intellectual property are known as “intellectual property rights” which are primarily derived from legislation concerning patents, designs, copyrights and trademarks

Copyright laws on the Internet differ in each country but they tend to cover the same principles. The act of Fair Dealing allows people to use a part of an original document without the permission of the author, however, the author of the original work and the source from which it originated must be cited. It must be a reasonable amount used only for research, teaching, criticism or comment with no financial gain.

In the case of copying pictures or photographs, permission from the owner must always be sought with the exception of four things; it is owned by the government, was published before 1922 and registered at a Copyright office, advertised as free or in the public domain.

The failure to comply by these regulations is known as plagiarism. Laws relating to software are very simple. One copy of the program is allowed to be stored on a computer and one back up disc can be made, any more copies made or distributed are illegal and referred to as software piracy. Profit made by registering other peoples' trademarks as one's own is called Cyber squatting and although not as easy or as common anymore, it is still illegal.

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These laws protect original work and present businesses with the opportunity of advancement. They allow the public to use or view works within limits and are a small requirement for the vast amount of information available on the internet.

## Chapter 1

### 1.1 definition

Copyright is a universal law created to protect authors' of original creations .It promotes the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries'. It grants the authors' exclusive ownership and legally allows them to deny others the privilege of using their works. Copyright can be placed on anything in tangible medium such as; literary, artistic, dramatic or architectural works, however, it doesn't cover material in the public domain.

The digital form “Every innovative mental product that has been put into a digital form or has been converted from the initial form it is to a digital form.”<sup>1</sup>

The Berne Convention defined it as: Every production in the literary, scientific and artistic fields, regardless of the way or form of its expression.<sup>2</sup>

Copyright law provides creators with two broad groups of rights: economic rights and moral rights.

#### A. Economic Rights

Copyright law protects creators of original works by granting creators the sole right to produce or reproduce any substantial part of the work in any form, to perform the

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<sup>1</sup> Souffalou,Amel. protection of intellectual property in the Digital Environment, 2017, PhD thesis, University of Algiers Faculty of Law, page 15

<sup>2</sup> Ibid, page 20

work in public or, if the work is unpublished, to publish the work or any substantial part of it. This means that copyright owners have the exclusive right to control the translation of a work into another language, the adaptation of a work into another form, the communication of a work, the recording of a work, and the public performance of a work.

## B. Moral Rights

Even if the creator sells copyright in the work to someone else (i.e. control over the publication and reproduction of the work and the right to receive remuneration), he or she retains moral rights in the work. The work cannot be distorted, mutilated, or otherwise modified in a way that is prejudicial to the creator's reputation or honor. Unlike economic rights, moral rights are personal to the creator, and thus cannot be sold or given away. However, moral rights can be waived by written agreement, e.g., not to exercise the rights. Specific moral rights include:

- the right to prohibit the use of a work in association with a product, cause, or institution in a way that would be prejudicial to the creator's reputation or honor;
- the right to protect the integrity of the work in order to prevent modifications that would be prejudicial to the creator's reputation or honor.

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## Requirements for Copyright Protection

In order for a work of authorship to meet the requirements for copyright protection, the work must satisfy two basic criteria: originality, and fixation. The specifics on what each criterion is and how it can be met is as followed.

### Originality

Originality is an important legal concept with respect to copyright. Originality is the aspect of a created or invented work that makes it new or novel, and thereby distinguishes it from reproductions, clones, forgeries, or derivative works. In this regard, an original work stands out because it was not copied from the work of others.

Copyright requires originality for several reasons. For one thing, it ensures that the work protected by copyright reflects the author's personality and expression and that the effort the author expends in creating the work is substantial enough to justify legal protection.

This also means that copyright protection is limited to each author's expression, leaving non-original expressions and works free for others to use in the creation of new works:

In this way, the originality requirement protects the creative and intellectual freedom of other creators. Additionally, as copyright protection depends on originality this maintains the incentive for authors to use

their skills and efforts to keep making new works for the public to enjoy

### Affixed to a Tangible Medium

The creative expression must be affixed to a tangible medium. This means that the copyrighted work must be recorded in a tangible format. A tangible format may include recording the work on paper, canvas, hard surface, digital device (such as a camera, hard drive, or video recorder), etc. If a expression is made without recording it to any form of tangible medium, it does not receive copyright protection. In fact, if the expression is communicated to the public prior to being recorded, it may find itself in the public domain and incapable of copyright protection.

The Berne Convention says that copyright subsists in literary and artistic works „whatever may be the mode or form of its expression“ (Article 2(1)). Thus we can see that the definition that has been provided is broad and not narrow. Thus we can say that the tangible medium would include writing, electronic storage of work in digital form on discs and in computer memories. As far as speech, singing and music are concerned the tape and cassette recorder have been familiar ways of making recordings and film, video and digital recording, have gained wide recognition all over the world.<sup>1</sup>

The whole idea of fixation is to enable protection for a fixed work. If a work is fixed in a tangible medium it acts

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<sup>1</sup> Ahmad, Tabrez & Snehil, Soumya. (2011). Significance of Fixation in Copyright Law. SSRN Electronic Journal. 10.2139/ssrn.1839527.page 5

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as a boon for the author. As mentioned earlier it also acts as evidence in legal disputes. Fixation provides a definite starting time for the term of protection. a work is protected from its moment of fixation, even if that work is never distributed to the public.<sup>1</sup>

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<sup>1</sup> Ibid , page 7



## Chapter 2

### Protection of Copyright on the internet.

Protection of the interests of copyright owners and enforcement of their rights has become more difficult since the rise of INTERNET around the world. An "International Copyright" does not exist.' Copyright protection.

throughout the world depends largely upon the laws of the particular country where the infringement takes place. The common practice for those who want to protect their work is to register for protection anywhere it is used, sold, manufactured, or licensed.<sup>46</sup> This practice is very expensive and usually elusive due to policing and enforcement problems. A greater problem has developed with the advent of the Internet.

It is impossible to predict everywhere digital music will be uploaded or downloaded. A copyright is not expected to understand or monitor copyright laws throughout the world. The World Wide Web, a component of the Internet, now consists of trillions of individual web pages, and according to some estimates, the number of Internet users has increased to more than 500 million.

The Internet has created a new avenue for copyright infringement on a global scale. Although virtually all types of works that are subject to copyright law can be transferred through digital networks, transfers of music recordings have received the most attention. A web-based company, Napster, during the 1990s became the most well-known and heavily used portal for transferring electronic

files containing copies of music. Users of this system were capable of transferring copyrighted works in a format called MP3 to their home computers, with a sound quality that was comparable to that of a compact disc.

The musical compositions in most of these files were copyrighted, and owners of those copyrighted materials complained that the file transfers infringed their copyrights. The Recording Industry Association of America sued Napster, eventually prevailing and causing Napster to close down. Napster was not merely a phenomenon in the United States and North America. The company had an estimated 16.9 million worldwide users, and the system accommodated about 65 million downloads.<sup>1</sup>

Domestic copyright law is limited in its protection of some of these works additional protection was needed. so In 1996, the World Trade Organization approved the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), which requires member countries to provide certain levels of protection for copyright holders in their countries.

Additional protection came in the form of so-called "digital treaties" approved by the World Intellectual Property Organization, including the Copyright Treaty and the Performance and Phonograms Treaty. Both of these treaties, which became effective in 2002, clarified and extended the Berne and TRIPS provisions by allowing

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<sup>1</sup> International Copyright - Protection Of Copyright In The Digital Age - World, Internet, Napster, and Rights - JRank Articles

copyright holders to encrypt their works in order to protect their rights.<sup>1</sup>

### **International efforts to protect the copyright on the internet.**

The Berne Convention, adopted in 1886, deals with the protection of works and the rights of their authors. It provides creators such as authors, musicians, poets, painters etc. with the means to control how their works are used, by whom, and on what terms. It is based on three basic principles and contains a series of provisions determining the minimum protection to be granted, as well as special provisions available to developing countries that want to make use of them.<sup>2</sup>

The UCC was adopted in 1952 and revised at Paris in 1971. The main inspiration for the adoption of the UCC was the desire to meet the particular features of US Copyright law, which required formalities such as deposit, registration and notice as conditions precedent for protection, and to establish a lower common standard of protection acceptable to the developing countries.

The Convention seeks to meet these obstacles by requiring that these formalities shall be regarded as fulfilled, as far as works originating in other countries are concerned, if all legitimately published copies of the work bear the “copyright notice” i.e., the symbol ‘©’, the name

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<sup>1</sup> Ibid

<sup>2</sup> Islam, Mahbubul. (2016). Legal Responses to IPR Infringement in Internet Sphere. Asian Journal of Humanity, Art and Literature. Vol 5 133-146. 10.18034/ajhal.v5i1.329. page 26

of the copyright proprietor and the year of first publication.<sup>1</sup>

Since the level of protection required by UCC is lower than that required by the TRIPS Agreement, it is unlikely to be relevant to the future course of international copyright law and its importance in the development of world copyright primarily lies in building a bridge between the United States, Russia and other developing countries on the one hand and those of the developed world on the other.

The TRIPs Agreement: As copyright was becoming increasingly significant in shaping international trade with the emergence of the internet, the 1994 Uruguay Round of GATT produced TRIPs- the Agreement on Trade-Related Aspects of Intellectual Property Rights. Regarding copyrights, the Agreement did not introduce any radical changes to the Berne System but rather based member obligations on the substantive provisions (Articles 1 to 21) of the Berne Convention (except the provisions on moral rights). Rather, the Agreement explained and clarified existing copyrighted principles and focused on enforcement.<sup>2</sup>

Besides, the TRIPs first made it clear that databases and computer programs fall under the definition of copyrightable works under the Berne Convention.

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<sup>1</sup> Rajendra Kumar & Latha R. Nair in the World e-Commerce & IP Report, November 2001, volume 1, Issue 14 page 2

<sup>2</sup> Islam, Mahbubul IBid. page 27

Moreover, it calculated the term of protection in certain cases and clarified limitations and expectations.<sup>1</sup>

The WIPO Copyright Treaty & The WIPO performance and phonograms Treaty

The WIPO Copyright Treaty deals with protection for authors of literary and artistic works, such as writings and computer programs; original databases; musical works; audiovisual works; works of fine art and photographs; whereas the WIPO Performances and Phonograms Treaty deals with protection for authors rights of performers and producers of phonograms.<sup>2</sup>

The purpose of the two treaties is to update and supplement the major existing WIPO treaties on copyright and related rights, primarily in order to respond to developments in technology and in the marketplace.

Since the Berne Convention and the Rome Convention were adopted or lastly revised more than a quarter century ago, new types of works, new markets, and new methods of use and dissemination have evolved. Among other things, both the WCT and the WPPT address the challenges posed by today's digital technologies, in particular the dissemination of protected material over digital networks such as the Internet. For this reason, they are often referred to as the "Internet treaties."<sup>3</sup>

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<sup>1</sup> Ibid

<sup>2</sup> [https://www.wipo.int/copyright/en/activities/internet\\_treaties.html](https://www.wipo.int/copyright/en/activities/internet_treaties.html)

<sup>3</sup> Ibid

Both treaties require countries to provide a framework of basic rights, allowing creators to control and/or be compensated for the various ways in which their creations are used and enjoyed by others. Most importantly, the treaties ensure that the owners of those rights will continue to be adequately and effectively protected when their works are disseminated through new technologies and communications systems such as the Internet. The treaties thus clarify that existing rights continue to apply in the digital environment.

They also create new online rights. To maintain a fair balance of interests between the owners of rights and the general public, the treaties further clarify that countries have reasonable flexibility in establishing exceptions or limitations to rights in the digital environment. Countries may, in appropriate circumstances, grant exceptions for uses deemed to be in the public interest, such as for non-profit educational and research purposes.

The treaties also require countries to provide not only the rights themselves, but also two types of technological adjuncts to the rights. These are intended to ensure that right holders can effectively use technology to protect their rights and to license their works online. The first, known as the "anti-circumvention" provision, tackles the problem of "hacking": it requires countries to provide adequate legal protection and effective remedies against the circumvention of technological measures (such as encryption) used by rightholders to protect their rights.

The second type of technological adjuncts safeguards the reliability and integrity of the online marketplace by requiring countries to prohibit the deliberate alteration or deletion of electronic "rights management information": that is, information which accompanies any protected material, and which identifies the work, its creators, performer, or owner, and the terms and conditions for its use.<sup>1</sup>

### Selected Regional and National Legal Frameworks

Internet Treaty in U.S.A- the Digital Millennium Copyright Act (DMCA): In October 1998, to implement the rules and laws of WCT and WPPT regarding to the copyright infringement over internet, the United States adopted another Copyright Act locally named the Digital Millennium Copyright Act (DMCA). This Act moved the nation's copyright law into a Digital age. Main features of this Act are:

-Declares the avoidance of anti-piracy measures as a crime.

-Outlaws the manufacture, sale, or distribution of code-cracking devices used to illegally copy software.

-Protects internet service providers from copyright infringement liability for simply transmitting information

-Limits the liabilities of nonprofit institutions of higher education.

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<sup>1</sup> Ibid

-Requires that the webcasters pay licensing fees to record companies.<sup>1</sup>

### Chapter 3

#### **Infringement of Copyright in Cyberspace includes**

The most frequent mode of infringing IPR over the Internet is the infringement of Copyrights. There are several reasons behind it. First of all, the ability of rapid reproduction and distribution of the internet can be traced as a compelling reason. Secondly, much copyright material published on the internet has been made available free of charge. Thirdly, it is difficult to identify an individual internet user. Users may, therefore, infringe copyright with little risk of detection, especially if the infringements are relatively small-scale and non-persistent .

Uploading copyrighted material: Another very frequent mode of copyright infringement over the internet is uploading documents or materials which are copyrighted. It is very common that many copyrighted materials are available on the internet. Most of the users assume or many ignore the fact that these materials are technically restricted. However, they assume that a material is available electronically entitles them to upload it to their websites.<sup>2</sup>

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<sup>1</sup> Islam, Mahbul. (2016). Legal Responses to IPR Infringement in Internet Sphere. Asian Journal of Humanity, Art and Literature. Vol 5 133-146. 10.18034/ajhal.v5i1.329.page 27

<sup>2</sup> Reed, C. (2004) Internet Law: Text and Materials, Cambridge University Press, 2nd ed. p 101.



Downloading copyrighted material: Downloading copyright material is the subsequent step of uploading copyright materials. Once the unauthorized copyright materials have been uploaded and remained available, the next possible thing is that internet users will download it from the internet. The copyright owners are reluctant to bring actions against millions of individual infringers. Much attention has been paid to the possibility of holding liable those parties who provide the equipments or the facilities used for infringing activities.<sup>1</sup>

FRAMING It refers to the process in which a website is allowed to include the contents from another independent website in its frame such that the framing website appears as the original one. In framing, every frame functions independently, due to which, the information downloaded in one frame stays inside it without overlapping with any other frame. Consequently, the users remain at the framing website and view its content by staying unaware of the fact that the content comes from another framed website.

Hot-linking is when a website links to an image (or other media file) that is hosted on an external server (i.e. another website) so that the image is embedded into the web page. Websites sometimes do this instead of uploading the image directly, which means they do not actually host the image on their server. When viewing a website, it's not always immediately clear that an image is hotlinked, because it blends seamlessly into the page.

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<sup>1</sup> Lloyed, L.J. (2008) Information Technology Law, Oxford University Press, 5th ed. p401

Exceptions to copyright such as

### “Fair Use” and “Fair Dealing” in the Digital Era

As part of the balance between the exclusive rights of authors, artists and other creators on the one hand, and the social goal of wide dissemination of knowledge on the other, international copyright rules allow countries to place limits on the right to prevent unauthorized use and reproduction in certain prescribed circumstances.

For example, article 9, paragraph 2 of the Berne Convention states “It shall be a matter for legislation in the countries of the Union to permit the reproduction of such works in certain special cases, provided that such reproduction does not conflict with a normal exploitation of the work and does not unreasonably prejudice the legitimate interests of the author.”

Accordingly, national copyright laws in most countries incorporate exceptions for copying for personal use, research, education, archival copying, library use and news reporting, based on principles of ‘fair dealing’, or in the US, the doctrine of ‘fair use’. The scope, strength and flexibility of these exceptions vary widely between countries and regions, in part due to differing national jurisprudence, but generally focus on the following conditions:

- The purpose and character of the use – copying must be for private, non-commercial purposes. Only single or a small number of copies may be reproduced.

- The proportion of the work that is copied – copies should be made only of parts of the work. Complete works may be copied only where originals are not available on the market.

- Copies of hard copy works may typically be produced only by reprographic processes. There is also some freedom to make copies of electronic works as, for example, for time-shifting of TV programs or archiving of computer software.

- If there are exemptions for the benefit of libraries and archives, those institutions must be accessible to the public and act in a non-commercial way.

- The legitimate interest of the right-holder must be taken into account – the effect on the potential market for the work.

The development and diffusion of digital technology, however, now permits unauthorized creation of unlimited, perfect and costless copies, and the almost instantaneous and worldwide distribution of protected works. The copyright industries are responding by using digital technology, in the form of encryption technologies and anti-circumvention measures, supplemented by contract law and sui generis forms of databases protection.

Critics argue that these measures effectively restrict “fair use”, and may reduce the ability of teachers, students, researchers and consumers to access information, particularly in developing countries. On this view, new

approaches are needed to ensure that appropriate “fair use” exceptions can be preserved in this digital context.<sup>1</sup>

Jurisdiction in case of copyright infringement on the internet

Internet can be defined as the network of networks. In tangible space, the jurisdiction could be easily established. Unfortunately, in case of infringement on the internet, the jurisdiction with regard to Cyber Space poses certain legal issues. In case of infringement of Cyber space, many countries may have jurisdiction. Hardship is thus faced in to decide if the jurisdiction shall be determined on the basis of the origin of material or place of storage of material or placed where the material is displayed.

Moreover, even if the jurisdiction is determined the choice of law happens to be another impediment as there might chance that laws relating to infringement of copyright may differ between countries or even be of the nature conflicting to one and another. The infringer may escape after committing infringement on cyber space as; a) it is difficult to establish whether infringement has been made in the first place as internet is a fast growing with complexities and technical diversifications, b) Even after establishing infringement, the jurisdiction could not be determined in ease, c) Conflict of law may exist and d) Financial viability and feasibility happens to be another obstacle.

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<sup>1</sup> Barton, J. & Alexander, D. & Correa, Carlos & Mashelkar, R. & Samuels, G. & Thomas, S.. (2002). Integrating Intellectual Property Rights and Development Policy. chapter 5, p. 100

## Methods to protect copyright over the internet

A blockchain It is highly secured decentralized public ledger that is used to record peer to peer transaction. In each transaction that occurs, the parties agree to details to encode it into the block of digital data which is uniquely signed or identified. A it is a growing list of records, called blocks, that are linked together using cryptography. Each block contains a cryptographic hash of the previous block, a timestamp, and transaction data The timestamp proves that the transaction data existed when the block was published in order to get into its hash.

As blocks each contain information about the block previous to it, they form a chain, with each additional block reinforcing the ones before it. Therefore, blockchains are resistant to modification of their data because once recorded, the data in any given block cannot be altered retroactively without altering all subsequent blocks.

Blockchains are typically managed by a peer-to-peer network for use as a publicly distributed ledger, where nodes collectively adhere to a protocol to communicate and validate new blocks.

**Digital Watermarks** One of the easiest ways to protect the work of the creator of Copyright as it helps the owner to trace his work and prevent it from duplication. In this technique, a watermark is embedded in the original work of the author in this way the unauthorized copying of the work can be detected.

It seems that digital watermarking is a good way to protect intellectual property from illegal copying. It provides a means of embedding a message in a piece of digital data without destroying its value. Digital watermarking embeds a known message in a piece of digital data as a means of identifying the rightful owner of the data. These techniques can be used on many types of digital data including still imagery, movies, and music.<sup>1</sup>

A digital watermark is a signal permanently embedded into digital data(audio, images, video, and text) that can be detected or extracted later by means of computing operations in order to make assertions about the data. The watermark is hidden in the host data in such a way that it is inseparable from the data and so that it is resistant to many operations not degrading the host document. Thus by means of watermarking, the work is still accessible but permanently marked.<sup>2</sup>

### **The authority that governs the internet.**

Who Governs the Internet?

It is actually a pretty straightforward answer: no one. Not a single person, company, organization, or government runs the Internet. In fact, it is a globally distributed network made up of interconnected autonomous networks (which runs with little to no human intervention and the ability to configure, monitor, and maintain itself independently).

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<sup>1</sup> Prachi Khanzode, Siddharth Ladhake and Shreya Tank.(2011)Digital Watermarking for protection of Intellectual property IJCEM International Journal of Computational Engineering & Management, Vol. 12, p 10 ISSN (Online): 2230-7893

<sup>2</sup> Ibid

There is no central governing body of the Internet. Instead, each constituent network setting follows its own lead and enforces its own policies.

But even though no sole entity runs the Internet, there are still a few smaller institutions that have a bit of control. To start, the Internet Governance Forum (IGF), lead by the United Nations (UN), is a multi-stakeholder forum which promotes conversation about policy and the issues related to Internet governance.

The Internet Architecture Board (IAB) is also on board with Internet governance, created by the United States Department of Defense's Defense Advanced Research Project Agency. It functions by overseeing the technical and engineering development of the Internet by the Internet Society (ISOC).

ICANN : is one of the biggest dogs in the Internet world. ICANN stands for the Internet Corporation for Assigned Names and Numbers. They manage the allocation of IP addresses as well as the domain name system (DNS), which keeps track of all domain names and translates them into IP addresses. And they are also an organization responsible for coming together to govern the Internet.

One of the main reasons why the Internet is not governed by any single body has much to do with disagreements among major powers. These include the governments of the United States, the European Union, Russia, and China. They have consistently fought long and

hard on how the Internet should be managed and controlled and whose hands it should fall into.

The US and the EU have come together in support of continuing the decentralized, multi-stakeholder process which involves governments as well as businesses and private citizens.

No one person, company, organization or government runs the Internet. It is a globally distributed network comprising many voluntarily interconnected autonomous networks. It operates without a central governing body with each constituent network setting and enforcing its own policies .<sup>1</sup>

## CONCLUSIONS

Even though digitalization has given opportunities to the creators to show cause their work and creations effectively it has at the same time also raised concerns for infringement of the rights belonging to owners. However, even though several efforts have been made at both International and national level to overcome the obstacles so as to ensure the protection of copyrights in the digital arena still a lot is to be done. At the national level, there is a necessity to create awareness among the people, to train the enforcement agencies and develop proper mechanisms to prevent infringement.

At the International level, there is a need to ensure that the provisions and principles enriched under International treaties and conventions have been complied

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<sup>1</sup> <https://dsim.in/blog/2020/01/21/governing-body-internet/>



with so as to ensure effective management for protection of copyright in the digital world.

The emergence of the internet has both positive and negative effects for the IP rights. The commercial success and transactions of newly invented products or ideas are now mostly dependent on the Digital Technology and the Internet. It is time to rethink and amend copyright systems under the digital network environment. a possible solution should not limit the fundamental individual's rights and should employ identification methods that require a moderate intrusion into the user's privacy, who should be made aware in advance of how his/her personal data are used.

In particular, web users wanting to exploit all the opportunities offered by the Internet cannot claim to be anonymous, but they should accept more invasive forms of privacy protection in order to preserve other relevant rights.

Everyday new technologies and techniques are introducing in the Internet Sphere. Therefore, the universe should walk towards a new morning. It is the reality that driving by necessity people will continue introducing new ideas and inventions. Thus, based on the Internet, some will find new passage to copy or use another's idea or invention for his own benefit. All we can do is to codify the laws relating to IPR protection and set a universal standard of jurisdiction for the Internet IP violation cases. And this will help the Internet IP infringement cases to stop from happening.

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