THE APPROPRIATE MECHANISM FOR PROTECTING SOFTWAREINTELLECTUAL PROPERTY

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Abstract

The intellectual property importance as a human right has increased; since successful economy requires investing new ideas, taking the lead of it, and protect them by IP under its several categories.

However, since the digital environment is enlarging, more attention should be given to software IP, because the intangible creations in the case of software is accessible by everyone in the world, where people can see the source codes used in creating a specific Mobile Application, or the HTML and CSS used in developing a website, and anyone can develop the same software without being considered to have committed infringement, as long as the new software has its unique source code.

consequently, it can not be protected by the traditional types of Intellectual Property, whereas in many legislations as the Egyptian IP Law 82 of 2002, software and database IP are included in Patent, although this characterisation can be criticised for many reasons, as the protection period, the high cost, and the content that patent protects.

On the other hand, other legislators dealt with the Software IP as part of the copyright such as the Berne Convention, considering the Source Code as a writing in a specific language by an author, however I believe that it is not true, whereas the Copyright does not protect the ideas about the code functions and the different features

of software.

Therefore, a persistent need requires the legislators to put effort in understanding how software and unique source code is created and functioning, in order to provide suitable provisions, new type of the IP, or adopt an international treaty asthe WIPO treaties.

Hopefully this research is going to be a motivation to the modern legislators to find out new ways to protect the future's main intellect work and an important asset for the new generations.

Keywords: Software Intellectual Property, Unique Codes, Source Codes, programming languages, Software Patent.

Introduction and definitions

The current lifestyle requires the usage of many machines everyday, and each machine has its software that consists of many source codes to give orders for the machine to perform, and to benefit us, consequently the need of software programming development day by day is an essential thing in the human's normal life, and the economic value of each software increases according to the benefits and the services provided by it, and the more creative the code is made the more valuable it becomes.

What is the software and its source codes?

The Software is a group of sets of some computer programs, some associated documents, and other data. Most of the softwares are written in highly developed programming languages. Which are easier, more efficient, and understandable for developers and programmers because they are more similar to the natural humanlanguage than machine language[1].

Advanced languages are also translated to other machine language using some technical methods as the compiler or a specific program that works as interpreter[2]. Software sometime may be also written in a less advanced language, which correspond stronger to the computer's machine instructions by its language and which is translated into machine language and consequently to deal with such machines the source codes used in its system are the main controller over

the machines' operation, therefore the protection of these codes mean the protectionof the whole invention.

Therefore, the programming developers compete in creating new source codes that applies the equation of providing more benefits in faster time and without glitches in the system, which requires a very well written unique source codes, and that makes such code attractive to be copied and stolen.

[1] Bessen, J. and J. Hunt (2003), "An Empirical Look at Software Patents", Work ing Pap er03-17, Federal ReserveBank of Philadelphia.pg96.

[2] *Ibid.pg101*

However, the legislators work on finding solutions to protect the software by IP protection, because the Intellectual Property is a term that describes a set of intangible assets or in other words assets that are not physical or can not be found in the nature[3], and the IP Law is the method used to legally protect a person's intangible work from unwanted outside usage or implementation without the owner's consent.

Hence, since the Intellectual Property right protects the physical output of an Idea, and not the Idea itself, consequently, the Software Codes to get protected need to be written as unique codes, which means that the one to have the ability of claiming IP protection to prove that the opponent code is identically written like his/her code.

[3] Blind, K ., J. Edler and M. Friedewald (2005), Software Patents: Empirical Evidence and Policy Implications, Cheltenham,Edward Elgar.

Importance of Intellectual Property for Software

Individuals, start-ups, and companies can all benefit from software innovation. The greatest way to safeguard content, such as software, is through the law. Programmers and companies treat software as intellectual property in order to benefit from legal protection.

When you consider your software as intellectual property, you have more control over who can use it and how it is distributed to the general public. If you don't, people might use it without your permission and you won't get compensated when they use your programme. In severe circumstances, you can lose your ability to usethe software you made.

A work that isn't a physical object is considered intellectual property (IP). IP typically results from creativity and can take the form of a manuscript, formula, song, or piece of software. IP is legally protected by copyrights, trademarks, trade secrets, and patents[4].

IP protection is a challenge for both organisations and individuals. Employee theft is a concern for companies with valuable intellectual property, such as software. Even yet, it doesn't happen as frequently when theft originates from outside the company.

One way to safeguard firm IP is by having staff sign non-

disclosure agreements. Another option is to limit employee access to IP, such as software under development.[5]

Utilising the legal system to protect IP is another means of doing so. That entails obtaining a trademark, patent, or copyright. If someone does steal your property, you will have a case to bring charges.[6]

Both a copyright and a patent provide legal protection when you want to safeguard software intellectual property. Different aspects of IP protection are covered by

[4] *Ibid*.

[5] Peter Toren (2003) Law Journal Press, Intellectual Property and Computer Science.

[6] Peter Toren (2003) Law Journal Press, Intellectual Property and Computer Science.

each choice. While some choose to use both, others favour one over the other. You can also decide to treat your programme as a trade secret. Making a decision is a crucial first step in safeguarding your software.

Another choice is trademarks; however, they cannot shield your IP software code. What they safeguard is the software's name or a symbol you use to promote it. The brand name of your software should be trademarked in order to prevent competitors from utilising it to confuse consumers.[7]

[7] *Ibid*

History of Software IP

Software Intellectual Property history, with the problems occurred from the need of software developers to protect their software codes by patent. Which raised the complicated question of whether the software can be protected by patent or not, which previous Court cases could not completely answer. In fact, some people believe that Software can be protected by patent, copyright and other IP methods, while other people still believe that you can't get a patent for software.[8]

Software IP History in foreign legislations:

Software IP started in most countries as a part of the intellect product that could be protected by patent, while many people thought that it could not be imagined to be protected under the patent, as they believe that patent can not protect:

- Computer programs
- Computer games rules
- Different Business methods[9]

Therefore, in their logic If computer programs can not be protected under patents, then how can the software be protected under the patent?

In the past, the British patent law did not change and was kept the same from 1623 until 1977. In 1623, an

invention to be able of being protected under patent, had to be considered as a "new method of manufacturing" according to what was stated in the Statute of Monopolies.[10]

When the United Kingdom became a member of the European Patent Convention (EPC), that definition of the invention that can be protected under patent that is manufacturing-based has been changed in the UK. During the 1960[11] and 1970,

[8] https://www.wipo.int last visit 16th June 2022

[9] Bessen, J.and E . Maskin (2000), "Sequential Innovation, Patents and Imitation", M IT Work-ing Paper,No. 1/2000, Cambridge: MIT.

[10] https://www.wto.org last visit 15th June 2022

[11] Blind, K .and J. Edler (2003), "Idiosyncrasies of the Software Development Pro cess and theirRelation to Software

Patents: Theoretical Considerations and Empirical Evidence" , Netnomics, 5 (1); 71-96.

mindsets about the patents were being changed, but computers and software were not with the same driving force as they are today. That is why legislators did not think about software frequently (or not at all) when putting together new patent literature[12].

On the other hand, the European Patent Convention followed the Washington Agreement (which is also named the Patent Cooperation Treaty). Where the computer programs were excluded from inventions that were able to be protected under patent, and the reason behind that was that the computer programs and software were complicated so the patent officers could not review[13].

But keeping all computer programs away from being protected under IP means that some of the most advanced and valuable computer inventions may not get its protection under patent, so they added the word "as such" in the article definitionto the language.

Accordingly, the Boards of Appeal for the European Patent Office had to justify the usage of the word "as such" in describing the other software languages. They dealt with a Vicom (Visual Communicators Management)[14] patent application to be done with an image software. Where guidelines about software IP came from their decision.

Mainly Programs should have a "technical effect." If they have novelty or non- obvious features, then running such program can not be technical enough to be

qualified for an IP protection.

software patents Gale's Application[15] discussed a software invention that might have satisfied the patent requirements. In fact, computer specialists find his approach to be very helpful. Gale failed to establish that his computer software met the criteria for being patented since he didn't prepare the application correctly. As a result, it was denied by the Court of Appeals.

[12] *Ibid*

[13] Blind, K .and J. Edler (2004), " General look on the Software IP" , Netnomics,

[14] https://www.wipo.int last visit 16th June 2022

[15] Blind, K .and J. Edler (2004), " General look on the Software IP" , Netnomics,

programmes for computers In 1997, the EPO issued a patent to IBM. Their acts established a precedent for the issuance of patents for computer programmes that addressed technical issues.

business techniques. The British Patent Office broke with the EPO's judgement in 2006. Business practises, according to the BPO, cannot be patented. Software is often referred to as a business method.

Software IP history in Egypt:

The International Intellectual Property Alliance research states that Egypt's rate of software piracy in 2011 was 61 percent, having a substantial negative impact on the country's IT and software industries. According to IDC and BSA, a 10% decrease in software piracy in Egypt over the next few years may increase the country's gross domestic product by $254 million.[16]

Egypt has started to regain its political and economic stability in 2015, so it's time for the government to refocus on its initiatives to reduce piracy and other violations of intellectual property rights, as these are frequently the main concerns of many foreign corporations and business owners investing in Egypt.[17]

According to Law No. 15 of 2004 the information technology (IT) industry development was established (the E-Signature). It is principally in charge of granting software licences, expanding the software industry, taking complaints, and providing training. The creation of the ITEDA contributed to the legalisation of software in Egypt, but it still requires development to be more successful, particularly in locating and pursuing businesses that employ illicit software. Therefore, it is necessary to alter the E-signature statute in order to provide ITEDAthe power to track and look into matters.

Furthermore, the police in Egypt have a hotline for copyright and internet offences, it is still difficult to

report cases that are related to cyberspace or copyright. In most cases, authorities would not take significant action unless the reported case was extremely serious. The presentation and utilisation of evidence in relation to cybercrimes was the second problem that, up until recently, presented a hurdle.[18]

However, the formation of the Economic Court in 2008 marked the beginning of the upward trend towards solvency. Despite the BBC significant initiatives that have been made since then (e.g., the installation of an online complaints system and
training for police in the use of electronic evidence), there is still much space for improvement.

[16] https://itida.gov.eg last visit 15th June 2022
[17] *Ibid*
[18] Nagla Rizk and Lea Shaver (2010) Access to Knowledge in Egypt, Blooms Bury Academic

In accordance with Law No. 120, the Economic Court was founded in 2008. The development of intellectual property has been profoundly impacted by the formation of the Court, where copyright cases are handled by skilled justices. Email addresses, IP addresses, and website IP addresses are accepted as electronic evidence by the court.

According to law No. 82 of 2002, the fine ranges from LE 5,000 to LE 10,000, and the minimum sentence is one month. As a result, the penalties are light (Article 181). Such a "nominal" fine is plainly not enough to make up for the losses incurred by the right holder, and civil litigation to get compensation often drags on for much too long. Therefore, the clause or pertinent legislative reform may have a beneficial effect on the protection of intellectual property rights.[19]

The Egyptian Legislator is missing a huge fact, where there are over 40 million internet users, there is no Internet Law. The adoption of a cyber law in Egypt is crucial for dealing with online crimes, illegal downloading, software piracy, etc. These situations cannot be handled by the Intellectual Property Law No. 82/2002 and the E-Signature Law No. 15/2004. In order to effectively combat E-crime and internet business crimes, a separate internet law is necessary[20]

[19] https://itida.gov.eg last visit 15th June 2022

[20] *Ibid*

Comparison between the Foreign legislations and the Egyptianlegislations in protection Software IP.

From the previous presented historical background, we can conclude that the Egyptian legislator as well as the foreign legislators worked hard on setting up a set of laws and procedures to create protection for the software IP, although it may not be sufficient enough to achieve the required and suitable protection for the software, but that does not deny the efforts made.

In Egypt the Information Technology Industry Development Agency (ITIDA) is currently the main responsible agency of the Software IP.
However, The People's Assembly has approved in May 2002 the new IPR Law No. 82 of 2002[21], a specialised law for the software and database, this law was intended to take the Egyptian legal Intellectual Property Right system together with its obligated terms under the WTO Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement.[22]

The IPR law No 82 of 2002 is intended to build a suitable environment to encourage software developer's creativity and foreign investments in Egypt. which is the development of Law No. 354 of 1954 on the Egyptian copyright and other types protection. Whereas it tries the reinforcement of the IPR Law to change and

administer a national IP system in respect to the government's entities, Non- Governmental Organisations, for example the Egyptian Center of Information Technology and Intellectual Property Rights (ECIPT), the Information and Communication Technology multinationals such as Microsoft, Auto Desk, and others.

[21] https://itida.gov.eg last visit 15th June 2022

[22] https://www.wto.org last visit 15th June 2022

The I PR law No 82 of 2002, is consisted of 205 articles, which are a set of unified and superseded existing intellectual property rights laws. However, the IPR law in Egypt contains many types: trademarks, copyrights, patents, and others.

In first ranked technology exporting country – the United States

The Copyright Office started accepting source code listings as copyrightable subject matter in 1964, but Congress didn't officially include machine-readable computer programmes as subject matter of copyright until 1980 [CONTU79, Samuelson84]. Today, copyright is a widely used method of securing software's intellectual property.

The "writings" of "writers" are the subject of copyright law, according to the US Constitution.
Congress is authorised by the constitution's Article 1, Section 8, Clause 8 to give exclusive rights to "writers" for their "writings" for a set period of time in order to advance the arts and sciences. Even though the most recent revision of the Copyright Act [17 U.S.C. 101, et seq.] added an explicit provision for software copyright, some have questioned whether computer programmes are a proper subject matter for Copyright law. Under the current copyright Act, copyright protection is available for "original works of authorship," such as books, paintings,motion pictures, and sound recordings.

In second ranked technology exporting country – India

The Copyright Law in India protects computer software's Intellectual Property Rights (IPR). As a result, the provisions of the Indian Copyright Act 1957 provide protection for computer programme copyright.[23]

According to the Copyright Act's definition, computer programmes are literary works. A set of statements or instructions that can be utilised directly or indirectly in a computer to achieve a certain outcome is known as a "computer programme." The structure and design of computer programmes cannot be copied due to

[23] http://www.legalservicesindia.com/ last visit 15th June 2022

copyright laws. A computer software may infringe even if no code was copied because the images, sounds, and appearance of the programme may be protected as an audiovisual work.

A copyright is created for each addition or modification to the source code that exhibits sufficient originality, just as one was created when the first lines of source code were produced by the programmer. As a result, a computer programme is typically covered by a number of copyrights, beginning with the one that applies when it is originally developed and continuing through the final update.[24]

In the United Kingdom

An improved knowledge of intellectual property (IP) rules and how such laws may impact their work is advantageous for software developers who reside or operate in the United Kingdom. A multitude of different forms of IP regulations may apply to software programmes since they are frequently complex works that combine utilitarian and artistic features. Below, we'll go through what copyright law is, where it came from, and how it relates to technological works.

The Statute of Anne 1709, a common law principle, served as the basis for the creation of copyright law in the United Kingdom. With the passage of the Copyright Act 1911, it was become a statute. The Copyright, Designs and Patents Act of 1988 is the current law. You

can read the entire text here if you're interested.
The UK Intellectual Property Office is the appropriate government agency to contact for copyright issues. Additionally, the UK has ratified the Berne Convention, a global accord on copyright law that has been ratified by 172 nations.

In Germany – Example of an European country

In Germany, software is often not exempt from patent protection. The text of the European Patent Convention and German patent law both expressly state that only software "as such" is prohibited under the law (EPC). This should prohibit a pure

[24] http://www.legalservicesindia.com/ last visit 15th June 2022

mathematical model of cognition or pure computer code from being patented. because a technical element is necessary for every patent claim.

Software does not acquire patentability just by being kept on a storage medium. Programs for data processing equipment are not eligible for patent protection as a whole under the German Patent Act (Section 1(3) No. 3 in connection with Section 4 of the Patent Law). However, as may be seen from a quick review at the German case law on data transmission and processors, software is patentable in some circumstances.

Germany has a connection to IP legislation and the rest of the EU as one of the European nations. Common principles exist that can benefit the person, generate issues, or result in challenges. There may be instances where the owner needs to seek legal counsel due to infringement, much like in other nations with regard to IP. These legislations typically have a comparable scope, which ties the EU nationsand Germany together.

Difficulties With protecting Software IP

The difficulties surrounding software patents come from the definition of what isconsidered to be patentable.

However, the legislators in the United States do not consider three things to bepatentable:

- Abstract and Mere ideas
- Natural phenomena without human development
- Laws of nature[25]

When you patent software, it has to meet lots of USPTO and legal criteria. That'swhy not all software qualifies for a patent. The most important include:

- Your software has to be useful or have a specific application.
- It has to be new.
- It has to have an "inventive step" that is not obvious to people in the field. Therefore, you can not protect and algorithm by patent on its own because that isconsidered to be an abstract idea. [26]

But in case the code or the algorithm has a specific function to do a purpose and application in the software, then the software itself may be qualified to be protected by patent. [27]

If the software succeed in solving a technological problem in a specific way, and it can be discussed in detail, then it could be qualified to have a patent protection. However, also an abstract idea (like math or a source code) which can create a specific or a tangible

application can be qualified to have a patent protection.

The majority of software patent applications fail because of abstract concepts. It can be challenging to demonstrate that software is an actual invention and not just

[25] Peter Toren (2003) Law Journal Press, Intellectual Property and Computer Science.

[26] *Ibid,pg82*

[27] https://www.wto.org last visit 15th June 2022

an abstract idea. That is why the issue has been the topic of so much recent legislation.[28]

Some Successful software patents:

- Amazon "One-Click-Buy" software, U.S. Patent No. 5960411[29]
- The mp3 audio software, U.S. Patent No. 5579430[30]

Software copyright protection has some shortcomings that make it problematic. Computer software is made up of functionality and text (source code), as previously stated. Only the idea's expression—the language and code of a program—is protected by copyright; the underlying concept and the functional results are not covered. Therefore, if a programme is independently developed (with a different source code and developed in a different programming language) but is based on the exact same concept or produces the exact same functionality as an existing programme, the copyright regime would not be able to offer legal protection.[31]

Therefore, copyright does not offer sufficient defence against software that is copied in a non-literal manner. However, a legitimate argument may be made that if the principles or features of software were protected by copyright, this might lead to a monopoly over those concepts and could hinder innovation and competition.

Adding to the above point, some authors point out still another drawback of copyright protection: in some cases, it can serve to reinforce already-existing barriers

to market entrance. This is because to how simple it is to create software that performs the same duties as a computer programme that has already been released without copying its code.

[28] Bessen, J. and J. Hunt (2003), "An Empirical Look at Software Patents", Work ing Pap er03-17, Federal ReserveBank of Philadelphia.

[29] *Ibid,pg115*

[30] https://www.wto.org last visit 15th June 2022

[31] *Ibid,pg130*

As a result, if new software is introduced to the market, it could not have enough time to pay for itself because functionally similar software with a different source code may soon undercut its competition.

Small and new businesses in particular can be impacted by this circumstance. Furthermore, it could be claimed that the dynamics of the software business are incompatible with long-term software protection, which could impede the advancement of software programmes.

Therefore, you can not protect the neither the idea nor the intangible product of it in case your code is not exactly written as the contradicted code[32], and this may happen since the same function can be written in many ways in programming languages, as follows:

C++	`int number = rand() % 100+1;`
Rust	`let random = rng.gen_range(1..101);`
Java	`private static final int NUMBER = r.nextInt(100) + 1;`
Groovy	`int randomNumber = (new Random()).nextInt(100) + 1`
JavaScript	`const randomNumber = Math.floor(Math.random() * 100) + 1`
awk	`randomNumber = int(rand() * 100) + 1`
Lua	`number = math.random(1,100)`

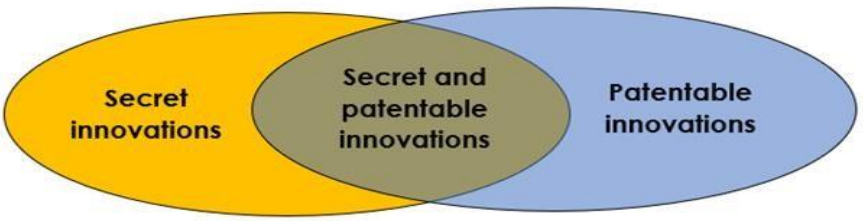
In the previous example, all these codes whoch are all written differently, are doing the same function which is generating a random number with a function like rand().

[32] Bessen, J. and J. Hunt (2003), "An Empirical Look at Software Patents", Work ing Pap er03-17, Federal ReserveBank of Philadelphia.

Useful intellectual Property for Software e-Forms

Protecting Software Through Copyrights, Patent, and Trade Secrets.

As long we do not have specialised method to protect the software IP, then according to the current available IP methods, Software can be protected by patents, trade secret and copyright and the correct mix shall be selected on a case by case basis considering your business model and the software application as follows:



Patent protection

It is true that according to the law, software itself cannot be protected by a patent. Software, however, is merely a technical tool used to carry out a process on a computer. If the criteria for patentability are met, the computer programme that uses the method is also patentable. [33]The main need for such a technique or piece of software is that it finds an original solution to a technological issue. Therefore, if they are new and innovative, computer programmes that have a technical effect, like a control programme for a machine, or that

address a technical issue, like an algorithm quickening data transfer over a communication line, are plainly patentable.[34]

On the other hand, it will be challenging to defend against software that targets a non-technical goal like forecasting stock exchange values. This is only a very brief explanation, and each patentability issue must be assessed individually.

[33] Peter Toren (2003) Law Journal Press, Intellectual Property and Computer Science.

[34] Bessen, J. and J. Hunt (2003), "An Empirical Look at Software Patents", Work ing Pap er03-17, Federal ReserveBank of Philadelphia.

Additionally, the conditions for patentability may differ between nations. As a result, even if not all software developments may be patentable, many of them are[35].

Trade secret

Software is frequently compared to a "black box" that operates through aninterface to receive inputs and output results. Normally, any user has access to andmay readily copy the inputs and outputs of the software. Instead, it is frequentlychallenging for a third party to reverse-engineer the algorithms in the black box. By analysing the finished software product, one cannot reverse engineer manysoftware advancements because they are actually concealed in the "black box." Therefore, In order to secure the software breakthroughs, it may be preferable tokeep them a secret. It's sometimes referred to as know-how or a trade secret. Inthis scenario, reasonable measures must be made to keep the black box's contents,like its source code, a secret.[36]

Trade secret versus Patent protection

Three groups can be used to categorise software innovations. software inventions being patented (see blue circle), patentable and secret (see yellow circle), and software innovations being secret like the content of the black box (see overlap of both circles). Trade secret protection should be provided for un-patentable innovations. Patents should be used to protect non-secret developments so that rivals cannot steal this reverse-engineer-able portion of your programme. On a

case-by-case basis, it must be decided whether software developments that[37] are confidential and patentable are kept secret or are protected by a patent.[38]

Copyright protection

[35] https://www.wipo.int last visit 16th June 2022

[36] *Ibid*

[37] Blind, K ., J. Edler and M. Friedewald (2005), Software Patents: Empirical Evidence and Policy Implications, Cheltenham,Edward Elgar.

[38] *Ibid*

Your software's source code and object code are also covered by a copyright. Copyright isn't as effective at defending you from a rival reprogramming the features of your software. However, avoiding 1-to-1 copies of your software programme is a powerful weapon. The old software business model relied on the concept of copyright to sell copies of the software programme to customers who then install the copies on their computers.[39]

Copyright may be less significant in contemporary software business models like Software as a Service (SaaS), because the software code is primarily performed on the server. Anyhow, copyright protection needs to be regarded seriously as an additional layer of security and to support trade secret protection.[40]

[39] https://www.wipo.int last visit 16th June 2022

[40] *Ibid*

Using Contracts and Licensing to Protect Software IP

IP contact

Intellectual property (IP) owners should safeguard their priceless assets in a variety of methods. The most obvious methods could be to register the IP in the appropriate jurisdictions and then use that IP right to sue anyone who violates it. However, there is a very practical and preventative strategy to safeguard your intellectual property in your pertinent contracts. Because IP is a part of your regular operations, it contributes significantly to the value of your company.[41]

IP can generate value and money in a variety of ways, including by being sold or licensed, provided as capital in a joint venture,[42] made available to form strategic alliances, incorporated into an existing firm, or utilised to start a new one. Businesses and organisations that SMEs do business with and, thus, contract with frequently use your intellectual property to varied degrees.[43]

There are two important considerations to keep in mind while conducting business involving your intellectual property: always utilise written contracts whenever possible, and make sure that, where applicable, your IP is included in such agreements.

And it is frequently concluded in different types of agreement as follows[44]:

1. Non-Disclosure Agreements (NDA) and Confidentiality Agreements
2. Memorandum of Understanding (MOU)
3. Employment agreements
4. Agency agreements
5. Trade mark/patent license and technology transfer
6. Franchise agreements
7. Distribution agreements
8. Manufacturing agreements
9. Joint Venture agreements10.IT-related agreements
11. Selling/assigning your IP

[41] Bessen, J.and E . Maskin (2000), "Sequential Innovation, Patents and Imitation", M IT Work-ing Paper, No.1/2000, Cambridge: MIT.

[42] *Ibid,pg170*

[43] *Ibid,pg182*

[44] https://www.wipo.int last visit 16th June 2022

All of the contracts above (numbered 1) through 10) have a licence as part of theirconditions.

IP license

The parties should be clear on whether the customer intends to own the source code or just modify or upgrade the software in the future if the client requests that a software developer supply source code. This is so because a licensing agreement and a contract for the sale of software or a contract for the transfer of copyright to source code are very different from one another.[45]

The developer may insert a clause requiring the client to keep the source code confidential if the parties agree to a software licence agreement that requires the source code to be shared for the purposes of customising or updating the product.[46]

Copyright owners are not prohibited from providing rights to third parties by software licence agreements. There are numerous forms of software licence agreements because copyright is transferable, licensable, and subdivided, including:

[45] https://www.wto.org last visit 15th June 2022

[46] Bessen, J.and E . Maskin (2000), "Sequential Innovation, Patents and Imitation", M IT Work-ing Paper, No.1/2000, Cambridge: MIT.

Exclusive Licenses: The only person or entity authorised to use the software is the licensee. It is not authorised for use by the licensor, and no further licences may be granted.

The software may only be used by the licensee under a sole licence. The licensee promises not to issue any further licences, but they are still free to use the software.[47]

Nonexclusive Licenses: The programme may be used by the licensor and multiple users may be simultaneously granted licences by the copyright owner. Mobile applications and general software are typically licensed on a non-exclusive basis.[48]

An authorisation for another individual to carry out a specified act is known as a licence. In most cases, a licence is given in exchange for money. An agreement between the owner of the IP (the "licensor") and another party (the "licensee") that merely permits the licensee to do specific things using the licensor's IP is known as an IP licence.[49]

For instance, a nondisclosure agreement (NDA) can let your prospective partner to talk about your trade secrets internally or with specific specified third parties. Terms that expressly permit employees to utilise the company's IP for particular duties may be included in an employment agreement.

As a result, it can be useful conceptually to consider licensing your IP under each of the aforementioned agreements. Thus, the pertinent IP terms can be incorporated into the contract to ensure that you have legal protection against the other party with whom you are transacting.

[47] Bessen, J.and E . Maskin (2000), "Sequential Innovation, Patents and Imitation", M IT Work-ing Paper, No.1/2000, Cambridge: MIT.

[48] https://www.wipo.int last visit 16th June 2022

[49] https://www.wto.org last visit 15th June 2022

The decision of whether a non-exclusive business strategy would generate more overall revenue or whether licensing will allow SMEs to access markets that would not otherwise be accessible to them will determine whether they should licence.

Recommendations

Based on this research paper, we can now understand that the Egyptian legislator in order to be able of following up with the modern life requirements and the developments of world's inventions and creations, new legislations and new ways of provisioning these legislations should be taken into consideration:

1- Semi-legal or Paralegal contribution

In matters as the one we are discussing now, where law is being used to regulate technical issues, the need for people who understand both areas of the issue, the legal side and the technical side is important and desirable, because it depends in a very notable manner to the personal discretion of the one who judges the case, therefore, it would be helpful if the discretion for both areas is being made by the same person, so he/she would think impartially without taking one side of his/herspecialisation.

2- Creation of new Specialised Law to regulate the Software IP in particular According the previously mentioned comparison between different countries legislations, we can conclude that no country has developed an depended specialAct for the Software IP, although it is very understandable that the future is beingwholly built depending on Software industry, accordingly it is highly recommendedfor Egyptian legislator to take the lead of creating special Law that

focuses only onthe software IP, and not just measures it to other intellect work to put it beside it.

3- Knowledge exchange programs

It was obviously noted that there no huge difference between the Egyptian legislations and the foreign ones, but it can be said that the foreign legislators have took longer steps into implementing the Software IP, and this does not disgrace our legislators by any chance, it is only because the need of this legal development was not desired in our country as much as it was in the more developed countries specially those countries that depends on the Software industry as a source of revenue, therefore we recommend that an exchange program between the
technology regulators in the foreign countries and ours to be made frequently to enable the development of our legislations.

4- Technology awareness campaigns

In countries that do not rely on technology to be source of revenue, or do not focus on creating technology, but only using it, people require more effort on spreading the new ideas and the world's move towards new technology by awareness campaigns, which are being already made nowadays by the ITIDA by offering Cost-free educational programs to educate people specially the young ones about the programming and data technology.

5- Specialised and double-majored post graduate studies should be available in the Egyptian law schools

For many students who are interested in enlarging their knowledge in the new fields of Law, such as the IT law, it becomes a problem when they realise that such educational programs are not available inside their country and they will be required to travel abroad and bear heavy expenses. Therefore, it is recommended for the Egyptian Universities to open new advanced postgraduate studies programs to allow the students who wish to study such programs from achieving their goals.

Conclusion

After making studies on how to protect the software IP most people should reach one result, the special nature of the software required protection, and that in order to have actual protection and not.a mere one, the need of new legislations that deals in a technical way not just the legal way of infringements toward the softwares is being increasinglyobvious.

Interesting patterns can be seen when comparing the tactics and tools used for protection in the software industry.
We discover an intriguing pattern for the usage and significance of patents, despite the fact that the general use relevance of the various protection tools has not altered.

One the one hand, we cannot see a spread of software patents among software development firms.
On the other hand, businesses that use patents place a higher value on this novel and not yet legally established protection tool.

As a result, there is a wider disparity in the skills

required to operate this protection tool, which could lead to greater inequalities in the software market.

The size bias, i.e., the likelihood of using patents and their importance increasing with company size, is supported by an analysis of the elements that influence their usage and relevance as a tool for protection.

Additionally, firms with a significant level of export activity are more likely to utilise this additional protection measure, particularly given the increased legal unpredictability within and outside of Europe regarding software patenting and its ramifications for infringement and litigation.

Finally, the usage of patents is significantly influenced by patterns of collaboration. Companies with extensive customer collaborations are more likely to use patents than those without such relationships. The possibility of using a patent is reduced by active partnerships with suppliers and even rival companies, perhaps because these collaborations go against those that are based on

open source.

However, more research must be done on this in order to draw useful policy conclusions for the ongoing debate over software patents.

Resources

Bessen, J. and J. Hunt (2003), “An Empirical Look at Software Patents”,
Work ing Pap er03-17, Federal Reserve Bank of Philadelphia.

Bessen, J.and E. Maskin (2000), “Sequential Innovation, Patents andImitation”, M IT Work-ing Paper, No. 1/2000, Cambridge: MIT.

Blind, K ., J. Edler and M. Friedewald (2005), Software Patents: EmpiricalEvidence and Policy Implications, Cheltenham, Edward Elgar.

Blind, K .and J. Edler (2003), “Idiosyncrasies of the Software Development Pro cess and theirRelation to Software Patents: Theoretical Considerations and Empirical Evidence”, Netnomics, 5 (1); 71-96.

Peter Toren (2003) Law Journal Press, Intellectual Property and Computer Science.

Nagla Rizk and **Lea Shaver** (2010) Access to Knowledge in Egypt, BloomsBury Academic

Blind, K .and J. Edler (2004), “General look on the Software IP”,

Netnomics.

https://www.wipo.int last visit 16th June 2022
https://www.wto.org last visit 15th June 2022
Http://www.itida.gov.eg last visit 15th June 2022
https://www.senate.gov last visit 15th June 2022
http://www.legalservicesindia.com last visit 15th June 2022 https://european-union.europa.eu last visit 15th June 2022 https://www.legislation.gov.uk last visit 15th June 2022