

LEGAL PROTECTION OF ARTIFICIAL INTELLIGENCE SYSTEMS IN LIGHT OF INTELLECTUAL PROPERTY LAW



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Abstract:

rapid technological progress has given rise to artificial intelligence systems that have revolutionized various fields. These artificial intelligence systems, powered by advanced algorithms, machine learning, and data analysis, have transformed industries and impacted our daily lives in numerous ways.

This study examines the degree to which existing intellectual property laws have accommodated the new creations produced by artificial intelligence, and assesses whether the emergence of such creations and inventions requires amendments to the legal framework of intellectual property. Furthermore, the study highlights some of the international efforts made to regulate artificial intelligence systems.

Key words: *Intellectual property law; Artificial intelligence; Creations; Inventions; Algorithms; Machine learning; Data analysis.*

Introduction:

Artificial intelligence is a branch of computer science that focuses on creating machines and systems capable of performing tasks that typically require human intelligence, with minimal or no human intervention. Artificial intelligence generally signifies "narrow artificial intelligence" which is techniques and applications designed to execute particular tasks (WIPO, 2020, p.p.3-4).

Artificial intelligence has various applications across multiple fields, including healthcare, advanced manufacturing, information technology, defense, and beyond. Artificial intelligence's uses extend to the development and production of medical materials and medicines, as well as the technology and management of advanced industries, and other fields that cannot be limited or counted. Which's

what makes us face a real societal revolution caused by a non-material factor that takes the form of an algorithm, that feeds on data and whose effects are difficult to determine in space and time.

Legal protection for artificial intelligence systems falls primarily within existing intellectual property laws. However, it is important to note that applying these laws to artificial intelligence systems can be complex, given the rapid pace of technological development.

The legislator has always intervened with amendments and rules that are compatible with the challenges arising from technological development, artificial intelligence poses a new challenge to the law at multiple levels, specifically in terms of applying intellectual property laws to the various legal issues that artificial intelligence can raise.

Which makes us wonder about the extent to which current intellectual property laws adapt to the changes brought about by artificial intelligence systems?

This study aims to evaluate the compatibility of current intellectual property laws with new creations produced by artificial intelligence, and to determine whether these laws need amendments to keep up with these developments.

To achieve this, we adopted a descriptive-analytical methodology by describing the applications of intellectual property laws on artificial intelligence, as well as describing international efforts to regulate these systems. Besides Analyzing various laws related to this using analytical approach.

I. The application of intellectual property law to artificial intelligence:

legal protection for artificial intelligence programs primarily falls under existing intellectual property laws, such as copyright and patent law...However, it's important to note that the application of these laws to artificial intelligence programs can be complex and subject to ongoing legal discussions and developments.

1. Patent law:

Patent law seeks to protect and support new innovations for people / inventors that meet the required standards; however, new creations have recently appeared made by artificial intelligence without significant human intervention (or control), and this has raised many legal questions regarding invention and ownership.

Does the law recognize artificial intelligence systems as inventors? This contradicts the traditional point of view that grants the status of inventor only to

humans! Referring to the patent laws, we do not find a clear assimilation of the inventor's status as a human person. Rather, this assimilation is deduced from the formal conditions, and uncertainly from the substantive conditions specified by this law (Eva Stanková, 2021, p.1).

The Algerian legislator specified the objective conditions for eligibility for invention in Article 03 of Ordinance 03-07 (Ordinance 03-07, 2003, p.p.23-30) relating to patents of invention: "novelty, non-obviousness and that the invention is capable of industrial application", and concludes that these criteria do not make it possible to decide with certainty whether the inventor must necessarily be a human person. In other words, if the "political" choice is to recognize artificial intelligence as an invention, it would not be useful to modify the applicable legal texts, but simply to interpret it according to a different prism from that of the legislators who designed them when the question did not arise (Mélanie Clément-Fontaine, 2022, p.64).

The European Patent Office (EPO, 2020), the United Kingdom Intellectual Property Office (UKIPO, 2019), and the United States Patent and Trademark Office (USPTO, 2020) have rejected a patent application for artificial intelligence called DABUS as an inventor.

Certainly, the natural person does not have a monopoly on legal personality, However, the recognition of legal personality to entities other than the human person is the responsibility of the legislator, because it gives access to rights and obligations.

On the other hand, there does not seem to be any obstacle to patent offices or judges recognizing the validity of an application or a title when the inventor is a natural person who would have use an artificial intelligence to create an invention. However, some wonder whether the inventive act can still be attributed to a natural person when the creation was produced without the person participating significantly in its conception. WIPO took up the issue as did the European Parliament (WIPO, 2020, p.5).

The response, it seems to us, must meet the "explainability" requirements mentioned earlier. In view of technical advances, the hypothesis that an invention is the autonomous fruit of an artificial intelligence remains theoretical. In any case, it follows from reflections on the supervision of artificial intelligence technologies that the latter, to remain in the service of humanity, must be subject to the control of the human person. Therefore, the patentability of inventions would require that a human person be able to explain and capable of conceiving the invention in an intelligible manner. If this is not the case, the invention made by an artificial intelligence should not be eligible for protection under patent law. Such use of artificial intelligence would fall into the "high risk" category defined by the European Parliament in its 2020 resolution.

In short, to the criteria of “technical solution to a technical problem” and “industrial application”, it seems reasonable to us to rigorously add that of “explainability” of the process which led to the creation of the invention (Mélanie Clément-Fontaine, 2022, p.66).

2. Trademark law:

The use of artificial intelligence in trademark creation and management raises a number of important legal questions, particularly regarding trademarks created by machine learning algorithms. One of the main issues is the distinctiveness of trademarks created by artificial intelligence, as they must be distinctive to be eligible for protection and this is confirmed by Article 02 of Ordinance 03-06 (Ordinance 03-06, 2003, p.p.18-23) relating to trademarks. However, when artificial intelligence algorithms generate trademarks, it can be difficult to determine whether they meet the criteria for distinctiveness, and how to assess their originality.

Another important consideration is ownership. Traditionally, trademarks are associated with the entity or individual that uses them in commerce. However, when an artificial intelligence system generates a trademark, the question of ownership arises. It may involve determining whether the artificial intelligence system is acting as a tool of the human user or if it has autonomous creative capabilities that warrant recognition as the creator or co-creator of the trademark.

Liability is another area of concern. If an artificial intelligence system generates a trademark that infringes upon the rights of others or violates trademark laws, questions arise regarding liability. Determining responsibility and potential liability for artificial intelligence generated trademarks can be complex, especially when there is no clear human input or control over the artificial intelligence's decision-making process.

Furthermore, artificial intelligence algorithms can be used to identify potential trademark infringements by analyzing vast amounts of data. However, the accuracy and reliability of artificial intelligence systems in identifying potential infringements may raise concerns and require human oversight to ensure correct determinations (Muhammad Hamza Zakir and others, 2023, p.315).

Finally, the existing legal framework may need to evolve to address the challenges posed by artificial intelligence generated trademarks. Trademark laws and regulations may require updates to account for the unique aspects of artificial intelligence technology, determining ownership, liability, and the protectability of artificial intelligence generated trademarks. This may involve new legislation, regulations, or court decisions that provide clarity and guidance on the legal implications of artificial intelligence generated trademarks.

3. Copyright:

The employment of artificial intelligence technology to generate, process, or analyze copyrighted works presents several intriguing copyright dilemmas. artificial intelligence algorithms now possess the capacity to generate original content, such as art, music, and literature.

An artificial intelligence project called WASP (Wishful Automated Spanish Poet) has been developed in Spain, which creates poetry based on the works of renowned Spanish poets. This software utilizes news from online sources to generate relevant and high-quality poems, requiring an operator to refine the final product (PABLO GERVÁS, 2017, p.10).

The legal implications of such a process raise questions about authorship and ownership, as it is unclear who should be considered the author and who owns the intellectual property rights. Should it be the artificial intelligence system, the human creator who trained the artificial intelligence, or a joint authorship? This challenge requires careful consideration and analysis (Enrico Bonadio & Luke McDonagh, 2020, p.p.115-117).

Finally, it should be noted that recognizing the authorship of artificial intelligence is an option that is not currently being considered in Algerian law “Ordinance 03-05 (Ordinance 03-05, 2003, p.p.03-18) relating to copyright and related rights”, similar to various other national legislations. and therefore it is not surprising that most of the judicial authorities that had to rule on this point refused to recognize the artificial intelligence as author (Compendium of U.S. Copyright Office Practices, 2021, p.7), but the debate on that remains open.

II. Efforts to regulate artificial intelligence:

Efforts to regulate artificial intelligence are gaining momentum at both the national and international levels, as governments and organizations seek to address the ethical, legal, and societal challenges posed by this rapidly advancing technology. While comprehensive and binding regulations for artificial intelligence are still in the early stages of development, various initiatives have been launched to promote dialogue, cooperation, and the establishment of common principles. These efforts aim to ensure that artificial intelligence is developed and deployed in a responsible and ethical manner, benefiting society as a whole.

1. National efforts to regulate artificial intelligence:

Algeria has been working concurrently with the international community to regulate artificial intelligence, as it recognizes the importance of keeping pace with the rapid developments in this field. The country has taken a proactive approach by establishing specialized institutions, such as the National Higher School of

Artificial Intelligence, and expanding research facilities dedicated to artificial intelligence across universities and research centers. This demonstrates the nation's commitment to integrating artificial intelligence into various sectors, including education, research, and the economy, while also awaiting the legal frameworks regulating artificial intelligence to be put in place by the legislator, and the opinions of jurists and judges to be taken.

1.1. National Higher School of Artificial Intelligence:

The National Higher School of Artificial Intelligence was established by Presidential Decree 21-323 (Presidential Decree 21-323, 2021, p.p. 19-25), with the aim of advancing the field of artificial intelligence through various means. As outlined in Articles 17 and 18 of the decree, the school's role includes:

- Providing elite education and training in various specializations of artificial intelligence, fostering a new generation of experts in the field.
- Encouraging innovation, technological entrepreneurship, and research, both in academia and industry, to drive the development of cutting-edge artificial intelligence technologies.
- Contributing to the national effort for scientific research and technological development in artificial intelligence and data science, advancing the state of the art in these fields.
- Engaging in international scientific collaborations, sharing knowledge and best practices, and enriching the global artificial intelligence community.

1.2. Artificial Intelligence Center:

The Artificial Intelligence Center of Skikda University (CIAUS) is a comprehensive training, research, and development initiative focused on artificial intelligence and its sub-field of Machine Learning. The center's establishment marked a significant step towards connecting the university's socio-economic environment with artificial intelligence solutions for industrial, economic, and social partners. By leveraging techniques from artificial intelligence and data sciences, particularly Machine-Learning methods, the center aims to promote the use of data assets and facilitate knowledge sharing among researchers and executives in the field.

The Center will regularly organize specialized training sessions, workshops, and conferences, providing a platform for the exchange of experiences and ideas. These events will bring together experts from various fields, fostering collaboration and innovation in the rapidly evolving landscape of artificial intelligence and Machine Learning (Artificial Intelligence Center website).

2. International efforts to regulate artificial intelligence:

Governments and organizations are seeking to regulate artificial intelligence and address the legal and societal challenges posed by this rapidly evolving technology. Various initiatives have been launched to enhance cooperation and establish common principles, such as the proposed European Union Artificial Intelligence law, discussions on the ethics and regulation of artificial intelligence with the participation of the United Nations, and many other initiatives and directives.

Accordingly, we will try to highlight some of the international efforts made to regulate artificial intelligence:

2.1. In European Union:

The European Union (EU) has been at the forefront of artificial intelligence regulation. In April 2021, the EU released the proposed Artificial Intelligence Act, which aims to establish a comprehensive legal framework for artificial intelligence systems. The Act classifies artificial intelligence systems based on their risk levels and outlines requirements for transparency, accountability, and human oversight (European Commission, 2021).

This landmark legislation demonstrates the EU's commitment to ensuring that artificial intelligence is developed and deployed in a responsible and ethical manner, and serves as a model for other regions to follow.

2.2. In United States of America:

There is no comprehensive federal legislation specifically dedicated to regulating artificial intelligence in the United States. However, regulatory discussions and initiatives are still ongoing to address various aspects related to artificial intelligence.

The Algorithmic Accountability Act, proposed in Congress, aims to address potential bias and discrimination in artificial intelligence algorithms. The bill stresses the importance of companies conducting data impact assessments to evaluate risks to individuals' rights and freedoms resulting from data processing operations. The bill empowers the Federal Trade Commission to regulate the details of these requirements. Although it may not pass Congress on its own, it could be incorporated into a new national privacy law currently under consideration in Congress. If enacted, it would apply to artificial intelligence systems (Mark MacCarthy, 2019, p.1).

Also, the National Institute of Standards and Technology (NIST) plan, which emphasizes a sector-specific approach to artificial intelligence standards and encourages agencies to tailor standards to specific artificial intelligence applications.

The NIST plan also focuses on the development of explainable artificial intelligence principles to enhance transparency and accountability in artificial intelligence systems. The Department of Transportation and the Food and Drug Administration are commended for their efforts in examining the use and impact of artificial intelligence on setting standards.

Additionally, initiatives such as the Joint Artificial Intelligence Center and the National Strategic Plan on Advanced Manufacturing, which support the development of artificial intelligence standards and best practices. The Office of Management and Budget has also published guidance on regulating artificial intelligence applications to align with U.S. principles of free markets and regulatory practices (Christopher S. Yoo, Alicia Lai, 2020, p.p.13-14).

3. Examination of potential theories for the establishment of intellectual property rights in artificial intelligence products:

Jurists stress the need for legislative updates to address the rapid advancement of artificial intelligence and other modern technologies (Alexandru Gribincea, 2020, p.238). One proposed option for intellectual property rights to artificial intelligence is to grant rights to the creators of artificial intelligence programs. This approach can clarify attribution and ownership of artificial intelligence generated works, acknowledging human creators' roles in artificial intelligence algorithms. It can also incentivize innovation by providing legal protection and commercialization opportunities for artificial intelligence creations, encouraging developers to invest in advanced artificial intelligence technologies. Additionally, granting ownership to creators can enhance accountability and responsibility, as they are more likely to ensure the ethical and lawful use of their technology, bearing legal consequences for any misuse or infringement.

The second option, transferring all results of activities to the public, is not economically viable for programmers or investors. This approach would discourage developers from investing time, resources, and expertise in creating and improving artificial intelligence technology, as they would not have sufficient motivation to do so. Without a clear way to recoup their investments, investors would be less likely to fund artificial intelligence projects, stifling innovation and progress in the field.

The use of artificial intelligence software in the creation of new creative content can also lead to intellectual property disputes. Developers of artificial intelligence software may face legal challenges from third parties who claim ownership or authorship of the content generated by the software. This can occur when the artificial intelligence software uses self-learning algorithms to analyze data uploaded by consumers and create new works that could potentially infringe on existing intellectual property rights (Alexandru Gribincea, 2020, p.239).

Overall, transferring intellectual property rights to software creators is a realistic approach, but it requires further examination and legal considerations to develop a balanced and applicable solution.

Conclusion:

The rapid advancement of artificial intelligence systems highlights the need to reevaluate and adapt intellectual property laws to accommodate the novel forms of creativity emerging from artificial intelligence. The difficulties in adapting to new technologies underscore the importance of a proactive approach to legislation that can address the unique challenges posed by artificial intelligence generated works.

Our study has yielded several key findings, which we summarize as follows:

- There is a legislative vacuum in regulating artificial intelligence produced-works, which significantly hinders the development of this technology and society's benefit from it.

- Current intellectual property laws do not align with the creations produced by artificial intelligence.

- There are many international efforts and initiatives to regulate artificial intelligence.

In order to enrich the study, this research paper addressed the following recommendations:

- Updating legal definitions to include artificial intelligence's role in creative processes.

- Inserting a new category of intellectual property rights specifically tailored to artificial intelligence creations.

- Promoting international collaboration in order to establish a regulated legal framework for artificial intelligence.

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