

ARTIFICIAL INTELLIGENCE AND TRADEMARK PROTECTION

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Abstract

Although Artificial Intelligence does not represent a new concept, it seems that only in the recent years it started to have a massive impact on people's lives, including their economic behavior. As a consequence, Artificial Intelligence has taken by storm the world of Intellectual Property. While its advantages and disadvantages are still not clearly defined or its benefits and threats are still being debated, the presence and influence of Artificial Intelligence can no longer be disregarded. In this context, its intersection with intellectual property rights, including with aspects concerning trademark protection, is inevitable. Artificial Intelligence became a very useful tool for intellectual property offices, being used to create an interface with users, to assist applicants in online filings and also in connection to examination proceedings. Thus, although it usually came more to the aid of applicants, Artificial Intelligence became more and more helpful to examiners as well. More importantly, Artificial Intelligence changed the consumers' buying habits, and this aspect puts the classical trademark role and functions into a new perspective. This being said, the present paper aims to find which are the evolutions in connection to trademark protection and practice brought by the presence of Artificial Intelligence tools, both from the perspective of the national offices and from the point of view of consumers.

Keywords: *Artificial Intelligence, intellectual property rights, trademark protection, average consumer, likelihood of confusion.*

1. Introduction

What is Artificial Intelligence (AI)? Encyclopedia Britannica offers the following definition: „the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings.”¹

That being said, which are those tasks commonly associated with human beings? The cited author explains: „Psychologists generally do not characterize human intelligence by just one trait but by the combination of many diverse abilities. Research in AI has focused chiefly on the following components of intelligence: learning, reasoning, problem solving, perception, and using language.”²

From all the above, the human trait that Artificial Intelligence is trying to replicate, which I find the most relevant to trademark protection, is „perception”. In psychology, „perception” is defined as a psychological mechanism for deep processing of information. More specifically, while the „sensation” is a subjective reproduction of simple traits of goods and phenomena, „perception” is much more complex than that: it allows individuals to complete the information gathered from simple sensations, it helps people place the same sensations in categories based on common features, it helps individuals compare each stimulus with others from its own environment, allows individuals to focus on the most important aspects of the stimulus and to ignore the less important ones. More importantly, „perception” is based on prior knowledge, to the extent that similar prior experience influences the later act of perception.³

Needless to say, consumers' perception is a key element in both the analysis of trademark conflicts and even in trademark examination proceedings. To this end, in a recent article, author Lotte Anemaet debates whether likelihood of confusion should be assessed only factually (based on an empirical approach focusing on consumer perception), or this assessment should also focus on how consumers ought to behave in the marketplace (following a normative approach), concluding that the best option would be a balanced combination between the two approaches.⁴ With this in mind, would AI be seen as an appropriate tool to assess trademark conflicts including a likelihood of confusion claim? In other words, would it be able to have a normative approach, or rather an empirical approach? I will try to find an answer in this article.

Another trait of AI identified by the doctrine is of a more complex nature, namely that it is able to make its

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¹ B.J. Copeland, *Artificial Intelligence*, Encyclopedia Britannica, 16.02.2023, <https://www.britannica.com/technology/artificial-intelligence>, consulted on February 19, 2023.

² *Ibidem*.

³ M. Zlate, *Psihologia mecanismelor cognitive*, Polirom, 2nd ed., 2006, Bucharest, p. 85.

⁴ L. Anemaet, *The Many Faces of the Average Consumer: Is It Really So Difficult to Assess Whether Two Stripes Are Similar to Three?*, in the International Review of Intellectual Property and Competition Law, 51, 2020, pp. 187-213.

own decisions and appreciations, that are not necessarily the same as those of the owner of the software, or of the one making a certain inquiry: „It is clear that a work created through such software or system belongs to whoever utilised that software or system lawfully. (...) However, in the case of AI, it refers to itself during the creation process and acts more as an independent source of intelligence than as a simple tool. Most importantly, the process of creation does not require the management or even the involvement of human intelligence. Thus, the developer of AI may not be deemed owner of the work created by the AI on its own.”⁵ Although this question may be found more provocative from a copyright protection perspective, it also raises an important issue from a trademark protection standpoint. If AI was to assess a potential trademark conflict, will it use its own built experience? How is this experience built? Would it be able to provide sound solutions or decisions? The same questions could be asked from the perspective of the interaction between AI and consumers: which are the factors that influence the decision-making process of AI tools, and how do they affect the trademark functions, as we traditionally know them. These are a few questions that will be addressed in the following.

2. Today's use of Artificial Intelligence in connection to trademark examination procedures

According to the website of the *World Intellectual Property Organization* (WIPO), one of the most acclaimed AI tools developed by the Office is the *Global Brand Database*, a tool that allows users to identify visually similar trademarks by means of an image-search function. The *Global Brand Database* was launched in 2014 and its functions are described as follows: „*The new, easy-to-use image-search technology supplements the database's other querying criteria, including Vienna Classification codes, brand-holder names, country of origin and others. With this new addition, for example, a user can simply upload a proposed logo and quickly return records – sifting through more than 4 million images from 15 national and international collections - of other protected images that may bear a resemblance. The database contains nearly 13 million records, with 15 national and international collections. The database contains more than 4 million searchable images.*”⁶

One of the most important features of this database is the *Artificial Intelligence-Based Image Search Tool for Brands*. According to WIPO, this tool determines similarity by identifying shapes and colours, and also uses deep machine learning to identify combinations of concepts.⁷ The advantage of this type of search would be that it enables those interested in searching the availability of a certain figurative element to do so without the need to conduct a search using the *Vienna Classification*, which may not be known to a lot of trademark owners and may also generate a lot of results that are not relevant because they are visually sufficiently different to the searched trademark. That being said, using WIPO's tool may prove to be efficient from the visual perspective of an availability trademark search. For a conceptual similarity, however, the *Vienna Classification* may still remain the most relevant criteria in searching figurative trademarks. Nevertheless, the upgrade of the *Global Brand Database* comes with the promise to enhance the capabilities of this tool to conduct conceptually-based searches through learning mechanisms.

Also useful in connection to conducting searches for figurative trademarks, and to overcome the potential lack of knowledge of applicants, WIPO released the *Vienna Classification Assistant* in 2020, an „*(AI)-based tool to help users classify trademark images according to the Vienna Classification more easily*”.⁸ For the above reasons, this tool may complement the use of the *Global Brand Database* with the comment that, as the doctrine points out, the *Vienna Classification* system was adopted only by 34 contracting parties, so searches by using this criteria has territorial limitations and, furthermore, establishing Vienna classes for a certain trademark has rarely been consistent because of the „*subjective variations between examiners*”.⁹

This being said, I have conducted a test-search, in order to assess the availability of a sign consisting of the picture of a Labrador Retriever on a green field with a background of trees, in connection to goods in Nice class 31, which also consists of food for animals. I have chosen the „*conceptual*” similarity option, the one that was enhanced through AI. I asked the machine to sort the results by relevance, which to me meant that the system

⁵ Gönenç Gürkaynak, İlay Yılmaz, Türker Doygun, Ekin Ince, *Questions of Intellectual Property in the Artificial Intelligence Realm*, article published in February 2, 2018 in the *Robotics Law Journal*, available at the following link: <https://roboticslawjournal.com/analysis/questions-of-intellectual-property-in-the-artificial-intelligence-realm-91908569>, consulted on February 25, 2023, at 11:45.

⁶ *WIPO Launches Unique Image-Based Search for Trademarks, Other Brand Information*, press release from May 12, 2014, available on the website of the World Intellectual Property Organization, at the following link: https://www.wipo.int/pressroom/en/articles/2014/article_0007.html, consulted on February 19, 2023, at 18:16.

⁷ *WIPO Launches State-of-the-Art Artificial Intelligence-Based Image Search Tool for Brands*, a press release issued on April 01, 2019 and available on the website of the World Intellectual Property Organization, at the following link: https://www.wipo.int/pressroom/en/articles/2019/article_0005.html, consulted on February 19, 2023, at 19:00.

⁸ *Release of the Vienna Classification Assistant*, a press release published on the website of the WIPO on August 05, 2020, available at the following link: https://www.wipo.int/reference/en/branddb/news/2020/news_0006.html, accessed on April 23, 2023 at 21:57.

⁹ D.S. Gangjee, *A quotidian revolution: artificial intelligence and trade mark law*, published in Ryan Abbott, *Research handbook on intellectual property and artificial intelligence*, Edward Elgar Publishing Limited, Cheltenham, 2022, p. 335.

would make a certain similarity assessment in order to determine which result comes closest to the searched sign. None of the first results (first page of 244) contained an image of any kind of dog. It therefore seems, from a simple experiment, that the *Vienna Classification* is still remains important for identifying conceptually similar figurative trademarks, while the *Global Brand Database* may still be improved.

The *European Union Intellectual Property Office* (EUIPO) also uses AI tools. A Webinar provided by the Office, published on February 16, 2022, is very informative with respect to what AI tools are used at the moment, and which are the ones still under development. From the existing tools, this material reminds of the possibility to conduct a semantic search of goods and services when filing trademark applications, a chatbot that offers assistance to applicants, an AI-based goods and services comparison and the implementation of conducting a figurative search for Designs on the *eSearch Plus* platform. I will focus on the comparison of goods and services tool, which is for the Office's internal use and it is targeting examiners. For the comparison it compiles two sources, namely prior first instance decisions and the information in the *Similarity* database, which is publicly available. The AI involvement consists not only in tracing down the same comparison under assessment in other decisions, but also to identify comparisons between semantically similar goods or services that could be used by analogy.¹⁰

Personally, I find using AI tools in assessing the similarity between goods and services to also have disadvantages, not only advantages. Of course, using such tools may offer consistency and a certain type of predictability. However, it may also apply some prior findings mechanically, without taking into consideration, for example, the interdependence of factors in assessing the similarities between goods and services, which requires, in my opinion, more attention to the particularities of each case than simply applying those found in prior decisions. Not to mention that first instance decisions, with which the AI learning mechanism is fed, may be overturned, and that practice may change in time together with market realities. Needless to say, relying too much on older decisions may shift the attention from changes in a potential market. In any case, it appears that the EUIPO is one of the few Offices at the moment that uses AI for examination purposes and, more specifically, for the examination of objections on relative grounds.

To sum up, it seems that the most common use of AI by trademark offices is limited to trademark availability searches or classification issues. Furthermore, the doctrine has already identified current limits of AI when it comes to tools used by intellectual property offices. It is stated that „*The most obvious limitation is that the AI technologies used by different offices currently only search prior registered signs; there is no tool yet that 'surfs the Internet' or has access to relevant databases in order to identify which signs are in use but not registered. Another limitation relates to non-traditional marks, which cannot be searched for at this point.*”¹¹ However, a paper issued by the International Trademark Association (INTA) in October 2019 makes a brief analysis of the implementation of AI among several IP Offices. In terms of trademark searches, it appears that the most offices focus on AI solutions to find trademarks that are conceptually similar in connection to figurative or word elements, or to assist in mark segmentation and find trademarks that are similar to certain elements of a trademark. With respect to the actual examination of trademarks, the AI tools are rather limited, and their purpose is to try to provide consistent decisions. For example, in 2019, the Singapore Intellectual Property Office was implementing a so-called „*Distinctiveness Checker*”, which is aimed to make a first assessment of distinctiveness and provide materials to justify the decision. For the same purpose, the Australian Intellectual Property Office developed a tool called „*Smart Assessment Toolkit*” to anticipate possible objections. It also „*uses a combination of natural language processors and internally developed software trained by a dataset of historic adverse reports from 2008 to 2016 to detect similar existing trademarks*”.¹²

Other authors, however, propose using AI tools for more complex examination issues, such as assessing the distinctiveness of a sign or, more specifically, in assessing if a certain trademark has become generic. Cameron Shackell and Lance De Vine explain that, typically, when assessing if a certain trademark became generic, surveys among consumers represent the most compelling evidence. However, acknowledging the importance of the Internet as a communication tool, the authors believe that this type of evidence can be complemented by AI tools that can assess the way a certain mark is actually used online. To this end, the AI could record instances where a certain trademark was written without capitalization (for example, as verbs) or in

¹⁰ New EUIPO AI tools empowering customer services, Webinar held by the EUIPO on February 16, 2022, available at the following link: <https://euipo.europa.eu/knowledge/course/view.php?id=4531>, consulted on April 23, 2023, at 14:00.

¹¹ A. Moerland, C. Freitas, *Artificial Intelligence and Trademark Assessment*, published in yh-An Lee, Reto M Hilty, and Kung-Chung Liu, *Artificial Intelligence and Intellectual Property*, Oxford University Press, Oxford, 2021, pp. 266-291.

¹² Al. Butterman, M. Fernandez Marques, J. Mackie, M. Marcet, S. Wright, S. Zemanick, C. Lerman, *Use of Artificial Intelligence by IP Registries*, article issued by the Emerging Issues Committee of the International Trademark Association and published on October 2019 on the INTA website and available at the following link: https://www.inta.org/wp-content/uploads/public-files/advocacy/committee-reports/AI-Use-by-IP-Registries-Report_-10.18.2019.pdf, consulted on April 23, 2023, at 19:20.

different forms (for example, with a plural form), which are indications that the mark has become generic, or, in general, assess the context where the certain trademark is used and, based on mathematical formulas, to determine if the mark became generic or not.¹³

Authors Sonia K. Katyal and Aniket Kesari analyse the importance of AI tools used for trademark procedures in the broader context of trademark doctrines and economics of Intellectual Property, in general. The authors argue that, since we are now facing registries crowded with a significant number of trademarks, manual availability searches inevitably involve significant costs. In this context, however, the efficiency of AI tools is of great importance, since faulty searches could generate even more costs in case of conflicts. As opposed to the traditional manual searches that were mostly text based, the authors draw the attention to the new features of AI search tools, that also take into consideration phonetical similarities, even conceptual similarities or visual similarities of images, and this type of in-depth searches may have the effect of reducing the role of paralegals or junior attorneys, if they do not reduce the role of legal advisers as a whole. Nevertheless, the authors argue that the AI solutions offered by the private sector are generally more complex than those already used by IP offices, and generally advocates for the cost benefits of using AI tools in trademark management in general, for example, for making risk assessments with respect to the revealed search results.¹⁴

However, I tend to agree with Dev S. Gangjee who pointed out that at this moment AI tools are meant to assist professionals, and not to replace them. It is indeed a danger that professionals would rely on the findings of AI tools, which sometimes also assess the risks posed by a revealed trademark in percentage, without acknowledging limits of the used algorithms, also to shelter themselves in terms of liability for the opinions they provide. Nevertheless, it should be kept in mind that trademark law and practice also require attention to the particularities of each case. To this end, Gangjee exemplifies that an AI tool that was fed with information deriving from English-speaking jurisdictions may provide results based on assumptions on the knowledge of the relevant consumers that are not correct in others (for example, that the meaning of Chinese characters is not understood). Another example to this end is the capacity of professionals to assess if a certain similarity feature identified by the AI is distinctive enough in the context of a particular conflict and, consequently, to weigh its importance in the overall appreciation of the trademarks' similarity. Most importantly, although the similarity of the conflicting trademarks and the similarity of the conflicting goods and/or services are the pillars of assessing a likelihood of confusion claim, it is, in fact, the assessment of the intersection between these two factors that actually matters and the impact of this synergy on the „real-world consumer”, an aspect that may be left behind by the „algorithmic assessment of similarity”.¹⁵

3. How does Artificial Intelligence influence buying habits?

A recent article published on the website of WIPO makes a comprehensive description of the way buying habits have changed in time. It explains that, during Victorian times, shop assistants were the „filter” between consumers and sold goods, which were largely unbranded. Further in time, supermarkets allowed consumers to make decisions without the help of shop assistants, but relying on the information delivered by trademarks. Since then, Internet produced major changes in consuming habits, but, to some extent, reinvented the shop assistants: „The structure of the purchasing process is changing again, arguably, with the introduction of AI applications such as Amazon Alexa, Google Home, consumer chatbots, AI personal shopping assistants, such as Mona, Amazon Dash and AI robot assistants, such as Pepper. In many ways, the introduction of AI applications has meant that the purchasing process has reverted back to the old Victorian model, with some important differences.”¹⁶

Rob Batty has identified three ways in which AI could help customers find the desired goods. One of them is by making recommendations based on previous purchases, searches or ratings of the consumer. The second is by using voice-activating searches and orders, by giving direct instructions such as „add coffee to my shopping list”. Another option, offered, for example, by a luxury store, is to provide the seller with a picture of a good, for the system to provide similar items from their offer.¹⁷ It seems that choosing the goods based on the trademark they bear has little to do with these manners of making commercial choices. In fact, as Kalyan Revalla stated, the

¹³ A more detailed explanation in C. Shackell, L. De Vine, *Quantifying the genericness of trademarks using natural language processing: an introduction with suggested metrics*, *Artificial Intelligence and Law*, vol. 30, no. 2, 2022, pp. 199-220.

¹⁴ S.K. Katyal, A. Kesari, *Trademark search and AI*, article published in the *Berkeley Technology Law Journal*, no. 2, vol. 35, 2020, pp. 501-588.

¹⁵ D.S. Gangjee, *op. cit.*, p. 337-340.

¹⁶ L. Curtis, R. Platts, *Trademark Law Playing Catch-up with Artificial Intelligence?*, article published in the *WIPO Magazine*, available at the following link: https://www.wipo.int/wipo_magazine_digital/en/2020/article_0001.html, consulted on February 25, 2023, at 14:41.

¹⁷ R. Batty, *Trade Mark Infringement and Artificial Intelligence*, *New Zealand Business Law Quarterly* (Forthcoming), August 16, 2021, available at SSRN: <https://ssrn.com/abstract=3978248> or <http://dx.doi.org/10.2139/ssrn.3978248>, pp. 7-9, consulted on April 22, 2023, 18:30.

„emotional bond” that consumers develop with trademarks may be replaced by an „artificial bond”, while „average consumers” are replaced by „artificial consumers”.¹⁸

In my opinion, however, this assessment may be nuanced. It is true that the bond with trademarks may become less emotional. Not entirely, however. Moreover, consumers cannot become artificial. What is, maybe, artificial, is the shopping environment, the market, the commercial channel, and these are indeed changes that should be taken into consideration in a potential trademark conflict. For example, such developments may also bring new nuances in assessing trademark conflicts in the sense that voice ordering may bring the assessment of trademark phonetical similarity to have a greater importance.¹⁹ Or, I might add, the assessment of how particular goods are placed on the shelves of brick-and-mortar stores, in order to determine their similarities in the sense of the trademark law and practice, may be replaced with the assessment of the way certain goods are presented by online retailers.

This being said, which are the novelties brought by AI to commerce? First of all, AI acts like a filter between the consumer and the market, providing consumers with offers tailored on their past buying experience. In this context, although AI is not making a direct buying decision for the consumer, it has, at least, a significant influence upon it, with the effect that consumers are not aware of the full range of goods available on a certain market when searching specific products, but only of those recommended by AI. Therefore, AI basically reduces information available to consumers and, to some extent, participates to the purchasing decision made by the consumer. This being said, a legitimate question arises: in the context of modern legislation, who is to be considered the average consumer, and how could it be defined.²⁰

Trademark practice still usually goes by the definition of the average consumer offered by the European case-law, namely: „The answer to be given to the questions referred must therefore be that, in order to determine whether a statement or description designed to promote sales of eggs is liable to mislead the purchaser, in breach of art. 10(2)(e) of Regulation no. 1907/90, the national court must take into account the presumed expectations which it evokes in an average consumer who is reasonably well-informed and reasonably observant and circumspect. However, Community law does not preclude the possibility that, where the national court has particular difficulty in assessing the misleading nature of the statement or description in question, it may have recourse, under the conditions laid down by its own national law, to a consumer research poll or an expert's report as guidance for its judgment.”²¹

Under modern circumstances, could a consumer stand by the same qualities? Is it reasonably well-informed, in the context where AI makes an initial selection of goods or brands in its place, and this precludes it from actually being aware of most of the trademark available on the market? Can it be reasonably observant, when most of its purchase decisions are made at long distance? Furthermore, can it be circumspect while it is assisted in making a commercial decision?

From this perspective, in a position paper issued by the Emerging Issues Committee the authors go so far as to state that AI is, actually, taking the place of the „average consumer”, as defined in traditional trademark practice. The scenario envisaged by the authors is the following: a consumer makes an oral order using smart devices with AI tools. The AI responds by proposing goods bearing other trademarks, either less expensive or that it considers more compatible with the buyer. Usually, in case of conflict, a trademark similarity conflict is assessed based on a visual, aural and conceptual comparison of the trademark at hand. However, as the consumer is less involved in purchasing decisions, as they usually make oral commands and receive oral feedback, the aural comparison between two potentially conflicting trademarks should gain more weight. Furthermore, concepts like „likelihood of confusion” or „imperfect recollection” would become obsolete, in consideration of the fact that AI is not susceptible of confusion and its recollection is close to perfect. Furthermore, various degrees of attention of the average consumer, depending on the price variations of the goods, would also become irrelevant. Under the circumstances, the authors conclude that „brand owners and trademark practitioners may need to reevaluate the strength of infringement theories that rely principally on initial interest and point of sale confusion and instead explore theories of infringement that place greater emphasis on the harm caused by post purchase confusion”.²² Once again, I would actually argue that the average consumer did not

¹⁸ K. Revalla, *Intelligent Trademarks: Is Artificial Intelligence Colliding with Trademark Law?*, IUP Law Review, vol. 8, no. 4, 2018, pp. 13-20.

¹⁹ L. Curtis, R. Platts, *Alexa, What's the Impact of AI on Trademark Law*, Managing Intellectual Property, 281, 2019, p. 44.

²⁰ L. Curtis, R. Platts, *Trademark Law Playing Catch-up with Artificial Intelligence?*, *op. cit.*

²¹ Judgement of the Court (5th Chamber) of 16 July 1998 in *Gut Springenheide GmbH and Rudolf Tusky v Oberkreisdirektor des Kreises Steinfurt - Amt für Lebensmittelüberwachung* (case C-210/96).

²² R. Keen, S. Rollo, M. Stratton, V. Caddy, C. Lerman, *Artificial Intelligence (AI) and the Future of Brands: How will AI Impact Product Selection and the Role of Trademarks for Consumers?*, article published on the website of the International Trademark Association in October 2019, available at the following link: <https://www.inta.org/wp-content/uploads/public-files/advocacy/committee-reports/AI-and-the-Future-of-Brands-Report-2019-010-18.pdf>, consulted on February 25, 2023, at 19:00.

disappear. Its senses, however, may have gotten a little sharpened or, to the contrary, weakened. It remains for the case-law to decide how the average consumer changed. For example, if AI remembers its prior purchases, is this considered as an aid to its imperfect recollection or, to the contrary, it makes it even weaker, since now consumers rely on a tool to remember trademarks for them?

In fact, this lower level of involvement of consumers in making commercial choices is very well described by the doctrine in the following phrase: „Probably the most important feature of AI technologies in online shopping is that they can predict what consumers want or like before consumers know it themselves”.²³ The authors explain that, for AI to be able to provide consumers with results it should compile a series of pre-existing data consisting of other purchases, available offers on the market, browsing history of the buyer, general trends and feedback offered by other consumers, amount of views, cross-selling data etc. They also draw the attention to the risk that some of the data AI is fed with is the result of human subjectivism, and replicating such information could lead to limitations of the tools. Nevertheless, if the amount of data fed to the AI Machine Learning is higher, „incidental bias” becomes less of a threat. Another potential foreseen threat is that AI does not have the ability to know why a certain input was given and, in the end, why it is making a certain recommendation.²⁴ This is put in other words by Michael Grynberg: „Even though the AI knows your desires better than you do, you will not understand why. Maybe the suggestion to eat at the new creperie owes its origin to a political donation, a song on your playlist, your hometown, or some combination of these or other details. Who knows why? The AI sees a pattern, and it works.”²⁵ I would add that, in the same sense, not even AI knows precisely why a recommendation is being made, since it only follows clues that may lead or not to the actual „taste” of the consumer. However, even if it succeeds or not, the consumer may very well get used to being told what it likes. Or, to the contrary, it may get used to being critical with respect to the choices AI is making for him.

4. How does Artificial Intelligence influence the role of trademarks?

The same Michael Grynberg explains that the main importance of trademarks is – or better said, used to be – to provide consumers with limited and simple information, allowing customers to save time from doing their own research that, ultimately, might lead to different results. The author states that trademarks usually simply information, by removing „context”. On the other hand, AI has the ability to browse through the so called commercial „context”, being able to offer consumers better results. This may lead to a potential decrease of importance of trademarks as we know them today.²⁶ Additionally, the doctrine also points out that, in this new context, consumers would rely more on the trademark of online selling platforms, as carriers of information, than on the information provided by the trademark on different goods and services, in consideration of the fact that they rely more on the platform’s algorithms and how they provide them a certain selection of goods.²⁷

This is, indeed, consistent with the results of tops measuring which are the most valuable brands. In 2022, according to *Interbrand*, the first three most valuable brands were – in this order – *Apple*, *Microsoft* and *Amazon*.²⁸ All three brands are famous in the technology field, while the third one is actually a very famous online marketplace and one of the most efficient developers of Artificial Intelligence. Or, in my opinion, this could only prove right those stated by Daryl Lim. Consumers are now, indeed, placing their trust in technology more than they do in goods designating common goods.

To the contrary, other authors do not exclude the possibility that trademark owners may take advantage of the possibilities given by AI to create an even stronger connection with their consumers: „Savvy brands now realize that AI curation provides a way to compete and entrench themselves in the buying habits of consumers. (...) Although only the brave would predict what will happen in this changing environment, certain AI tools may favor brands with greater prominence and broad reach, which could amplify the importance of an identifiable trademark and brand recognition.”²⁹ This is, however, a double-edged conclusion. I read this statement in the sense that trademark owners would continue to maintain their importance to the extent that they will learn the

²³ A. Moerland, C. Kafrouni, *Online shopping with artificial intelligence: what role to play for trade marks?*, published in Ryan Abbott, *Research handbook on intellectual property and artificial intelligence*, Edward Elgar Publishing Limited, Cheltenham, 2022, p. 291.

²⁴ *Ibidem*, pp. 292-293.

²⁵ M. Grynberg, *AI and the "Death of Trademark"*, article published in the *Kentucky Law Journal*, no. 2, vol. 108, 2019-2020, p. 203.

²⁶ *Ibidem*, pp. 229-230.

²⁷ D. Lim, *Computational trademark infringement and adjudication*, published in Ryan Abbott, *Research handbook on intellectual property and artificial intelligence*, Edward Elgar Publishing Limited, Cheltenham, 2022, p. 264.

²⁸ *Best Global Brands 2022*, top published on the website *Interbrand*, available at the following link: <https://interbrand.com/best-brands/>, consulted on April 25, 2023, at 18:16.

²⁹ C. Strutt, F. Ward, A. Berger, *Artificial Intelligence Threatens Trademark's Gatekeeper Role*, article published on February 09, 2022 on the website of the International Trademark Association, available at the following link: <https://www.inta.org/perspectives/features/artificial-intelligence-threatens-trademarks-gatekeeper-role/>, consulted on April 24, 2023, at 21:55.

mechanism of Artificial Intelligence. This, however, would not leave much room at the consumers' end, which in this case would be guided towards those brands that have learned to play by the new rules.

Reviewing all the above, one could argue that the information carried by trademarks may be absorbed in the AI's processed data. In this case, the trademarks' importance of information carriers may be considered obsolete? I believe the answer is no. Because in such a scenario, by analysing the customer's behavior, the AI is actually analysing its attachment to certain brands and the way it responds to the information transmitted through trademarks.

From this perspective, I tend to agree with authors Anke Moerland and Christie Kafrouni, arguing that, even if trademarks may lose some of their importance at the moment of making a certain commercial choice, they will still remain important sources of information at the moment when certain goods are actually consumed or when certain services are rendered. Furthermore, even when it comes to the advertising functions of a trademark, I agree that, even if AI may arguably be a substitute of advertising itself, to the extent that it could make choices in the place of consumers using different criteria than those communicated through advertising, the positive connection that a person may have with a certain brand cannot be replaced. Thus, even the advertising functions of trademark may still remain of relevance in the presence of AI.³⁰

In the same sense, Hiroko Onishi argues that, even where a consumer is not involved in choosing a certain brand, confusion is still possible in the „post-sale” stage of the commercial act.³¹

Vilté Kristina Steponénaitė makes a compelling argument to this end. The author argues that trademarks interact with consumers at a psychological level, and for this reason concepts such as „average consumer”, „likelihood of confusion” or „imperfect recollection” were developed by trademark law and practice in connection to trademark protection, notions that are built based on human attention or human perception, the latter serving as a „measuring tool”. For this reason, „the functions of a trademark (origin, quality, investment, communication, advertising) include a great emphasis on cognitive processes as well”. This may not apply to AI, which cannot be assumed to have the perception of an average consumer or an imperfect recollection. However, the author points out that „the functioning of AI is not challenging the relevance of (the current understanding of) the notions and the functions in a broad sense since a decision by an AI application is not functioning in isolation and a human agent is still interacting with a trademark after receiving an item (i.e., the trademark is functioning not only at the moment of purchase). Besides, the traditional notions and the functions remain relevant in their traditional sense when an AI application chooses a particular item and places an order under human supervision or where it is merely recommending some alternatives”.³²

On this basis, it can be argued that, while trademark functions seem to be affected by the interference of AI in the commercial process, the bases of trademark law are still safe, for the time being. Consumers are not entirely replaced and their contact with trademarks is not entirely suppressed.

5. Conclusions

Artificial Intelligence started to be more and more present in people's lives, even if they are aware of this or not. No doubt, Intellectual Property Law and the Trademarks Law could only adapt to the novelties brought by this new equally useful and controversial tool.

First of all, intellectual property offices have relied on AI to deal with the increasing number of trademarks and conflicts they are dealing with. To this end, some of them implemented AI tools to assist applicants when filing new trademarks, or to assist both consumers and examiners to conduct more efficient searches in local, regional or global databases. Most importantly, some offices took a further step, and decided to rely on AI tools to help them in examination proceedings. Of course, this raised the question of whether AI could take the role of examiner and replace the human input. Or, at least for the moment, the dominant opinion is that AI is only a tool in the hands of examiners, just a helper, who should continue to make decisions based on their own assessment. Otherwise, the risk is that decision making would become influenced according to the information previously fed to an AI, information which could not be relevant to a certain jurisdiction or to a certain type of conflict.

Furthermore, AI influenced the way consumers make their choices. Actually, it is more and more debated that AI is the one making commercial choices for consumers or that, judging by the way AI is being used by the

³⁰ A. Moerland, C. Kafrouni, *Online shopping with artificial intelligence: what role to play for trade marks?*, op. cit., p. 298-301.

³¹ H. Onishi, "We will still be confused!" : online shopping and trade mark law in the AI era. *European Intellectual Property Review*, 43(6), 2021, pp. 397-401.

³² Vilté Kristina Steponénaitė, *Alexa, are you confused? Unravelling the interplay between AI and (European) trademark law*, article published on the website of Katholieke Universiteit Leuven on December 17, 2019, available the following link: <https://www.law.kuleuven.be/citip/blog/alexareyouconfused-unravelling-the-interplay-between-ai-and-european-trademark-law/>, consulted on April 24, 2023, at 22:40.

latter, their contact with trademarks is smaller and smaller. This raised the question of whether the traditional qualities of the average consumer – namely those related to its level of attention, its imperfect recollection or its „ability” to be confused – are still present. From this perspective, it is more and more accepted that the ways in which consumers interact with trademarks influence the way trademark conflicts should be assessed. Nevertheless, it cannot be concluded, at least at this point, that the average consumer has been replaced. For the time being, it is adjusting to the new commerce environments. And so are trademark owners.

Last but not least, it has been discussed if trademark roles and functions remained the same. If they still are indicators of origin and bearers of information for consumers, or this role has shifted to AI. From this perspective, I agree with the doctrine that even if confusion is more likely to appear post-sale than pre-sale, it remains a threat and the trademark’s role to protect consumers against it is not obsolete. Furthermore, even if the consumers’ trust starts to be placed in the brand of the retail service provider more than in the trademark of the purchased goods, this is, in my opinion, only a matter of balance that consumers will find in time, by accumulating experience – because not only AI is able to do that, humans are too.

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