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WIPO CONVERSATION ON INTELLECTUAL PROPERTY (IP) AND ARTIFICIAL INTELLIGENCE (AI)

Third Session

Geneva, November 4, 2020

SUMMARY OF SECOND AND THIRD SESSIONS

Document prepared by the WIPO Secretariat

INTRODUCTION

1. Artificial intelligence (AI) is a general-purpose technology increasingly present in all aspects of our lives worldwide and across all industry segments. While the technology goes back to the 1950s, the recent exponential increase in data and computing power and improved mathematical models are largely responsible for the current widespread implementation of AI.
2. According to the 2019 WIPO Technology Trends on Artificial Intelligence, more than 340,000 AI-related applications have been received by IP offices since AI first emerged.¹
3. AI technologies are starting to permeate creative and innovative activities, which until recently were perceived to be solely the remit of humans. The current intellectual property (IP) system was designed to incentivize that human creation and innovation. As AI is operating more autonomously, this raises fundamental questions for the IP system across all IP rights.
4. AI is also used more and more for IP administration in IP offices to help examiners with prior art searches, translation, classification, and prequalification.
5. As policy-makers start to decipher the wide-ranging impacts of AI, WIPO has begun to engage in the aspects of AI that are specific to IP. As part of the effort to engage on IP policy aspects of AI, the WIPO Conversation on IP and AI commenced in September 2019 to discuss the impact of AI on IP policy.² The first session of the Conversation was held in September 2019 with the participation of Member States and representatives of the commercial, research and non-governmental sectors.³ After the first session of Conversation, the WIPO Secretariat developed a draft list of issues to provide the basis for a shared understanding of the main questions that need to be discussed or addressed relating to IP policy and AI.⁴ Following a public consultation in which close to 260 submissions were received, WIPO published a revised Issues Paper in May 2020.⁵
6. The revised Issues Paper⁶ formed the basis of more focused discussions at the second and third sessions of the Conversation in July and November 2020, respectively.⁷
7. Due to the COVID-19 pandemic, these sessions were held in a virtual format. There were over 2,000 registrations from 130 countries for the second session and over 1,500 registrations from 133 countries for the third session, which underscores the extensive interest in the topic.
8. The issues in the revised Issues Paper were divided by IP right. Due to constraints imposed by the virtual nature of the second and third sessions, several topics were grouped to allow a broad range of discussion. For example, questions of inventorship and authorship and

¹ WIPO (2019). WIPO Technology Trends 2019: Artificial Intelligence. Geneva: World Intellectual Property Organization. Available at <https://www.wipo.int/publications/en/details.jsp?id=4386>.

² Further details about the WIPO Conversation on IP and AI is available at https://www.wipo.int/about-ip/en/artificial_intelligence/conversation.html.

³ A summary of the first session of the Conversation is available at https://www.wipo.int/meetings/en/doc_details.jsp?doc_id=459091.

⁴ WIPO/IP/AI/2/GE/20/1, Draft Issues Paper on Intellectual Property Policy and Artificial Intelligence, available at https://www.wipo.int/meetings/en/doc_details.jsp?doc_id=470053.

⁵ WIPO/IP/AI/2/GE/20/1 Rev., Revised Issues Paper on Intellectual Property Policy and Artificial Intelligence, available at https://www.wipo.int/meetings/en/doc_details.jsp?doc_id=499504.

⁶ WIPO/IP/AI/3/GE/20, WIPO Conversation on Intellectual Property (IP) and Artificial Intelligence (AI): Third Session, available at https://www.wipo.int/meetings/en/details.jsp?meeting_id=59168.

⁷ WIPO/IP/AI/2/GE/20, WIPO Conversation on Intellectual Property (IP) and Artificial Intelligence (AI): Second Session, available at https://www.wipo.int/meetings/en/details.jsp?meeting_id=55309 and

WIPO/IP/AI/3/GE/20, WIPO Conversation on Intellectual Property (IP) and Artificial Intelligence (AI): Third Session, available at https://www.wipo.int/meetings/en/details.jsp?meeting_id=59168.

ownership of AI-generated and AI-assisted works and inventions were discussed in one slot. Following these principles, topics were grouped as follows:

- (a) Definitions
 - Issue 1: Definitions
- (b) IP protection for AI-generated and AI-assisted works and inventions and related topics
 - Issue 2: Patents: Inventorship and Ownership
 - Issue 6: General Policy Considerations for the Patent System
 - Issue 7: Copyright and Related Rights: Authorship and Ownership
 - Issue 9: Deep Fakes
 - Issue 10: Copyright: General Policy Issues
 - Issue 12: Designs: Authorship and Ownership
- (c) AI inventions: patentability, disclosure and guidelines
 - Issue 3: Patentable Subject Matter and Patentability Guidelines
 - Issue 4: Inventive Step or Non-Obviousness
 - Issue 5: Disclosure
- (d) Data: copyright in training data, further rights in data and trade secrets
 - Issue 8: Copyright Infringement and Exceptions
 - Issue 11: Further Rights in Relation to Data
 - Issue 14: Trade Secrets
- (e) Trademarks
 - Issue 13: Trademarks
- (f) Capacity Building and Accountability
 - Issue 15: Capacity Building
 - Issue 16: Accountability for Decisions in Intellectual Property (IP) Administration

9. The present paper summarizes the discussions undertaken during the second and third sessions of the WIPO Conversation on IP and AI.⁸

10. Both sessions were opened by the Director General of WIPO⁹ and chaired by Ambassador François Rivasseau, Ambassador, Permanent Representative of France.

⁸ Copies of interventions made during the second and third sessions are available at https://www.wipo.int/about-ip/en/artificial_intelligence/conversation.html#interventions.

Videos on demand are available at <https://c.connectedviews.com/05/Search/wipo?search=WIPO%2FIP%2FAI%2F>.

⁹ Second Session: <https://c.connectedviews.com/05/SitePlayer/wipo?session=108501&starttime=10>

Third Session: <https://c.connectedviews.com/05/SitePlayer/wipo?session=110297&starttime=37>

11. During the sessions, each slot comprised a short introduction by a keynote speaker, followed by an open floor discussion.

Keynote speech: The Honorable Ms. Amanda Solloway MP, Parliamentary Under Secretary of State, Minister for Science, Research and Innovation, Government of the United Kingdom, London

12. Ms. Solloway gave a keynote speech in the third session of the WIPO Conversation on AI. She generally set out developments and trends in the AI field and some of the questions this raises for the IP system.

13. She also brought to attention that last September, a call for views was launched in the UK to gather information and ideas about AI and IP. A strong AI sector needs a robust IP framework. Ms. Solloway advised that it is essential to find common ground and develop common standards, definitions, and approaches. This commonality will show consistency and lead to confidence, unlocking the vast global investment needed to bring AI technologies to market. Business, investors, and researchers need predictability, not differences in the international system, she added.

14. She also called for capacity building and accountability for AI-related IP administrative decisions, and a global shared framework for those decisions

DEFINITIONS

Session introduction: Mr. Jean-Marc Deltorn, Senior Researcher at Center for International Intellectual Property Studies, University of Strasbourg

15. Mr. Deltorn suggested that a consensus is needed on basic definitions for AI and AI-related terms to allow a constructive conversation about AI and IP. While the definitions should be clear and unambiguous, actually achieving this is complicated by several factors. A broad definition of AI is insufficient when it comes to precisely defining the specific AI subject matter for which IP protection is sought, he explained. Human intelligence itself is challenging to define, so it is not surprising that AI faces similar complexities. Finally, AI includes many techniques and concepts, such as machine learning and reinforcement learning, making it difficult to find generally accepted definitions. According to Mr. Deltorn, designing a technologically-neutral, future-proof framework for AI is further hampered by the rapidly evolving field. He suggested inclusiveness and transparency, as well as a multidisciplinary approach to reach a shared understanding of AI.

Statements made from the floor

16. In general, speakers concurred and said a basic definition of AI and AI-related terms needs to be agreed upon. Some called for continuing the discussion with stakeholders from different industry sectors and technologies, legal experts, as well as governments and non-governmental organizations. One participant suggested defining AI as something capable of performing following its own human-like-mind, independently of any operator. However, it was also generally recognized that establishing a definition would be difficult given how fast AI technologies are evolving.

17. Beyond defining AI generally, several speakers underlined the need to define terms such as AI-generated inventions/works, where an AI system autonomously invents or creates without human intervention, and AI-assisted inventions/works, where AI is a tool assisting with the creation of inventions/works, and how to differentiate those two concepts.

18. One speaker warned that the lack of established technological definitions setting a boundary between AI-generated and AI-assisted outputs would give rise to inconsistencies in the global patent system. A clear delineation would allow the creation of a more precise borderline between patentable and non-patentable AI inventions.

19. Many speakers discussed how to establish the difference between inventions/works produced with the assistance of AI and inventions/works created by AI applications without human intervention. Some speakers asked if a threshold of human intervention should be included to delineate between AI-generated and AI-assisted outputs. If so, they questioned if the distinction between AI-generated and AI-assisted outputs could be conditional on the degree of human intervention, rather than its presence or absence. Another speaker emphasized that using "AI-generated" and "generated autonomously by AI" as synonyms may lead to confusion, while another remarked that AI-generated and AI-assisted should not be defined from a legal point of view but from a technological perspective. Some noted that full AI autonomy in the invention or creation process has yet to be achieved, therefore it is not yet a term that can be clearly defined.

20. Regarding the degree of human intervention, the question of how to define "material" human intervention arose. One speaker said that considering inventor eligibility would provide a more distinctive definition than material. He suggested classifying AI outputs into three categories: an invention generated by AI with the contribution of an eligible human inventor, an invention with the contribution of an ineligible human inventor, and an invention without human intervention. By an eligible human inventor, the speaker referred to a human who is deemed eligible under the laws of a particular jurisdiction. He warned against enshrining in law the definition of the term "AI-assisted" as set out in the revised Issues Paper as is too vague to provide sufficient guidance. He suggested adding an intermediate definition of output with "with immaterial human intervention" between AI-assisted output and AI-generated output.

21. Another speaker said defining "material" is also likely to be challenging as it is vague and lacks a standard point of reference, which would enable the difference between AI-generated and AI-assisted to be understood and applied consistently. The term "material" may also be susceptible to individual interpretations. For example, human input may be judged to be material based on the quantity of input, its observable impact on the output, or by reference to its intrinsic qualities, such as skill, effort, or creative choices. The situation is even more complicated when there are multiple sources of inventive or creative input, as is often the case for AI. In such cases, should material human input be assessed on an individual basis or in aggregate? Then there is the question of at which stage in an inventive or creative process an intervention must be made to count as material to the output.

22. One participant said it will be important to define what is meant by "black box" to determine when the details of an AI algorithm are incomplete or lack transparency and hence are not sufficiently disclosed and described in a patent application.

23. One speaker proposed to create three categories of AI-related inventions and outputs: core AI inventions, application-specific AI inventions, and AI-generated outputs.¹⁰ Yet another suggestion was to categorize AI outputs in three ways: AI-supported, AI-assisted, and AI-generated. Creating an inclusive definition listing out all the tasks considered to require human intelligence related to AI was proposed as an alternative.

24. Speakers remarked that if AI-generated inventions become patentable, the concepts of inventor and inventorship might have to be revisited.

¹⁰ See also paragraph 48, SCP/30/5 Background Document on Patents and Emerging Technologies, available at https://www.wipo.int/meetings/en/doc_details.jsp?doc_id=438393.

IP PROTECTION FOR AI-GENERATED AND AI-ASSISTED WORKS AND INVENTIONS AND RELATED TOPICS

25. Although issues of inventorship and authorship, and follow on questions of ownership and liability, were discussed in one session, it is clear that the arguments need to be distinguished and that views voiced concerning, for example, the inventorship of patents may not directly apply to authorship of copyright.

Session introduction: H.E. Mr. Omar Sultan Al Olama, Minister of State for Artificial Intelligence, United Arab Emirates

26. Minister Al Olama underlined that the COVID-19 pandemic has accelerated the pace of digitalization in many countries. The rapid evolution of AI-related technologies and the move towards more autonomous systems highlight the need to consider new ways of creating and enforcing IP safeguards. Minister Al Olama indicated four fundamental needs in the context of IP and AI: the protection of AI algorithms in a way that does not affect current IP protection of software; the protection of the rights of authors of AI algorithms; the use of AI to simplify the process of applying for IP protection; and the use of AI to track misuse and enforce IP protection.

Session introduction: Mr. Ahmed Elgammal, Professor, Department of Computer Science, Rutgers University, United States of America

27. Although the use of AI for generating artworks is as old as AI itself, there has been a revolution in the last five years with generative AI, in which AI applications have been trained to generate artworks by themselves, Professor Elgammal explained.

28. The question, in this case, is who is the creator in this process? Even though an AI system creates the work, an artist steps in at various stages of the creation, such as selecting images with which the machine will be trained and selecting the outputs, he further set out.

29. There has been an increasing presence of AI-generated artworks in exhibitions around the world, hinting at a social acceptance of such artworks and leading to a social debate about those works, he said.

Statements made from the floor

Inventorship

30. The question of inventorship and ownership for AI-generated inventions prompted several comments.

31. One speaker asked if AI was to be considered an inventor, who should then be designated the patent owner. Should it be the owner of the AI system?

32. A number of speakers observed that there are already applications pending for inventions that are claimed to have been autonomously generated by AI and that name AI as the inventor, with potentially divergent positions being taken on the patentability of such inventions.¹¹ A speaker involved in the filing of these patent applications naming an AI as the inventor argued that when an AI system invents something, it should be named as the inventor. The intention of

¹¹ The DABUS patents. See for example, WO 2020/079499 A1, EP 3564144 A1, EP 3563896 A1, US 16/524,532, US 16/524,350, GB 2574909 A; GB 2575131 A, [2020] EWHC 2412 (Pat), *Thaler v The Comptroller-General of Patents, Designs And Trade* (21 September 2020).

this approach is to prevent individuals from taking credit for work they have not done rather than to give rights to machines.

33. One speaker suggested that the status of moral co-inventor should be given to any AI algorithm that autonomously generates an invention without human intervention, while another proposed to grant limited legal capacity to AI.

34. However, many other participants pointed out that a human inventor is required under the patent laws of most jurisdictions.

35. Some speakers believed that the current patent system was designed to incentivize human invention and that patent protection should not be granted to AI-generated inventions, at least at this stage. One speaker remarked that AI-assisted inventions could be protected under existing laws, and several speakers warned against hasty legislative or policy changes.

Authorship

36. A number of views centered on the fundamental question of whether copyright protection should be granted to AI-generated works at all. One participant stated that no existing copyright regime could cover AI-generated outputs without doctrinal inconsistencies or imbalances between human-created and AI-generated works. Several more speakers voiced opposition to giving copyright protection to AI-generated works. Another speaker said that the notion of human authorship is a bedrock principle of copyright law, while the conceptualization of AI is still in flux. One speaker remarked that given the current, rapid growth of the AI sector, AI-generated works did not appear to lack incentives negating the need for copyright protection. Another speaker said that the technical nature of human inputs combined with the mechanistic nature of AI algorithms currently provides little ground to justify copyright protection for AI works. AI-generated works should be in the public domain, the speaker added.

37. According to one participant, AI-generated works are based upon human creativity. AI should be considered as an assistant or tool for the human author. As some AI applications become gradually capable of producing works more and more autonomously, another speaker suggested rewarding such AI-generated works with derivative rights. Another speaker proposed a sui generis system for the protection of AI-generated works.

38. One speaker pointed out that the causal link between the input of a human creator and the generation of an AI-assisted work should provide a basis for determining authorship. The speaker continued that this would be specifically beneficial when several people are involved in the creative process, to determine the factual relationship between contributors and to establish authorship or co-authorship of an AI-assisted work.

39. Broadening the categories of AI-assisted outputs to include the preparation, creation, and selection phases would raise policy questions and pose the risk of reducing the public domain by bringing more AI-based literary and artistic work production under copyright law, according to a participant.

Need to act now?

40. Some speakers thought that premature legislation would risk making legislation inflexible by impairing its adaptability to future technological developments. They warned against launching into norm-setting work before having a thorough understanding of possible ramifications. Some others, however, underlined variations between jurisdictions when it comes to authorship and ownership for AI-assisted works, which already leads to legal uncertainty.

AI INVENTIONS: PATENTABILITY, DISCLOSURE AND GUIDELINES

Session introduction: Judge Klaus Grabinski, Federal Court of Justice, Germany

41. Dr. Grabinski stated that AI algorithms might be likened to computer programs or mathematical methods. The patentability of computer programs is not harmonized across jurisdictions and may represent patentable subject matter in one country while being excluded from patentability in others. However, all jurisdictions seem to agree that computer programs have to display a direct, technical effect in the real world to be patentable.

42. AI differs from computer programs or mathematical methods in that AI can train itself and adapt to the environment without human intervention. However, the same patentability requirements of technical effect should apply. For example, the use of a neural network and deep learning algorithm incorporated into a physical device monitoring and identifying irregular heartbeats may be eligible for patent protection.

43. Beyond demonstrating a technical effect to be patentable, an invention also has to involve an inventive step. An inventive step exists if the invention is not obvious to a person skilled in the relevant art. While a legal concept, the person skilled in the art is understood to be based on a human. In the field of innovation and invention, AI is still generally perceived as a tool, not a system that can autonomously invent. Therefore, the question arises who should be considered as a person skilled in the art.

44. The patent system provides a balance between protecting inventors with a monopoly period and the public disclosure of inventions so others can use them to innovate further. In the case of AI-assisted or AI-generated inventions, patents should not be granted if the algorithms involved were not clearly disclosed. The lack of transparency in algorithms is known as a black box.

Session introduction: Mr. Santosh Mohanty, Vice President, Tata Consultancy Services, India

45. Mr Mohanty said that advances in AI technology give rise to the need to improve IP policies and guidelines. He underlined the importance of taking cognizance of the fast-changing IP ecosystem and its implications and impact on people, systems, and society.

46. In particular, he said that the current patent laws broadly treat AI inventions as logical algorithms implemented on the computer. While patent eligibility of algorithms is valid in certain circumstances, he highlighted that patent guidelines are inadequate in dealing with heuristic, model-driven inventions that learn from contextual data.

47. He also mentioned that data moves across jurisdictions in a global ecosystem and is accessed by multiple parties, leading to questions of data privacy, data ownership, data confidentiality, and supporting guidelines.

Statements made from the floor

Patentable Subject Matter and Patentability Guidelines

48. Participants discussed the patentability of AI-assisted and, in particular, AI-generated inventions, in-depth. They acknowledged that it is necessary to distinguish between AI-generated and AI-assisted inventions when discussing patentability.

49. There was broad consensus that AI-assisted inventions should be evaluated under the current legislative framework. One participant said that it might be necessary to reconsider the definition and identity of the person skilled in the art.

50. When addressing AI-generated inventions, some speakers found that no changes are required at this time to create new specific examination standards for such inventions. Others said that rules of examination might need to be adjusted or specific rules enacted in patent examination to accommodate those inventions.

51. Some speakers felt that the current patentability norms were likely to be sufficiently adaptable to accommodate new emerging technologies such as AI.

52. Many speakers highlighted the importance of having a harmonized patent system to maintain legal certainty and asked whether the advent of AI might be an opportunity to reform patent law and reach a consensus-based and harmonized international regulation. For example, patentability requirements for AI-generated inventions require a certain degree of international harmonization, for example, an agreement on what constitutes sufficiency of disclosure concerning training data, learning methods, the structure of the neural network, and types of layers, and the number of neurons per layer.

Disclosure

53. Other speakers had questions relating to disclosure requirements regarding AI-generated inventions. One participant asked if the degree of disclosure required might differ depending on the technological features of AI-assisted or AI-generated inventions. One speaker gave the example of an invention that uses generic AI algorithms and well-known combinations of training data. In this case, would the invention meet the disclosure requirement without the need for a description of the algorithms and the combination of training data?

54. A participant suggested that a deposit system, similar to the Budapest Treaty,¹² could be applied to AI-assisted or AI-generated inventions. Adopting an internationally agreed standard would assist the effective implementation of such a system, as a single international standard could cover both types of deposit: AI/algorithms and training data. However, another speaker noted that the rationale of de deposit of microorganisms under the Budapest Treaty does not similarly apply to algorithms.

55. The rise of AI as a tool assisting with inventions could result in a severe increase of patent applications, which would be difficult to manage for IP offices, a participant pointed out.

DATA: COPYRIGHT IN TRAINING DATA, FURTHER RIGHTS IN DATA AND TRADE SECRETS

Session introduction: Judge Kathleen O'Malley, United States Court of Appeals for the Federal Circuit, United States of America

56. Judge O'Malley explained that data is a crucial element of AI, but that sometimes the collection and use of data can raise questions regarding copyright law. Both the Berne Convention¹³ and the TRIPS Agreement¹⁴ provide for exceptions to copyright infringement depending on the purposes of the use of an otherwise protected work, she explained. Article 9(2) of The Berne Convention establishes three conditions for exceptions and limitations to the right of reproduction: (i) only in certain special cases; (ii) only if there is no conflict with a normal exploitation of works; and (iii) only if there is no unreasonable prejudice to the legitimate

¹² Budapest Treaty on the International Recognition of the Deposit of Microorganisms for the Purposes of Patent Procedure, available at <https://www.wipo.int/treaties/en/registration/budapest/>.

¹³ Berne Convention for the Protection of Literary and Artistic Works, available at <https://www.wipo.int/treaties/en/ip/berne/>.

¹⁴ The TRIPS (Trade-Related Aspects of Intellectual Property Rights) Agreement of the World Trade Organization, available at https://www.wto.org/english/docs_e/legal_e/31bis_trips_01_e.htm.

interests of authors. Article 13 of the TRIPS Agreement provides similar criteria. In the United States, the fair use doctrine also comes into play. The US courts have held that the use of large volumes of copyrighted literary work for machine mining fell within the fair use exception. She explained that the relevant cases were primarily based on the fact that the data use did not provide an alternative version of the copyrighted literary work to the public, but only snippets of it.¹⁵

Statements made from the floor

Copyright and related rights

57. Speakers were generally agreed that the desire of AI developers to have access to large volumes of data and the rights of copyright owners in protected works included in the data will need to be balanced. However, speakers were divided on possible solutions. Some found data mining provisions or the fair use doctrine should provide adequate exceptions to copyright. Others warned against harming the rights and interests of creators.

58. Limitations and exceptions and bias are inextricably linked, said one participant, as some found that broad access and use of copyrighted works should be allowed to help reduce bias.

59. A speaker explained that using copyrighted works to train AI should be considered non-infringing by default since such uses do not compete with the original works in any market.

60. Fear of liability for copyright infringement might also prevent AI researchers from releasing the data on which the AI was trained, reducing AI explicability and transparency, noted a speaker, who suggested a flexible copyright exception.

61. A participant noted that the use of AI allows a large volume of works to be produced in a short space of time. Therefore, granting copyright protection for AI-assisted outputs raises important policy questions, such as the risk of reducing the public domain as a result. He further noted that the risk of automated over-production of literary and artistic work may increasingly affect the demand for human creation.

62. Weakening copyright protection by introducing new exceptions would risk harming creators and reduce the quality of the output of AI applications and their general relevance, one participant asserted, adding that enabling the development of AI does not require or justify new exceptions to copyright. Another speaker said that one of the goals should be to enable an ecosystem allowing researchers, toolmakers, and content curators to coexist to enable a human-centered AI.

63. Text and data mining exceptions are being discussed or have been implemented in many jurisdictions. Still, there are concerns that cross-border sharing of databases is limited and that commercial use is restricted. One participant noted that while many countries have limitations and exceptions providing for research purposes that are broad enough to allow for text and data mining to train AI, many laws are still inadequate because they are limited to non-commercial use or excerpts of works only. Such exceptions are also largely unharmonized. For example, Article 3 of the 2019 European Union Directive on Copyright and Related Rights in the Digital Single Market provides an exception for text and data mining for scientific research.¹⁶ According

¹⁵ See for example, *Authors Guild v. HathiTrust*, 755 F.3d 87 (2d Cir. 2014), *White v. West* (S.D.N.Y. 2014); *Fox v. TVEyes* (S.D.N.Y. 2014); *Authors Guild v. Google*, 770 F.Supp.2d 666 (S.D.N.Y. 2011); *A.V. v. iParadigms, LLC* (4th Cir. 2009); *Perfect 10 v. Amazon*, 508 F.3d 1146 (9th Cir. 2007); *Field v. Google*, 412 F.Supp.2d 1106 (D. Nv. 2006); and *Kelly v. Arriba Soft*, 336 F.3d 811 (9th Cir. 2003).

¹⁶ Directive (EU) 2019/790 of the European Parliament and of the Council of 17 April 2019 on copyright and related rights in the Digital Single Market and amending Directives 96/9/EC and 2001/29/EC, available at <https://eur-lex.europa.eu/eli/dir/2019/790/oj>.

to a speaker, this article specifies that once a copyright work has been legitimately accessed, the right to read should be the right to mine when it comes to research and machine learning.

64. A participant proposed to differentiate data mining according to the use of data. Data extraction may not be a copyright infringement if exceptions for temporary copying and data mining are available, he said. However, if the AI system, such as a neural network, stores a work in its memory or reproduces its creative elements, this differs from simple data extraction and may represent copyright infringement.

65. Another speaker said that data and text extraction and machine learning should benefit from exceptions and limitations, albeit with conditions attached, including legal access of works and the prohibition of issuing a copy of the works or materials. No additional rights are needed, so the speaker, to protect data beyond what exists today, as new rights could hinder innovation by creating unnecessary barriers to the evolution of AI and related technologies.

66. Several speakers presented licensing as a solution for data and text mining. A speaker suggested devising transparent acquisition and disclosure rules for high-quality content and data used as AI inputs. Licensing, he said, would ensure both prominence and integrity of quality inputs. Another participant said there is no need for new protection, but for more data sharing, relying on improved licensing models.

Further rights in relation to data

67. There were supporters and detractors for potential IP rights to protect data. New rights are seen as a risk for impeding innovation, not incentivizing it, by creating unnecessary barriers. There was a call to consider the broader picture with laws in areas such as competition and privacy, as well as rights such as copyright and database rights. Some think that current mechanisms, such as contracts, licenses and trade secrets, provide adequate data protection; however, others believe that these are just stopgaps.

68. According to one speaker, certain types of data, like earth remote sensing data, represent a significant investment to produce and should be classified as an asset, creating the need to determine an owner or rights holder of such an asset. However, existing IP rights are not capable of effectively protecting those data or products based on them. Legal protection of data is the only way to safeguard the sizable investments needed to create the infrastructure required to collect and process those data. The current legal uncertainty concerning the type of IP rights applicable to data carries a risk for licensing agreements to be subject to legal challenges, providing support for a new type of IP right for protecting unstructured or raw data, and the development of common approaches to determine the scope and duration of such protection.

69. Some also suggested creating a right to access non-personal data to facilitate access to data, for example, in the context of interoperability between interconnected devices and data portability. Such a right should be limited by allowing licensing under fair, reasonable, and nondiscriminatory conditions. Current IP rights, privacy legislation, unfair competition legislation, and current technological measures are insufficient to protect non-personal data. A new right would create an obligation to grant access to a data controller and, at the same time, provide a right to remuneration in favor of the data creator, who has invested substantial resources on obtaining control or on processing non-personal data.

70. There is a need to consider the many different types and sources of data before implementing any possible data protection or other incentive mechanisms. There is a difficulty, for example, in drawing the line between personal and non-personal data. A speaker suggested that creating an exclusive property right for data may impede data utilization, and it might be interesting to introduce a new concept of protected data.

71. Another speaker suggested a specific framework for machine learning and deep learning, with contracts for companies to exchange data.

72. Another participant suggested considering the creation of neighboring rights for AI-assisted outputs.

TRADEMARKS

Session introduction: Ms. Tiki Dare, President-Elect International Trademark Association (INTA), and Assistant General Counsel, Oracle, Burlington, United States of America

73. Ms. Dare said that questions relating to AI's impact on trademark law include how AI will impact the way consumers encounter, search for, and compare goods and services before making their final selection. How does AI recommend or limited choices for the consumer? In the context of the Internet of Things and automatic purchases, what is the interplay between AI, the consumer, and the brand, she asked.

74. When an AI system limits the choice of or influences a consumer, what would be the responsibility of that system if the consumer was led to buy a counterfeit product? In the same manner, she added, who would bear legal responsibility if a bias was built into the algorithm of the AI system to exclude certain products?

Statements made from the floor

75. A participant remarked that personal assistants, such as Amazon's Alexa, have the potential to be "gate-keepers" between the consumer and the brand, controlling what brand information is available to the consumer with little or no human interaction.

76. He also noted that in the case of automated purchase services, AI applications might not assess products via conventional means of oral, phonetic, and conceptual comparisons of trademarks. Another participant explained that many features of trademarks, such as pronunciation, appearances, impressions, and connotations, impress upon consumers' minds and form consumers' purchasing decisions. However, some of these distinctive features are not discernable by AI applications, which are limited to verbal communication with consumers. They may fail to consider other visual differences between competing marks.

77. The question of the legal responsibility for influencing consumers or leading them to purchase counterfeit goods or services was debated. A speaker said persons selling trademark infringing goods must be held liable when the goods recommended by an AI application contains a trademark-infringing good. Another participant concurred and said if the AI application is found to be manipulating algorithms to push a consumer toward a particular purchase, the owner of such an AI application might be considered liable.

78. According to one speaker, some issues, such as who is ultimately responsible for AI recommendations, particularly when they include infringing goods or services, have to be considered in association with other laws, such as civil laws. Another participant said the owners of AI systems should be held responsible for the actions of such systems. She added unfair competition laws could be used in the case of ad words or meta-tagging undermining the function of trademarks.

79. Some speakers considered that there is no reason to reconsider the functions of trademarks or redefine legal concepts for the moment. At the same time, a participant noted the need to reflect on whether the described principles of trademarks based on the perception of the human mind require adjustments or not, and if they adequately framed for the use of AI. Another speaker suggested that the notion of "consumers" in trademark examinations may

change due to the growing involvement of AI applications in consumers' choice of goods and services.

CAPACITY BUILDING AND ACCOUNTABILITY

Session introduction: Ms. Nta Ekpiken, Partner and Head of IP, The New Practice (TNP), Lagos, Nigeria

80. As AI is rapidly progressing, it risks widening the technology gap between developing and developed countries, according to the keynote speaker, who added that if the capacities to develop AI are currently confined to a limited number of countries, the effects of the deployment of AI are not.

81. The subject matter of capacity building goes beyond IP policy and intersects with education, labor, and human resources. Combined efforts between various fields would be necessary to drive capacity building and mitigate the technology gap, she added.

Session introduction: Mr. Yuri Zubov, Deputy Head, Federal Service for Intellectual Property (Rospatent), Moscow, Russia

82. The use of AI in administration reduces the decision-making time and minimize costs, Mr. Zubov stated. While AI systems can already assume many functions, defined tasks could be delegated to AI systems to take well-defined decisions in a more distant future.

83. A critical barrier to the wider use of AI in IP administration is the lack of trust of society and users, he noted. Algorithms are difficult to interpret, and there is a lack of understanding of the procedures and the logic used by AI to reach decisions. Other participants shared this view.

84. He advised that when AI systems are developed, four principles should be respected: the systems should be designed with a people-centric approach: they should have inbuilt safeguards preventing them from causing harm to citizens or legal entities, they should achieve complete transparency of their functioning and the processes leading to results, and users should have access to information about the AI algorithms, and finally AI systems should follow ethical norms.

Statements made from the floor

Capacity Building

85. AI can be a factor for growth development and job creation, according to a participant, underlining the essential role WIPO could play in reducing the technological gap. WIPO could make available AI tools to member states, promoting consistency and defying the cost of tools for national IP offices with fewer resources. That would also serve to achieve WIPO's mission to promote an effective international IP system for the benefit of all, she said.

86. A speaker suggested international cooperation could help breach the IP knowledge gap. Another concurred and added that continued collaboration between IP offices would contribute to building capacities and the containment or reduction in the technology gap in AI capacity. A participant said regional offices could become hubs for the dissemination of certain technologies in their regions.

87. IP policy in relation to AI must show real inclusivity, a balance between protection of rights and access, be development-oriented, and human-rights based, according to a participant. He added that any form of capacity building, including training and technical assistance, should include those principles. He praised the principles of South-South cooperation and supported

larger participation from IP offices and developing country governments in discussions at WIPO on the issue of AI.

88. Many IP offices in developing countries need capacity and infrastructural support, particularly human resources, to ease their adaptation and implementation of AI for administration purposes, he added. Another speaker noted that developing country laws need to be updated to make room for future technologies.

89. Another speaker noted that developing countries need capacity building in data collection, dissemination, and use. She also said that AI used in the administration of IP should be country-specific and developed using local data and algorithms to avoid discrimination, warning against a protectionist system of IP, which would hinder access to quality data.

90. The reduction of the gap in AI capacity is an important goal that should be encouraged with business participation within the existing framework for technology transfers, a participant noted.

Accountability for decisions in IP administration

91. Most speakers found that AI tools were a substantial help in IP administration, such as facilitating classification and establishing prior art for trademark applications. A majority of speakers also said that AI systems should not replace humans.

92. One speaker said decisions delegated to AI systems should only be administrative decisions, advocating for human review evaluation, intervention, and control in all processes involved in AI. She also noted that IP offices might not be prepared to deal with appeals that are consequences of decisions adopted by an AI system. Some participants said that AI decisions should be subject to the same oversight procedures as humans. One person warned about efforts to ensure accountability could nullify the gains such as time and resources saved by AI.

93. Another speaker found that AI systems should be allowed to make decisions in IP applications, particularly in trademark searches, as long as there is a human-based appeal process available.

94. One participant recommended a transitional or test phase during which the AI system would be used and provide recommendations. The quality and pertinence of those recommendations could then be evaluated and serve to test and potentially improve the AI system. Another speaker pointed out the technical issues of AI, such as difficulty getting high-quality IP data from databases for machine learning to train AI systems. He advocated for a global harmonized policy for data collection for machine learning and access to databases.

95. Several speakers also spoke in favor of greater transparency in AI systems, including training data and algorithms. One participant added that applicants should be informed whether a human or an AI system has made the decision and have the right to ask for a human decision beforehand. In case of an adverse AI decision, applicants must have the right to ask for a human review of the decision, he said.

96. Several speakers found that it is not currently necessary to have any legislative change or new standards to facilitate the decision-making of AI applications. This is because human review, evaluation, intervention and control should always be present in all processes involved in AI.

97. The use of AI to improve IP office efficiency was supported by several speakers. AI and examiners should complement each other, one speaker said, remarking that AI needs a small amount of time to find the bulk of relevant data in most cases. Faster and easier patent prior art searches free examiners to focus on harder to find information and interpreting their findings, he

added. However, another participant noted, if AI becomes further involved in administrative processes, there will be a need to ensure that judicial bodies officers are appropriately trained, understand its role in processes and its implications.

98. The most promising areas cited by participants for AI-assisted tasks were providing suggestions for prior art, classification, machine translation, and machine-assisted prequalification and searches.

99. Following his national experience, a speaker indicated that defining common standard tests for the evaluation of AI-based search engines would allow the IP national and international offices and other stakeholders to compare their results. Such standards may establish data, methods of grading each search result, and methods of presenting an overall measure of the engine quality. Test results would direct the industry and help in the development and improvement of such systems.

100. One speaker warned about automated content recognition technologies by online platforms that filter uploads for potential copyright infringement. It is hazardous, mainly because the systems cannot tell if the content is lawful in the context of exceptions or limitations, the speaker said. AI technologies also run the risk of people wrongfully claiming ownership of the public domain or open-licensed work.

CONTINUING WIPO'S WORK ON AI AND IP

101. Many speakers agreed that WIPO has a key role to play in advancing the global discussion on AI and IP and fostering a globally coordinated, consensus based approach to AI and IP.

102. Closing the third session of the Conversation on AI and IP, WIPO Director General Daren Tang set out WIPO's future work direction. In particular, as AI cuts across many fields, it should be approached holistically with a broad perspective.

AI and IP Strategy Clearing House

103. AI has become a strategic capability for many governments across the globe. Strategies for the development of AI capacity and AI regulatory measures have been adopted with increasing frequency. WIPO has published an AI and IP Strategy Clearing House that collates policies, case law, legislative provisions and the main government instruments of relevance to AI and IP.¹⁷ WIPO will update the Clearing House on an ongoing basis.

AI and IP Policy Conversation

104. Director General Tang confirmed that WIPO would continue to use its convening power to provide a global and neutral platform to continue the policy conversations. At the same time, WIPO will focus on concrete items that can be addressed and positively impact the discussions in the short term, such as the impact of AI on IP administrative operations.

105. However, the more practical turn of the conversation is not intended to stop the conceptual discussions about the medium- and long-term implications of AI on the existing IP system.

106. WIPO will announce a priority list of topics and next steps in due course.

¹⁷ The AI and IP Strategy Clearing House is available at https://www.wipo.int/about-ip/en/artificial_intelligence/policy.html#clearing_house.

WIPO's AI tools

107. WIPO plays a significant role as a toolmaker incorporating AI. WIPO has already developed AI tools, such as WIPO Translate and WIPO Brand Image Search, which use AI-based applications for automated translation and image recognition, and these tools are available to IP offices.¹⁸

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¹⁸ For more information on WIPO's AI tools see
https://www.wipo.int/about-ip/en/artificial_intelligence/ip_administration.html.