

UNIVERSITY OF DEBRECEN

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**CONTRACTUAL CHALLENGES IN THE AGE OF
GENERATIVE ARTIFICIAL INTELLIGENCE**
THESIS



Supervisor: Dr. Fézer Tamás, PhD

Professor of Law

Vice Dean for Strategic Planning and

External Relations

Student: Anca-Maria Rusan-Boicu

European and International

Business Law LLM

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I. Introduction:

Does Generative Artificial Intelligence change all the established legal norms? What is the current legal landscape applicable to Generative AI topics? Did the pre-existing laws and regulations become obsolete? Is the Generative AI output compatible with copyright and other IP rights? What about ethics?

Today, these are just very few of the questions on the minds of legal professionals, scholars and legislators around the globe.

This dissertation thesis highlights the main challenges which are brought by Generative AI. It will explore aspects such as the main contractual, intellectual property and data compliance issues and will propose strategies and recommendations for risk mitigation.

Artificial Intelligence is definitely the technology that is radically transforming the way society works, the manner in which businesses are conducted, how people interact with each other and, even how we live. Although Artificial Intelligence is still an emerging technology, its impact is already significant and noticeable on a large scale and virtually across all industries.

One of the most promising and revolutionizing branches of Artificial Intelligence (hereinafter “AI”) is the Generative Artificial Intelligence (hereinafter “**Generative AI**”). In a nutshell, this technology could be described as highly intelligent software systems with cognitive humanlike capabilities. Generative AI technology has and promises to have creative and cognitive capabilities which priorly were typical only to human beings. For instance, Generative AI, nowadays is capable to create and generate, in a timespan of seconds, output such as images, music or text, simply by the speedy processing of the instructions given to it by the human that operates the technology.

What is more, Generative AI, is also accessible to everyone on the globe which has access to a computer and to internet. Numerous technology companies have launched easily accessible and free of charge versions of Generative AI products, such as ChatGPT, Gemini, GitHub Copilot.

As businesses and organizations strive to integrate increasingly advanced AI technologies into their operations, the contractual relationships and associated business risks pose new particularities and become more challenging. The legal challenges vary from new contractual liability issues,

data privacy and security concerns to novel intellectual property considerations. Addressing the unique challenges brought by the usage of Generative AI is of cardinal importance for the legal landscape.

This thesis is structured as follows:

- ❖ Chapter 2: provides a brief overview of the current AI Legal landscape, with focus on the European Union, the United States of America and ASIA (China, Japan, United Arab Emirates).
- ❖ Chapter 3: focuses on the importance of ethical usage of the Generative AI technologies and the commitments taken in this regard by the big players represented by organizations and countries.
- ❖ Chapter 4: examines the main intellectual property issues brought by Generative AI technologies, with main focus on copyrights and patents.
- ❖ Chapter 5: presents the particularities of Generative AI in terms of contractual liability.
- ❖ Chapter 6: concludes the dissertation thesis by presenting the findings of a case study centered on a comparative analysis of liability provisions based on the Terms and Conditions of popular Generative AI Tools (ChatGPT, Gemini, GitHub Copilot).

This dissertation thesis aims to explore and expand the current knowledge and perspectives on the contractual challenges in the age of Generative AI.

II. Brief overview of the current AI legislative landscape (EU, US, ASIA)

A far as the AI legislative landscape is concerned, it can be concluded that, at the moment, the degree of existing AI regulations, around the globe, is low and in its early stages of development. Similar to the case of data protection, also in the case of artificial intelligence, the governments have different economic interests and perspectives, due to which they prioritize and strategize differently the activity of issuing laws and regulations on AI.

The developed economies realized that the current legal landscape needs to be further complemented with regulations focused on AI development and usage, as to ensure trustworthy

usage of AI technologies. Reliability of AI technologies is crucial for all stakeholders, from developers to end users.

The forefront runner in the race to regulate the challenges posed by the new AI technologies is definitely the European Union (“EU”), which is expected to issue its’ first comprehensive regulation on AI, the Artificial Intelligence Act (“AI Act”) in the summer of 2024.

On the other side of the spectrum are US and ASIA, where AI legislation is in place or pending to be issued, as the case may be, but it is by far not as comprehensive as the EU’s. They have certain legislation, in many cases in the form of guidelines or recommendations that tackle the subject matter of the AI systems (e.g. principles for ethical development and usage of AI, regulations on discrimination, product safety, data privacy and safety, recommendations and guidelines regarding AI, etc.).

- **The United States of America (“US”) Legal Framework on AI**

Although the US legislative landscape on AI is not as comprehensive by comparison with the EU’s upcoming legal landscape, US already has in place a series of laws, regulations and guidelines applicable at local, state or federal level.

One of the main US AI regulations at federal level is *The National Artificial Intelligence Initiative Act of 2020*¹ (“NAIIA”). The NAIIA aims to bring structure and clarity on how AI is tackled in the US. It refers to aspects such as the formal designation of AI specialized national bodies with AI responsibilities, such as: the National Artificial Intelligence Office, the National Artificial Intelligence Advisory Committee, National Artificial Intelligence Research Institutes. Also, the NAIIA extends the portfolio of responsibilities of the National Institute of Standards and Technology by granting it special AI responsibilities.

¹ Text - H.R.6216 - 116th Congress (2019-2020): “National Artificial Intelligence Initiative Act of 2020” Congress.gov, Library of Congress, 12 March 2020, <https://www.congress.gov/bill/116th-congress/house-bill/6216/text>.

The main goal of NAIIA is to ensure the necessary governmental institutional structure and funding process, which is meant to support the US's goal of world leader in AI technologies and to encourage research and development, innovation, increase labor skills among workers and ensure US wide competitive educational programs, protection of human and civil rights.

NAIIA, is very different from the EU AI Act, as NAIIA does not impose so strict, mandatory and detailed regulatory obligations on the deployers of AI, as the EU AI Act does. For instance, NAIIA does not impose specific and mandatory rules for AI deployers on how AI should be developed. These rules, in the US, in general, result from other laws (e.g. regular discrimination laws must be taken into account by the AI deployer as the AI system must not discriminate or be biased). The EU AI Act and NAIIA are similar in the sense that both regulations emphasize the need to ensure the ethical development of AI and the protection of the fundamental and civil rights of the people, including the right to security, safety, privacy and data protection.

Based on the legal framework created by NAIIA several governmental bodies and agencies, expressly named, will issue in the future subsequent and more detailed regulations, guidelines and recommendations on AI.

Another worth mentioning US regulation is the US President's *Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence*² from October 30th 2023 ("US President's Executive Order 2023"). This presidential executive order is applicable at federal level and it is binding and mandatory for the governmental bodies and agencies it addresses³. Similar to the NAIIA, it focuses in its majority on defining goals and strategy for the US institutional and government bodies in order to take measures to ensure the protection of the US citizens and businesses, to increase the development and usage of AI across the US, to promote innovation and competition in the AI field, to ensure the respect of the human and civil rights, etc. Also, it provides principles to be aspired to when dealing with AI systems. For instance, it

² The White House, JOSEPH R. BIDEN JR. "*Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence*", October 30th 2023 (<https://www.whitehouse.gov/briefing-room/presidential-actions/2023/10/30/executive-order-on-the-safe-secure-and-trustworthy-development-and-use-of-artificial-intelligence/>)

³ Ashley Casovan, Cobun Zweifel-Keegan, "*Implications of the AI executive order for business*", November 2023, (<https://iapp.org/resources/article/implications-of-the-ai-executive-order-for-business/>)

explicitly mentions the need to have during the AI development and usage cycle measures such as: standardized evaluations of AI systems, pre-deployment testing mechanisms, post-deployment performance monitoring, cybersecurity safeguards, etc.

The US President's Executive Order 2023 envisions more detailed obligations to be established for the deployers and resellers of AI systems than the NAIIA, such as: reporting obligations, cybersecurity obligations. Based on the legal framework created by the US President's Executive Order 2023, governmental bodies and agencies listed in the executive order will issue in the future subsequent and more detailed regulations, guidelines and recommendations on AI.

The *White House Blueprint for an AI Bill of Rights* is essentially a White Paper, issued by the White House in October 2022, which lays down principles for and associated practices meant to represent a guideline in the process of design, usage and deployment of automated systems, in order to preserve the protection of the rights of the American public⁴. This document outlines that AI systems should be safe and effective, should have in place algorithmic discrimination protections, should ensure data privacy and protection, should be user friendly by design and should give the user the possibility to opt out of the AI system and request to and be attended by a human being, if preferred by the user.

Although both the EU AI Act and the *White House Blueprint for an AI Bill of Rights* display rules for developers and providers of AI systems, even common ones, it must be noted that the latter is simply a white paper, a guidance, thus it is non-binding. Whereas the EU AI Act is a regulation that once enacted will be fully mandatory to all the EU member states and beyond. The EU AI Act it is not simply a guideline.

Other federal US regulations and guidelines on AI are, for instance: the Congress National Artificial Intelligence R&D Strategic Plan, the AI and Emerging Technologies Partnership, the Combatting Online Harms Through Innovation report by the Federal Trade Commission, the

⁴ White House Office of Science and Technology Policy, “*Blueprint for an AI Bill of Rights: Making Automated Systems Work for the American People*”, October 2022, page 4 (<https://www.whitehouse.gov/ostp/ai-bill-of-rights/>)

Artificial Intelligence Risk Management Framework (AI RMF 1.0) issued by NIST⁵, the Joint Statement on Enforcement Efforts Against Discrimination and Bias in Automated Systems⁶.

Additionally, the US also has state and local AI regulations such as the New York local Law 144 on Automated Employment decisions, the Illinois (820 ILCS 42/) Artificial Intelligence Video Interview Act, The Virginia bill on Facial recognition technology. Further regulations with impact on AI systems at US level are the industry-specific regulations and guidelines for sectors such as finance, health, housing, credit, etc.

- **Asian Legal Perspectives on AI (China, Japan, United Arab Emirates)**

If we look at ASIA, the most competitive AI players are starting to develop and include in their legislation AI regulations.

One example is **China**, which in 2021 (*Algorithmic Recommendation Management Provisions*) and 2022 (*Deep Synthesis Management Provisions*) became the first country which issued mandatory and detailed regulations⁷ on some of the most commonly used types of AI. The Chinese AI regulations enclose rules such as: rules on recommendation algorithms, rules for AI providers to watermark the AI-generated content, rules on generative AI, rules on facial recognition, rules on usage of deepfakes, etc.

Similar to US and EU, China also mentions in its guidelines that the AI systems should be developed and used in an ethical manner, by upholding principles⁸ such as: data privacy, human welfare, protection of human rights, promotion of fairness and justice, protection of privacy and security, assurance of controllability and trustworthiness of the AI systems, ethical usage of AI⁹,

⁵ National Institute of Standards and Technology

⁶ Rohit Chopra, Kristen Clarke, Charlotte A. Burrows, Lina M. Khan, “Joint Statement on Enforcement Efforts Against Discrimination and Bias in Automated Systems” (https://www.ftc.gov/system/files/ftc_gov/pdf/EEOC-CRT-FTC-CFPB-AI-Joint-Statement%28final%29.pdf)

⁷ Matt Sheehan, “Tracing the Roots of China’s AI Regulations”, Carnegie Endowment for International Peace, February 2024 (<https://carnegieendowment.org/2024/02/27/tracing-roots-of-china-s-ai-regulations-pub-91815>)

⁸ “Ethical Norms for New Generation Artificial Intelligence”, The National New Generation Artificial Intelligence Governance Specialist Committee from China, September 25th 2021 (<https://cset.georgetown.edu/publication/ethical-norms-for-new-generation-artificial-intelligence-released/>)

⁹ Idem 8, page 1

rule of law. Such principles are explicitly mentioned in the *Ethical Norms for New Generation Artificial Intelligence* issued in 2021

In the *Governance Principles for a New Generation of Artificial Intelligence: Develop Responsible Artificial Intelligence*¹⁰ issued by the National New Generation AI Governance Expert Committee in 2019, are also stated principles such as the rules of law, human centric AI systems, ethics, privacy rights, safe and reliable AI systems.

In the upcoming regulation¹¹ called *Measures for the Management of Generative Artificial Intelligence Services*, China aims to tackle in more detail the issues brought by the research, development and usage of products with Generative AI capabilities¹². One of the main and mandatory rules that China intends to impose on the deployers of Generative AI systems is that the AI system generates content which is mandatorily in strict compliance with the socialist core values, and should absolutely not enclose content such as: subversion of state power; overturning of the socialist system; incitement of separatism; harm to national unity; propagation of terrorism or extremism; propagation of ethnic hatred or ethnic discrimination; violent, obscene, or sexual information; false information; as well as content that may upset economic order or social order¹³.

Similar to the EU and US legislative approach, with the upcoming regulation, *Measures for the Management of Generative Artificial Intelligence Services*, China also adopts the stance that the Generative AI systems have to respect intellectual property rights, fair competition, ethics, privacy and data protection rights (including prohibition of profiling¹⁴), safety and security rights, and to

¹⁰ Graham Webster, Lorand Laskai, “Translation: Chinese Expert Group Offers ‘Governance Principles’ for ‘Responsible AI’”, Stanford Cyber Policy Center, June 17th 2019, (<https://digichina.stanford.edu/work/translation-chinese-expert-group-offers-governance-principles-for-responsible-ai/>)

¹¹ Matt Sheehan, “China’s AI Regulations and How They Get Made”, Carnegie Endowment for International Peace, July 10th 2023 (<https://carnegieendowment.org/2023/07/10/china-s-ai-regulations-and-how-they-get-made-pub-90117>)

¹² Seaton Huang, Helen Toner, Zac Haluza, Rogier Creemers, Graham Webster, “Translation: Measures for the Management of Generative Artificial Intelligence Services (Draft for Comment) – April 2023”, Stanford Cyber Policy Center, April 12th 2023, (<https://digichina.stanford.edu/work/translation-measures-for-the-management-of-generative-artificial-intelligence-services-draft-for-comment-april-2023/>)

¹³ Article 4 of the: Seaton Huang, Helen Toner, Zac Haluza, Rogier Creemers, Graham Webster, “Translation: Measures for the Management of Generative Artificial Intelligence Services (Draft for Comment) – April 2023”, Stanford Cyber Policy Center, April 12th 2023, (<https://digichina.stanford.edu/work/translation-measures-for-the-management-of-generative-artificial-intelligence-services-draft-for-comment-april-2023/>)

¹⁴ Idem 12

not be discriminatory or biased. Additionally, China plans to explicitly mention in this law that the providers of the AI generative systems are liable with respect to the legality of the data used by the AI system and that they must ensure that the data does not infringe any intellectual property rights of others.

Moreover, the abovementioned regulation, puts on the providers the responsibility to take measures in order to prevent users from developing potential addictive behaviors caused by the generated content or to prevent excessive usage of the generative AI system. Other obligations on the providers shall be the obligation to mark the outputs (e.g. images, videos, etc.) of the generative AI system, specific obligations on how to handle complaints from the end users, to suspend or terminate the usage rights of the user that uses the AI system for unlawful purposes.

Japan is another country with notable advancements in the regulation of AI. In 2019, Japan published a set of principles on AI technologies, the *Social Principles of Human-Centric AI*¹⁵, meant to promote the need to have a human centric approach on AI development. The principles enlisted are: human centeredness; privacy protection, safety and security, fair competition, fairness, accountability and transparency, innovation, development and utilization principles to be abided by the developers and operators of AI.

Although, for Japan, AI development and usage is one of the top priorities of the government and as it strives to be a world leader in innovation and AI, Japan took a more flexible approach in terms on regulating AI. Japan keeps a close eye on the approaches of EU and US, and it is of the mindset that overregulation or to strict and detailed regulations will result in barriers for innovation. This perspective is very different from the strategy chosen by the EU on this matter. It can also be concluded, that the Japan AI regulatory landscape is even more flexible that of the US's.

In general, Japan's AI regulatory landscape manifests not through mandatory laws, but through non-binding guidelines, recommendations and guiding principles to be uphold in a voluntary

¹⁵ Decision made by the Integrated Innovation Strategy Promotion Council, Japan, "*Social Principles of Human-Centric AI (Tentative Translation)*", March 29th, 2019, (<https://www.cas.go.jp/jp/seisaku/jinkouchinou/pdf/humancentricai.pdf>; <https://www.cas.go.jp/jp/seisaku/jinkouchinou/index.html>)

manner by the deployers and developers of AI technologies. Aside from the Social Principles of Human-Centric AI, other notable documents that regulate AI in Japan are: the 2021 *AI Governance in Japan Ver. 1.1* (report from the expert group on how AI principles should be implemented¹⁶), the 2022 *Governance Guidelines for Implementation of AI Principles*¹⁷, the 2019 *AI Utilization Principles*¹⁸, and the upcoming *AI Operator Guidelines*.

The **United Arab Emirates (UAE)** is also one of the countries which strives to become a leader in fostering AI technologies development. The UAE aims to become a world leading hub for AI research and innovation. In the UAE the AI policies are overseen by the AI ministry, which is the first ministry¹⁹ for AI established worldwide, back in 2017.

The UAE took a flexible approach in terms of building a legislative landscape for the AI systems. Similar to Japan, UAE issued non-binding principles and guidelines for the AI developers and deployers. Notable are the following: the *AI ethics principles and guidelines*, the *Generative AI guide*, the *AI coding license*, the *AI System Ethics Self-Assessment Tool*²⁰.

The principles²¹ enshrined by the UAE for the AI systems are: ethic (fair, accountable, transparent, explainable), safety and security, humanity and inclusiveness. With respect to Generative AI, in the *Generative AI guide*, the UAE issued recommendations on how to use efficiently the available Generative AI technology such as Chat GPT, Jasper, Synthesis, DALL E·2, Tome, WellSaid, etc.,

¹⁶ EXPERT GROUP ON HOW AI PRINCIPLES SHOULD BE IMPLEMENTED, “*AI Governance in Japan Ver. 1.1*”, July 9th 2021 (https://www.meti.go.jp/shingikai/mono_info_service/ai_shakai_jisso/pdf/20210709_8.pdf)

¹⁷ EXPERT GROUP ON HOW AI PRINCIPLES SHOULD BE IMPLEMENTED, “*Governance Guidelines for Implementation of AI Principles*”, Ver. 1.1, January 28th 2022, (https://www.meti.go.jp/shingikai/mono_info_service/ai_shakai_jisso/pdf/20220128_2.pdf)

¹⁸ The Conference toward AI Network Society, “*Detailed Explanation on Key Points Concerning AI Utilization Principles*” (Tentative Translation), August 9th 2019, (https://www.soumu.go.jp/main_content/000658286.pdf)

¹⁹ International Association of Privacy Professionals (IAPP), IAPP Research and Insights, “*Global AI Law and Policy Tracker*”, January 2024, (https://iapp.org/media/pdf/resource_center/global_ai_law_policy_tracker.pdf), page 24.

²⁰ Idem 19

²¹ Dr. Aisha Bint Butti bin Bishr, Smart Dubai in collaboration with Falcon and Associates, “*AI ETHICS PRINCIPLES & GUIDELINES*” (https://www.digitaldubai.ae/pdfviewer/web/viewer.html?file=https://www.digitaldubai.ae/docs/default-source/ai-principles-resources/ai-ethics.pdf?sfvrsn=d4184f8d_6),

and it provides a variety of use cases²² as examples, in order to the users make the most of these available tools.

- **European Union (EU) Regulations on AI**

On the global scene, EU opted for the most comprehensive, detailed and strict regulation of the AI systems. The main pieces of legislation are the upcoming AI Act and the AI Liability Directive. The EU aims to set a high standard on human centric, safe, reliable and high-quality AI systems.

Unlike China, Japan and UAE, and even US, the EU opted for an approach which addresses directly to the providers, deployers, authorized representatives, importers, distributors and operators of AI systems and imposes mandatory and binding obligations and deadlines on them, not just non-binding principles, guidelines and recommendations. Also, the EU defines in the AI Act harsh sanctions system, that encloses fines up to €35M or 7% of the total worldwide annual turnover for the preceding financial year, whichever is higher. Similar to the GDPR, the AI Act, also lays down a deadline of 72 hours for the reporting of serious incidents to the authorities by the providers and deployers of AI systems.

The EU's approach is seen with skeptical eye by the non-EU AI players and it received criticism as it is considered that it may deter the innovation and the AI research and development, due to the very strict rules it instils.

The EU's journey of regulating AI officially started in 2017 when the European Council called for the adoption of common AI rules. Soon afterwards, in 2018, the EU Commission issued a “*Communication on Artificial Intelligence for Europe*”, followed by a “*White Paper on Artificial Intelligence – A European approach to excellence and trust*”, in 2020. In 2021, the first draft of the AI Act was launched by the EU Commission for public debate at EU level, which in 2024 reached its final version and is about to be published in the summer of 2024. The rules laid down

²² UAE, Minister of State for Artificial Intelligence, Digital Economy and Remote Work Applications, “*100 Practical Applications and Use cases of Generative AI*”, April 2023, (https://ai.gov.ae/wp-content/uploads/2023/04/406.-Generative-AI-Guide_ver1-EN.pdf), page 15-119

in the AI Act will be fully mandatory after 2 years from the publishing date of the AI Act in the Official Journal of the European Union.

In brief, the EU AI Act sets out a harmonized legal framework, binding for all the EU member states, for the development, placing on the EU internal market and usage of AI products and services. The AI Act targets all industries and affects all the companies and organizations that develop, provide, import, distribute and deploy AI, within and outside of EU. The AI Act is uniformly and directly applicable into the legislation of the member states.

Aside from the AI Act, the EU also prepares to launch the AI Liability Directive which is meant to tackle the liability particularities typical for products and services with AI capabilities. In case of the AI Liability Directive, the EU member states will have some room to create national rules.

The AI Act is centered on a risk-based approach, classifying the AI systems in four categories, namely: unacceptable risk, high-risk, limited risk and minimal or no risk AI systems. The EU regulates prohibitions on the usage of unacceptable risk AI systems (e.g. social scoring AI systems; manipulative AI systems).

The AI Act focuses in establishing rules and processes mandatory for high-risk AI systems. In the case of limited risk AI systems these rules and processes are simply recommendations and, most likely will become standards for the state of the art in terms of AI systems development.

Aside from the classification of the AI systems, the AI Act, also lists principles that have to be complied with by the AI systems, by design, namely: human oversight and agency; technical robustness and safety; privacy and data governance; transparency; diversity, non-discrimination and fairness; social and environmental well-being. These principles are also reflected, in different degrees and extent in the legislation of the US, Japan, China, for instance.

Compared to the legislation of other countries, the EU imposes certain express and mandatory, so to say, “key performance indicators” and rules in order to ensure strict compliance and oversight of the enforcement of these principles, and not mere recommendations. For example, for the

implementation of the technical robustness and safety principle the AI Act expressly regulates in a binding way that the AI system must do automatic recoding of events “logs” and that in the case of high-risk AI conformity assessments must be in place.

The AI Act regulates certain mechanisms meant to ensure the quality and reliability of the AI systems, such as: harmonized standards issued by the EU and national authorities, codes of conduct, conformity assessments, CE marking and AI systems redeployment testing in EU, regional and/or national sandboxes (controlled environments).

Additionally, the AI Act sets the framework for the infrastructure needed in the EU in the field of AI governance and oversight. In terms of public institutions, the AI Act establishes a central role for the *European Artificial Intelligence Office*, which was established in January 2024, as a body within the EU Commission, and for the Artificial Intelligence Board. At EU level, the implementation of the AI Act will be supported by: the EU Commission, the AI Office, the AI Board, and the EU standardization bodies, CEN²³ and CENELEC²⁴, as well as by an advisory forum and scientific panel of independent experts²⁵. Moreover, at EU level a data base with the high-risk AI systems will be kept and will be accessible to the general public.

At country level, the AI Act established the obligation of the member states to create national public authorities responsible for AI or to allocate AI oversight responsibilities in the portfolio of one of the already existing national public authorities.

As far as the Generative AI is concerned, the AI Act expressly imposes on the providers the obligation to ensure that the AI system marks, in a machine-readable format the content that is generated or manipulated by the AI system in an artificial way (“watermark”). Similarly, also China and the US recognized the importance of watermarking²⁶. Traceability of the generative AI

²³ European Committee for Standardization

²⁴ European Committee for Electrotechnical Standardization

²⁵ “*Artificial intelligence act*” (PE 698.792), Briefing by European Parliamentary Research Service, March 2024, page 10

²⁶ The AI Act, art. 50, point 2

content is a critical in order to ensure a trustworthy environment and to identify the source and origin of the data used by the AI system²⁷.

To sum up, the global payers for leadership status in the AI field, do not compete only in the arena of technological advancements, but also in the arena of legislative measures. As big economic powers, the AI legislation strategy of EU, US or China, matters, as they set standards to be followed by the Big Tech companies. Too strict or too vague legislation could strongly affect the technological advancements and/or the protection of the humans rights and civil rights.

Business wise, it is very important for the companies to know the legislation landscape on AI in their countries of targeted consumers and clients, as to know, one the one hand, how to comply with the legislation of the countries they activate in, and ,on the other hand, as to know how to adjust and negotiate their contracts and terms and conditions, throughout the entire supply and distribution chain.

Although we see a general international preoccupation to define AI legislation, it must be noted that the AI regulations, in general, do not tackle absolutely all the aspects that could trigger the liability for the AI systems' actions. Aside from the AI regulations, the AI systems, in all the countries of the world, also need to comply with other relevant laws such as: intellectual property laws, labor law, environmental laws, product liability laws, data protection laws, antitrust laws, cybersecurity laws, consumer protection laws, etc.

III. Ethical usage of generative AI in a contractual relationship

Ethical usage of AI is one of the main commitments the Big Tech companies and the countries have expressed in recent years, even in formalized ways such as white papers and recommendations. It can even be concluded that worldwide, among the nations and the Big Tech companies, there is a clear consensus on the fact that AI systems must comply and be used in compliance with the ethical norms of society.

²⁷ “*Generative AI and watermarking*” (PE 757.583 –), European Parliamentary Research Service, December 2023, page 3

But what are the ethical norms the AI systems should comply with?

At global political level UNESCO plays an influential part in defining universally recognized ethical norms. In this scope, UNESCO issued the *Recommendation on the Ethics of Artificial Intelligence*²⁸ (“**UNESCO Recommendation**”). The UNESCO Recommendation is of high importance as it is the result of extensive discussions among the member states of the United Nations. Its role is to inspire and shape the legislations of the nations across the globe and to be a benchmark on what ethical usage of AI means. Some of the principles for ethical usage of the AI are: the protection of the human rights, freedoms and dignity; the protection of the environment; diversity and inclusiveness; non-discrimination; safety and security; data privacy and data protection; sustainability; transparency; accountability, etc.

Similar to the ethics principles promoted by UNESCO, also the Organization for Economic Co-operation and Development (“*OECD*”), established such principles. In its *Recommendation of the Council on Artificial Intelligence*²⁹, the OECD emphasizes the following ethics principles on AI: inclusive growth, sustainable development and well-being; human-centered values and fairness; transparency and explainability; robustness, security and safety; accountability³⁰. The OECD’s principles, were further developed and reinstated in 2023 by the G7 via the “*Hiroshima Process International Guiding Principles for Advanced AI system*”³¹.

Generative AI, although already available and bringing benefits to millions of people, even free of charge in many cases, through various online platforms, it is not free of risks and concerns in terms of ethics.

²⁸ “*Recommendation on the Ethics of Artificial Intelligence*”, United Nations Educational, Scientific and Cultural Organization, 2022

²⁹ OECD, Recommendation of the Council on Artificial Intelligence, OECD/LEGAL/0449

³⁰ OECD, Recommendation of the Council on Artificial Intelligence, OECD/LEGAL/0449, page 4

³¹ G7, “*Hiroshima Process International Guiding Principles for Advanced AI system*”, October 30th 2023, (file:///C:/Users/uidr2442/Downloads/Hiroshima_Process_International_Guiding_Principles_f9dxhIpv7g0zQYG6c70eWpoSHkg_99643.pdf; <https://digital-strategy.ec.europa.eu/en/library/hiroshima-process-international-guiding-principles-advanced-ai-system>)

Some of the main ethical concerns and risks posed by the Generative AI are misinformation and fake content. Other notable ethical concerns and risks are bias and discrimination. In order to abide by the ethical principles recognized at global level, the Generative AI providers must take technical measures and make corrections to identify and combat misinformation and fake content. Also, in order to fulfill the principle of inclusiveness, the technology must provide output which is not biased, nor discriminatory.

The Generative AI also poses concerns regarding the infringement of intellectual property rights and of human rights (e.g. via manipulation, identity theft, etc.).

Probably the main measure that can mitigate the risks and ethical concerns posed by Generative AI is watermarking. For ensuring compliance with the laws, principles and ethics and not to disrupt the existing humankind information ecosystem it is crucial that the Generative AI systems are provided with functionalities that can differentiate the content generated by a human versus the content that is AI-generated³². Watermarking could help spot fake news, fake pictures and videos, etc. It would be incredibly dangerous, if in a few years, humanity would reach a point to not be able to tell which information came from humans and which from AI.

Data privacy and data protection is another aspect and worldwide recognized ethics principle, which poses concerns in the case of Generative AI, as Generative AI functions by processing vast amounts of data. In most case, the end users of Generative AI products and services have no control or oversight on what types of personal data is collected on them and what types of data processing occurs.

The ethics principles applicable to the Generative AI systems are very broad in their understanding. For instance, under the umbrella of the principle of respect for the human rights fall, most likely, all the currently human rights regulated to date (e.g. right to health, education, dignity, etc.). This means that, in practice, the providers of AI systems must have an overview of all the regulations

³² P. Kannan, “*Was this written by a human or AI?*”, March 16th 2023, Stanford University Human-Centered Artificial Intelligence (<https://hai.stanford.edu/news/was-written-human-or-ai-tsu>)

that refer to their clients and end users of the AI systems and develop the AI system by taking into account those regulations and principles.

Aside from the technical mechanisms, the ethical risks posed by the Generative AI can be mitigated by the AI systems providers also through the contracts and the terms and conditions they use.

In the case of natural persons as end users of AI systems, AI systems providers could ensure an ethical usage of AI, by using terms and conditions which are sufficiently informative, easily understandable and in plain language. Such approach would give the end users the opportunity to understand the technology and its limitations and, in most cases, would encourage the end users to question and double check the outputs they received from the AI system. The consequence would be that the people would be at a much lower risk of misinformation, bias and discrimination.

In the case of companies as clients for AI systems, ethical usage of AI could be ensured through the provisions of the negotiated contract between the parties. In such context, it is recommendable that the client requests and negotiates that the contract encloses provisions that refer to expressly mentioned ethical principles.

Moreover, it is also recommendable that the contract obliges the AI system provider to present to the client proofs that show and upkeep the compliance of the AI system with the state of the art standards and regulations in the AI field. In the case of EU, examples of such proofs are mentioned in the AI Act and could be, for instance: the CE marking, registration of the high-risk AI system in the EU public data base, proof of the testing of the AI system in a national/regional/EU sandbox, etc.

Additionally, the in the case of purchases of Generative AI services it is highly recommended that the parties also conclude data processing agreements, as to ensure the right standards of data protection and privacy. Observance of the General Data Protection Regulation is paramount.

IV. The Intellectual Property particularities of Generative AI

Since 2022, when ChatGPT was launched, Generative AI has polarized the conversations about new AI technologies. Natural persons and businesses are rapidly and increasingly experimenting with Generative AI in their activities in order to be more efficient, creative and productive.

Usage of Generative AI comes with many advantages and especially helps its users save time and be more productive. The big downside of it, however, is that, at least at the moment, the output of the Generative AI tool is not reliable in terms of intellectual property rights. Generative AI systems can be highly prone to incidents such as plagiarism, copyright infringement or patentability issues.

From legal perspective, until now, the discussions about intellectual property and ownership of the data used to train the AI system and the data created by the AI system as output, are far from reaching definitive conclusions. Many uncertainties are yet to be revealed, especially with regards to copyright.

The intellectual property (hereinafter “**IP**”) norms so far have been constructed on the principle that creativity and innovation can be produced only by humans, as are attributes inherent only to humans. Generative AI systems come to challenge this fundamental and, so far, largely recognized, law principle. The new technology can, if given the right instructions (hereinafter “**prompts**”), generate output that is highly creative and innovative.

In general, the currently existing intellectual property laws have been written long before the existence of AI technologies (TRIPS Agreement, Berne Convention, etc.). Generative AI is such a new technology, that was not even considered by the EU Commission in the AI Act draft launched in 2021 in the legislative process for public debate and enactment.

Recognition of copyright in AI-Generated Content

Copyright in the context of Generative AI, is one of the most debated topic by the legal professionals. Two main issues play a central part in the debate on copyright and Generative AI: copyright infringement and copyright protection, and ownership of the Generative AI output.

Firstly, not infringing the copyrights of others while using Generative AI should be one of the main concerns of the users of this technology. So far, the available Generative AI systems on the market provide their products under disclaimers on copyrights and offer no guarantees for the users in this regard.

Generative AI operates on vast quantities of data available on the internet and on various data bases. As the AI system does not provide to the user with information on the origins of the data it uses, the user cannot tell and cannot know beforehand if the output received is original or if it represents a copy of the original work of someone else. Thus, users of Generative AI technology are at risk of copyright infringement.

For instance, let's take the example of a software developer who uses Generative AI assistance tools in order to receive ideas and inspiration for new code lines. In such case, the software developer gives instructions to the AI system on how should the code be and, consequently, the AI system provides the output as per the instructions it received. The software developer has no guarantees that the code it received is protected by copyrights of others. Now, if the software developer incorporates the respective code in products of the employer which will be in the end commercialized, it could determine his/her employer to infringe copyrights and to end up in a license breach situation.

One way to not infringe the copyrights of others while enjoying the benefits of Generative AI is that the user does not simply copy paste the AI output, but alters the idea expressed by the AI system to a sufficient extent as to be sure that the result is an original work.

The derivative works resulted from the use of Generative AI systems, also pose challenges from legal perspective. This is due to the fact that the AI systems do not provide transparency on the data that was used. It may happen that the AI system produced a result by operating on a data set

that encloses copyrighted works. Consequently, the users of the Generative AI systems cannot determine, one hand, if the resulting derivative works are protected by copyright or, on the other hand, if they would need permission from third-party copyright holders in order to create a derivative work of their original work.

Secondly, if we are to consider that the literary and artistic creations produced by the AI system in response to the prompts given by the user are sufficiently creative and original, another copyright quandary arises: whether they should be classified as original works or derivatives, and consequently, if they can be appropriated by the user and safeguarded by copyright laws.

If we look at the definition of the “*literary and artistic works*” and to that of “*derivative works*” from the **Berne Convention**³³, **WIPO Copyright Treaty**³⁴ and **TRIPS Agreement**³⁵, it can be concluded that the outputs of Generative AI technology could be items from categories such as those described in the above-mentioned international regulations on IP. The question is, can these AI generated items (e.g. text, image, software code, music, video, etc.) be considered novel enough to represent an original work or a derivative work? The answer tends to differ across the different legal systems.

Copyright protection of AI output is definitely a hot topic in the legal sphere. More and more businesses and natural persons use AI and try to monetize the output of the AI. Copyright infringement could mean serious pecuniary sanctions on the culprits.

The most modern EU copyright legislation is the 2019 Copyright Directive. This EU directive aims to regulate and harmonize copyright protection for digital and cross-border environment. According to the Copyright Directive, literary works benefit from copyright protection, including those generated by AI algorithms, on the condition that they satisfy the standards of originality and creativity³⁶.

³³ *Berne Convention for the Protection of Literary and Artistic Works, Paris Act of July 24, 1971, as amended on September 28, 1979*

³⁴ *WIPO Copyright Treaty (WCT), Geneva, 1996*

³⁵ *Agreement on Trade-Related Aspects of Intellectual Property Rights*

³⁶ Alesia Zhuk – “*Navigating the legal landscape of AI copyright: a comparative analysis of EU, US, and Chinese approaches*”, AI and ethics, Springer Professional, 2023, page 2

At the moment, in the EU, it could be considered that the output of the Generative AI system is copyrightable if it can be proved that the human contribution to the result was determinant to the original character of the work. The original characteristic of a work implies that a human is at least partially the author and this can be proven³⁷. Such conclusion can be derived from the ruling of the European Union Court of Justice (“CJEU”) expressed in the *Painter case no. C-145/10*, where the court ruled that the work result, in order to have copyright protection, must be the “*intellectual creation of the author reflecting his personality and expressing his free and creative choices in the production*”³⁸. Same line of reasoning was reasserted by the CJEU in the *Brompton Bicycle case no. C-833/2018* where it ruled that in order for a work to benefit from copyright protection its originality must result from the manner in which the “*author expresses his creative ability in an original manner by making free and creative choices in such a way that that shape reflects his personality*”³⁹.

Yet, in the EU, it is unclear who should be considered author, the human or the machine or both. This unclarity comes from the fact that the output was generated by a machine or with the help of a machine, and not exclusively by a human. Consequently, if we cannot tell who the author is, we cannot conclude who owns the copyright.

Under the EU the standard rules are that the author of copyright is the natural person that did the work, except for the case when the work resulted within the employment relationship or when the work was commissioned. In lack of further clarifying legislative provisions, it is unclear if the author and owner of the work is the AI system provider, the user of the Generative AI, the client or the employer of the user of the Generative AI.

Also, it is unclear, in the EU at least, if we could talk about joint ownership with the Generative AI system, considering that, under current IP laws, copyright protects the expression generated by the computer program and not the idea, the processes, methodologies and principles behind the

³⁷ Despoina Farmaki, “*The player, the programmer, and the AI*”, *Journal of Intellectual Property Law & Practice*, Vol. 18, no. 12, 2023, page 923

³⁸ Case C-145/10, CJEU

³⁹ Case C833/18, CJEU

resulted work. So, in this line of argumentation it appears that if the Generative AI user's contribution was just the prompts, then the user is not owner of the copyright on the resulted work, as the prompts could be considered to be just the element behind the resulted work (idea, process, methodology, principle).

Consequently, in the EU, the user of Generative AI could be considered owner of the prompts, but not owner of the resulted work. Moreover, if the prompts were original and creative enough they could be themselves subject to copyright. Thus, the Generative AI user could be owner and copyright holder of prompts.

It is important to mention, that in the case of works made by humans assisted by Generative AI systems, the result could be copyrightable only if it can be shown that the human was in charge and made the creative choices typical for the stages of conception, execution and redaction⁴⁰. This means that if the contribution of the human in the resulted output was not determinant, then the output cannot be considered a work in the sense of the IP law, thus it is not subject of copyright protection.

Under the current EU IP legal framework what is certain though, is that even if it can be concluded, in some scenarios, that the author of the entire work result is the AI system, the AI system cannot be holder of copyrights as we do not have yet any legal framework that regulates and provides legal personality and capacity to an AI system⁴¹. Such law provisions do not exist yet and in lack of such, AI systems cannot be holders of copyright. It is yet to be seen if the legislator will consider necessary, especially from economic and financial perspective to create such regulations.

Under the circumstances highlighted above, in my opinion, the EU legislator should issue an EU regulation on intellectual property rules, in order to fully harmonize this filed within the EU and to clarify the new challenges posed to the IP current legal frame by the new emerging technologies. Full harmonization of the IP law field, within the EU is necessary due to the cross-border

⁴⁰ Hugenholtz, P.B., Quintais, J.P., “*Copyright and Artificial Creation: Does EU Copyright Law Protect AI-Assisted Output?*”, IIC 52, 1190–1216 (2021). <https://doi.org/10.1007/s40319-021-01115-0>

⁴¹ Miernicki, M., Ng (Huang Ying), I., “*Artificial intelligence and moral rights*”, AI & Soc 36, 319–329 (2021). <https://doi.org/10.1007/s00146-020-01027-6>, page 322

operations of the AI systems providers, which tend to be multinational companies that engage users from all over the world. The lack of certainty poses the risk that all AI generated content is part of the public domain.

For the moment, we can draw the conclusion that the existing EU Copyright legal frame, accompanied by contractual provisions of the parties (user and provider), as is, can accommodate and provide copyright protection to the outputs of the Generative AI systems. As shown above, also the case-law of the CJEU supports this conclusion⁴².

Likewise EU, the US also does not have in its legislation provisions that expressly tackle the ownership and authorship of the output generated by the AI⁴³. Under the current US IP landscape, the work created by the Generative AI is not copyrightable, as the AI system cannot be a copyright holder.

Regarding authorship, in the case-law of the US we have a hint that, based on US Copyright Act, only natural persons can be authors and copyright holders and not a machine. This conclusion comes from the notorious US case *Naruto v. Slater*⁴⁴, from 2018, in which a monkey took a selfie with a mobile phone. In this case, the US court ruled that the picture was part of the public domain as the monkey does not have legal capacity to be considered author and holder of copyrights. The US court reached this conclusion based on the fact that the US copyright Act says that the author has to be a human.

More recently, in 2023, US had another case that suggests that the output of the Generative AI cannot be copyrightable and reaffirms the applicability of the principle that only humans can be authors of copyrightable works. The US Copyright Office refuse to grant to the author of the comic book *Zarya of the Dawn* the copyright on the images used in the book and which were created by the author, Kristina Kashtanova, by using the Generative AI tool, Midjourney. In this case, the US

⁴² Hugenholtz, P.B., Quintais, J.P., “*Copyright and Artificial Creation: Does EU Copyright Law Protect AI-Assisted Output?*”, IIC 52, 1190–1216 (2021). <https://doi.org/10.1007/s40319-021-01115-0>

⁴³ Alesia Zhuk – “*Navigating the legal landscape of AI copyright: a comparative analysis of EU, US, and Chinese approaches*”, AI and ethics, Springer Professional, 2023, page 3

⁴⁴ Case: 16-15469, *Naruto v. Slater*, United States Court of Appeals for the Ninth Circuit, 2018 (<https://law.justia.com/cases/federal/appellate-courts/ca9/16-15469/16-15469-2018-04-23.html>)

Copyright Office recognized copyrights only on the text of the book and on the selection, coordination and organization of the written and visual elements of the book⁴⁵. Therefore, the images used in the above-mentioned book are part of the public domain.

It can be concluded that in the US, at least in the current state of affairs, the principle that only humans can be authors and benefit from copyright protection can be considered the guiding principle applicable to the output of AI systems as well. Thus, in the US the Generative AI output is not copyrightable and it is part of the public domain.

Under the Chinese legal system, things seem to be a bit more clearer. It is considered that the author of the prompts (the AI system user) is also the author and owner of the resulted work, thus the copyright holder⁴⁶.

To sum up, it is of relevance the nations of the world issue and ensure sufficient and harmonized legal basis so that all copyright scenarios are covered. By regulating and offering predictability to the legal standing of the IP resulted from usage of Generative AI, on one hand, the fundamental human right to the protection of the intellectual property of humans is reaffirmed and reconsolidated. On the other hand, the economic benefits brought by the new technologies are fostered, as legal uncertainties can deter investments and business development.

Patentability of AI Algorithms and Innovations

It is clear that AI systems can produce outputs with outstanding novelty characteristics. But, can the AI system obtain the status of inventor and be holder of a registered patent? The answer to this question, to date, unanimously, it is a definitive no. The patent laws of the world recognize only humans a possible inventors. The machines are incompatible with the status of inventors.

⁴⁵ Maura R. Grossman, Paul W. Grimm, Daniel G. Brown, and Molly (Yiming) Xu, “*The GPTJudge: Justice in a Generative AI World*”, Duke Law & Technology Review, Vol. 23, 2023, page 29-30

⁴⁶ Alesia Zhuk – “*Navigating the legal landscape of AI copyright: a comparative analysis of EU, US, and Chinese approaches, AI and ethics*”, Springer Professional, 2023, page 6

The AI systems cannot achieve the status of inventors and also, most likely it is not feasible, in the future for the legislator to issue such rights to AI systems, because, unlike humans the AI system cannot own property and cannot be party in a labor contract⁴⁷. So the status of AI systems as inventors is incompatible with the basic law principles, as AI systems do not have legal personality.

The European Patent Office recognizes 3 scenarios when AI is connected to an invention, namely: (a) inventions made by humans when the AI usage was limited to the verification and validation of the result; (b) inventions in which case the human contributed by identifying the problem and the AI system was used to identify the solution to the problem; (c) inventions fully made by the AI system, which entail that the AI identified a problem, proposed the solution and there was no contribution from a human⁴⁸.

The inventions from points (a) and (b) above could be patentable, should the human input result in a sufficiently novel output. However, in the case of the invention from point (c) above, no patent can be registered due to the lack of human contribution.

So far many computer scientists are of the opinion that the existing AI technology is not yet capable to invent autonomously⁴⁹.

Aside from the human contribution and novelty requirements, necessary for obtaining a patent, another obstacle in the way of AI systems to be holders of patents in the EU is the fact that the European patent office requires in its patent application forms that a human inventor be named.

One controversial case happened when there was an attempt to get an AI system (DABUS⁵⁰) registered as inventor. DABUS is an AI System which allegedly invented 2 novel products: a food

⁴⁷ Dr Noam Shemtov, “*A study on inventorship in inventions involving AI activity*”, 2019, page 6 (https://link.epo.org/web/Concept_of_Inventorship_in_Inventions_involving_AI_Activity_en.pdf)

⁴⁸ European Patent Office, “*Artificial Intelligence*”, 2023, (<https://www.epo.org/en/news-events/in-focus/ict/artificial-intelligence>)

⁴⁹ WIPO Conversation IP and Frontier Technologies, AI Inventions, 2023, page 4, ([*WIPO Conversation – AI Inventions](#))

⁵⁰ AI system: Device for the Autonomous Bootstrapping of Unified Sentience

container constructed using fractal geometry, which enables rapid reheating, and a flashing beacon for attracting attention in an emergency⁵¹.

DABUS, via its “handlers”, made attempts at several patent registration offices around the world (EU, US, New Zealand, Korea, etc.) to be register as inventor of the above-named products. So far all patent offices, but South Africa⁵², have rejected the request, as DABUS was a machine and not a human. Several litigations on this subject are ongoing, as the decisions of the patent registration offices have been challenged in court.

V. Contractual and regulatory liability in the case of Generative AI tools

Generative AI tools captivate us and increase our potential in delivering work of enhanced quality. The rapid processing of information and the user-friendly interfaces, make it tempting to incorporate Generative AI in all aspects of life and of the business.

The outputs of the Generative AI or even the prompts given by the user have the potential to trigger contractual and legal liability issues, between the parties and most often towards third parties (e.g. customers, employer, business partners, etc.).

In each case a Generative AI tool is used, a contract is unfolding. The contract could be represented by the Terms and conditions published on the website of the Generative AI tool being used. Also, the contract could be represented by an actual bilateral written agreement, in the case a particular Generative AI tool supplier was contracted by an individual or by a company. Thus, there always is a contractual framework that sets rights, obligations and limitations for the parties.

The contractual framework complements the rights and obligations set by the relevant and incidental regulations.

⁵¹ Wikipedia The Free Encyclopedia, “DABUS”, May 2023, (<https://en.wikipedia.org/wiki/DABUS>)

⁵² European Patent Office, “Artificial Intelligence”, 2023, (<https://www.epo.org/en/news-events/in-focus/ict/artificial-intelligence>)

Aside from the newly emerged and the upcoming regulations on AI technologies (e.g. EU AI Act), it needs to be realized, that the relationship between the parties (user of the AI tool and provider of the AI tool) is governed by other regulations as well. Such are the regulations pertaining to the more classical law fields, among which notable are: the commercial law, the intellectual property law, data protection regulations, etc.

Confidentiality of the data is one of the aspects that can be problematic for the user of the Generative AI tool (legal entity or natural person) or for the employer of the user. It is important for the user to understand the technology behind so to know how much data can reveal in order to not cause any data breach.

Additionally, it is paramount that the Generative AI tool provider explains in sufficient detail and in an understandable way how the technology works, so that the user can make informed decisions on the tool usage. Such action from the tool provider could prevent **data breaches**. This is one of the reasons why, the OECD, for instance, has established transparency and explainability as one of the main principles for ethical usage of the AI.

Especially in the case of the free of charge publicly available AI tools and in the case of the not-customized AI tools to the particular needs of the client, it can be the case that, the data inserted by the user as prompts, in the end it gets further used by the tool as data set for further training of the tool. It may happen also that the respective data resurfaces in some way in outputs generated by the AI tool as outputs to other users. If the respective data enclosed also personal data, then there might be a **personal data privacy** breach, thus the data protection regulations become applicable. The data protection laws, such as the EU's data protection regulation could result in the user or the service provider being fined by the relevant data protection authorities.

In the case of business or organizational data, the result can be the accidental and **unauthorized disclosure of know-how and trade secrets**. This could entail a breach of previously concluded non-disclosure agreements by the user, by the employer of the user with its business partners or even by the client of the user with its business partners. Such scenario could result in commercial claims for substantial damages.

Should the prompts enclose data containing innovative and patentable information (e.g. a new chemical formula), the data breach could result in the respective information becoming public and in the impossibility to patent it or in it being “stolen” by the competitors. In such scenario, the user or the employer of the user will be in impossibility to prove the inventor status.

Hence, the users of AI tools should make sure that they do not use in their prompts confidential data. Alternatively, the users should make sure that the AI tool they use is fully customized for the users’ needs of privacy.

Mitigation of the confidentiality breach risk can be ensured if the user and the AI Generative tool expressly agree on this in a negotiated bilateral contract.

Another scenario is the one in which the user is not in a position to be able to negotiate with the Generative AI system provider. In such case the contract is represented by the unilateral Terms and conditions of the Generative AI tool provider. If the provider does not explicitly guarantee in the Terms and conditions that it ensures confidentiality, the user can presume that no confidentiality guarantee exists and should act accordingly. The legal liability risks are mitigated if the user refrains from using confidential information in the prompts it gives to the system.

It must be observed, that the confidentiality breach risk, in principle, rests with the user of the Generative AI system. If the Generative AI tool provider did not expressly guaranteed confidentiality, then, in case of a confidentiality breach incident, the user cannot hold the Generative AI tool provider liable in any way. Hence, in relation to its business partners and collaborator, the user faces the liability consequences alone and on its own.

Another aspect that could trigger liability issues for the user of the Generative AI tool is the **ownership on the data**. Unless explicitly mentioned in the bilateral agreement or in the unilateral Terms of use that the user has the ownership of the data used as prompts or on the data generated as output by the AI system, as per the user’s instructions, it can be determined that the user has no ownership on the respective data.

This means that the user, by its prompts, gave to the Generative AI tool provider data. This means a transfer of ownership on the data took place. The AI provider will be at total liberty to use the respective data.

Such outcome can be mitigated if the contract corresponding to the Generative AI tool services expressly stipulates that the user retains ownership on the data and it acquires ownership on the output generated by the AI. In lack of such explicit provision, the only protection the user has is to refrain from sharing with the AI data that it is not in the public domain.

Copyright is another notable issue. Should the Generative AI provider not expressly guarantee in the contract that the data exchanged as prompts and output is confidential and not used further by the tool as data sets for further training and development, it can be presumed that no copyright protection exists. Thus, if the prompts of the user contain expressions of copyrightable ideas, such copyrights are at risk to be lost. The tool will recycle the prompts and the outputs to other users. The prompts and the outputs will be deemed part of the public domain.

For instance, if a photographer uses the Generative AI tool to enhance his photographs, he could risk that the original photographs, plus the AI enhanced versions of the photographs become part of the public domain. Therefore, the photographer will not be able to protect and prove the copyright on the photographs.

Such outcome could be mitigated if the photographer uses an AI Generative tool for which the contract expressly provides guarantees that ensure such protection (e.g. guarantee that the data provided by the user will not become part of the data sets the AI tool operates).

On the side of the Generative AI provider, one of the most notable aspect that could trigger liability is the **cybersecurity**. In general, the different nations and international organizations consecrated the standard that the AI tool providers must ensure state of the art levels of cybersecurity. This means that cybersecurity represents a statutory obligation on the Generative AI provider's side, which cannot be waived contractually in relation to the users. Hence, contractual provisions meant

to waive such cybersecurity obligations would be null and void, due to their illegal and/or unethical characteristic.

To illustrate the importance of the cybersecurity, the security breach⁵³ suffered by ChatGPT in March 2023 is a relevant example. ChatGPT experienced a data breach which allowed some users to see the titles of the conversations other users were having with the chatbot and which resulted in a data leakage of users' e-mail addresses, payment related information⁵⁴.

Contractual liability specific to the **labor relations** could also occur in relation to the Generative AI usage. Usage of Generative AI tools (e.g. Chat GPT, Midjourney, etc.) unauthorized by the employer, by an employee while execution tasks at work by employees could cause harm to the employer (e.g. data breach, copyright infringement, etc.). For scenarios as this, the labor liability of the employee towards the employer will be settled based on the applicable labor laws. Aside from a civil damages claim, the employer could also launch against the employee a disciplinary inquiry and apply disciplinary sanctions as well.

Liability for **malpractice** can be a consequence of the usage of Generative AI tools. Here we consider both, contractual and, in severe scenarios, even criminal liability.

Generative AI, as convincing as it can be, many times, in terms of the generated outputs, cannot replace the human reasoning and the need for humans to be highly skilled in the professional fields they activate in. The users of the Generative AI systems need to be cautious with the usage of the output received from the AI tool and double-check it. Human oversight is essential as one of the limitations of the Generative AI systems is the fact that they can hallucinate.

To give an example, a financial consultant or a lawyer, who does not personally check the plausibility and the accuracy of the output delivered by the Generative AI, could risk giving wrong

⁵³ Wikipedia The Free Encyclopedia, “*ChatGPT*” (<https://en.wikipedia.org/wiki/ChatGPT>)

⁵⁴ Open AI, “*March 20 ChatGPT outage: Here’s what happened*”, March 24th 2023, (<https://openai.com/blog/march-20-chatgpt-outage>)

advice to their clients, causing them harm. In such event, the financial consultant or lawyer, could be obliged to cover the damages caused to their clients by malpractice.

VI. Case Study: Comparative Analysis of Liability Provisions based on the Terms and Conditions of popular Generative AI Tools (ChatGPT, Gemini, GitHub Copilot)

The next part of this paper presents the findings of an analysis of the Terms and Conditions of some of the most popular and largely available Generative AI Tools, namely Chat GPT, Gemini and GitHub Copilot.

ChatGPT⁵⁵, developed by Open AI and launched in November 2022, and **Gemini**⁵⁶, developed by Google and launched in December 2023, are competing products in the form of chatbots, based on large language models. These chatbots enable their users to obtain information, data, suggestions, etc., probably on any topic, by chatting with the Generative AI tool (chatbot) via text messages. Basically, the interaction with the chatbot unfolds similar to a conversation in written form.

ChatGPT and Gemini can produce an immense pool of output types, based on the instructions of the users (prompts), such as: write poems, songs or essays, translations into various languages, summaries, generate ideas for different topics (e.g. ideas on how to structure business plans or letters of application, contract templates, answers to general knowledge questions, etc.), answer test questions.

GitHub Copilot⁵⁷, developed by GitHub and Open AI, is a code completion tool meant to assist software developers. GitHub Copilot generates software code suggestions based on the prompts of the software developers and it is based on the large language model technology.

All the abovementioned Generative AI tools are available for the public at large. They come in versions that are free of charge or on subscription basis. They have in common that the users must

⁵⁵ Open AI, “*Terms of use*”, November 14th 2023, (<https://openai.com/policies/terms-of-use>)

⁵⁶ Google, “*Generative AI Additional Terms of Service*”, August 9th 2023, (<https://policies.google.com/terms/generative-ai>)

⁵⁷ GitHub, Inc., “*GitHub Terms of Service*”, November 2020, (<https://docs.github.com/en/site-policy/github-terms/github-terms-of-service>)

comply with the mandatory and non-negotiable Terms and Conditions posted on their websites. In rare cases, probably, such as in the situation of big corporations that have the financial means to acquire custom made versions of the tool, negotiation of contract terms and conditions is feasible to some extent.

Hence, the contractual basis between the users and the AI tools is represented by the respective Terms and conditions/Terms of Service (“**T&Cs**”) published on the websites. These T&Cs are made reference to below in this chapter of the paper.

To begin with, it must be noted that all three AI tools, in their T&Cs, aim at ensuring that the **applicable law** is the law from the state of California, US, and the place of **jurisdiction** is San Francisco, with the exception of the cases where the conflict of law related provisions trigger a different applicable law and jurisdiction.

In the case of the European Economic Area (“**EEA**”) users, reference to the EU consumer protection laws and procedure is made. The EEA consumers, also have, in addition, the possibility to lodge complaints to the national and EU **consumer protection** authorities. These users can address their complaints to the alternative dispute resolution body, online, through the European Commission’s Online Dispute Resolution (ODR) Platform. This indicates that the EEA consumers have a larger degree of protection and enforceability of their rights.

Chat GPT, Gemini and GitHub Copilot took into account the **data protection** regulations, including the EU’s General Data Protection Regulation, and have published the necessary data protection information notices for the users. At least at declarative level, the users data privacy and data protection rights should be safeguarded and the users are informed on the data processing types that can occur. The users from EU and EEA are provided with a distinct and customized privacy notice.

In order to ensure the adequate data protection requirements compliance, Chat GPT, Gemini and GitHub Copilot have set different data controllers (subsidiaries pertaining to the group of company that owns each AI tool), depending on the location of the users. For instance, in the case of the EEA users the Chat GPT data controller is established in Ireland, while in the case of GitHub Copilot the data controller is established in the Netherlands (GitHub Copilot). In the case of the non-EEA users the data controller is established in California, US.

The three AI tools have imposed on the users **minimum age restrictions** (18 year old, or under 18 years old if parental consent is given, as the case may be) and have deferred to the users any liability in the cases when the users use the AI tools for illegal, unethical or harmful purposes (e.g. usage of prompts or output to commit crimes, instigate to hatred, etc.).

ChatGPT and Gemini expressly mention that the user should not use in their prompts **illegal or unethical content** and also prohibits the user to use the Generative AI output in such purposes. If the user is detected by the Generative AI service provider as using the tool for illegal or harmful purposes, the user's account can be suspended or terminated. In order to determine this, the service providers monitor the content entered by the users and the outputs. Such monitorization takes place on anonymized data, as for the data protection and privacy rights of the users to be ensured.

With respect to **data ownership** and **intellectual property rights** it can be concluded that ChatGPT, Gemini and GitHub do not become owners of the prompts of the user and of the output generated by the AI and received by the users. Certainly, the service providers do not offer any guarantee that third parties have no rights on the output generated by the AI.

According to the T&Cs, the user is the owner of the prompts and of the Generative AI output, provided that no third parties claim any rights on the information and data comprised by the prompts or the outputs.

The tools do not guarantee any copyrights to the users and even state that the same outputs can be given by the Generative AI tool to other users. Thus, there is absolutely no way for the users to count on obtaining or preserving copyrights guarantees from the Generative AI tools.

In consequence, the contractual terms (the T&Cs) waive any liability on the Generative AI suppliers' side with respect to the outputs provided to the users. All liability on the data rests with the users. Moreover, the T&Cs warn the users against using **confidential or sensitive data** as prompts.

The users ought to be well informed on the status of the data they use as prompts. They need to realize beforehand and be sure that their prompts do not enclose confidential information. Otherwise, simply by sending a prompt to ChatGPT, Gemini or Github Copilot, they could easily break the non-disclosure and confidentiality agreements in place with their employers, customers or suppliers.

If we look at the example of a software developer who uses GitHub Copilot to enhance his/her coding abilities, based on the T&Cs, it results that the code suggestions received by the software developer could be code on which third parties have copyrights. The software developer has no way of determining if the code is open source code or not. Since it does not know the source of the code because the Generative AI tool does not provide it, the software developer cannot find out what would be the license conditions for the usage of the respective code.

It can happen that the code provide by Github Copilot is considered open source if used for private and personal purposes by natural persons. Also it can happen that the same code, when incorporated in software products meant to be comercialized, becomes subject to license payment obligations in order to be lawfully used.

If as next step the software developer uses the GitHub Copilot code and incorporates it in products meant to be comercialized, the result could be infringement of third parties licences. Such action could expose an employer or customer of the software developer to copyright infrindgement and damages reimbursement claims and litigations.

What is more, although the users of ChatGPT, Gemini and GitHub Copilot are owners of the data, the Generative AI service providers reserve the right to use the data, in the background, in order to improve their services and the tools' capabilities or to conduct research activities. This is another very good reason that should determine the users to not use confidential or sensitive data.

Of course, the service providers give the users the posibilidad to explicitly opt out and not allow the tools to use their data for tool improvement or further development, but if the user chose to do this, they are warned that the Generative AI tool, in regards to them, may provide services of lesser quality.

ChatGPT, Gemini and GitHub Copilot **do not offer any guarantee on the accuracy, completeness, quality and reliability of the outputs** of the Generative AI. Based on the T&Cs the user is responsible for the usage of the outputs, including for vetting if the output is error free, accurate and plausible from technical, professional and operational point of view. Hence, the users or the third parties are not able to hold ChatGPT, Gemini or GitHub Copilot responsible for the validity of the output.

The three AI service providers have taken measures to ensure compliance with the **export control** regulations. The users are prohibited from using the tools to create content for third parties from countries where sanctions have been imposed (e.g. Russia, Iran, etc.).

The T&Cs waive the AI service providers' liability towards the user for scenarios such as when the service is temporarily unavailable or suspended. This means that the users cannot hold the service providers accountable if the **service is unavailable** at times.

To sum up, the service providers of the abovementioned Generative AI tools settle via the T&Cs the most pressing legal issues posed by the usage of Generative AI and which are not settled expressly by any piece of legislation to date. These are the issues of data ownership, intellectual property and data privacy.

The service providers are transparent about the fact that all responsibility and liability on the data and information exchanged between the user and the AI tool rests with the user. Transparency is also provided on the fact that the service providers use the users' data for training and further development of the tool and that no confidentiality can be guaranteed to the users.

VII. Conclusions

Generative AI represents the trigger for a superior digital revolution. If in the industrial revolution era the major change was the automatization of physical labor, it can be said that the digital revolution era, thanks to the Generative AI technology, brings the automatization of the human intellect.

This dissertation thesis aimed to explore and expand the current legal challenges posed by the usage of Generative AI tools. It explored aspects such as the main contractual, intellectual property, ethical and data compliance issues and proposed strategies and recommendations for risk mitigation. Also, it provides a brief look into some of the AI regulations that exist in the EU, US and ASIA (China, Japan, United Arab Emirates).

First and foremost, one of the key findings is that more and more countries hurry to issue regulations specific for AI systems, as they acknowledge the potential and the challenges posed by

these emerging technologies to the human rights and freedoms. The big economies closely monitor the legislative plans of their competitors as to speculate every advantage they could get in the race for AI world leadership. The legislative landscape has the power to boost or decrease innovation research and development and economic advancements, so it needs to be very well thought through.

By far, the EU, has the most detailed, restrictive and comprehensive legislative plan. The EU's vision is to become a benchmark in terms of setting standards for AI systems development and usage. The future is yet to reveal if the EU's extra cautions and over-regulatory approach was the best strategy to ensure the balance between the protection of the human rights, the development and innovation of new Generative AI systems and the financial interest of the Big Tech players.

By comparison to the EU, the other countries have issued more basic, less complex and less restrictive regulations on AI. In many cases the regulations are in the form of recommendations and guidelines. This is why, many countries managed to issue and have in place AI regulations sooner than the EU.

Global consensus exists on the fact that the AI field needs to be regulated. The only thing that differs among the nations is the aspect of how detailed such regulations need to be as to serve their purpose.

Moreover, it seems that more and more consensus is reached over the fact that there have to be laws that oblige the AI developers to develop the AI systems so that, by design, they mark the content generated by the AI. The distinction between the human generated content and the AI generated content needs to be ensured and documented.

In this regard, the EU's AI Act expressly imposes on the providers the obligation to ensure that the AI system marks, in a machine-readable format the content that is generated or manipulated by the AI system in an artificial way ("watermark"). Similarly, also China and the US recognized the importance of watermarking. Traceability of the generative AI content is a critical in order to

ensure a trustworthy environment and to identify the source and origin of the data used by the AI system.

Moreover, in my view, the practice of “watermarking” will be essential and inherent to attain compliance with the standards of ethical usage of Generative AI.

The focus now seems to be on the issuance of regulations specific and tailored on AI systems. One must not lose sight of the fact that, aside from the newly AI regulations, the AI systems, in all the countries of the world, are bound to comply with the in force and pre-existent laws such as: intellectual property laws, labor law, environmental laws, product liability laws, data protection laws, antitrust laws, cybersecurity laws, consumer protection laws, etc.

Business wise, it is very important for the companies to be familiarized with the legislation landscape on AI in their countries of targeted consumers and clients. This, as to know, one the one hand, how to comply with the legislation of the countries they activate in, and, on the other hand, as to know how to adjust and negotiate their contracts and terms and conditions, throughout the entire supply and distribution chain.

Secondly, the ethical usage of AI is another topic of concern in the legal sphere. Organizations such as UNESCO and OECD have defined the main ethical principles that have to be guaranteed by the AI systems providers and deployer. Some of the main ethical principles, worldwide recognized are: human-centric AI, accountability, transparency, safety, sustainability, data and privacy protection, non-discrimination, robustness, etc.

In my belief, it can be concluded that the attention given by OECD and UNESCO to this topic strongly proves that it is a subject matter of major concern for all the nations and all the Big Tech players.

Regarding the implementation and upholding of the ethical principles in the day to day business, within Chapter III of this paper, several recommendations were made. Such include: usage of specific terms and conditions and contractual provisions which are sufficiently understandable,

informative and explainable; request of proofs that the AI system is compliant with the state of the art in the industry (e.g. CE marking, certification, audit systems, etc.).

Thirdly, another conclusion of this thesis is that, for the moment, a big downside of Generative AI is that the output of the Generative AI system is not reliable in terms of intellectual property. Generative AI outputs can be highly prone to incidents such as plagiarism, copyright infringement or patentability issues.

With respect to copyright, there is no uniform legal background. Thus, as I see it, this will be a big challenge for the businesses that conduct international operations as, in general, they need, from operational perspective, to define their processes and systems as uniform and standardized as possible, at cross-border level.

In the case of EU, it can be concluded that the existing IP legal framework can accommodate copyrights for the output of the Generative AI systems, provided that it can be proven with clarity that the human contribution to the result was determinant to the original character of the work. Yet, the dilemma if humans and AI systems can be or should be co-authors remains open.

On the other hand, in the US, the stance on copyright is more established. Under the current US IP regulatory landscape, the work created by the Generative AI is not copyrightable, as the AI system cannot be a copyright holder.

In China, the debates were settled by the incorporation of the rule that the author of the prompts (the AI system user) is also the author and owner of the resulted work.

With respect to patentability, the conclusion is that, in general, worldwide, there is consensus that only humans can be inventors. This is mainly due to the fact that the machines do not have legal personality.

Under the circumstances highlighted above, in my opinion, *de lege ferenda*, the EU legislator should issue an EU regulation on intellectual property rules, in order to fully harmonize this filed

within the EU and to clarify the new challenges posed to the IP current legal frame by the new emerging technologies. Full harmonization of the IP law field, within the EU is necessary due to the cross-border operations of the AI systems providers, which tend to be multinational companies that engage users from all over the world. The lack of certainty poses the risk that all AI generated content is part of the public domain.

Furthermore, it is of relevance the nations of the world issue and ensure sufficient and harmonized legal basis so that all copyright scenarios are covered. By regulating and offering predictability to the legal standing of the IP resulted from usage of Generative AI, on one hand, the fundamental human right to the protection of the intellectual property of humans is reaffirmed and reconsolidated. On the other hand, the economic benefits brought by the new technologies are fostered, as legal uncertainties can deter investments and business development.

In my view, *de lege ferenda*, the legislators should focus on preserving the current legal rules that ensure that only humans have legal personality and thus the right to hold property. Creating the possibility for machines to hold legal personality could become very dangerous for the humankind. The humans would lose the uniqueness of intellectual power. Also, by granting legal personality to machines, more possibilities for frauds may be fostered.

Fourthly, on the contractual and regulatory liability in the case of usage of Generative AI tools, it can be concluded that the outputs of the Generative AI or even the prompts given by the user have the potential to trigger contractual and legal liability issues, between the parties and most often towards third parties (e.g. customers, employer, business partners, etc.).

The contractual and regulatory liability needs to be analyzed on two levels. One level is the relationship between the Generative AI system user and the provider of such systems, which in general, is described in the contract or in the unilaterally imposed terms and conditions.

The other level, is the relationship between the user of the Generative AI system and its partners (e.g. customers, suppliers, business partners, third parties which are copyright holders, etc.), with regards to which special attention needs to be given to aspects such as confidentiality of data,

copyrights, data protection and privacy, unauthorized disclosure of know-how and trade secrets, malpractice, etc.

All the legal risks and uncertainties can be mitigated by negotiating and enclosing in the contract with the AI provider of the necessary clauses, or, in situations when no contract negotiation is feasible, by the user being carefully informed on and following the content of the unilaterally imposed terms and conditions.

Last but not least, Chapter six of this thesis focused on a case study on a Comparative Analysis of Liability Provisions based on the Terms and Conditions of popular Generative AI Tools (ChatGPT, Gemini, GitHub Copilot).

The key findings are that the service providers of the analyzed Generative AI tools settle via the T&Cs the most pressing legal issues posed by the usage of Generative AI and which are not settled expressly by any piece of legislation to date. These are the issues of data ownership, intellectual property and data protection and privacy.

With respect to data ownership and intellectual property rights it can be concluded that ChatGPT, Gemini and GitHub do not become owners of the prompts of the user and of the output generated by the AI and received by the users. Certainly, the service providers do not offer any guarantee that third parties have no rights on the output generated by the AI.

According to the T&Cs, the user is the owner of the prompts and of the Generative AI output, provided that no third parties claim any rights on the information and data comprised by the prompts or the outputs.

The service providers are transparent about the fact that all responsibility and liability on the data and information exchanged between the user and the AI tool rests with the user. Transparency is also provided on the fact that the service providers use the users data for training and further development of the tool and that no confidentiality can be guaranteed to the users.

All in all, it can be concluded that on the current state of affairs there is sufficient legal framework in order to ensure the safe usage of AI at a high level. The key for this is that the users are aware of the legal implications and that, when necessary, proceed to refrain themselves from using the AI in the case when such usage could result in legal uncertainties or infringement of the rights of others.

Also, on the side of the AI systems providers and developers, also exists sufficient legal framework as to ensure the full respect of the fundamental human rights. The only issue I see is the balancing of the economic interests and the profit orientation with the rights of others.

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