AI IN BUSINESS, ECONOMY AND INTELLECTUAL PROPERTY LAW: CHALLENGES, OPPORTUNITIES AND RISKS

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Abstract

We intend to identify the role of AI technologies in business, economy and legislation challenges. Conceptual and descriptive research methodology was employed to show the role of AI technologies in the areas listed above, taking into account dynamically changing international relations on a global scale. In the paper we comment emerging trends of deglobalization in rivalry with still dominant world-wide globalization tendency. These findings imply a new AI paradigm to face challenges that go far beyond the today needs and expectations. We argue for a more efficient interaction between humans and computers, so that potentially harmful risks resulting from the uncontrolled technology use may be reduced, especially in the sensitive areas discussed in this paper. Our research framework permits to explain the omnipresent AI influence on business, public sphere, as well as legislation theory and practice.

Keywords: AI**,** deglobalization, business, legislation theory and AI practices, AI opportunities and risks, low-resourced languages.

1. Introduction

The title of this paper refers to the new phenomena in the area of technology and its social and legislative environment, centered around the strong contrast between deglobalization and globalization currently occurring. The advantages and disadvantages of AI use in business and in changing organizations will be discussed. In particular, AI's effects on public administration, public security, and military conflict will also be discussed. All these require further intensive research and appropriate funding to ensure that the use of AI technologies in both public and business spheres will be safe, secure, and efficient in the future. Furthermore, the use of AI in business and dynamically developing organizations in areas where populations using languages with fewer resources predominate should be given special attention and merits further, in-depth research.

One of our main objectives is to review the main directions of changes expected soon. Particular emphasis is put on the balance of profits and risks for selected cases.

2. Methodological aspects

The observation of new phenomena and emerging trends in economic, social, political, legal and other fields is accompanied by the evolution of the research apparatus needed to improve the effectiveness of forecasting of the development of key areas of human activity in the medium and long term. This task will require the use of a methodology based on both empirical research (descriptive research methodology) and theoretical research (conceptual research methodology). In addition, organizing the knowledge acquired through observation of phenomena in a way that allows analytical derivation of practical conclusions from this knowledge is desirable (see, e.g., the recent reflection by Olayemi Jemimah Aransiola (2023) titled *What is Conceptual Research? Definitions, Framework, Pros & Cons*).

3. Technology-related global threats

A factor that is becoming increasingly important is the growing risk of conflict going beyond the sphere of narrowly understood business and spreading to the entire sphere of human existence.

While average people still perceive today's conflicts in terms of traditional threats, the factor causing the upcoming change may be new technologies that at first glance seem distant from current warfare practices.

These technologies, for the most part, were created for socially acceptable and (generally recognized as) desirable purposes. Examples are robotization, AI and communication technologies. The positive aspects of progress, whether within these areas, or in synergy between them, have been identified and discussed for years, while risks and threats were taboo. Meanwhile, the threat becomes apparent when, in the course of ongoing conflicts, parties look for opportunities to use new technologies to gain an advantage over their rivals. This situation is driving a

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technological race, often on a global scale. Technology triggered threats are especially obtrusive and may cause significant difficulties for the population of speakers utilizing less resourced languages.

In the border zone between the AI technology field and the domain of inter-agent communication the situation could be viewed in a specific way. Inter-agent communication at all levels has a fundamental impact on the development and stability of social life, including business. Its susceptibility to disturbances makes it possible to see how modern communication media may create a dangerous alternatives to the traditional operations of intelligence services of rival parties, allowing one or more of them to gain a military and economic advantage.

In this regard, the way to gain a business or military advantage may be the clever generation and dissemination of fake news (practiced in a primitive form already during World War II and even before), and the use of operational techniques to detect and neutralize them. Human Language Technologies may, in fact, become a means of advancing dangerous political agendas. Specifically, when the recipients of broadcasts are humans, techniques developed around Language Technologies are effective tools for both generating and disposing of non-factual claims and ideas.

In the last few years, the development of AI Technologies has accelerated spectacularly. This has meant that the previously reported concerns about AI have gone beyond the traditional fears related to the potential threat to the military balance between superpowers. It has begun to penetrate the sphere of everyday life and, consequently, states' policies. The spread of knowledge about the successes of AI tools has gained a media dimension, while at the same time one observes a general lack of knowledge about the nature of the limitations of proper AI technologies. Meanwhile, a potentially harmful public belief is spreading that AI technologies are a panacea for everything that traditional scientific methods cannot cope with. Similar expectations regarding AI apply to some pressing economic needs, especially where existing scientific methods have not yet been able to provide satisfactory solutions. Moreover, this situation is reflected in everyday language, where we observe the anthropomorphizing and subjectification of AI technology.

The currently fashionable linguistic usage, in which phrases such as *"AI will heal the patient"* are not objectionable, should be treated as a symptom of warning against the unauthorized attribution to AI systems of abilities and competencies traditionally considered human-specific.

An example of bad practices observed in scientific communities whose mission is (or should be) to spread scientific knowledge are the increasingly frequent cases of using AI systems such as ChatGPT to generate texts intended for publication in scientific journals. The text creation technologies in question require significant use of non-deterministic methods proper to artificial neural networks, as well as large text resources, extensive knowledge bases and very powerful and expensive computing power. As a result, the AI-generated texts, even in cases where they appear to have been consciously edited by a human, cannot be considered as expressing original human thoughts, but at most as their substitutes. The growing popularity of this type of practices is evidenced by the journals' editorial committees refusing to publish papers that contain texts generated using advanced AI techniques. Similar objections are the subject of a lively discussion in artistic circles, among others regarding the automatic generation of musical lyrics and artistic creation.

A few years ago, media reported on the threat of dissolution of the OpenAI company. This centered on controversy between Ilya Sutskever, Chief Scientist of OpenAI, and Sam Altman, CEO of Open AI, co-authors of the successful ChatGPT project, regarding the assessment of threats to global security from uncontrolled AI technologies. Both Sutskever and Altman have identified the same threats but have disagreed on the company's business policies. Ultimately, in an atmosphere of scandal, in 2023, Sam Altman left his position at OpenAI for Microsoft, but soon returned back to the OpenAI.

4. Legal aspects of AI technologies and related global threats

In July of 2024, Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence and amending Regulations (EC) No 300/2008, (EU) No 167/2013, (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1139 and (EU) 2019/2144 and Directives 2014/90/EU, (EU) 2016/797 and (EU) 2020/1828 (Artificial Intelligence Act) was published (https://artificialintelligenceact.eu/the-act (access 14.11.2025)).

In accordance with recital 1 of the preamble, "the purpose of this Regulation is to improve the functioning of the internal market by laying down a uniform legal framework in particular for the development, the placing on the market, the putting into service and the use of artificial intelligence systems (AI systems) in the Union, in accordance with Union values, to promote the uptake of human centric and trustworthy artificial intelligence (AI) while ensuring a high level of protection of health, safety, fundamental rights as enshrined in the Charter of Fundamental Rights of the European Union (the 'Charter'), including democracy, the rule of law and environmental protection, to protect against the harmful effects of AI systems in the Union, and to support innovation (…)".

Artificial intelligence technologies create previously unknown problems also in the field of Intellectual Property (IP) Law. Recently, a discussion has arisen as to whether creations generated by artificial intelligence can be classified as works and, consequently, whether artificial intelligence could be considered a creator. A similar issue also arose in the field of patent law (see e.g. (Abbott, 2019), (Walsh, D., 2023) and (Blaszczyk, M., 2025)).

Currently, there are already disputes in which courts must decide issues concerning the authorship of works generated

by AI. One example is the decision of the US courts in the case of August 18, 2023 S. Thaler v. S. Perlmutter, Register of Copyrights and Director of the United States Copyright Office, No. 22.1564 (BAH), 687 F. Supp. 3d 140, D.D.C. 2023 (see also Blaszczyk. M., ibid). The court stated that "copyright protects only works created by humans" and that "human authorship is a fundamental requirement of copyright law." The court also stated that "copyright has never extended to protect works generated by new forms of technology operating without human involvement."

It can be expected that new forms of protection will have to be developed in the coming years.

5. AI potential applicability and risks

5.1. Advantages and disadvantages of AI

A new way of perceiving the role, advantages, and disadvantages of AI in the business and administrative environment, referred to in the title of this work, requires examining the situation in the sectors that are most susceptible to the use of the latest trends in the use of AI technology.

Hereby, we provide a brief overview of the selected application areas in two specific dimensions, which are:

1) the possibility of achieving significant desirable added value (within an acceptable time) resulting from the use of AI technology,

2) the risk of critical undesirable effects resulting from the use of AI technology in the current state of knowledge.

The overview covers the following areas (in alphabetical order): business, security, health care, management of economic processes, management of production processes, marketing management, military conflicts, public administration, public security, quality control, quality of life, and stability of legislative practices in rule-of-law states (non-exhaustive list).

According to Odrakiewicz (2016, 2018), AI implementation in public services cannot in any way exclude vulnerable people's access to health, social, employment, safety and other services offered by governments. This research has highlighted the crucial role of university education, including integrity and anti-corruption education, taking into account ethics training and corruption prevention training (at various levels, in all university faculties and higher education institutions). The results of these studies highlighted the fact that when implementing new technologies aimed at improving the management of economic activities and production, it is crucial to avoid the phenomenon of social exclusion.

5.2. Significant desirable added value

Among the above-mentioned areas of application, the following are the most promising, in a reasonable time, for obtaining significant beneficial results as an effect of the application of AI-based technologies: 1) management of business processes, 2) management of production processes, 3) quality control, 4) terrorism prevention. However, the use of AI technologies in legal procedures seems to be one of the most challenging tasks.

The openness observed in the use of AI technologies and methods in these fields (very susceptible to using AI intensively) may be explained by the fact that desirable and sometimes spectacular benefits can be achieved often with relatively low expenditure, e.g., in optimizing customer-supplier relationship models (1), in simplifying information flow management in a company or corporation (2, 3), and in identifying threat situations and criminal structures (4). Examples abound in professional literature, media reports and specialized portals. Successes in these areas are well received by the public because of their practical value, the relative simplicity of important problems and the wide spectrum of beneficiaries.

The other of above mentioned sectors are less likely to be positively affected using AI due to the complex nature of phenomena that require precise modeling based on knowledge about the world and communities, which is often incomplete or imprecise. The non-determinism of the description of these phenomena will reduce the effectiveness of applied problem-solving algorithms for decision-making, which in turn may have a negative impact on the effectiveness of the IT support.

The most challenging task, from the point of view of the desired results, will be the implementation of AI technology to obtain expected results in decision making processes in the management of global, economic, political, and military conflicts, and in the development of AI methods considering legal implications.

5.3. The risk of critical losses resulting from the use of AI technology

It is believed that with the current state of knowledge, the risk of critical and unforeseen losses resulting from the use of AI mainly concerns the following areas: 1) health care, 2) decision processes in world conflicts, 3) terrorism prevention.

The above-mentioned areas are very sensitive, hence entrusting the management to AI technologies may result in the loss of health and human lives due to the presence of too many undefined variables. This situation often results from the shortage of empirical data critically necessary to train the AI systems in the right way. This is especially important for the technology based on Artificial Neural Networks that requires a huge amount of barely accessible empirical training data, and may appear critical, for example, in case of war and terrorism situations.

Regardless of the above reservations, there are many examples (in all areas) of applications where the use of technology does not reduce the effectiveness of AI products. An outstanding example is the work currently being carried out on translation systems from a sign language (e.g., American Sign Language) into a spoken code and thus overcoming the communication barrier for non-speaking people (Duarte *et al.,* 2021). Emre Sevindik with collaborators (2023) also addressed similar issues (see Vetulani and Paroubek (2023)).

5.5. AI-threat prevention: policy recommendation

The authors suggest the introduction of global universal legislation — possibly beginning at the levels of EU and U.S. government — with the aim of ensuring that AI systems are managed by trained and qualified professional staff. The safe development and application of AI systems in the public and business sphere must become a key issue. Otherwise, they can cause considerable safety problems or pose a security threat and their use without further research and testing should be legally prohibited to protect the public. More research attention should be paid to advanced AI uses and systems than ever before, focusing on potential threats while seeking safe and effective business and public solutions.

6. Current and future role of AI in business and organizations

The literature on the subject has numerous examples of the perspective of using AI technology in Business Management which, until recently, belonged to the domain of Science Fiction. One of the well-known authors we intend to quote here is Marianne Chrisos, whose observations (Chrisos, 2018) refer to the current state of AI technology applications. She observes how quickly advances-of AI technology may help to improve quality of life. She wrote: "in the short time we all have witnessed that AI has been more viable for commercial applications, it has brought consumers many things already — personal assistants in the form of Amazon's Alexa, Google Home, and Apple's voice assistant Siri". (ibid.)

We advise an awareness that despite many spectacular successes, more studies should be conducted to obtain further significant increases in the impact of AI technologies on the educational and business processes, to assess their long-term effects on the well-being of organizations and society, and to achieve their ability to affect users beneficially.

One of the fundamental principles of applied computing is that customer needs come first when designing IT systems. All AI services of a kind of client assistants must be not only customer-friendly and easily understood by various groups of customers, but also should be adaptable to different groups and open to ways of communicating with the consumer and especially for people with disabilities and in the organizational contexts people and organizations are intertwined (Odrakiewicz *et al.*, 2018). AI should not become a tool serving only the best market operators and highly professional users, while excluding a large part of society, such as operators of small to medium-sized businesses and local organizations they cooperate with. Modern organizations and production facilities will need training for their staff to operate in an environment that requires constantly growing AI-based knowledge. Relationships and fulfilling customer needs must come first, while integrating presently existing customer relationship management (CRM) systems in organizations with the new incoming AI infrastructure. Our advice is to proceed with careful AI implementation in organizations, taking time for training in the new AI technologies, not only for organizations but also for their various customer and their needs .

Employing artificial intelligence in business information processing will likely be a competitive advantage in various labor-intensive production and processes, and in public administration as well as in-public security services (Vetulani and Osiński, 2017).

According to (Chrisos, 2018) the following industries are already using AI technologies heavily:

Logistics: "Companies that use freight trucks or cargo flights have found that using AI processes helps to determine efficient travel patterns based on the AI ability to source information (…) regarding weather, average fuel consumption, traffic, and other elements."

Healthcare: "Some healthcare organizations are using AI to supplement physician training and education. (…) AI has already been used in the healthcare industry to help review medical records and evaluate treatment approaches (…)."

HR and staffing: "Human resource departments and staffing agencies are using AI technologies to help them find the best talent from resume submissions. AI can match the best applicants with the job positions based on keyword functionality and AI's ability to gather and analyze information from several sources concurrently."

It is instructive to compare the above examples of recent applications of AI technology in business management presented by Marianne Chrisos (ibid.) with the AI-saturated vision of the world in 2050 envisioned by Toby Walsh a year earlier (Walsh, 2017). The Walsh vision was presented in the form of a decalogue composed of several images, including: "You are banned from driving", "You see the (AI) doctor daily", "A computer hires and fires you", "A robot robs a bank,", "World soccer champions lose to a robot team", "TV news is made without humans", and "Humans live on after death."

Readers of Toby Walsh's decalogue (Collins, 2017) will certainly notice how deep the thread of human-machine communication runs through, constituting one of the first great and still open challenges for AI.

Concluding remarks

Observations collected in this work concern both the beneficial aspects of modern artificial intelligence technologies and the risks associated with them as well as challenges for the implementation and efficient use of AI technology in the areas of low resourced languages. They should be treated as a preliminary attempt to demonstrate the complexity and the scale of problems associated with AI technologies and to show their impact on changing organizations and evolving society. Further in-depth research is needed, primarily on ethical considerations related to imposing AI technologies in the areas of business, arts, and public services; both those that may bring potentially positive effects and those that may have harmful consequences.

Considering the dynamic development of the world around us and, consequently, the emergence of new technologies and needs, it is necessary to redefine AI as a new concept and to develop a new approach to the implementation of AI technologies. The new AI should enable a more efficient interaction between humans and computers, so that potentially harmful risks resulting from the uncontrolled use of these advances can be minimised (e.g. for Hindi, Oriya and Bengali, see: Vetulani Z., Vetulani G. and Mohanty P. (2021).

The authors believe that it is understandable for both the public and the media to be fascinated by the phenomena related to the positive and negative existential issues of AI technologies. People may not always perceive the positive, life-changing impacts of AI especially in the areas where low resourced languages are predominantly used. They will undoubtedly also worry about potential threats, including the possible extinction of the human species.

Similar to the Global Diplomatic Forum article "AI's Linguistic Diversity Gap: A Global Challenge and Missed Opportunity" (published by @shyrabbani) (https://www.linkedin.com/pulse/ais-linguistic-diversity-gap-global-challenge-oqoxe/) we claim that out of over 7,000 languages spoken globally, fewer than 100 are represented in the data used to train AI models. We believe that this situation will put billions of people at risk of technological exclusion, preventing them from fully exploiting the opportunities of the digital economy, and using AI technologies.

We largely tend to concur with Global Diplomatic Forum @shyrabbani that if the current trend continue, large sections of the world's population could be excluded from participating in the digital economy. AI systems are not just technical tools but gatekeepers to resources, opportunities, and economic growth. For communities already struggling with inadequate access and limited digital infrastructure, the lack of linguistic diversity in AI exacerbates existing challenges, creating an even greater divide between high-resource and low-resource language communities.

On the other hand, for more and more people, it is becoming clear that, given the real danger of the self-destruction of the human kind, people cannot cross the threshold when humans will create war machines (robots) with decision-making autonomy, which will be equipped with the self-preservation instinct and with awareness of their own existence. Thus, the current emergence of AI technologies in the military doctrine of some national governments should elicit the highest level of alarm among all those advocating for ethical governance.

In addition, the following statement from Cathy Li, Head of AI, Data, et Metaverse at the World Economic Forum in Davos, warns that those already disadvantages "will probably fall further behind." AI models that are tailored predominantly for English and a few other widely spoken languages are missing the opportunity to empower the vast majority of global populations , especially those in low-income or-rural regions. The above mentioned areas require further research funding and cooperation to train AI models in areas where Less Resourced Languages are predominantly used.

Should we be afraid of artificial intelligence in the light of the above considerations? The authors of this work agree that one should not have fear of technology. Instead, vigilance is to be increased regarding the real intentions of technology owners worldwide. It is hoped that this view will soon become a universal truth (Vetulani, 2023).

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