Artificial Intelligence: Opportunities and Challenges for the Global South with a Focus on Nepal

Agni Raj Upadhayay*

Abstract

Artificial intelligence is a relatively new and contemporary technological tool that also figures significantly in the current discourse of international relations. AI stems from its ability to mimic human cognitive functions, allowing machines to perform tasks that previously required human intelligence. AI systems can analyze massive amounts of data, identify patterns, and make data-driven decisions by utilizing advanced algorithms, machine learning, and data processing capabilities. The primary goal is to improve efficiency, accuracy, and automation across multiple domains, including healthcare, finance, manufacturing, and transportation. Furthermore, AI has the potential to address complex challenges, innovate solutions, and contribute to scientific advancements, making it an effective tool for supplementing human capabilities and driving progress in a variety of fields. However, ethical considerations and responsible development are essential for ensuring the responsible and beneficial integration of AI into society. Concerns regarding AI have also been expressed from the viewpoint of foreign policy, national security, data privacy, and the possible replacement of humans by machines. This is expected to pose additional difficulties for developing nations like Nepal as it may be very expensive to use AI in various development endeavors that aim to address global issues on an equal footing with developed nations. Because most of the countries in the Global South are developing or least developed, AI may therefore present more challenges than opportunities to them.

Hence, this article attempts to incorporate the various dimensions of AI in terms of the different perspectives that are encountered in this changing context of the AI world, as well as the real impacts that may be opportunities or threats to Nepal from the perspective of international relations and diplomacy.

Keywords: Artificial intelligence, information and communication technology, Global South, Nepal, national security.

*Mr. Agni Raj Upadhayay (Anil) is an MPhil-PhD Scholar of International Relations and Diplomacy at Tribhuvan University, Nepal and is also a Member of NCWA.

Introduction

John McCarthy, an American computer and cognitive scientist, invented the term "artificial intelligence" in 1956 and created the programming language LISP which became popular in AI research (Smith, 2006). Arthur Samuel developed the first computer program to play checkers, utilizing machine learning in 1959. AI is classified into four types: artificial narrow intelligence (ANI), artificial general intelligence (AGI), artificial superintelligence (ASI), and strong AI (stronger than humans) (Press, 2021).

According to, Ian Bremmer and Mustafa Suleyman, the authors of "The AI Power Paradox", AI will be everywhere by 2035. AI systems will run hospitals, operate airlines, and battle each other in the courtroom. Businesses have scaled at blistering speed generating immense advances in well-being, science, and technology. More unpredictable and more fragile is the issue of terrorists finding new ways to menace societies through cyberwarfare and white-collar workers losing their jobs (Mustafa, The AI Power Paradox, 2023).

Policymakers around the world have begun to wake up to the challenges posed by AI. In May 2023, the G-7 launched the "Hiroshima AI process," a forum devoted to harmonizing AI governance. In June 2023, the European Parliament passed a draft of the EU's AI Act, the first comprehensive attempt by the European Union to erect safeguards around the AI industry (Parliament, 2023). The United States has not yet formulated AI law, but there are extensive discussions underway to regulate and govern AI. States and cities such as California, New York City and New Jersey are moving forward with the creation of their versions of state legislation (Surden, 2019).

The government of Nepal has not paid any attention to AI and its positive and negative impacts on the society and country. However, academic institutes such as universities and some private organizations have prioritized development regarding the cause and effect of AI. Though there are pros and cons to AI, this article will attempt to deal with the AI effects, particularly in the global south, which also includes the Nepali context.

Two articles on AI are particularly noteworthy-"AI is Already at War" by Michele A. Flournoy and "The AI Power Paradox" by Ian Bremmer and Mustafa Suleyman, both published in Foreign Affairs Journal in September/October 2023) (Mustafa, 2023). The first article raised the question - Can States Learn to Govern Artificial Intelligence- Before It's Too Late? which indicates that artificial intelligence needs to be governed. If we wait to develop ethical and legal guidelines, it may become uncontrollable by 2035 (Donath, 2020). The European Union has already passed a draft of the EU's AI Act, which is also known as the first attempt to regulate AI.

The G-7 also established the "Hiroshima AI process, a forum aimed at harmonizing AI governance in May 2023 (G7 Leaders' Statement on the Hiroshima AI Process).

UN Secretary-General Antonio Guterres demanded in July 2023 the creation of a global AI regulatory watchdog to oversee the advancement of AI technology (Body, 2023). During his speech to the UN Security Council, Mr. Guterres suggested that the UN is the ideal place to lead the efforts on AI governance which calls for a global approach to either stifle AI to reduce its risks or use it to increase national power. Artificial Intelligence cannot be regulated like any other technology, and it is already changing conventional wisdom regarding geopolitical dominance.

According to Ian Bremmer and Mustafa Suleyman, AI does not just pose policy challenges but its hyper evolutionary nature also makes solving those challenges progressively harder. That is the AI power paradox.

Writing Approach

This article has been prepared based on desk review or secondary data. Since artificial intelligence is still relatively new, particularly in the context of digital transformation, the majority of the data has been included from official websites, research articles of experts in the field (Goodwin, June 2012) as well as policy and legal documents in the context of Nepal. AI, which is viewed as a new opportunity and challenge for the global community, is still being studied and researched in Nepal. However, sufficient information about its market and investment opportunities cannot be obtained.

Global Market of AI

Josh Howarth, a UK based Knowledge Engineer, forecasted the market of AI as follows (Howarth, 2024):
- The global AI market is valued at over USD 136 billion.
- The AI industry value is projected to increase by over 13x over the next 7 years.
- The US AI market is forecast to reach USD 299.64 billion by 2026.
- The AI market is expanding at a CAGR of 38.1% between 2022 to 2030.
- By 2025, as many as 97 million people will work in the AI space.
- AI market size is expected to grow by at least 120% year-over-year.
- 83% of companies claim that AI is a top priority in their business plans.
- Netflix makes USD 1 billion annually from automated personalized recommendations.
- 48% of businesses use some form of AI to utilize big data effectively.
  - 38% of medical providers use computers as part of their diagnosis.

Source: https://explodingtopics.com/blog/ai-statistics
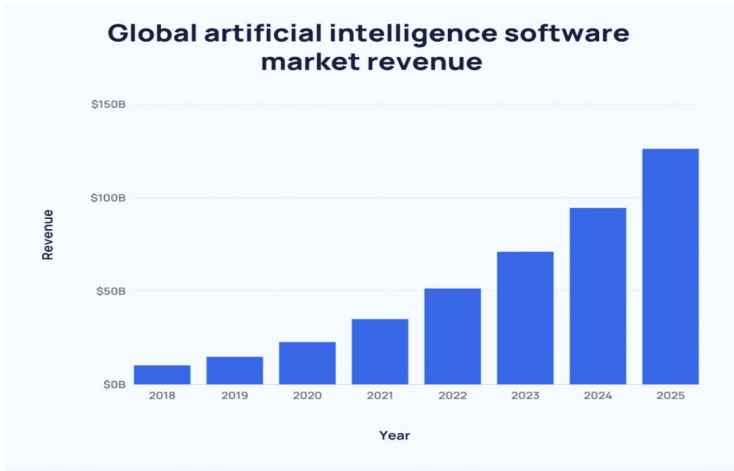
Rashi Maheshwari and Aashika Jain, in their article that was published in Forbes "AI Global Market Size and Its Forecast," critically analyze AI technologies, digital disruption, and competitive advantage in this rapidly expanding global economy. According to them, AI possesses immense potential to boost the world economy. By 2030, AI is predicted to have a greater global economic impact than the combined output of China and India today and boost the world economy by USD 15.7 trillion (Jain, 2024).

China will see the greatest economic gains from AI, with a 26% increase in GDP by 2030, followed by North America (14.5% increase), totaling USD 10.7 trillion.
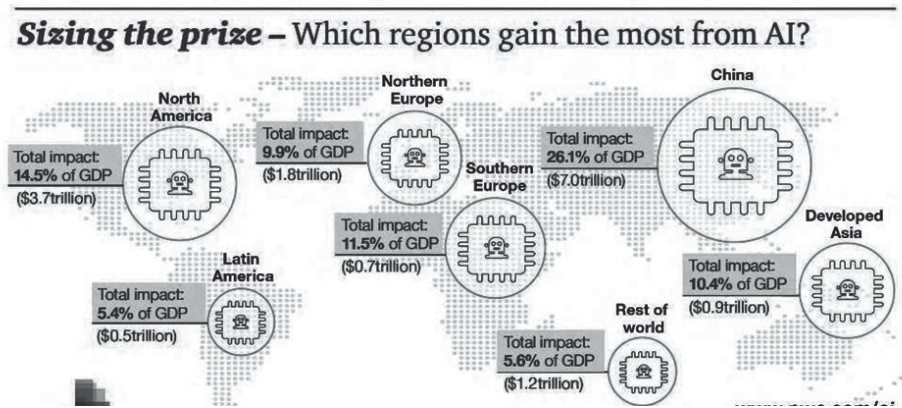
Source: PWC-Sizing the Price

This data shows that the upcoming competition between economically dominant global powers will be determined by the investment in AI and its competitive

approaches to operating the entire world through its digital regime.

In the Global South, AI has become an useful force that is changing healthcare, education, and the economy. AI technologies have made agricultural advancements possible in parts of the world like Africa, Asia, and Latin America. These advancements have made precision farming techniques possible which increase crop yields and resource efficiency. Additionally, AI-powered healthcare solutions have made treatment and diagnosis more accessible, especially in rural areas with inadequate medical infrastructure. With customized online platforms, AI has significantly increased access to educational resources in the field of education. Nonetheless, issues like the digital divide and the possibility of job loss highlight the necessity of inclusive AI regulations.

Geopolitics and AI

The most powerful governments will vie to control the world's most valuable resource while countries in the global South will be left behind. AI is not just another tool or weapon that can bring prestige, power, or wealth, it has the potential to enable a significant military and economic advantage over adversaries. Rightly or wrongly, the two players that matter most - China and the US both see AI development as a zero-sum game that will give the winner a decisive strategic edge in the decades to come (Lee, 2018).

From the vantage point of Washington and Beijing, the risk that the other side gains an advantage in AI outweighs any theoretical threat the technology may pose to society or their domestic political authority. As a result, both the US and Chinese governments are devoting enormous resources to developing AI capabilities while working to deprive each other of the inputs required for next-generation advances. Because of this zero-sum dynamic and a lack of trust on both sides, Beijing and Washington are more concerned with accelerating than slowing AI development (Ernst, 2020).

If that were not enough, by shifting the structure and balance of global power, AI complicates the very political context in which it is governed. Within countries, AI will empower those who wield it to surveil, deceive, and even control populations supercharging the collection and commercial use of personal data in democracies and sharpening the tools of repression authoritarian governments use to subdue their societies. Across countries, AI will be the focus of intense geopolitical competition.

National Security and Other Threats of AI

In upcoming future, AI supremacy will be a strategic objective of every government

for military power where global power is more focused on technological weapons rather than humans. AI supremacy will be a strategic goal for military power soon, with a focus on technological weapons rather than human ones. This is because a global power's repressive capabilities, economic potential, or military advantage may pose a greater threat to the national security of weaker nations.

AI is accelerating the spread of disinformation; it has been claimed that AI could enable automated cyberattacks at "machine speed". Chemists claimed that AI could create chemical weapons. Biologists have expressed interest in developing new pathogens organisms that cause disease in their hosts and bioweapons. AI could misidentify people or objects as targets, resulting in unintended death and destruction. AI's reasoning, which cannot be fully understood or explained, may lead military planners to make dangerous decisions (Lin, 2023).

Hence, some common AI threats to the global community include cybersecurity, legal issues, algorithmic bias, job displacement, privacy concerns, ethical dilemmas, data privacy, misinformation, disinformation, economic inequality, global catastrophic risk, power asymmetries and trust deficit.

National Security from Nepal's Perspective

Nepal should consider the following conditions from the perspective of national security.

Border Security: AI can be used for surveillance and monitoring, using sensors to detect unauthorized crossings and activities.

Cybersecurity: Weak cyber infrastructure of Nepal is prone to cyberattacks which will raise concerns about national security.

Military Modernization: AI-loaded military tools and weapons upgrade military capabilities, advanced training simulations and improved strategic planning.

Intelligence Gathering and Analysis: AI can help in gathering intelligence and analyzing data to identify potential, including extremist activities and cross-border terrorism threats.

Public Security: Countering deepfakes, hackings and cyberattacks.

National Interest: AI and Nepal

In terms of information and technology and its understanding level, Nepal is not far behind. However, in terms of infrastructure and technology plant development, Nepal is far behind the developed countries.

The Government of Nepal is still not taking the issues and implications of new technologies and the digital world, including AI, seriously, despite some efforts

in the name of ICT that are insufficient to deal with the current world of artificial intelligence.

The National Information Communication and Technology Policy, 2015 included ICT in education, research, health, agriculture, tourism, environment and natural resources, disaster preparedness, and ICT for women and youth (Government, 2015). Other campaign-based efforts aimed at securing the goals of sustainable development and stimulating economic growth in countries around the world include E-Governance, the concept of Digital Nepal, Digital Palikas, and the National Education Policy 2076, which also included technical education and ICT, but the term AI is not explicitly mentioned in any government-endorsed policy.

Even though some efforts have been made at the academic level to incorporate AI courses into the curriculum, Kathmandu University, Tribhuvan University, Pokhara University, and Purbanchal University appear to have AI courses in their respective branches of academia. Some efforts are also underway at the private sector and individual levels. Dr. Sameer Maskey, a US-based Nepali AI scientist, promoter of Fusemachines Inc. and an adjunct associate professor at Columbia University developed the first software robot in Nepal which is being used in e-commerce, trekking, airlines, hotels, hospitals, telecommunications, and government projects (Maskey, 2019).

Threats from AI to Nepal include the nation's reliance on remittances and the possibility of AI replacing skilled Nepali workers in developed nations which would be detrimental to the country's economy. Digital governance includes the ways it affects and influences job markets, digital functions organizations, digital markets, and electoral processes. Because less developed countries cannot invest in machine security mechanisms like other developed countries, AI can increase security threats in developing countries like Nepal.

Securing Nepal's National Interest through AI

Enhanced data analysis: Analyzing international trends, trade data, global economic patterns and such patterns would guide informed decisions.

Digital diplomacy: Through social media analysis, understanding global public opinion, diaspora, epistemology, and international audiences.

Climate change and environment policy: AI could help phenomenally regarding climate change impacts such as glacial retreat in the Himalayas.

Economic diplomacy: Identifying potential markets for exports by analyzing trade patterns.

Consular service: Streamlining visa processing and providing better service for natives and foreign nationals

Peacekeeping security: Providing logistical support, threat assessment and mission

planning to enhance the safety and efficiency of its peacekeepers.

Language translation: Removing language barriers for smooth diplomatic dialogue.

Monitor international commitments: Tracking and reporting the implementation of international treaties and agreements to ensure compliance and identify areas of attention.

Capacity building: Training diplomats in various skills, including negotiation, foreign language, and intercultural communications.

Conclusion

AI seems to pose both challenges and opportunities in this new digital era. From the perspective of international relations, it poses a significant threat to developing countries such as Nepal which have made insufficient investments in AI and technology. The global geopolitical order will change, as will the technological landscape, posing new challenges for non-skilled leaders. So political leaders must stay up to date on AI and new technology. The countries of the Global South should be aware of their technological rights and advocate for them to mitigate the gap between strong and weak countries

AI will be a major factor in terms of national security in the days ahead. Nepal should invest in technological infrastructure and expertise development, consider ethical and legal concerns about cybersecurity, analyze the global AI race, advocate for data sovereignty to minimize the digital divide and draft appropriate IT laws as soon as possible. It should also try to develop its data bank for reducing dependency on foreign data storage which could create more confidence in the IT sector of the country.

References

Body, A. A. (2023). *Interim Report: Governing AI for Humanity.* United Nations. AI Advisory Body. doi:www.un.org/en/ai-advisory-body

Donath, J. (2020). *Ethical Issues in Our Relationship with Artificial Entities.* (F. P. M.D. Dubber, Ed.) London, The Oxford Handbook of Ethics of AI: Oxford: Oxford University Press.

Ernst, D. (2020). *Competing in AI: Major Challenges. In Competing in Artificial Intelligence Chips: China's Challenge amid Technology War.* Centre for International Governance. Retrieved from http://www.jstor.org/stable/resrep24302.7

G7 Leaders' Statement on the Hiroshima AI Process. (2023). *G7 Leaders' Statement on the Hiroshima AI Process.* Ministry of Foreign Affairs of Japan .

Goodwin, R. b. (June 2012). In R. b. Goodwin, *Law and the Technologies of the Twenty-First Century.* London: Cambridge University Press.

Government, N. (2015). *National ICT Policy 2015.* Department of Information Technology. Kathmandu: Ministry of Communication and Information Technology. Retrieved from https://api.giwms.gov.np/storage/22/posts/1663070749_90.pdf

Howarth, J. (2024). 57 NEW AI Statistics. Retrieved from explodingtopics.com

Jain, A. &. (2024, January). *Top AI Statistics and Trends In 2024*. Retrieved from , https://www.forbes.com/advisor/in/business/ai-statistics.

Lee, K.-F. (2018). *AI Super-Powers. China, Silicon Valley and the New World Order.* Harper Business.

Lin, H. S. (2023). *The Stanford Emerging Technology Review.* California: Stanford University.

Maskey, S. (2019, Dec 8). With Right Talent, Artificial Intelligence can help Transform Nepal. Retrieved from https://kathmandupost.com/brunch-with-the-post/2019/12/08/sameer-maskey-with-right-talent-artificial-intelligence-can-help-transform-nepal

Mustafa, B. I. (2023). Can States Learn to Govern Artificial Intelligence—Before It's Too Late? *The AI Power Paradox, Foreign Affair Journal,, Volume: I02*(Issue Number 05), 26-43.

Mustafa, B. I. (2023). The AI Power Paradox. *102*, 26-43.

Parliament, N. E. (2023, December). EU AI Act: first regulation on artificial intelligence. *EU AI Act: first regulation on artificial intelligence.* Retrieved from https://www.europarl.europa.eu/

Press, G. (2021, May 28). *On Thinking Machines, Machine Learning, And How AI Took Over Statistics*.

Smith, C. (2006). *The History of Artificial Intelligence.* Washington: University of Wahsington.

Surden, H. (2019). Artificial Intelligence and Law: An Overview. *Georgia State University Law Review,, Vol. 35*. .