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Tangible and Intangible Impact of AI Usage: AI for Information Accessibility

Abstract:
Any technology opens enormous opportunities for individuals as well as societies. This undoubtedly will contribute to the welfare of the individuals and the growth of society. Since any technology is the creation of human intellect, it may also carry the issues of socio-cultural and environmental concerns, such as issues of acceptability, access, and equity. AI is no exception to this. This paper investigates some of the aspects related to the development and usage of AI, that includes accessibility relating to socio-cultural, economic, and ethical concerns. It argues for the need to evolve nation-specific policies and regulations addressing the issues of inequalities.

Keywords: Equity, Democratic, Governance, Guidelines, Marginalised, Multisectoral, Policies

Outline:

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1. Introduction

In the quest for evolving a more comfortable and secure world, humans have always tried to innovate. In this pursuit, innovative technology has always played a significant role, be it in any field of human society and the nature of society, whether 'literate' or 'pre-literate'. One thing that we need to remember is that unless, and until, the technology becomes a part of one's culture, it will not survive purely based on its technical and other merits. For example, in India during the *Dussehra* festival, all artefacts, and instruments are worshipped, including computers in government or public offices! It is also important to understand that in the process of time, the innovators remain anonymous. We all know that the invention of the wheel revolutionised human societies all over, but no one knows who invented that. Once a technology is internalised, one might not be as concerned with whom invented it. However, it gets adopted differently in different cultures and thereby also attains different meanings. This is true with all systems of knowledge and innovation. In view of this, we need to understand Artificial Intelligence (AI) and its possible implications for building better inclusive human societies.

2. Social Equity and AI

In today's fast-changing world, the role of information technology is immense. In the last two decades, it has transformed the systems of governance, communication, etc., making the world into a global village. At the same time, it has also widened the gap between rich and the poor, urban and rural areas, and developed and underdeveloped countries. What is generally expected is that with the advancement of technologies, inclusive knowledge societies can be built due to increasing access to information (UNESCO 2019). However, this has not happened as the political dispensations in different countries, and the role of the advanced countries is no less in this regard, have been responsible for such developments.

It is important to understand that free access to information helps in building inclusive knowledge societies and that is possible only when we sustain cultural and linguistic diversity among the societies. All social systems have institutional mechanisms to provide access to information to all its members. However, with the introduction of digital technology, the way information is shared has been drastically altered (COMEST 2019). There is a digital divide that has been hampering the reach of the communication due to unequal socioeconomic conditions, both within and outside a country (WSIS 2015). In this regard, we need to bear in mind that access to information is highly structured and it is also a source of power. In fact, keeping people ignorant is one way to control them and keep them subdued (Hobart 1993: 1-2). This stranglehold of information on human societies especially has a severe impact on the lives and livelihoods of the underprivileged communities everywhere. In this regard, modern digital technology is expected to bridge this gap and provide access to information to all. Thus, AI is expected to play a key role.

3. Role of AI

AI has huge potential, not only to store large amounts of data, but also due to its ability to process it fast and perform multiple tasks simultaneously. It plays a particularly important role in crisis and disaster situations. In this context, it is pertinent to understand the way we approach the data - as information, as infrastructure, as a control mechanism, etc. When we talk about data as information, we need to appreciate that data can provide information to understand issues relating to poverty, hunger, education, public health, etc. This can be related to the data available on infrastructure for a better planning to achieve the desired goals of sustainable development. This further helps in regulating and monitoring the processes of implementation, thereby enabling to build inclusive societies that contribute to sustainable development (Ibaraki, 2017: 4-9). It also widens the opportunities for generation, distribution and consumption of information that falls under information access. What is most important to keep in mind is to make AI more inclusive so that it can effectively meet the requirements to build a just society where it facilitates information made available to all.

Under the prevailing COVID-19 pandemic, access to information and the follow up of actions using AI has been playing a crucial role in effectively managing the pandemic. For example, AI-enabled robots provided more effective services to the patients by considering COVID-19 protocols, thereby avoiding human contact. AI has also been very effective in enhancing the efficiency of the functioning of hospitals and diagnostic services. Moreover, in the infodemic situation, AI has been effectively used to counter misconceptions, misinterpretations, and myths about the pandemic in different media broadcasts and products. Thus, AI has been playing an important role in blocking fake news and misinterpretation of the information, and in creating and facilitating reliable information.

Emerging technologies, like ML, IoT, VR, AR, and AI, enhances access to information, thereby making it open and stimulating international cooperation. This further enables data mining from diverse perspectives. The need for sharing data and collaborating across nations seems to be more prominent today than any other time in history. For instance, the recent COVID-19 pandemic has brought many countries to collaborate with WHO and other international bodies that enabled the stakeholders to scientifically analyse the data to take appropriate measures to control the pandemic. This has enabled us to share the data on the efficacy of the vaccines produced by different organisations. It is also important to note that "AI for Good Global Summit, 2017" enabled different international bodies, like the United Nations, industry, NGOs and academic institutions to work out strategies for achieving SDGs (2017: 4).

3.1. AI and Citizenry

Democratic and transparent social environments are the prerequisites for the usage of any technology, including AI. To address 'ethical' concerns of AI, we need to properly shape our societal response to the usage of AI in terms of regulation and law (Muller 2021: 2). AI can enhance or impede citizens' participation in decision-making relating to public welfare and concern. Besides, it can also be used to quell any protest movements by the citizens. AI is used by governments, for instance in India, "to digitise criminal records, and use facial recognition to predict and recognise criminal activity. There are also plans to train drones to identify violent behaviour in public spaces " (STOA 2020: 14). Thus, AI has implications for democracy, since "people's right to a private life and dignity" should be ensured. AI is used "to change party affiliation, or to increase or decrease their probability of turning out to vote and then to apply resources to pursue them to do so" (STOA 2020: 14). AI can also restrict citizens "right to freedom of expression, thought, religion, assembly, and association" (Access Now 2018: 22), which, in turn, will have a negative impact on democratic functioning of the society. At the same time, AI is being "used to predict and help to prevent armed conflict. The same approach could also be used pre-emptively by governments to predict and prevent public demonstrations or protests before they take place" (Access Now 2018:23). This puts democratic institutions, their effective functioning, and citizen participation in question.

It is important to note that AI can enhance access to information to the citizens and thereby enable them to increase involvement and participation in decision-making. Thus, it has a greater potential to the democratisation of information sharing and ensuring social justice. It can also play a significant role in weeding out misinformation/disinformation or fake news that has been plaguing societies which are carried out through the traditional as well as the modern media by various agencies, be they individual or others. In this regard, governments must come out with legislation or policies to promote access to the right kind of information to all its citizens and to penalise those who deny access to the right information to the citizens and promote disinformation/misinformation or fake news.

3.2. AI and Digital Wellness

AI has a good promise in promoting access to information to different speech or language communities. Automatic translation of information through the speech technologies into regional or local languages can be a big boost to large sections of deprived communities in society who can access information, and this can be a boost for empowering them (Ugra Declaration 2017). For example, in many countries AI is being used to preserve endangered languages. Tools are now available for many cultures to translate information from different languages. These tools help in translating online content.

Efforts are being made to "use automatic speech recognition to support language learning and translation" (UNESCO 2019: 159). Thus, availability of information in local languages will help in assuring access to information and in ensuring social justice. This facilitates building an inclusive society. We need to enable AI through proactive regulations via national and international bodies where these bodies are monitored by a multi-stakeholder group for compliance.

We need to be conscious of the threats of the misuse and overuse of AI technology. In this regard, Hagendorff states that AI is being used by governments in many areas, such as "automated propaganda and disinformation campaign", "social control", "surveillance", "face recognition and sentiment analysis", "social sorting", and "improved interrogation techniques" (2020: 5). We notice today increasing cybercrimes in the areas of finance, trafficking, and deepfakes. Hence, there is a need to maintain a multi-stakeholder approach to AI governance. Such an appraoch should include the processes suggested by UNESCO (2019) as mentioned below:

Effective multi-stakeholder processes are:

- Inclusive
- Diverse
- Collaborative
- Transparent
- Equal
- Well-informed" (UNESCO, 2019: 21)
- Flexible and relevant
- Safe and private
- Accountable and legitimate
- Responsive
- Timely

The above table of processes are elaborated on in detail in the chapter on "Multi-Stakeholder Approach for AI Governance", by UNESCO (2019: 117-119) that highlights the need to take proper care in addressing the issues listed in the table. It suggests that there is a need to focus on the "marginalised communities, women, youth, small business entities and/or civil society participants" for an inclusive and diverse multi-stakeholder participation. It further highlights the significance of collaboration and transparency in taking note of the multi-stakeholders' "interests and affiliation", thereby ensuring equal participation. It also calls for flexible adaptation of internet and digital technologies to a local environment so that there is a sustained participation of all stakeholders. It is also suggested to ensure the privacy and safety of the participants to the maximum extent where possible, and to work out mechanisms for accountability of the processes.

4. AI Policies and Guidelines

In order to effectively implement the above processes, there is a necessity to frame terms and conditions for the implementation of AI in different sectors, including service delivery. Any policy design needs a multisectoral and multidisciplinary approach for better AI governance. This will also ensure to achieve Sustainable Development Goals (SDGs) while addressing ethical and human rights, gender equality, information access and privacy, etc., issues.

In addition, we need to deal with the problems pertaining to access, affordability, and equity. This is essential especially for the marginalised sections and their participation for enabling an inclusive society, as AI is elitist oriented. It must be brought down to the level where all sections of the society can accrue the benefits of AI. All over the globe, societies are culturally diverse. They are largely stratified and divisive in terms of access to resources, information, opportunities, etc. Therefore, we need to take note of the cultural, linguistic, social, economic and other ethos of the communities. The heterogeneous nature of the societies/communities, their knowledge systems, their values, etc., should be protected to build inclusive knowledge societies (UNESCO 2019). Otherwise, like globalisation, AI can lead to the homogenisation that is detrimental to the multi-cultural and pluralistic nature of societies (Fairweather and Rogerson 2003).

It is well recognised that AI, like any technology, is basically business-oriented because enormous amounts of investment are required for research and application of AI by private enterprises (COMEST 2019: 2). However, we also notice various governments are also investing substantial amounts in AI research and its application in different sectors. For example, as observed by Hagendorff, "the US government alone intends to invest two billion dollars in military AI projects over the next five

years" (2020: 5). While these are capital intensive, the questions of equity need to be addressed by governments.

If AI must be inclusive and is freely accessible to all the citizens, there is a need to bridge the gap between the business interests of the corporations and providing access to everyone. Here the idea of commons – be it digital or data commons – become more appropriate. In this context, UNESCO's (2019: 100-103) 'Steering AI and Advanced ICTs for Knowledge Societies: A Rights, Openness, Access, and Multi-stakeholder Perspective' provides a broad framework for inclusive access to information. Citing Goldstein, Gasser, and Budish (2018), UNESCO argues that, "Broad data commons provide an interface between the core functions as described in the narrow data commons and the society". These include:

i. Organizational practices for leveraging data commons to encourage collaboration and multi-stakeholder participation;
ii. The legal and policy concerns surrounding privacy, access, openness and human rights arising out of data commons; and
iii. The involvement of humans in the development and preservation of other layers through improved inclusion, education and literacy.

Interoperability in the broad data commons is ensured through the development of shared knowledge and normative understanding in society" (pp. 102-103).AI ethics is twofold: 1) The guidelines and policies are not always comprehensive. This leads to treating AI ethics as something reinforced from outside and, thus, serving only as a market strategy. Such an approach results in "lack of feeling of accountability" and viewing it as the "moral significance of their work". Most of the time "economic incentives are easily overriding commitment to ethical principles and values". And 2) Designing comprehensive policies and guidelines enable one to resolve "specific problems, such as accountability, privacy protection, anti-discrimination, safety, or explainability". However, there is also a wide range of ethical aspects that are significantly related to the research, development and application of AI systems but are not mentioned in the guidelines" (Hagendorff 2020: 10). This, once again, reinforces the necessity to have a multi-stakeholder and multidisciplinary approach towards framing up AI policies and guidelines.

5. Implications of AI

In every society there are structured inequalities among different sections based on ethnicity, class, gender, disabilities, etc. These get reflected with regards to the design and access to the technologies. For example, we can notice this in AI skills and workforce, algorithmic discrimination, deepfakes, etc., in furthering the existing social discriminations (UNESCO, 2019). As AI, like any other technology, is a product of human creation, it is not value-neutral, and this must be borne in mind while operationalizing it. What is needed is to maintain a proper balance between 'ethical principles and societal interests'. This should not conflict with the objectives of AI research, interests of industry and business, in general (Hagendorff 2020: 7). Further, it is important to note that, as Hagendorff aptly put it, "people should not be treated as mere data subjects, but as individuals". However, countless examples show that computer decisions, regardless of their susceptibility to error, are attributed a strong authority which results in the ignorance of individual circumstances and fates. Furthermore, countless companies strive for the opposite of human autonomy, employing more and more subtle techniques for manipulating user behaviour via micro-targeting, nudging, UX-design etc. Another example is that of cohesion: Many of the major scandals of the last years would have been unthinkable without the use of AI. Hagendorff continues that "from echo chamber effects [...] to the use of propaganda bots [...] or the spread of fake-news, AI plays a key role to the effect of diminishing social cohesion, fostering instead radicalization, the decline of reason in public discourse and social divides" (2020: 8).

In this regard, we need to understand that information and data are two important elements for AI and machine learning (ML), because "systems can learn from data, identify patterns and make decisions with minimal human intervention" (SAS, n.d.). Therefore, indiscriminate use of these technologies will have an impact on human behaviour. This brings into focus issues related to information ethics (IE). IE emphasises on the relationship between production and consumption of

information which, in turn, dictates human behaviour in the society (STOA 2020: 18-20). Hence, it is important to properly deal with the information cycle. Usage of AI requires a democratic and transparent ecosystem. There is no doubt that AI brings greater citizen participation and involvement in many arenas. This also suggests that overuse of AI will have a serious neurological and psychological consequences on individuals. Thus, digital well-being, or digital wellness, (DW) is seen as a solution to deal with the negative impacts of emerging technologies, in general, and AI, in particular. The possible negative impacts have to be identified and addressed time to time to avoid disastrous consequences which may arise due to misuse or overuse of AI. The governments must put in place proper mechanisms to regulate and to direct proper usage of AI.

6. Conclusion

AI, like any other technology, is a part of human society. Therefore, it has implications for organising and proper functioning of human societies. For example, in multicultural societies usually, technologies, including AI, will have differential impacts and that can further complicate the issues of inequality and access. While attempting to design policies, guidelines and laws, one has to take into consideration not only the linkages between technology and its application in a given society but also the social structural differentiation and cultural ethos.

7. References

Access Now. (2018). "Human Rights in the Age of Artificial Intelligence". https://www.accessnow.org/cms/assets/uploads/2018/11/AI-and-Human-Rights.pdf. Accessed on November 7, 2020.

AI for Good Global Summit. (2017). Artificial Intelligence can help solve humanity's greatest challenges: Report. https://www.itu.int/en/ITU-T/AI/Documents/Report/AI_for_Good_Global_Summit_Report_2017.pdf. Accessed on November 07, 2020.

Bird, Eleanor, Jasmine Fox-Skelly, Nicola Jenner, Ruth Larbey, Emma Weitkamp and Alan Winfield. 2020. The ethics of artificial intelligence: Issues and initiatives. Scientific Foresight Unit (STOA), EPRS | European Parliamentary Research Service. https://www.europarl.europa.eu/RegData/etudes/STUD/2020/634452/EPRS_STU(2020)634452_EN.pdf. Accessed on November 07, 2020.

Bostrom, Nick and Eliezer Yudkowsky. (2021). (forthcoming). "The Ethics of Artificial Intelligence". In Keith Frankish and William Ramsey (eds.), Cambridge Handbook of Artificial Intelligence. New York: Cambridge University Press. https://intelligence.org/files/EthicsofAI.pdf. Accessed on November 07, 2020.

COMEST. (2019). Preliminary Study On The Ethics Of Artificial Intelligence. Paris: Unesco|Comest. Https://Ircai.Org/Wp-Content/Uploads/2020/07/Preliminary-Study-On-The-Ethics-Of-Artificial-Intelligence.Pdf. Accessed on November 07, 2020.

Fairweather, N Ben and Simon Rogerson. (2003). "The Problems of Global Cultural Homogenisation in a Technologically Dependant World". Info, Comm & Ethics in Society, 1: 7-12. DOI: 10.1108/14779960380000221, Accessed on November 07, 2020.

Hagendorff, Thilo. (2020). "The Ethics of AI Ethics: An Evaluation of Guidelines". Minds and Machines, 30, 99-120. http://doi.org/10.1007/s11023-020-09517-8. Pp. 1-16. Accessed on November 07, 2020.

Hobart, Mark. (1993). An Anthropological Critique of Development: Growth of Ignorance. London: Routledge.

Ibaraki, Stephen. (2017). "Accelerating the Sustainable Development Goals through AI". ITU News, AI for social Good: How artificial intelligence can boost sustainable development. https://www.itu.int/en/itunews/Documents/2017/2017-01/2017_ITUNews01-en.pdf. Accessed on November 07, 2020.

Muller, Vincent C. (2021). (forthcoming). "Ethics of artificial intelligence". In Anthony Elliott (ed.) The Routledge Social Science Handbook of AI. London: Routledge. 20pp. http://www.sophia.de & http://orcid.org/0000-0002-4144-4957. Accessed on November 07, 2020.

SAS. (online). Machine Learning: What it is and why it matters. Available: https://www.sas.com/en_in/insights/analytics/machine-learning.html

STOA. (2020). The ethics of artificial intelligence: Issues and initiatives. European Parliamentary Research Service. doi:0.2861/6644. Accessed on November 07, 2020.

Ugra Declaration. (2017). Preserving Languages and Promoting Linguistic Diversity in Cyberspace for Inclusive Sustainable Development. Khanty-Mansiysk, Russian Federation, 4–9 June, 2017. http://www.ifapcom.ru/files/2017/Ugra_declaration_eng.pdf. Accessed on November 07, 2020.

UNESCO. (2019). Steering AI and Advanced ICTs for Knowledge Societies: a Rights, Openness, Access and Multi-stakeholder Perspective. Paris: UNESCO, UNESCO Series on Internet Freedom.