Expanding Information Technology: a curse or a blessing

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The Essay

In 2020, amid COVID-19 pandemic crisis, **1.6 billion** learners were forced out of classrooms due to global lockdown. Within weeks technology became the lifeline of education, from Africa, where childrens attended classes via radio, to students in Europe and Asia utilizing E-platform e.g, zoom, google meet, world saw a transformative shift in expanding information technology. Information technology refers to the use of computer, internet, softwares and digital tools to store, process, trasmit and exchange information. Over the fast few years, IT has evolved from office utilities into global connectivity. It has been deeply integrated into everyday life encompassing empowerment of knowledge and education, acceleration of innovation and economic growth, enhancement of political Participation and digital democracy, Expansion of cultural values globally and facilitation of AI in problem solving as well as combating warfare In addition, a bunch of challanges exist alongside these benefits, such as

cybersecurity threats, dissemmination of false information, digital division, overdependence, mental health impacts, erosion of local cultural values, expansion of inappropriate and sexually explicit material as well as digital money theft risk and expansion of extremist groups propagandas. These all challanges can be addressed via digital literacy, cybersecurity policies and laws, limited access to extremist activities and obscene content.

In undesstanding the true value of information technology, one must explore the significant benefits of information Technology. No doubt, information technology has played a crucial role in the empowerment of education and knowledge. Numerous e-learning platforms such as zoom, Googlemeet for utilizing in classrooms discussion, conferences as well as in business meetings. Certain online learning platforms have transformed the landscape of education and knowledge. Major contributions from globally

recognized platforms such as Khan academy, udemy, Digiskills, coursera, chegg, Tutorme, coursehero, Brainly, Byju's have revolutionized access to learning. Initiatives such as DigiSkills have played a pivotal roll in learning skills, while coursera and likewise courses have provided free access to thousands of courses, marking a significant breakthrough in the evolution of digital learning. Similary, E-libraries initiative is instrumental in providing open access to millions of valuable books which is financially inaccessible and beyond people's budget. Indeed, digital revolution in education and knowledge acquistion contributed significantly in expansion of Information and Technology.

Beyond revolutionization of education, acceleration in innovation and economy boosting are additional milestones of information technology. Today, the leading e-commerce platforms Amazon, ebay, Shopify, Daraz and Alibaba play a key role in strengthening and empowering global economy. In 2025, retail e-commerce sales are estimated to exceed

4.3 trillion US dollars Worldwide, and this figure is expected to reach new heights in the upcoming year. In addition, the rise of digital banking and fintech stands as remarkable achievements that have contributed to boosting economy. Digital banking, featuring innovations such as Paypal, Payoneer, mobile wallets, online payment gateways has revolutionzed financial transactions globally by providing greater speed, security and accessibility to consumer and businesses alike. Moreover, the emergence of cryptocurrencies such as Bitcoin, Pi, Ethereum allows people to transfer money without the interrference of banks and its attraction lies in global accessibility. Similarly, Artificial intelligence has emerged as revolutionary force in agricultural farming such as such as drone monitoring, AI-powered irrigation and crop yield prediction. Another transformative area is freelancing, where Pakistan is ranked among the top five countries globally which generate a major revenue from major

freelancing platforms such as fiverr, upwork, freelance.com. Indeed, the rise of freelancing, AI in agriculture, cryptocurrencies and E-commerce has collectively strengthening the economy, an unprecedented success in the expansion of Information technology worldwide.

In addition to transforming economy and breakthrough in innovation, the expansion of information technology has extended its influence to political participation and civic engagement. fostering digital democracy. The areas of digital democracy deepens civic engagement via E-governance, E-Petetion, freedom of speech on social media such as Instagram, Linkdin, Facegroup, X(Twitter). It also engages public in policy making. Mobilizing of masses against oppression and injustice. Zainab rape case, High profile cases such as Noor Mukadam Murder case and Qandeel Balooch honour killing sparked nationwide outrage, with the social media platforms the protests gained momentum and served as a powerful tool to amplify public voices. Whereas,

in an era without the digital revolution, such cases might have remained clandestine. Freedom of Speech and Shared public opinion shaped the people's view and has empowered individuals with awarness and nurtured a culture of education. Indeed, political partici-pation has fostered a culture of discernment between right and wrong. Moreaver, digital democracy had bridged the gap between public and stakeholders via social media platforms like X (Twitter) playing a central role in fostering direct engagement. Apart from this, E-petition has revolutized the way citizens engage with governance and policy making. Most notable work on E-petition is of Taiwan, it has developed the e-petition platform which empowered youth to actively take part in the resolution of ubber. Likewise, social media platforms prompted masses to hold stakeholders accountable, thereby ensuring their transperancy. Additionally, the hosting of E-webinars holds significant importance in

mobilizing the populace to advocate for their rights.

Likewise, Expansion of global cultural exchange stands as another gift of information and technology. Communities connected via digital platforms experience and celebrate distinctive and rich cultural values which were inaccessible befor the digital revolution. Platform such as TikTok have become a great source of ↑ music, art and cultural Trends. According to a recent report, TikTok Spans across 158 countries and available in 57 languages. Thus, it serves as a platform for sharing culture across diverse markets. Information and technology has served as a powerful tool in documenting and preserving valuable endangered cultural heritage through initiatives such as archives, virtual museum and 3D constructions of Sites. Rich and distinctive cultural which different nations experience via global digital connectivity is a powerful catalyst for tourism. For example, Pakistan's national desi cuisines and Switzerland's captivating serene nature attracts tourist

when they watch vlogs on digital platforms encompassing Youtube, instagram, Tiktok and facebook. Moreover, language learning apps and online dictionaries has preserved endangered languages and become a powerful tools for expansion of different languages across different regions. Most notable initiatives in preserving language are **Shina language community programme** for preserving endangered languages of northern areas of Pakistan. and on global level **The Missing Script programme by UNESCO** aims to preserve the rich diversity of the world's languages and protects indigenous scripts. Moreover, by sharing cultural values can create the oppertunities for cross-cultural collaboration of artists, filmmakers and musicians from different countries online via virtual reality (VR). Augmented Reality (AR) is another major breakthrough which enables individuals to explore historical sites virtually. Thus, information technology has emerged as a powerful too which offers immersive cultural experiences from anywhere in the world.

Alongwith that, Artificial Intelligence has emerged as a powerful facilitator for solving complex problems in any area of life. Through its capabilities in data mining and data extraction, it enables the vast amount of data sets to analyse rapidly. It also transforms raw information into meaning ful knowledge that would otherwise be time consuming and laborious if done manually. In the same way, transmission of data from scientific instruments have been made streamline, simplified and accessible. For example, AI tools like **Chatgpt** has simplified the tasks and curtailed the labor-intensive manual work as well as it has made research more reliable and accessible. Likewise, **deepseek** has achieved similar advancements. Thus, data handling and processing become more seamless and effective in the coveal era. AI has facilitated E-commerce by deploying **AI-powered chatbots** that simplify and improve customer service. It has transformed customer service convenient and provided round-the-clock assistance. AI

has been integrated into various other sectors such as research and development, E-laboratories; which has made access to remote areas having lab instruments and equipments, also supported virtual simulation of experiments. Similarly, AI-integration into E-governance has helped process smooth by circumventing bureaucratic red tape. In addition, integration of AI in healthcare, transportation, graphic designing, generating AI videos, machine learning, and simulation and wearables has transformed the global landscape in unprecedented ways.

Moreover, an important sector in the expansion of information and technology lies in its role in countering and combating modern warfare. In earlier times, where obliviouness to threats prevailed and looming threats left societies vulnerable, now, technological advancements have turned that fear into proactive measures. Dectection of threats and surviellance have become greatly accurate and precise.

Similarly, intelligence based operations have curtailed the collateral damage by invogarting the power of AI.

For example, deploying satellites powered by AI as it predicts and analyse enemy movements, preventing anticipated attacks. More overe, AI assists in facial recognition of targeted enemy. Likewise, AI powered cybersecurity can monitor, analyze data and respond to cyber threats in real time. AI has mitigated the risk of senstitive data theft and identifying the culprits behind this unethical digital practices. In addition, AI. based machine learning models assist in conflict analysis by interpreting huge amounts of data, like newspaper, social media posts, satellite images, to find warning signs before the conflict starts. UN has tested AI tools that track hate speech on social media and satellite based models have been used to watch troop movements in conflict zones. Thus, Information technology powered by AI has blostered warfare prepardness, mitingating the risk of cyber attacks, enabled advanced surviellance, deploying

satellites to monitor troop movements, facilitated facial recognition, and using AI-based machine learning to assist in conflict analysis and safeguarding sensitive data thefts. ultimately, these advancements in the domain of digital warfare not only address present challenges but also underscores the importance of laying the foundation for a resilient future.

However, beyond these remarkable advancements of Information technology, there also emerges a dark side of it and potential drawbacks that can not be overlooked. It entails cybersecurity threat, disemmination of misinformation, most notably a digital divide between rural and urban people due to digital literacy gap, also risk of overdependence on technology cause death of creativity. Moreover, mental health impacts such as anxiety and depression substantially in teenagers under 18. PEW 2022 report, 95% of teenager (13-17) surveyed, reported using social media, 1/3rd of them use constantly.

In addition, it results in disruption of sleep cycle by staying awake untill midnight and memory loss. Further, exacerbated by insomnia and pornography addiction which leads to constantly watching sexually explicit content which has eroded moral norms and ethical values. Alongwith it, teenagers are particularly vulnerable to digital propagandas of radical extremist groups, which diseminnate their extremist ideas, thus normalizing the terrorism activities by brainwashing the immature minds. Last but not least, digital money theft is the most notable curse of expanded information technology, arising from the widespread use of digital banking and finetech.

Althogh, the expansion of information technology has transformed the way we live, work and connect but it also have deterimental effects on our lives. Certain actions might ~~have~~ be taken to address these negative effects such as cybersecurity ~~relient~~ defense to combat cybersecurity threat, strengthening of digital infrastructure by building robust data centers, limiting access to pornographic websites to prevent naive minds from obscene content. Moreover, bridging the gap between rural and urban populace by promoting digital literacy is the unmet need in this digital revolutionzed coveal. Similarly, kids should be engaged with learning material instead of their exposure of inappropriate digital content. Furthermore, coordinated action is need to integrate policies against cyber threats and new policies and laws must be framed against unethical digital Practices.

"In conclusion, the information technology has profound blessings encompassing empowerment of education and knowledge via digital platforms, acceleration of innovation and boosting economy through digital banking and finetech, enhanced digital democracy by political participation

and freedom of speech, Expansion of cultural values globally through virtual reality and augmented reality, facilitation AI-powered information technology in every domain of life as well as solving complex problems via Artificial intelligence. However, like every powerful tool, it carries a dark side that can not be overlooked. information technology also has certain challanges such as cyber security threats, Dissemmination of misinformation, digital division, overdependence and access to youth the obscene content which leads to deteriorated impacts on mental health. All these challanges can be overcome by digital literacy, restriction to pornographic sites, bridging the gap between rural and urban people via education, enforcement of international laws and policies against cyber attacks as well as strengthening digital infrastructure. ~~Thus,~~ undoubtedly, the expansion of information technology is a powerful tool, but its value will depend on how wisely we use it.