

EXPLORE THE ROLE OF TECHNOLOGY IN FACILITATING COMMUNICATION AND TRANSNATIONAL CONNECTION

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Abstract

The way people communicate has been profoundly affected by recent technology developments. The amount and quality of in-person interactions seem to be declining due to technological advancements, according to several studies. Even though people are aware that technology is reducing face-to-face connection, over 62% of those surveyed on college campuses said they still use their phones when everyone else is around. A number of households have chosen to prohibit electronic devices, including as video games, laptops, and smartphones, in reaction to the excessive amount of time spent in front of the TV. Many are concerned that, with the fast development of technology, people would get too engrossed in their phones and computers to pay attention in the physical world. People are increasingly avoiding face-to-face interactions in favor of conversing via cell phones. Most people think that having a discussion while using a gadget lowers the quality of that conversation, and many people find it annoying when their friends or relatives utilize technological devices while they're around. One of the most important aspects of digital transformation is communication and cooperation.

Keywords: *Global Connectivity, Digital Collaboration Tools, Language Translation, Virtual Networking.*

1. INTRODUCTION

Because of its history of fast change and growth, the information and communication technology (ICT) industry should be actively involved in the fight against climate change. An energy-efficient, environmentally-friendly, and carbon-neutral economy are all within reach with the help of information and communication technology. By bridging physical distances, ICT may lessen the need for travel and the transfer of commodities. It may facilitate the dematerialization of the economy, guarantee a transition from goods to services, and boost efficiency and creativity via giving workers greater leeway in how they go about their jobs. The combined effect should be a reduction in carbon emissions.

By lowering carbon emissions and increasing knowledge about climate change and its effects on Earth's physical makeup, ICT goods, services, and applications have enormous potential to mitigate climate change in various domestic and industrial sectors, especially transportation [1]. There are two schools of thought on how information and communication technologies could help lessen the global economic impact of climate change. Given that the developed and developing worlds of the world experience the expansion and improvement of information and communication technologies in different ways. Even though we've been living in a digital age for over a decade in the industrialized world, the less developed regions have hardly noticed the shift.

Due to the fact that the developed and underdeveloped worlds are separated by a digital gap. For the time being, there will be differences in how each will use ICT to mitigate the impact of climate change.

Video conferencing, audio conferencing, data calls, flexi-work, online purchasing, online billing, geographic information systems (GIS), and other information and communication technology (ICT) goods and applications might help developed countries drastically cut down on their reliance on carbon-related fuels and the likelihood of climate change. Developing countries, on the other hand, could only rely on ICT as a localized information source for mitigating climate change. In the second, people in rural areas get their news and other information via the usage of ICT. Thus, in both scenarios, the ICT Players are seen as possible saviors for the world economy in terms of reducing the impact of climate change. Nevertheless, the actors in the information and communication technology (ICT) ecosystem may play both the hero and the villain roles when it comes to climate change.

The rising frequency of extreme weather events, particularly increases in air temperature, is already having an impact on ICT, and it is very probable that other network infrastructures and equipment will also be impacted by climate change. Too much carbon dioxide gas in the air causes this.

As villains of climate change, ICT corporations utilize energy to power the ICT network, to heat and cool buildings, to safeguard equipment and for transport. However, compared to other sectors, ICT uses less energy and produces less carbon. Further reductions in ICT energy use will occur with the introduction of next-generation networks. In the not-too-distant future, a sizable network will just need basic solar cells or wind power to generate electricity [2]. Most information and communication technology infrastructures will soon be able to rely on renewable energy sources, which are both dependable and affordable.

Video conferencing: Using next-gen multimedia technologies, video conferencing allows two or more people in various parts of the world to have a live, visual conversation. If the managing director of MNB Limited in Finland wanted to have a meeting with the technical team of a service business in Nigeria and a financial adviser from the same firm in the US, they could do it using video conferencing instead of flying to the same place. Consequently, video conferencing has superseded air, road, and train travel for most commercial destinations. Therefore, a lot of energy is conserved, which means that millions of tons of CO₂ are not released into the atmosphere.



Figure 1: Video conferencing

Flexi-work: Many individuals in developing nations and parts of Europe are able to work from the comfort of their own homes because to the rise of the internet. This has eliminated the need for many people to take public transportation, buy gas, or hire a vehicle to go to and from work. A computer, an internet connection, a printer, and a scanner are all that are needed. With the use of information and communication technology (ICT) and tiny solar panels, architects may construct 3D models and send them to clients for approval. Payment can be made online, and many indoor businesses can operate [3]. Here, you won't require a lot of juice since the information and communication technology gear isn't power hogs. This has the potential to drastically reduce atmospheric CO₂ emissions by many million metric tons. Also, we'll rely less on fuels produced by hydrocarbons.

Online billing: Hundreds of millions of consumers in industrialized nations get their bills online. This includes phone bills, electricity bills, bank statements, satellite bills, and more. This has prevented the emission of millions of tonnes of carbon dioxide into the atmosphere, which in turn lessens the danger of climate change, and it has drastically cut down on the energy needed to print hard copies of such statements and the fuel needed to deliver the bills to the different locations of the customers.



Figure 2: **Online billing**

Online Shopping: An internet shopper might place an order from afar, and the product would be sent to him. An African businessman may peruse an item's description online, place an order, and have it sent to him from a European corporation. Because of this, fewer business trips are taken by road, air, or train, which means less fuel is used and less carbon is released into the air. Avoid the catastrophic consequences of climate change by doing so.



Figure 3: **Online Shopping**

Internet: The internet has replaced traditional libraries as the go-to place for research and information gathering on a global scale. The internet has become an integral part of many organizations' and research institutes' marketing strategies, allowing them to reach customers all over the globe. Online registration, admissions applications, and recruiting are becoming the norm. This has drastically reduced the amount of energy needed to print, distribute, and otherwise coordinate the delivery of forms to various locations. In recent years, electronic mail has largely replaced the postal service as the primary means of communication for millions of messages. Consequently, atmospheric carbon emissions are decreased.

The role that ICT plays in reducing the effects of climate change would be different in third-world countries.

It is believed that over 60% of people in the third world still live in villages and work mostly in agriculture. For the most part, rural populations carry out their daily tasks by using traditional equipment and techniques. Even while the use of cell phones and cable TV has increased somewhat, there are still concerns about the amount of information that is shared and awareness that is created in rural regions. Information and communication technologies (ICT) are useful tools for disseminating knowledge, developing capabilities, and enhancing rural people's standard of living [4]. ICTs have the power to dissolve barriers between time and place. In order to maximize the benefits to rural communities, information and communication technologies (ICT) play a critical role in distributing scientific knowledge to end users, particularly those living on the other side of the digital divide.

2. LITERATURE REVIEW

Schmitz, H. P., Hall, N., and Dedmon, J. M. (2020)[5]. Scholars studying international relations (IR) have acknowledged the role that technology plays in helping nongovernmental organizations (NGOs) expand their reach and create transnational networks. However, elite networks spanning NGOs, governments, and international organizations have generally been the focus of IR experts. This essay examines the ways in which digital technologies create new forms of networked power amongst members of NGOs. Digital technologies enable more decentralized campaigns, quick mobilization spikes, and quick response from supporters. Crucially, in the digital age, non-governmental organizations need to choose not just which digital channels to use but also whether to provide decision-making authority to their supporters. There are two queries that come up: First, who defines and creates advocacy content—supporters or NGO staff? Second, is increasing or decreasing involvement the aim of digital activism? Four digital tactics are produced by the answers to these questions: preaching, testing, chatting, and facilitating. These tactics alter advocacy procedures, but only enabling tactics create new kinds of networked power that are predicated on relationships between supporters.

Michael, M., Lupton, D., and Watson, A. (2021)[6]. The worldwide COVID-19 epidemic has placed severe limits on leaving the house, which has increased the significance of commonplace digital devices for distant communication with close relationships. In this paper, we examine how digital tools and software supported and enhanced intimacy and sociality during this time of crisis and isolation by drawing on data from a home-based video

ethnography research conducted in Sydney. During lockdown, digital communication technology became more prevalent in people's daily life. As a means of achieving better intimacy and connection with friends and family during both routines and special occasions, video chatting software has become extremely vital for many individuals. These results highlight the materialities of intimacy and sociality, both digital and non-digital, as well as the opportunities people's improvisation with the affordances of home-based communication technology opened up during a period of prolonged physical isolation.

In 2021, Narayanamurthy, G., and Tortorella, G[7]. This study aims to accomplish two goals. Initially, our goal is to investigate how COVID-19's job consequences affect workers' performance (i.e. output quality and delivery). Secondly, we want to confirm that I4.0 base technologies have a moderating effect on this connection. We used multivariate approaches to assess the reactions of 106 workers from various service firms who had been working remotely throughout the epidemic. The findings showed that, albeit not to the same degree, the work implications of COVID-19 (i.e., home office work environment, job instability, and virtual connection) do affect employees' performance. Furthermore, it was discovered that I4.0 technologies somewhat improved employee performance. Our study offers significant theoretical and practical insights into enhancing employee productivity via the digital transformation of service businesses.

Oliver, M., Ramalhinho, H., and T. A. Oliveira (2020)[8]. The general quality of life is impacted by how people engage with their cities. Their involvement in social decision-making is crucial for influencing public policies that impact law, order, and education. Within the context of smart and digital cities, this connection has the potential to grow, particularly in light of recent developments in blockchain technology. This book presents ideas on how cutting-edge technology and the principles of smart cities might support society in overcoming everyday obstacles to raising citizen awareness. Because digital technologies use information and communication technology (ICT) to foster innovation, they may propel social and economic progress. In this environment, e-governance is emerging as a key instrument for a decentralized democracy, along with disruptive ideas like blockchain.

Ardolino, M., Bacchetti, A., Zheng, T., & Perona, M. (2021)[9]. Thus, the goal of this study is to present a thorough literature analysis that addresses the following research question: What uses can I4.0 enabling technologies have in manufacturing organizations' operational procedures? The study's analysis of 186 publications reveals that, while servitization and circular supply chain management are also on the rise, production scheduling and control is the process that is most often looked at. Furthermore, a broad variety of operations are covered by the widespread combined usage of IoT, Big Data Analytics, and Cloud. In contrast, there is a lack of discussion around other technologies such as Blockchain in the I4.0 space. This suggests that more study be done to broaden the scope of I4.0 in manufacturing.

3. TECHNOLOGY AND TRANSFORMATION IN COMMUNICATION

Organizations may reap great advantages from implementing digital transformation, as the workplace must adapt to the ever-changing business environment. In order for businesses to succeed, today more than ever, they must react effectively to these problems. According to a

recent poll, the majority of company executives from Fortune 500 businesses selected the fastest-paced technology development as the single largest problem they confront in today's environment. Thus, if they want to keep their company heading in the direction of success, they must make a commitment to acting to meet this new wave of difficulty. A company's internal functionaries—primarily its employees—are lost when it undergoes a digital revolution. Additionally, it would be challenging to create experiences and goods that meet the needs of today's consumers if staff members continue to operate in an antiquated manner. These days, technology is an organization's most valuable communication tool[10].

Technology has completely changed how businesses handle marketing and public relations, particularly how they communicate with stakeholders and the media. The quick creation and uptake of new technologies has altered how conventional media is communicated with. The change in technology has also had a significant impact on marketing. Businesses can no longer depend on conventional advertising to bring in money[11]. Several advancements in marketing communication have been brought about by this trend: Nearly every employee in the organization has a computer at home and a cell phone in their pocket due to the increasing prevalence of technology. Employees often carry their smartphones to work (BYOD, or bring your own device) or use them from home to complete work.

Technology for communication has both advantages and disadvantages for enterprises. While technology increases efficiency, it also makes public relations, marketing, and internal communications more difficult. In the modern global economy, technology makes it simple to communicate with individuals anywhere in the globe via the forums of their choosing. Thanks to the Internet, we can instantaneously contact practically anybody via email, instant messaging, social media, or a plethora of other applications. Gone are the days of waiting for a stamped letter to travel great distances or accruing large long-distance phone bills. Costs have decreased significantly as communication speed has increased.

These days, complex technology is readily accessible and well-liked, with new advancements appearing almost daily. Hence, a company's ability to adapt to and comprehend the technical advancements underlying media and communication systems, shifting societal perspectives, and emerging media goods influenced by social factors will determine its level of success. Even while these new media are upending long-standing corporate strategies and business models, they also provide organizations with fresh, exciting chances to strengthen client connections and grow via tactics that adapt to this rapidly evolving new media landscape. The effectiveness of new media and digital communications is widely shown by available data [12]. The declining results from old tactics are something that most marketers have personally experienced. This is the reason why a lot of companies seem to be waiting for the digital revolution to happen, even if they are aware that it will probably affect them cognitively tomorrow rather than now. A day that, until it's too late, never seems to come. Until they get a wake-up call that their competition is leading search results, has more qualified online visitors, and improves conversion rates—all of which translate into more sales, decreased expenses, and greater margins—their rival has already taken the lead and dominated them.

4. TRANSNATIONAL CONNECTION

The term "transnational connection" describes the bonds, exchanges, and connections that cross national borders [13]. These relationships may arise in a number of domains, such as but not limited to:

- **Cultural Exchange:** People from other nations may more easily share cultural ideas, customs, and practices thanks to transnational links. This might include exchanging languages, music, artwork, literature, and gastronomy in order to promote a better understanding and respect of other cultures.
- **Economic Integration:** Through their ability to facilitate cross-border commerce, investment, and financial flows, transnational links are essential to the global economy. Mechanisms that encourage economic integration and transnational ties include international trade agreements, multinational firms, and global supply networks.
- **Social Networks:** Social networks that transcend national boundaries clearly exhibit transnational relationships. Through social media, online forums, and international organizations, people build communities, connections, and interactions with people from other nations, encouraging cross-cultural communication and cooperation.
- **Migration and Diaspora Communities:** Diaspora communities, where people live abroad but keep in touch with their home nations, are created as a result of migration [14]. These international ties support social cohesiveness, economic growth, and cultural exchange in both the host and the country of origin.
- **Academic and Research Collaboration:** In order to solve global concerns, exchange information, and develop scientific understanding, intellectuals, scientists, and researchers from many nations must collaborate across transnational boundaries.
- **Political and Diplomatic Relations:** International accords, alliances, and negotiations are influenced by transnational links, which also impact political and diplomatic ties between nations. Countries may interact and collaborate on common concerns via diplomatic channels, international organizations, and summit gatherings.
- **Humanitarian Assistance and Global Aid:** International help and humanitarian relief operations are aided by transnational links in times of crisis, natural catastrophes, and warfare. To address humanitarian needs internationally, international non-governmental organizations (NGOs), relief groups, and multilateral initiatives combine resources and assistance across boundaries.

5. CONCLUSION

Technology has impacted communication in a number of ways, including better quality, lower communication costs, and changes to the nature and manner of communication. Technology is used in many different forms of communication, such as online chats, email, blogs, video calls, and mobile phones. Additionally, it has become clear that when dealing with communication hurdles, one should try to employ technology. Technology also makes it easier to preserve previous connections and capture and save vocal interactions. Notably, technology hinders the growth of interpersonal skills and ought to be avoided when the development of such abilities is necessary [15] Conversely, the same principle need to be followed while corresponding with those who lack comprehension of the workings of certain communication devices.

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