CHALLENGES OF THE COVID-19 DURING PANDEMIC SITUATION, THE POSSIBLE SOLUTIONS USING INFORMATION TECHNOLOGY

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ABSTRACT

Different technological advancements and technologies for the war against the pandemic have been created. The pandemic similarly has consequences for technology design, production and use. Better awareness of the roles that information technology system and technology investigators will play in this worldwide pandemic is urgently needed. This paper addresses new developments for reducing COVID-19 risks and relevant issues in the architecture, implementation and usage of technologies. It also offers perspectives and recommendations about how IT scientists can better combat the COVID-19 pandemic. This paper contributes to the future advancement of science and technologies to address pandemics and future pandemics adequately.

Keywords: Information Systems, Digital Divide, Block Chain, Artificial Intelligence, Covid-19

INTRODUCTION

COVID-19's pandemic has had a significant impact on healthcare services, businesses, universities, and the community. Telehealth, remote work, and online education are all becoming more relevant in assisting the community in halting the spread of the Coronavirus (Loh et al., 2020; Chavez et al., 2020; Young, 2020). The pandemic has intensified attempts to utilize innovative technologies to counter the COVID-19 threat to our existence (O'Leary, 2020).

Because of these devastating epidemics, opportunities are often presented to the need to research science-based technologies are reinforced by the call for programs to help store, use, and access knowledge and monitor technology. As well as application procedures, use of technology and developing technology, is seen with more epidemics, is currently in more critical, yet only in helping the advancement of operational processes. Implementation of technology is essential in medical settings (Sein, 2020). But this surge in the way we arena services points to is representative of how prevalent and valuable digital technology has become capable. When used in a structure in tandem with panda viruses, there are huge advantages to using new technology and critical dangers to regulating the pandemic (Richter, 2020). In hospitals, clinical decision-makers, emergency and disaster planning and risk control, information technology and Information systems (IT/IS) have a significant role. Many IT and information security professionals have joined the fight against the pandemic through various approaches, such as the development of infectious vaccines, mapping, forecasting, and defence of medical facilities from cyber attacks (Mingis, 2020). Training and management expertise in emergency response can be used to defend against future bio vitamin COVID-19 and the

possible pandemic (Gerfalk et al., 2020). In contrast, skill-based telework will increase and teaming up the data capacity and benefiting from big groups and virtual teamwork to allow for greater working efficiencies. It's unclear if study contributions to information management (IS) can counteract the effects of COVID-19.

The pandemic has consequences for knowledge management and technologies production, and usage (Sein, 2020). Researchers and experts can help interpret global disease knowledge of the COVID-19 technologies and activities and participate in recommended response analysis topics such as social-distancing jobs, contactless companies, mask-carving, or other emergencies COVID-19 implementation of anonymity, cross-supply, data donation and monitoring events, robots, and other applications.

Rai (2020) has defined several prospects for IS research to lead to the pandemic and severe incident resistance, such as (i) rethinking public wellbeing infrastructure through responsive to constructive instead in the application of real-time monitoring systems and communication tracking techniques to stem transmission(ii) transforming organizations by strengthening risk management led to resilience and crisis prevention demonstrated fragility and (iii) Responding to, engaging with, and fighting the knowledge epidemic inspires individuals and communities. Dwivedi, et al., (2020) provide an evaluation of COVID19's crucial problems from an information system and technical viewpoint, as well as perspectives and guidelines for study and experimentation on the effect of COVID-19 on information strategy formulation and execution in transforming education, employment, and existence.

This article relies on technology incorporation from the evidence, method, and people viewpoints, discussing how computer systems and technology academics may add expertise and experiences to help combat the pandemic as information systems and innovations become more embedded in the community. The existing information technology in use Information systems and variously employed techniques are employed by the researcher in both the design and the development of new technology that enable them to better manage emerging methods in the event of a catastrophe and to better assist the industry in coping with future disturbances.

Current Information Technologies Solutions

The paper looks at various technologies designed to help address the implications of the COVID-19 virus crisis by using the data people paradigm instead of treating one kind of chronic illness at a program at a time. Bardhan, Chen & Karahanna (2000) suggest a multidisciplinary approach that focuses on data gathering, processing, and dissemination. The behavior models for people indicated by them and which provide guideline framework are in that case study include guidance and framework for dealing with several chronic ailments. It should be remembered that the initial data people and systems were developed with illness-specific data. They will require work to cope with the current circumstances, though, as seen with the pandemic.

The COVID-19 epidemic underscored the vital importance of transitioning public health technology from a reactive to a proactive mode and implementing technologies capable of delivering real-time data for regulating public health processes at the local, state, and national levels (Rai, 2020). COVID-19 is unusual for infectious diseases in that it is highly contagious, spreads across individuals, and has a high mortality rate. Additionally, since COVID-19 is a novel disease, clinical knowledge about the infection, medical activity, and government and business practices are all changing. COVID-19's influence on people and society is constantly evolving in previously unseen ways. Due to the severity of the current pandemic situation and its repercussions, combating the COVID-19 pandemic would need tight collaboration across several instruments.

This paper would discuss technological strategies for combating a COVID-19 pandemic and the obstacles and future opportunities for researchers in information systems and substructures about the threats and risks raised by COVID-19. We conducted a thorough study of internal technology, interactions, and technology processes, using academic databases and

internet search engines. With a variety of questions about technology, Corona virus, and COVID-19, we synthesize the related discussions in magazines, internet forums, websites, research publications, technical articles, and unpublished or scholarly articles.

Recent scientific innovations have been developed to tackle this pandemic. Software and robotic process automation for the COVID-19 contact tracer on smart phones. This innovation will help to mitigate the corona virus disease outbreak's individual, organizational, and social consequences. Utilizing emerging technology effectively and creatively will aid in detecting the widespread dissemination of Corona virus in the community, tracking the health of infectious patients, optimizing COVID-19 services, and enhancing medical treatment and vaccines (Johnstone, 2020). These technological applications are evaluated in this section using the data's human-system framework Bardhan, et al., (2020).

Artificial Intelligence Technology (AIT) can be used for early infection detection and diagnoses, for quicker drug detection to develop new therapies, including machinery training, image-recognized and deep learning algorithms; (Brohi et al., 2020). Few organizations have revised established excellent programs initially planned for other places to help implement and trace social distances (Sipior, 2020).

Healthcare professionals can use 3D printing to produce face masks and other Personal Protective Equipment (PE). Mark forged and Neuro photometrics collaborated to create 3D printed rayon enveloped nasopharyngeal (NP) swabs for COVID-19 research. Swabs may be prepared even more rapidly, in less than three minutes, and effectively trap viral particles (Markforged, 2020).

In extensive data analysis, individuals who require quarantine can indeed be identified based on their travel records. A COVID19 curve is used, antiviral and antibiotic drug production can be accelerated, and COVID-19 can be understood in time and space. Big data analytics is effectively implemented in Taiwan to identify COVID 19 cases by examining hospital visits, travel background and clinical symptoms and generating real-time alert (Wang et al., 2020; Wang et al., 2020; Watson et al., 2020).

HPC networks and supercomputers must process large data sets in a shorter timeframe to tackle complicated research challenges with modern medicines and vaccinations. To use computing and supercomputer capabilities in the US, the COVID-19 Powerful Processing Collaboration was introduced. The consortium consists of 16 national and international authorities, such as the US Administration for Energy (Department of energy) (Woo, 2020).

As people carry videoconferencing smart phones and apps, tracking their actions and advising them about COVID-19 hotspots can be done *via* mobile applications. Will assist with online purchases, online training, and teleworking. Twenty years from now, a variety of applications have been created for the healthcare and community sectors. The National Science Foundation has given the grant to help Princeton researchers generate a method to use cell phone firmware updates to provide public health departments monitoring capabilities. Only keys to nearby details will be saved on the device if the handset owner has permitted this. Assume a patient has a good prognosis for COVID-19. Scientists will also trace all other cell phone users within a specific range of the infected individual. There's a tendency for the health official to be oblivious. People with an infection can be notified by the health departments or told to check themselves to be under disorder (WHO, 2020).

Robots that are infected with the Corona virus are included. There are several machines. Hospitals, for example, employ robotics as support devices for food and drug delivery, as well as disinfecting rooms and other hotspots that do not need active human intervention. According to a CNN post, Seattle laboratories treated the country's first confirmed Corona virus positive patient using a tablet (Chavez & Kounang, 2020). Drones are often used to provide medical vehicles, patrol public areas, and monitor for failure to comply with lockout mandates, among other uses (Marr, 2020; Marr, 2020).

Corona virus infections are detectable through the Internet (Kumar et al., 2020). Much of the Internet functions include gathering, delivering, and processing data. Internet of Things

cameras and teleoperated robots could be used for data collection. The third step is gathering, aggregating, and analyzing data in the cloud. Patients are quarantined. Thus, medical data can be managed, tracked, and awakened on cell phones, decreasing the risk of contracting the virus (He, 2020). Furthermore, early detection, lockout, and recovery are critical to Internet of Things (IoT) implementations (Nasajpour et al., 2020).

Blockchain-to-based transactions are streamlined. It is safeguarded by agreement (Chong et al., 2019). For example, a Smartphone application has been developed to help combat the spread of the Corona virus. The block chain app provides the participant with a personal identification number that gives a digital connection to the government's plan allows needy people to obtain food or necessities (Sinclair, 2020). Blockchain helped prevent fraud. They used block chains and financial services throughout the outbreak to increase the rate of claim management and payment security (News Staff, 2020). Blockchain technology has been used for public trust and non-based record issues, such as patient confidentiality issues, with regards to tracking COVID-19 (Khurshid, 2020).

All of the above technology needs evidence, people and systems to be integrated. We generally divide them into three groups based on their primary purpose and their original design goal for practical usage. The COVID-19 data-centred innovations include data science, deep learning, extensive data processing and HPC architecture. Human-centred applications include robots and 3D printing tools to assist patients and protect stable people from viruses through complex mechanisms. System-centered solutions include remote touch tracking applications, the Internet of Things and Block chain; systems models are designed to control patients and avoid corona viruses in healthy people. Some of these innovations are interrelated and may go beyond other definitions, based on how innovative people utilize them in different ways as they are needed to cope with the pandemic. Extensive data analysis to classify individuals that need quarantine can have system-centered or human-centered dimensions, based on the particular intent, which various governmental institutions may use, health departments, hospitals, and organizations. Table 1 summarizes the three technology categories and their details, personnel, and systems support.

Table 1
TECHNOLOGY CATEGORIES AND THEIR DETAILS, PERSONNEL, AND SYSTEMS SUPPORT

COVID-19 Solutions	Technologies	Data used	People	The system
Examine disease cases (Punn et al., 2020)	Machine Learning/Deep Learning	Real-time data through computed tomography objects		Deep learning framework that is fully automated
Diagnostic and prognostic analysis (Wang et al., 2020;Wanget al., 2020; Watsonet al., 2020)			5372 Total numbers patients	
COVID-19 instances may be detected automatically. (Ozturk et al., 2020)				
COVID-19 instances are automatically detected. (Ozturk et al., 2020)		Raw chest X-ray images	125 patients	

Early triage of critically ill COVID-19 patients (Liang et al., 2020)		Medical history from hospitalized incidents that have been laboratory checked	Five hundred seventy-five hospital centres treated 1590 people, 131 of which developed the acute disease.	
People's habits are being tracked, outbreak movements are being considered, and pharmacological resources are being regulated and normalized (Ting et al., 2020; Liu., 2020). Creation of new drugs and vaccines (Wang, 2020)	Analytics with Big Data		115,000 inhabitants in Anhui and neighbouring Hubei provinces	Map of Baidu Migration
Exploration of targets and medication selection (Liu, 2020)	Infrastructures for high-performance computing			Alibaba's massive computational capacity
Deliver food and medicine; clean rooms; and treat patients (Yang et al., 2020)	Robots		Patients; Healthcare workers	Non - contact ultraviolet (UV) layer sanitization operated by a robot; Temperature measuring mobile robots; Nasopharyngeal and oropharyngeal swabbing that is automated or robot-assisted; Drones or land vehicles that operate autonomously; Camera networks that are done by robots;
Make safety goggles and research swabs (Choong et al., 2020)	3D Printing Technology		Patients; Healthcare workers	Personal security systems; Kit for practising COVID-19 swab testing procedures;
Specific travel tracking: prevents people from attending COVID-19 hotspots (Budd et al., 2020)	Digital contacts Patients; Healthcare workers	Data from mobile devices and social networking	Patients; Healthcare workers	Apps for tracking smartphones

Promote operational conformity with vaccination prerequisites; remote help physicians (Rahman et al., 2020)	Internet of Things	Sensor data; mobile data	Patients; Public	Intelligent disease control mechanisms built on the Internet of Belongings
Create a "digital persona" for safe people; process claims and buyouts (Bansal et al., 2020)	Blockchain	COVID-19 connected medical information	Public	The system with Immunity Certificates

Challenges during Covid Pandemic

In COVID-19, the shortcomings of emerging schemes in terms of public health were highlighted. In several ways, the application of pandemic technology poses problems. To promote global cooperation, the unique essence of the pandemic in tackling COVID-19 demands close teamwork between linked data and individuals and networks (Bardhan et al., 2020). Public health departments and health partners traditionally may not have the same frameworks, evidence or guidelines that hinder the potential to detect patterns and improve pandemic intervention. To consider the emerging pandemic and make collective choices on tackling the epidemic, Community health researchers, biologists, and public officials must collaborate. *via* the interconnected data structures. Since people are instrumental in fighting the COVID-19, various stakeholders must be connected, coordinated and supported by advanced and joined technology.

Systems Link to Technology Integration

Emerging technologies such as IoT, extensive data analytics, and block chain were leveraged to tackle major corona virus issues. Coding another way: Facebook uses big data and artificial intelligence to use satellite images and census data to look at traffic trends and demographic figures and find the best locations for distribution (Holt, 2020). Often, allowing Geographic Information Systems (GIS) and Internet of Things sensor data on infected individuals helps epidemiologists find non-infected individuals (He, 2020). Recently, the National Science Foundation earned a gold medal for its role in social network epidemiology and risk management analysis. Genetic and scientific data with significant commitments to public health and defence, these new technologies are converging (Gurgu et al., 2019; Singh et al., 2020). Often, blockchains can store and transfer non-to-patient non-specific sensor data had to comply with stricter laws concerning privacy regulations (Agbo et al., 2019; Onik et al., 2019). The incorporation of big data techniques will offer on- and off-the-and-the-off chain analytics and near-real-time data reporting.

Continue to improve various government departments, medical associations and organizations; several programs or apps used to address the pandemic are still loosely interconnected. Systematic systems and instruments lack the systematic convergence of different innovations into the international response to pandemic threats. Guidelines and organized efforts for coordinating the processing of vast quantities of quality data relating to corona virus cases are essential for integrating these various technologies. The creation of efficient Big Data and AI algorithms involves providing accurate and good quality data by public health departments and hospitals. The convergence of various compatibility information sources is complex due to the absence of specifications. Any data sets may be organized, and others may not be organized (Pham, Nguyen, Huynh-The, Hwang & Pathirana, 2020). Standard protocols are often needed to

allow connectivity through networks without jeopardizing data protection. Governments, leading tech companies, health associations and other related actors must work closely and actively together to identify standards, specifications, data formats, categories of information, etc.

In recent decades, IT and scientists have investigated the use of systems in companies or enterprise environments (Henningsson, Yetton & Wynne, 2018). IT experts have studied the function of computer technology in crisis, disaster, and emergency response (Valecha et al., 2019). Information and technology researchers can take advantage of the ability to share their expertise in device architecture, emergency and crisis response services, and other areas to offer guidance and strategies to developers of diverse software and infrastructure construction programs.

Through Data Connecting Sharing Best Practice

To provide tailored responses by coordinating efforts to help countries face this crisis in diverse forms and at various periods, the World Health Organization (2020) proposes new collaboration and information exchange. Governments should cooperate in exchanging data, intelligence, expertise, appropriate action and coronation coping in the face of a global pandemic. Furthermore, it will be essential to coordinate the transfer and use of data and information by key parties between organizations and governments to address the issues that have arisen due to the pandemic. China has taken, for example, extreme steps to prevent the transmission of the Corona virus from shutting up Wuhan, a big city with millions of inhabitants (Lin et al., 2020). For other countries which consider similar steps, valuable experiences and lessons relating to their effectiveness as a containment measure can be helpful. Technical data collection and the use of information management (IM) systems such as information repositories, information libraries and online forums can be used for more efficient and secure data interactions to access resources at lower rates (Pan, Cui & Qian, 2020; Bardhan et al., 2020).

Experience and understanding systems such as specialist systems and informed decision technology have been utilized to help patient detection and diagnosis by health professionals and to provide the appropriate health care partners and decision leaders in the pandemic epidemic with an excellent port for decision-making (O'Leary, 2020; Rehfuess et al., 2019). In the course of the corona disease widespread, data analysis and simulation tools have been used to explore and simulate the progression of science through time and places. Online healthcare groups have been established to enhance the knowledge of the symptoms and efficacy of therapies for health professionals, patients and other stakeholders (Yan & Tan, 2014; Ziebland et al., 2004). These systems are sometimes operated on a silo, though, and not commonly exchanged details, information and expertise retained on their systems. We have to build an atmosphere that encourages people across countries to exchange knowledge rather than to maintain or keep knowledge for different processes and members in various cultures of practice to transfer knowledge within and throughout their domains. Strategies to measure the consistency of experts and supporting approaches to break down cells in the sense of coronavirus epidemic.

Compliance issues should also be addressed to encourage data exchange and best practices among stakeholders. Over the years, computer system and technology experts have been called upon to consider the unexpected or detrimental impacts of innovations (Chiasson, Davidson & Winter, 2018). IT specialists rushed to develop touch management, tracking and quarantine networks, software and services. Some are lightweight, and others are intrusive (O'Neill, Ryan-Mosley & Johnson, 2020). Some technologists are lightweights, and some invasive. Many experts, for example, have promoted the usage of remote touch tracking and health code software to minimize the transmission of the disease (Oxford Analytica, 2020). To fear that more marginalized populations are monitored by an application (Lin & Martin, 2020). Implementing tracing on the Internet may be helpful but may lead to catastrophic results if it is not handled carefully (Huang et al., 2020).

Some researchers, for instance, inquire about the anonymity of the data but whether the personal identity of infected persons may be quickly declared or deduced (Lee & Roberts, 2020). Data obtained by existing mobile tracing applications may be misused or used for long-term and other uses by healthy organizations. Many citizens are worried about whether these corona virus apps are safe to use, and policies to discourage abuse of customer confidence would be lost when certain obstacles are likely to be expected. Much further study into these controversial new pandemic-fighting strategies is required.

Information on CVID is crucial in containing the spread of corona viruses. Health agencies provide tools, such as Smartphone applications, to aid corona virus detection. These apps record a person's approach and then warn them if they are vulnerable to VICO. Authorities in Australia have frustrated the ability of non-health department authorities and obtain corona virus data to quell public outcry by refusing to release it. The Europol said (recommended) that people should use data and tracking techniques to help protect privacy and protection. The Apple and Google touch management programs launched many initiatives, including improved confidentiality and precision.

On the other hand, some researchers believe that it is correct to protect lives, support greater interest, and ensure public health in the event of an epidemic to remove momentary privacy measures for specific inventions. Many individuals have used the social web for personal knowledge exchange (for example, wearing masks and buying sanitizing products) such as health and defensive behavior because revealing this knowledge contributes to the public interest (Nabity-Grover et al., 2020). Any researchers argue that the utility of technologies to preserve public health does not decrease privacy issues (Cho et al., 2020). They don't believe these inventions intend to transform culture (Ferretti et al., 2020) permanently. The absence of agreement on the security of privacy in COVID-19 technology means that best practices to assure people on data collection must be established (Fahey & Hino, 2020).

The implementation of many innovations, including the exchange of information on challenges resulting from this pandemic, requires public faith and trust (Ferretti et al., 2020). At present, in western societies, it is voluntary to implement remote touch tracing applications. In Western institutions with a tradition of individualism like Europe and the United States, these topics are seen to trigger more controversy than in nations with a culture of collectivism. However, at least 60% of mobile users ought to opt-in to those applications for efficiency (Scott, 2020). It is a struggle to encourage mass users to accept these applications. During this life-lost coronavirus pandemic, IT structures and technology experts will help to assess digital software and communications use and technology. It includes Cognitive computing to provide an outlook for user-related data, develop incentives for users to share necessary data when required, and develop mechanisms for ensuring technology neology is designed (Ienca et al., 2020; Lee et al., 2020). Experts in information management and infrastructure will also assist in defining best practices in applying responsible data and data preservation and striking a balance between data security and the utility of the proposed innovations.

Connecting Individuals to Improved Information Technology and Collaboration Tools

The COVID-19 outbreak is rapidly changing the environment. Millions around the World use television to get their offices into their houses. Many companies benefit from the reality that information workers are operating virtually, from home, and utilizing cloud storage to manage and store files. During this pandemic, internet applications became more widely accepted by citizens and different forms of industry. IT infrastructure has been generally recognized for the importance of telecommunications, online literacy, e-governments, e-commerce and other online operations. The pandemic forces a record number of people to operate remotely for a long time, leading to excessive traffic on distributed networks. To combat the current COVIR and preventative epidemics, the community must invest in IT and digital transformation three years ahead of target; Firms would raise their expenditure in video

conferencing and decision support technologies to support remote teams and collaboration p Short-on, the other hand, in contrast to teleworkers, many students join online classes because of the COVID-19 epidemic

The increase in IT infrastructure's harsh costs correlated with satisfying high demand needs to be understood. For staff to carry out their duties securely and healthily, IT infrastructures must be increased as the pandemic develops (CISA, 2020). There could not be any vital assignments from home, and workarounds have to be found. The reasons that lead to increased demand for teleworking must be identified in particular, including the expense of cloud servers, video conferencing and additional licenses for support devices. Established infrastructure including Google Cloud, Azure, AWS or Salesforce can further exploit Cloud resources. Strategies must be formed to maintain and operate essential functions and facilities. CIOs ought to reflect on the current needs or create new frameworks to address unique circumstances (Watson et al., 2020). Finally, the preparation and stability of the digital infrastructure are still relevant fields for research (Papagiannidis, Harris & Morton, 2020).

In time-constrained cases, decision-making is still essential. Communities and governments, and health departments may use IT and information management experts to discuss their expertise to aiding strategic collaboration and member engagement. Experts in information technology and engineering will help build IT systems, community-based IT systems, and youth-run IT initiatives that employ the help of stakeholders' E. For example, a COVID is creative. COVID-19 wastewater identification may be an early alert device for community screening and protection as an addition to medical tests. Continued surveillance of wastewater may warn health authorities about the continued circulation of Coronavirus in one population (Chakradhar, 2020). Many volunteers are required to identify COVID-19 wastewater early successfully. Information management and technical experts will contribute to developing and developing a volunteer network with a broad range of volunteers by supplying resources to support governing, councils, and local populations and helps set up a shared information infrastructure to implement the national program (Thomas & Bertsch, 2020). According to Rai (2020), the rapid implementation of grassroots creativity will create fast measures to meet emergency needs.

Studying Human Psychology with Internet Usage and Technology

It's necessary to research human behavior in the development, construction and usage of technology while governments, organizations, and citizens create, adopt and utilizes more COVID-19 technologies. Many attempts to fight the pandemic include new developments in technology and ways to integrate different technologies and inventions. However, the misbehave of people with technology can decrease the efficacy of technical interventions or countermeasures to contain the breakdown of Corona virus. Info systems and application researchers may contribute to the creation and advancement of technology by integrating their knowledge of human behavior (Pfleeger & Caputo, 2012). The acceptance and use of associated technologies such as COVID-19. A number of models, including the paradigm of technical acceptance, the principle of creativity by reasoned action, the theoretical constructs, and the idea of action, were used to analyses telemedicine technology. Let's use an illustration like discovering online patient groups that may facilitate interaction, exploring how groups can interact, and finding out how groups like COVID may share knowledge (Bardhan et al., 2020). after the pandemic, we've seen a digital void. Digital content usually does not pertain to those who have particular or simple control problems accessing it. Abilities to successfully use technology vary (Newman et al., 2017). Mobile applications, such as wearable’s, augmenting social disparities and gaps with IT, the Internet of Things, and Big Data analytics (Park & Humphry, 2019). The dilemma of a digitally divided society is revealed in this worldwide pandemic. labor, studying, socializing, senior citizens, people, people at risk of poverty, and the poor spend far more time at home (Venkatesh, 2020). Because of this, IT academics would

assist in designing policies and approaches to reduce digital inequalities where governments need it.

Providing a better understanding of digital inequalities in organizations and societies (Bardhan et al., 2020). In the United States than in any other developed country in the World (Nemo, 2020). People of colour have little public health expertise and little familiarity with health research. IT researchers should take an active role in determining the extent to which the vulnerable are concerned, including and impacted by women, the aged, and people of colour. COVID-19 tools and systems related to technology include apps searching patient information, mobile contact tracking programs, COVID-19 self-checking chatbots, quarantine monitors, and long-term telecommunications. The short, long-term and expected effects of the digital divide on disadvantaged populations, minorities, older citizens, colour people and rural communities during the COVID 19 pandemic will be worth understanding. Information systems and technology scientists will play their role in improving technological design and promoting digital inclusion, helping to evolve and introduce the proposed technology effectively and sustainably, especially in the more impoverished communities. Goh, Gao & Agarwal (2016) demonstrated, for example, that knowledge sharing and alleviation could lead to technology-assisted online health communities in rural-urban areas. The neediest families may also be assisted by Online Wellbeing Community (Friedman et al., 2018). Information systems and data scientists will investigate influences that impact underutilized markets and societies in adopting and efficiently using new technologies. They may also recognize incentives for promoting knowledge exchange and the widespread adoption of relevant coronary technologies by the underprivileged population. Understanding the diverse experiences of the under-served community during this coronavirus epidemic will include guidance on the creation, implementation, and usage of new IT solutions for future IT systems and applications.

CONCLUSION

The pandemic caused by COVID-19 has far-reaching consequences for people, industries, and civilization. Furthermore, the pandemic has ramifications for the design, growth, and application of technology (Sein, 2020). Technologies may help mitigate the impact of the coronavirus pandemic on people, organizations, and the community. On the other side, pandemic response technologies raise concerns regarding security, privacy, racism, ethics, and the digital divide. This essay examines technological applications through the prism of a data person-system and argues that the pandemic's simplicity is essential for global collaboration to flourish. COVID-19 is a joint project including materials, organizations, and services that are connected.

There are sure to be future pandemics. While IT experts might not be willing to relate explicitly to the science side of vaccines and care, we will contribute expertise, skill, and time to help the population properly equip itself for potential pandemics. Chin & Chin (2020) requested a national, shared data room for highly contagious disorders to reduce potential costs of pandemics and increase the exchange of data across global public health emergencies. Whilst it is challenging for different reasons, including technological, geographical and ethical challenges to build a global shared space for exchanging data on public health, we embrace its call for good benefits and more comprehensive social advantages. At the moment, IT experts can at the very least lobby for and build a common national data field or health information networks for the sharing of public health data.

To resolve major societal problems takes considerable financial and human capital. We urge scientists to regularly apply for numerous grants from governments and industries, including various funding resources for COVID-19, to obtain financial assistance to bring into motion some of their scientific proposals to enhance the significance and usefulness of training systems technology research. The United States, the National Science Foundation and national health organizations, for example, have funds to promote technological research to solve corona

virus issues. IT researchers can prepare grant applications and be funded specifically to operate on certain of these study ideas by conducting or forming an interdisciplinary team. In addition, several teachers, both undergraduate and doctoral students, seek internship programs in computer management and technology. Given the pandemic that struck most small companies, such as travel, food and retail, IT and teaching will take students' summaries, bring them into Google drives or a database and exchange summaries with interested small business owners. The student can collect knowledge about information systems and technologies. Additionally, it will assist ICT students and innovative small companies or non-profit organizations in solving facility and other problems that could occur during the pandemic. We understand that some professors in information technology programs and applications are doing this and aiding small business owners in introducing emerging solutions to address business continuity issues (Papadopoulos, Baltas & Balta, 2020).

Several professors participated in seminars for the advancement of digital solutions (e.g., correcting misinformation) and aided in the preparation of activities such as cyber hacking to get individuals with different expertise together to collaborate towards society-based solutions to COVID 19. (Bacq et al., 2020; Pan & Zhang, 2020). We hope to see more information technology academics interested in the process of developing and extending. To combat VICO-19, volunteer infrastructure networks, as well as shared support and programs, have been applied. Finally, after the pandemic is finished, some of the latest technologies and software built for it would become outdated. Nonetheless, several may be preserved, enhanced, or repurposed (Oxford Analytica, 2020). For instance, would pandemic-era data on mobile touch tracing be destroyed? To avoid the misuse of user data and to direct the creation, implementation, and use of potential mobile communication monitoring and follow-up tools? What types of privacy policies are required?

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