IMPACT OF TECHNOLOGY IN COVID- 19 PANDEMIC

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Abstract: *Technology may or may not prevent the onset of a pandemic; but it can certainly prove to be helpful in handling a crisis efficiently. We all know how badly our lives have been affected by COVID-19, both personal and professional. Our ability to embrace technology has been our lifeline during this period of utter confusion and relentless fear. In order to introduce new creative ideas as quickly as possible, states, venture capitalists, research institutions, incubators, start-ups, and large and small businesses are all doing their part. Old and new policies are being developed and updated by governments to facilitate the accelerated advancement of technologies that can help eradicate the Coronavirus.For instance, the Ministry of Corporate Affairs (MCA) now allows businesses to channel their mandatory spending on Corporate Social Responsibility (CSR) to help finance new disruptive technology that will help combat the COVID-19 pandemic. The Invest India Social Impact Team is growing the MCA's initiatives by putting together a repository of qualifying CSR technologies that can assist in COVID-19 research, curing and prevention.*

Keywords: *Pandemic, Covid-19, Artificial Intelligence, Machine Learning, Deep Mind*

Introduction :

"The worldwide pandemic is COVID-19, an infectious disease caused by the novel extreme acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The key basis of pandemic control has been containment and prevention with high transmissibility, a case fatality rate greater than 1 percent, and no successful antiviral therapy or vaccine. However, countries around the world have had varying degrees of success in handling the burden of COVID-19, despite relying on proven public health principles. The human race has been threatened time and again by epidemics and pandemics. In the past, SARS, H1N1, Ebola, and more have exposed their teeth, but with each such outbreak,we are finding new ways to tackle and treat such unexpected diseases that can kill millions of individuals. The onset of pandemics cannot be stopped by technology; however, it can help deter the spread, inform, warn, and encourage those on the ground to be aware of the situation and reduce the effect noticeably. Today, it has become possible to test many creative approaches to pandemic response with converging technologies such as mobile, cloud, analytics, robotics, AI/ML, 4G/5G and high-speed Internet. We have identified eight such areas here in which technology plays an important role.

Misinformation on the number of deaths, options for diagnosis and care, vaccinations, medications, government policies, etc., causes more population fear and anxiety. The effect can be widespread disorder, panic buying, hoarding of critical goods, rising costs, street crime, bigotry, theories of conspiracy, and so on. Companies like Google, Facebook, and YouTube work diligently to direct people to the right, verifiable facts, such as that reported by the WHO or local authorities and government, in order to minimize false information. By making accurate information available to everybody, a transparent scenario can be created and the people can be informed about the right steps to take."

Role of modern technology to quell COVID-19 :

Technology refers to methods, frameworks and instruments used for practical purposes that are the after-effect of scientific knowledge. Machine Learning (ML), Natural Language Processing (NLP), and Computer Vision applications may be described as artificial intelligence. These skills instruct computers to use huge models based on knowledge to design, portray, and forecast. AI focuses primarily on patient and virus identification, medical imaging procedure, disease monitoring and its prediction in the fight against coronavirus. It also involves alerting, knowledge building and social control through the internet, on the other hand.Following are some ways where technology is being used in the fight against COVID-19.

Distance Learning :

Approximately 191 countries have either introduced or declared the closing of schools and colleges, which has directly affected close to 1.57 billion students, according to a recent study. To ensure that schooling is not interrupted due to the pandemic, several educational institutions have begun offering their courses online. In remote learning, innovations used include augmented reality, 3D printing, virtual reality and artificial intelligence-enabled robot teachers.

Online Entertainment :

"How content is created, distributed, and streamed has been fully transformed by COVID-19. Across the globe, online broadcasting of live shows and concerts has gained momentum. Through 'Over the Top' (OTT) platforms such as Amazon Prime Video, Hotstar, Netflix, Zee5, Voot Pick, etc., several film production companies have also released their films. With perennial additions of diverse material, OTT addresses the diverse desires of people around the world.

The lockdown has allowed individuals to understand the ease of viewing content on OTT platforms; it has altered the way people access content on a daily basis. In the lockdown time, OTT platforms have seen a large increase in both app downloads and viewership.

In their user base, several gaming platforms have witnessed tremendous growth. There has been a major increase in the revenue of the gaming industry and the length of the games being played. People are using gaming to deal with COVID-19 stress as an alternative."

Healthcare System :

Health care is one of the main sectors in which IT is making a difference during the COVID-19 pandemic. In world health organizations, hospitals, research centres, and labs, technology has played an immense role in raising standards. In the medical community, we sometimes forget just how common IT is. Digital health has become an integral part of the medical community and, during these tough times, it plays a critical role.

Everywhere, new hospitals and healthcare facilities have digital instruments and information technology. In reality, it includes everything from devices that enable virtual care to track patients and interact with any patient with coronavirus disease 24/7 without being physically present, to networks that store clinical data and allow institutions and clinicians to easily access and exchange patient records, test results, and other health information while they are present.

Critical Role in Spreading Information :

"During the crisis, IT and digital technology have allowed individuals to easily and quickly exchange information. By distributing news related to the COVID-19 virus to millions of people, healthcare organizations and governments use information technology to enhance public health. In a matter of seconds, any breakthroughs, preventive steps, and medical advice that can help save lives are exchanged through networks and devices.

In reality, organizations such as the WHO have created websites providing rolling updates on the coronavirus and top stories. In addition, several organizations are streaming on social media in an effort to notify individuals of the latest virus alerts and information. As well as statistics on the virus at a global level, they list preventive steps that people can take to stay healthy. Countries are doing the same thing, and providing region-specific data offers insight into population health and the steps being placed in place during the spread of COVID-19 to keep people healthy. There are also dedicated lines that people can contact to get more information or report symptoms of the virus. These are all measures to track COVID-19 as it spreads around the world. This quick COVID-19 response was made possible with information technology."

Amazon Web Services (AWS) launched a new, global initiative :

The AWS Diagnostic Development Program has just been launched, pledging $20 million to Amazon customers working on COVID-19 diagnostic solutions. To help research teams use cloud technologies to tackle this monumental task, funding will be given as AWS in-kind credits and technical support.

This project is intended to encourage cooperation between clients of Amazon who work hard on solutions and organisations with common objectives.

Customers of Amazon who are new to AWS cloud services will be happily surprised by how much smoother their cloud workflow will be. The best aspect is that to meet all data

privacy security requirements, cloud technology is powerful and easily protected. With AWS, Amazon clients working to tackle COVID-19 with cloud technologies are in good hands.

Google is using DeepMind to help fight COVID-19 :

In two big ways, Google is using technology to battle COVID-19. First, the company is collaborating with the government of the United States to develop an educational platform on COVID-19 to host resources. The idea is to build a central place where, without having to sift through misinformation, people can find all the right stuff.

As part of Google's fight against COVID-19, the company has contributed its DeepMind tools to its AlphaFold system. Both systems are part of Google's solutions for artificial intelligence, but the addition of DeepMind is intended to predict the protein structures associated with SARS-CoV-2 viruses that cause COVID-19 in order to create effective treatments.

An Alphabet-owned business called Verily is creating a wear patch for COVID-19 patients that senses a fever and interacts with a phone app to capture an early COVID-19 or flu diagnosis.

Contact-less movement and deliveries :

“Self-driving cars, drones, robots can all help at a time when the need is to avoid human interaction. Autonomous vehicles can be used to transport affected patients safely to and from health care facilities without risking the lives of healthy people. It is possible to use robots to supply groceries, cook, sterilize hospitals and patrol the roads. Drones may be used for food distribution, population control, quarantine site delivery of test kits and drugs, thermal imaging to identify infected people, spraying of disinfectants, and more. Several new areas and use cases are developing where drones, robots and autonomous vehicles are being used.Drones and Autonomous Robots used to fight Coronavirus in China.”

Robotics :

COVID-19 has made us aware that human experiences are meaningful for making things work. Labor-intensive industries such as food, retail, logistics, and manufacturing firms have been seriously affected by the pandemic. COVID-19 has contributed to a significant drive to implement the use of robots and also to accelerate the study of robotics. Robots are also being used to disinfect contaminated areas and to distribute food to individuals under quarantine.

The number of cases of COVID-19 is growing exponentially, and the number of patients in need of medical treatment puts extraordinary pressure on healthcare professionals worldwide. Remote-controlled robots are used in a few countries to help medical professionals perform vital tasks, such as collecting mouth swabs for virus detection testing, performing ultrasound scans, etc.

Drones are used for food distribution, population monitoring, transporting test kits, disinfectant spraying, and distributing drugs to quarantine areas, etc.

Fitness & Health Apps :

New alternatives are being implemented by health and wellness applications to help people keep fit in the comfort of remaining indoors because of the pandemic situation. Several fitness and wellness brands have started performing live exercise sessions on their smartphones and social media sites. These measures have also seen decent momentum.

The "Aarogya Setu" app was launched by our Indian Government to detect patients in the nearby area and to protect ourselves.

Conclusion :

Today, a pandemic, an enormously contagious virus that is further devastating and can kill many people, is the greatest risk of global catastrophe. It has been recognized that we are not preparing the way we ought to be to tackle this pandemic situation.

. The next pandemic is not a matter of "if it happens," but "if it happens," we will be prepared at an individual and collective level in advance against the pandemic. We actually need preparedness and alertness. A lot of progress has been done in the field of technology and it will continue but it is important for human institutions and communities to accelerate the process of adaptation. We need to continue to invest in developing technical structures for preparedness. The COVID-19 outbreak has proved that the technological innovations are needed to manage the epidemic from AI to robotics. It is better to equip them in a timely, systematic, and calm way to combat the medical emergencies to come in future.

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