



Digitalization during COVID-19 Pandemic: Its Impact on Humankind and modern education in 2020

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I. INTRODUCTION

“It is not the strongest of the species that survives, nor the most intelligent. It is the one that is the most adaptable to change.”—CHARLES DARWIN

Many centuries ago, a single species (Homo sapiens) was destined to evolve through the process of natural selection. A step by step approach resulted in a huge chain of events that led that species to be the current direct successor of the group of Mammals collectively known as ‘Primates’. The achievements that our ancestors made, be it from ‘discovery of fire’, ‘invention of the wheel’ to various complicated theoretical understandings such as ‘Quantum Mechanics’ and ‘Thermodynamics’ to one of the most significant ideas of ‘Information Exchange’, makes us the most technologically developed and advanced species in this universe. It is with this pride and conceit that I write this manuscript on the impact of digitalization on humankind in 2020.

Humans are curious and most inquisitive amongst all species. They are eager to turn every rock and look under it. This curiosity to share this enthusiasm with other members of our community paved way for the later discovery of speech and the invention of languages. Native Africans were so curious that they had over 2000 languages. Initially, they spoke through signs and signals and later on when the expression was needed they used paintings and drawings by inventing colours and dyes. When the description was needed, Mother Nature gave us vocal cords that specialized in vocalization which helped us invent language. But we did not stop

there; we invented papers, used pigeons, postcards, telegrams, etc for communication. All these were various forms of 'Information exchange' or 'Communication methodology' that later on led to the digital revolution of the present time.

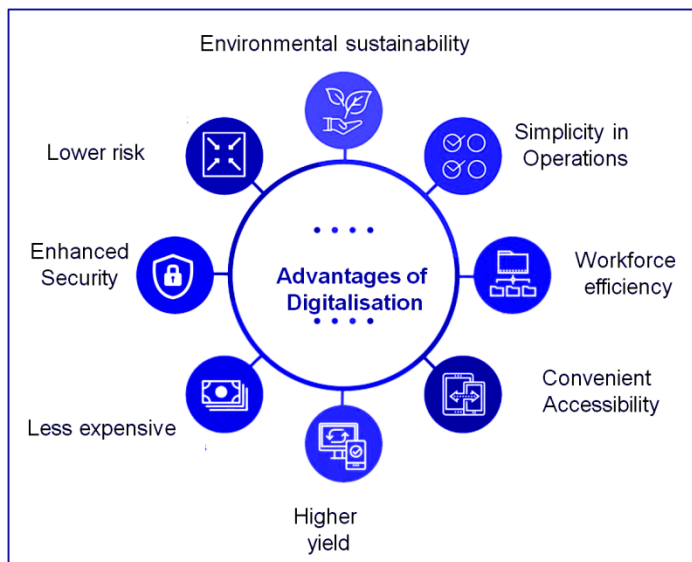
The COVID pandemic has witnessed a surge in the rate of digitalization across the globe. Our nation is no exception to that. Internet services have increased up to 100% in many areas of our country; video-conferencing platforms have seen a 10 fold increase and content delivery services have seen a 30% increase in content usage [1].

In this paper, we shall discuss the digital era, its impacts on humankind and how we can overcome the negative effects of digitalization. Our main topic of discussion will be about the year 2020 and how this particular year was impacted by The Digital Environment.

II. DIGITALISATION

Ever since the Analytical and Difference machines were invented by Charles Babbage, the cogs of wheels for the 3rd Industrial revolution began to turn. The revolution heightened when Claude Shannon applied the set of logic formulae invented by George Boole to solve the perplexing and complicated problems faced in digital logic gates which he then published as his famous 'Information theory'. By 1950, J.P.Eckert and J.W. Mauchly invented the first generation electronic computer called ENIAC [2]. After this point, it was only a matter of time before the 2nd and 3rd and 4th generation of computers that used Transistors, Capacitors, Resistors, Integrated Circuits, Very-large-scale integrated circuit (VLISC) and Ultra Large Scale Integrated Circuit (ULISC) came into existence. The current fifth-generation uses ULSICs along with other important technologies such as Artificial Intelligence, Machine Learning, Deep Learning, Cloud computing that strives to automate almost anything and everything.

Fig 1 illustrates the advantages of digitalisation in business models



Blockchain technology creates an excellent platform to create and transfer safe and secure information. As healthcare services and educational portals have largely shifted to digital domains, blockchains offer great digital assistance in a simple, paperless method of transmission of information [3].

Fig 2 illustrates the advantages of blockchain technology.



The concept for Fig 2 is taken from Ref 4 [4].

Along with all this, the birth of the Internet was a major driving force that led millions of people to use computers every day. It is quite safe to say that most of us use Computers for a variety of different purposes than what they were originally intended for. A young writer like me using computers trying to get published is one such purpose. The Internet opened the gates for a stronger connection to get established. One can update themselves about what people on

the other face of the earth are up to, in a matter of seconds without any delay. This is in total contrast to postal mails and letters that take days to weeks to reach the other side of the globe.

III. DIGITAL WELLBEING

As mentioned earlier computers have occupied an integral part of everyone's lives. We use it to entertain ourselves, talk to people, take photos, shoot movies, play video games etc. On the flip side, the general criticism is that we use too much of it. And as the old saying goes, "Too much of anything is bad". It is not only stressful to the sensory organs but also the brain. This is also applicable to people whose lives depend on computers. Long hours of being glued to computers would cause negative reinforcement to the neurons and induce the same amount of stress.

Humans secrete hormones for indispensable jobs. And these digital devices disrupt the secretion of important hormones needed for sleep, alertness, and most importantly emotions. A high level of cortisol is secreted which further increases the chances of one developing anxiety disorders, depressive phases, insomnia, hypertension and stress-induced diabetes disorders.

Human is a social animal and hence needs emotions to live in a community as a society. When the Body cycles get disrupted, they tend to take a longer time to rejuvenate. And hence it is a good practice to limit our on-screen duration. A new medical term was coined in 2005, known as 'Computer Vision Syndrome' [5]. A study in the United States has shown that about 90% of the U.S. workers who use computers for more than 3 hours every day develop this syndrome. Excessive strain to the eyes increases fatigability and causes irritation of eyes with excess watering and may also cause blurring of vision and neck stiffness. Earlier this phenomenon was attributed to occupational hazard, but of late these findings point towards excessive use of computers.

IV. DIGITAL FOG

Brain Fog is essentially a state of mind where a mental barrier is formed and we are unable to concentrate or focus on one particular thing. The various systems of our body get disoriented and we feel fatigued and exhausted. This state occurs due to extreme exhaustion of internal energy and improper diets. It can also be caused by psychological traumas such as the loss of a loved one or humiliation etc.

Digital fog is a term that relates to brain fog because of constant exposure to the digital screen. When a person constantly uses digital devices, they are exposed to very small wavelength blue light that is similar to the less intense ultra-violet rays [6]. Constant exposure to such light makes the person lose his eye-sight and they may even become blind when there is too much exposure to very high intense Blue-Light. We can overcome this disorder by adjusting the screen brightness option in our devices. We feel that like our brain is clogged at its maximal capacity and ready to explode. Common problems such as Migraines, headaches, insomnia and tiredness are direct consequences of Digital brain fog or simply 'Digital fog'.

V. REVITALIZING METHODS (tentative title)

In this digital era, where each one of us is exposed to digital media and information all the time, every one of us would have experienced 'Digital fog' at least once in our lifetime. But other than limiting our screen time per day, do we have other options? The answer is Yes. Our body would always try to adjust and adapt itself and stay in equilibrium. When our body is disturbed by internal or external forces, it takes measures to bring back the original state of the body. Needless to say, it is a very tough job because, over some time, our bodies get damaged continually and the rate of regeneration is not able to keep pace with the rate of damage caused.

This process becomes a lot easier when the rate of damage is either reduced or stopped for a while. A full recovery can be then expected to take place. The damages that cannot be restored are of the chronic types like permanent eye damage or blindness. Fortunately, digital fog

ceases to exist if our exposure is minimized. Meditation, Relaxation and Exercising are some of the most common and effective ways to repair small damages.

When damages are more, the methods of repair and recovery get more complicated. Hormone detoxification is one of the important techniques of repair. Every time we look at the digital screen, various hormones are secreted into blood circulation. Some like dopamine, endorphin make the person elated whereas cortisol is secreted in times of physical and mental stress [7]. Some hormones like Melatonin are needed for daily purposes including sleeping. When there is too much exposure, large amounts of these frequently secreted hormones get into the blood circulation and we begin to feel 'out of place'. This immediately affects other hormonal systems and our brain. In simple terms, our body, over some time, develops a state of physical dependency and we behave like drug addicts.

The detoxification method is said to be complete when one restricts the secretion of hormones due to exposure to digital screens. A complete rest to the body and a properly balanced diet with abstinence from the digital screen for about 24 to 48 hours is a well recognized and scientifically accepted method of detoxification. This facilitates our body to restore order in our nervous systems and aids in speedy recovery from Digital Fog. As Prevention is always better than cure, it is prudent to limit our on-screen time.

VI. THE YEAR 2020

The secret of change is to focus all of your energy, not on fighting the old, but on building the new - Socrates

This COVID-19 pandemic has taught humankind, many a lesson. This virus made humans realise that they are not infallible. Global communities felt the need to show more restraint and self-preparedness to face more such natural calamities in future. This dreaded virus 'Covid-19' gave rise to a pandemic that has hurled the entire world into a state of fear and turmoil. For many months the economy of many countries sank to hit the rock bottom. In these times of social distancing, the world saw a greater increase in the usage of electronic gadgets as a method of learning and as a mode of entertainment. The Whole world sought to ON-DEMAND services such

as Netflix, Audible and Spotify. Since there was little reason to go outside because of delivery services, the whole world experienced the comfort of staying at home and getting all their things done. This overflowing comfort made only things worse for us. School, colleges and universities cut down their timings and people took it upon themselves to entertain themselves in the available time, making their 'digital screen-presence duration', a little longer. Researchers claim that staying indoors is associated with a reduction in our immunity, making us more prone for other infections to affect us.

VII. THE EFFECT

The year in particular put a lot of stress on students and IT professionals. They had poor digital hygiene. Students in their free time binge-watched television shows while professionals had to work overtime carrying their stress throughout the day and at the end of the day sitting in front of the television to get some entertainment. It is not right to comment that the damages done are entire because of human's obsessive need for happiness. The situational turmoil in the world is partly to blame. Everyone was apprehensive if they were going to live to see another day, the people were afraid and the only way was a distraction. And the distraction led to situations where they completely cut themselves off from the physical world. They lived online and were completely at the mercy of digital devices. People had no choice to make, even though they had enough and in plenty. The total influence of advertisements, fellow human beings and boredom stuck in the house has led to a situation where people experience head-splitting headaches and poor vision during the 2020-world-wide-quarantine.

VIII. THE AFTERMATH

Well, it is a proven fact that despite all these ways of mass destruction of mankind that Mother Nature attempts, humans are not going to go get extinct. Despite several attempts in the past by Mother Nature to erase humankind from the earth, humans have somehow found out ways and means to overcome that, survive and start afresh. We have already come up with vaccines to combat this deadly virus. The humans have revived themselves from yet another attack by nature. Our head stops splitting from pain, our vision gets clearer. And we won't make the same

mistake again. Globalisation has already begun again and we are beginning to feel like how we were before 2020. We have started to go to the institutions which we were going to. It will once again become normal with time. Just like the old saying goes, “*Time is a great healer and the greatest revealer*”.

IX. LESSON'S LEARNT

The lockdown period and the self-inflicted quarantines have shown to us the dangerous life that we were leading all these years. The resurgence of clear blue sky, unpolluted atmosphere, clean water in rivers, chirping noise of cuckoos, the off-shore appearance of dolphins and re-surfacing of the ozone layer tells us the miserable life that we were all leading. This lockdown also enabled us to understand our neighbours better, made us realise that our society has a good heart too and facilitated an easy connection amongst communities.

Problems always surround us wherever we go. We must be in our best frame of mind and have sound health to fight such pandemics. Some of the common practices that one must follow include:

- Drinking plenty of water,
- Sleeping between 7-8 hours,
- Eating a properly balanced diet,
- Exercising at least 3 times a week (Meditation and floor exercises).
- Living with nature

X. CONCLUSIONS

This COVID-19 pandemic has taught many a lesson in our lives. The digitalisation of various educational and business models is exponentially catalysed during this period. This process of digital transformation made us feel like walking on a thin rope, where, if we deviate onto either side, we are bound to have a deep fall.

Just like any other threat that we faced in the past including the Black plague or the pox virus, humans recover faster and get on with their routine. The perseverance and compounded efforts of the human species is what defines and distinguishes us from the rest of the species. The

digital era is only beginning. There are more blanks to fill, more pages to write, more developments to make and more history to create. The limitations of today's digital era may not be there tomorrow. This chapter of human history is a long but difficult one with never-ending possibilities and infinite branching opportunities. It is going to take a significant amount of time, but knowing what we know about humanity, I have no doubt this will be bigger and better than the last chapter of our human story.

XI. REFERENCES

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