

COVID-19:

THREAT TO THE FUTURE OF TECH?

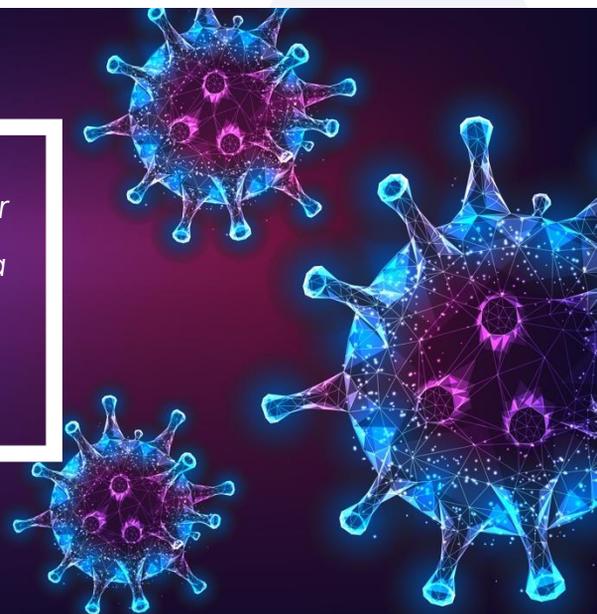
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INTRODUCTION

In his book *Need, Speed, and Greed (How the New Rules of Innovation Can Transform Businesses, Propel Nations to Greatness and Tame World's Most Wicked Problems)*, Vjay V. Vaitheeswaran highlights some of the impactful efforts of Nathan Wolfe, a renowned virologist and founder of the epidemic data and analytics company **Metabiota**, who has dedicated his work towards saving the world from the 'next deadly wave of HIV, SARS or influenza' through technology and data. In the past few years, many researchers like Nathan Wolfe have heavily relied on technology to detect and prevent diseases and pandemics that could threaten the entire human race and have advocated for 'pandemic prevention' over 'pandemic response'. Unfortunately, notwithstanding some of these recognizable efforts, the outbreak of Covid-19 coronavirus (which was recently declared by the World Health Organisation (**WHO**) a pandemic), appears to have caught the world unaware and unprepared. According to the International Monetary Fund (**IMF**), Covid-19 may trigger a global recession in 2020; and undoubtedly, the pandemic has negatively impacted the fortunes of industries across the world, the tech sector inclusive.

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“There is simply no greater threat to humanity than a viral pandemic”
- Nathan Wolfe



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In this article, we examine the specific impacts of Covid-19 on the global and local tech sector, how tech giants have responded (through products and innovations) to the pandemic and the expectations for the role and future of tech in a post-Covid-19 world.

IMPACTS OF COVID-19 ON THE TECH SECTOR

The impact of the Covid-19 pandemic on the global tech sector varies from industry to industry, for instance, while the smartphone, mobility and fintech sectors appear to have suffered a great deal due to the decline in manufacturing activities in China, the numerous lockdowns in countries across the world and the nosedive in electronic payment transactions respectively, tech companies in the video streaming, food delivery, e-commerce, health and video-as-a-service (**VaaS**) sectors have recorded more growth. The impact of the pandemic on the tech sector can best be understood under the following sub-heads.

Loss of revenue and drop in stock prices

Stock markets fluctuate based on a variety of factors, and the coronavirus is impacting stocks across industries, not just tech. But the tech sector's recent plunge is especially concerning given its recent track record of being resistant to any significant hits, and the fact that the top tech companies FAAG- Facebook, Apple, Amazon, and Google account for a large portion of the total global stock market. The financial impact of the Covid-19 virus has affected virtually/all leading stocks, including Apple, Microsoft, Mastercard, Tesla, Nvidia, and Paycom Software. Microsoft's stock declined by about 8% between 8th March 2020 and 24th March 2020 (vs. an 18% decline in the S&P 500), and the stock is down almost 13% since 31st January.



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Even higher demand as a result of the coronavirus crisis for stocks like Amazon, Netflix, and Alphabet does not leave them unscathed. The stocks of Apple, Microsoft, Amazon, Facebook and Alphabet, have collectively lost more than \$1 trillion in market value from a month ago. In January 2020, the world's most valuable tech company, Apple, reported its highest quarterly revenue ever for its first quarter. A record-breaking \$91.8 billion! In this same report, as customary, it issued guidance for the second quarter stating the expected revenue to be between \$63 billion and \$67 billion. But on February 17, the company issued a rare update to this guidance, stating that it does not expect to meet the previously stated revenue. Apple has only issued such a guidance update twice in the last fifteen years.

While many tech companies in Nigeria are unlisted, global tech giants operating in the country are beginning to suffer revenue loss, particularly as a result of the lockdown imposed by the Federal Government in some parts of the country. The mobility sector in Africa has experienced a downturn in revenues as many ride-hailing companies have been forced to fully or partially cease their operations across major cities. Relatedly, fintech companies in Nigeria have also witnessed a decline in revenues, specifically, the online payment companies often generate significant revenues from processing betting transactions, however, this has been hit badly by the pandemic, given the suspension of most sporting activities across the world, although, in the past few weeks, many fintech companies in Nigeria commenced campaigns to encourage the use of electronic channels over the use of cash on the basis that this would limit the spread of the virus, however, it is arguable that this new drive has not yielded significant positive results, especially in an economy where cash remains king and financial inclusion remains elusive.

Furthermore, like the mobility sector, the lending sector appears to have been negatively impacted by the pandemic. Pre-Covid-19 era, we witnessed growth in micro and digital lending in Nigeria, lending platforms reduced or removed some of the barriers to access to finance usually imposed by traditional financial institutions. Unfortunately, with the reduced or absence of economic activities, request for short term loans on the digital lending platforms have increased albeit, it is uncertain whether the users can easily fulfill their repayment obligations in the face of the lockdown, in other words, many digital lending platform are expected to run out of cash in the event the default rates spike as a result of increased demand for loans.

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A major disruption to global tech supply chains

The Wall Street Journal reports that the lockdown on Chinese manufacturing has caused global markets to “shudder” and is casting an “ever-widening shadow” on the economy at large. This is particularly relevant in the tech industry, which depends on Chinese labour to build everything from computer chips to cellphone parts. Having originated in China, the region was hit hard. This led to the closure of many factories used by prominent technology companies to manufacture their tech products. China exports more than 50% of the global technology supply chain, and the pandemic has significantly disrupted the supply chain of most global tech manufacturers. More specifically, the pandemic has caused a 12% decline in the production of smart phones.

The decline in production and supply numbers would lead to sales and financial woes for tech giants in the coming months. Apple, for instance, warned investors that the supply of iPhones, which accounts for the bulk of its revenue every quarter, would be hampered by the spread of the coronavirus. Microsoft, the tech giant depends on customers who install its Windows software on laptops and Surface tablets, and the production of both of those hardware products is also being hammered by closures in China. Personal computing accounts for roughly a third of Microsoft’s revenue. Another major tech company with its supply chain impacted by the virus is Amazon. It is estimated that more than 40 percent of Amazon sellers are based in and outsourced from China. In addition, a large portion of US-based sellers source their products from China, although, Amazon’s Azure continues to thrive given the increased demand for VaaS and streaming platforms such as Zoom, Netflix and Hulu.

Locally, Nigerian tech businesses especially companies that rely on the Chinese manufacturing sector, continue to suffer significant production setbacks. This is more worrying given that most Nigerian tech businesses (like their global counterparts) rely heavily on the Chinese markets, given the affordability of the goods from the Chinese market and the lack of local capacity to produce the relevant raw materials.



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Closure of Co-working Spaces and Tech hubs

Social distancing has been adopted globally as one of the measures for preventing the spread of the virus and this meant that many corporate organisations had to close down their businesses while resorting to remote working (through technology infrastructure). Co-working spaces and tech hubs across the world have also had to close their spaces to users; the business case for co-working spaces is even more prominent in Africa given the dearth of infrastructure (such as electricity, and internet) that is required by developers and tech founders. Unsurprisingly, many tech hubs in Nigeria have closed their offices, without doubt, this will impact the productivity of tech innovators as many of them are forced and exposed to uncertain and low quality public infrastructure. Although, it is expected that software learning hubs in the country will leverage e-learning infrastructure and tools to continue to train developers remotely. More so, just recently, the Nigerian government, through the National Information Technology Development Agency (**NITDA**) announced the establishment of a 10-member advisory committee to advise the government on the measures that can be put in place to alleviate the effects of the outbreak cum the lockdown on technology businesses. The committee is expected to amongst other roles, look into how basic infrastructure such as power and internet access can be provided to tech businesses during the lockdown.

Increase in Cyber-security threats

The increase in remote working across the world has also exposed organisations to potential cyber attacks given reliance by most employees on unsecured network infrastructure. Kaspersky recently reported that the number of devices affected by cyber attacks in South Africa spiked from about 20,000 – 30,000 to about 310,000 from 15 – 21 March 2020.

Positive Impacts?

Notwithstanding the negative effects of Covid-19 on the tech sector, we have witnessed some positive impacts in some sub-sectors of the industry. For instance, as a result of the remote working being practiced by most organisations globally (in compliance with the social distancing measure), there has been a surge in the use of VaaS facilities and platforms such as Zoom and Microsoft Teams. Few weeks ago, Bloomberg reported that the founder of Zoom added US\$20 million to his net worth in a single day and on the overall, he has added about US\$2bn to his net worth since the beginning of 2020 only, while the shares of Zoom climbed 0.4% bringing the year-to-end gain of the company to 58%. Relatedly, Amazon was reported to have planned to hire 100,000 workers to help meet virus-related order spike. Netflix also plans to reduce its streaming bitrate for African users to ease internet capacity during lockdowns in African countries, this move is expected to prevent the collapse of the internet given the spike in the demand for Netflix and other video-on-demand services and contents.

Relatedly, social media hangout apps such as TikTok, HouseParty and MarcoPolo have also recorded increase downloads on iOS and Play Store.



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TECH INNOVATIONS AND RESPONSES BY TECH COMPANIES TO COVID-19

Expectedly, the health sector is at the frontline of combating the Covid-19 pandemic, although, many tech companies have contributed to the fight against the pandemic through various means. For instance, telecommunications companies have found opportunities to help with what matters most in a period like this, keeping people safe and healthy. This has been achieved through assisting governments disseminate accurate information to citizens about the virus, in this regard, MTN Nigeria changed its network display name to '**Stay Safe**' while also sending regular updates to encourage citizens to stay at home. In January, **Telecoms ZTE and China Telecom** designed a 5G-powered system that enables remote consultations and diagnoses of the virus by connecting physicians at West China Hospital to 27 hospitals treating infected patients.

One of the noteworthy responses of tech to the Covid-19 pandemic relates to the diagnosis of the virus. This is highly important given that many countries do not have sufficient testing kits to detect the actual number of cases of infected people, leading to under-testing and reporting of the number of infected persons. Recently, Abbott, the renowned medical device company developed the new Covid-19 test which can return a positive result in five minutes and can be run in a doctor's office. This new test kit has been approved by the United States Food and Drug Administration and mass production of about 50,000 units is expected to be deployed by the manufacturer. In addition to leveraging technology to improve the tools for detecting the virus in human body, other key responses by tech companies to the pandemic are set out below.

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Efforts by tech companies towards combating Covid-19

Tech companies operating in different sectors have reacted to the Covid-19 pandemic and continue to leverage innovation and technology to either educate the citizens on the virus or curb the spread of the virus. Some of the sectors at the frontline in the fight against the virus include the health-tech, fintech, internet and e-learning service, media & entertainment, VC and Innovation funds. In some developed countries, Artificial Intelligence (AI) and Machine Learning (ML) have proven to be useful technologies in the detection, diagnosis and treatment of COVID-19, this has reemphasized the relevance of AI in healthcare. For instance in Wuhan (where the outbreak started), several AI models were leveraged to detect the outbreak of the virus based on natural language processing of government and research institute's healthcare reports and news releases. Furthermore, numerous AI-powered diagnostics have been developed based on CT scan data, with the aim to reduce the time to analyze CT scans for Covid-19 diagnosis to mere seconds.

In the Nigerian health-tech sector, we have seen companies such as 54gene (the African genomics research, services and development company) contribute to the fight against the pandemic through the launch of the Nigeria Covid-19 Support Fund. The Company donated US\$150,000 and within 24 hours secured an additional US\$350,000 from partners including Union Bank. The fund is expected to be deployed in improving the testing capacity in the country by up to 1,000 additional tests a day while contributing to the operations of the Nigeria Centre for Disease Control (NCDC). Relatedly, Lifebank, a health startup (that finds, stores and delivers bloods to patients) has created a national register to track hospitals with working or broken respiratory, ventilator or ICU Beds.

Importantly, tech has proven to be a reliable tool for continuous learning despite the lockdown. Private schools are leveraging platforms such as uLesson (which recently launched) and GoogleSchool to continue to deliver learning materials to students. Although, it appears access to such platform is a luxury affordable only by kids in the middle and high income families. Furthermore, CcHUB, the leading innovation hub in Nigeria announced that it will offer funding (between US\$5000 – US\$100,000) and engineering support to tech projects aimed at curbing Covid-19 and its social and economic impact. Also, Paga, one of the leading agent banking tech companies in Nigeria made fee adjustments to enable merchants accept payments from Paga customers for free, in a bid to "help slow the spread of the coronavirus by reducing cash handling in Nigeria". Globally, medical personnel have been empowered with the requisite technology tools to diagnose, treat, and operate on patients without the need to be physically near them. Online patient engagement tools, remote diagnostic solutions and virtual doctor visits have helped to provide additional support for the highly vulnerable groups of society.

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Startups and emerging companies have begun developing healthcare solutions to help combat the pandemic. These innovations will complement the social distancing directive and the *'work from home initiative'* which has been made mandatory by most organisations across the world. **Diligent Robotics** wants to give nurses a helper droid that can run errands for them around the hospital. The startup's bot Moxi is equipped with a flexible arm, gripper hand and full mobility so it can hunt down lightweight medical resources, navigate a clinic's hallways and drop them off for the nurse. **StethoMe** is a Polish startup offering a clinically validated system for remote examination of the respiratory system to detect abnormalities. StethoMe's AI algorithms perform sound analysis in order to detect and classify abnormal sounds, in some cases being 29% more effective than pulmonologists.

Cities around the world have utilized smart city technology in attempts to mitigate the impact of coronavirus. Police in China are using drones with thermal sensors to identify people in public running a fever. The South Korean government developed a smartphone app that puts self-quarantined individuals in touch with caseworkers, allowing them to report their progress and ask any questions that arise. The Australian government launched a chatbot to address citizen questions and quell the spread of disinformation. All these are some of the efforts of tech companies across to leverage innovation to combat the spread of the virus while supporting health workers on the frontline.



COVID-19 AND THE FUTURE OF TECH

People of all nations are working round the clock to put an end to the Covid-19 pandemic, while there have been some leads, the world remains in anticipation of a breakthrough. Nonetheless, humans are already bracing up for a world without Covid-19 and are putting key measures in place to prevent the reoccurrence of a pandemic. In this regard, the **XPrize Foundation** (a global non-profit organisation that designs and manages public competitions intended to encourage technological development that could benefit humanity), in collaboration with **Anthem** (one of the largest insurance companies in the US), few days ago launched the Covid-19 response platform, while calling on the global community to unite, collaborate and share information to address immediate needs and find long-term durable solutions to pandemic threats.

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Furthermore, when the pandemic is finally over, tech companies could benefit from changes in consumer habits. For instance, the 'virtualisation' of work and the continuity challenges many organisations will face in the coming months is going to accelerate the adoption of remote working technologies and flexible work culture across organisations. One of the biggest lessons would include the obvious fact that remote working actually works and organisations may begin to imbibe this culture, especially in busy cities such as Lagos where the '9-5 job' is considered stressful. It is expected that tech companies will become even more powerful and dominant as COVID-19 will fast-forward the digitalization of all major services and the digital transformation of many organisations. It is anticipated that there would be a revolution in the delivery of primary healthcare caused by a higher dependence on 'telehealth' services. In Nigeria for instance, healthcare surveillance systems lack innovation, this is mainly as a result of low investments in technologies leading to less effective healthcare systems. There has been increasing discussions on blockchain technology as a tool to assist with various aspects of containing the pandemic and future outbreaks. Blockchain could be used to improve a variety of health care-related processes, including record management, healthcare surveillance, tracking disease outbreaks and crisis management situations. A global blockchain surveillance system could easily reach areas where connectivity is poor. Local medical practitioners can receive real-time information on surrounding areas, regardless of governmental or political barriers. In addition, global organizations like the World Health Organization could access the data.

Conclusively, we look forward to a post-Covid-19 world where all people can continue to push the frontiers of scientific research and development with the aim of detecting and preventing the reoccurrence of a pandemic of this nature.

In the meantime, you can keep up to date with the ongoing COVID 19 related developments and their legal implications on our dedicated [COVID 19 Resource Centre](#).

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