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Metaverse and its Implications for Developing Countries: A Case of Bangladesh

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Introduction

The concept of metaverse initially emerged in a novel called 'Snow Crash' where the people transformed into avatars and worked in a 3D virtual reality, which is now called the metaverse. It implies a world where the virtual and real interact and co-evolve to impact social, economic, and cultural activities.[1] The metaverse also represents a significant economic opportunity for developing countries. The metaverse provides virtual spaces for engagement, sharing, connection, and collaboration in multiple ways, where people can do real world activities, such as play games, work, meet, shop, stroll and watch movies together. Asian countries including Bangladesh are said to be able to reap the most benefits and enjoy economic growth of over 2.3% equating to USD 1.04 trillion if the metaverse is adopted by 2025.[2] The metaverse can also be seen as the next step in social media, where rather than being only text and video-based, interactions could be made more personal by adding a more realistic touch. Friends and family could explore the virtual world and create experiences like they never had in the past. Currently, there are four types of metaverse and Bangladesh has the potential to tap each of them. It gives a strong independence for digital establishment, providing a unique yet immersive experience for the youth of Bangladesh, where they can express their creativity and imagination.[3]

[1] https://synapse.koreamed.org/articles/1149230
[2] https://www2.deloitte.com/us/en/pages/technology/articles/what-does-the-metaverse-mean.html

[3]https://doi.org/10.3352/jeehp.2021.18.32

A look at the global market share

The metaverse market share in 2020 was priced at USD 27.21 billion and in 2021 was 38.9 billion, and projected to reach USD 60.29 billion this year but is forecasted to increase to USD 1607.12 billion by 2030, growing at a compound annual growth rate (CAGR) of 50.74% between 2022 to 2030.[4] In North America, the U.S. is ranked to have the highest market share, followed by Canada and Mexico.

In Europe, Germany ranks first, followed by France and the U.K. In the Asia Pacific, China takes the largest share,

followed by Japan, India, and the rest of the Asia Pacific, where Bangladesh has ample room to grow.[5]

Fig 1: Global Market Share of Metaverse

Source: Global Newswire

Metaverse in Bangladesh

The shift to the metaverse will likely have a positive impact on economic growth as business models are anticipating breakthrough and transformational changes. The information below provide examples of how Bangladesh can positively benefit from the metaverse.

[4]https://shorturl.at/lmFMR
[5]https://www.prnewswire.com/news-releases/metaverse-market-size-worth--824-53-billion-globally-by-2030-at-39-1-cagr-verified-market-research-301585725.html#:~:text=According%20to%20Verified%20Market%20Research,39.1%25%20from%202022%20to%202030

Oftentimes, users can retain more information when presented in virtual reality (VR), compared to a computer screen.[6] Researchers claim that workers can be trained approximately four times quicker in soft skills if VR is employed instead of conventional techniques. Schools in Bangladesh can take lessons by shifting themselves to various places and times. For example, Poland uses immersive VR and AR technology, where teachers use the VR game Half-Life: Alyx to teach science lessons.[6] Bangladesh can use the same approach to teach school children about art, history, science, and more, reducing the need to travel to museums/zoos through traffic, which will not only save time but also fuel, and gas and reduce environmental footprints. Ongoing clinical trials globally suggest that the metaverse is slowly getting injected into the healthcare industry, allowing patients and clinicians to reduce communicable disease risk factors. For example, Bangladesh is one of the 30 high TB-burden countries and accounts for 3.6% of global cases[7]. With the emergence of the metaverse, doctors can take telemedicine to the next level and treat patients with ease, without any risk of spreading diseases.

The recent pandemic accelerated telemedicine and triggered many technological advancements in Bangladesh. However, combining them with the metaverse can create excellent results for the healthcare industry in the country. An experiment was conducted in China to see how metaverse can improve social skills for children with autism spectrum disorder and saw positive results as those children had alleviated anxiety and improvements in mood.[8] Moreover, it can create a digital environment where surgeons living in Bangladesh can operate and teach across the world and as well as train the new generation of physicians using 360-degree surgical scenes. For example, early this year, Queen Mary hospital of London conducted the very first surgery lecture in the metaverse through a VR headset, which forecasted an unparalleled leap in the way medicine is delivered and developed.[6,9]

[6] www.sciencedaily.com/releases/2018/06/180613162613.htm
[7] https://doi.org/10.3352/jeehp.2021.18.32
[20] https://www.thequint.com/voices/opinion/legality-of-metaverse-in-india-way-forward-for-web3s-sustainable-evolution#read-more
[9] https://doi.org/10.2196/35960

Many countries are optimistic about the potential of urban development using the metaverse. For example, Singapore has created a digital twin called 'Virtual Singapore' to let users visualize in 3D how the urban region will transform in the future, in respect to their growth of population and development.[10,1] This benefitted the country in terms of transportation planning through simulations and identifying accurate locations for solar grids. Likewise, Seoul is set to offer services in the metaverse, allowing its people to communicate with public officials to resolve civic complaints and get consultations, without needing to go to the City Hall. Furthermore, Saudi Arabia is building a city of USD 500 billion called 'Neom' which will have a digital twin in the metaverse allowing citizens to experience the city at its best.[11] The digital twin will optimize individual human behaviors by revolutionizing training and skills development to reduce the time needed to develop and acquire new skills. The United Kingdom, New Zealand, and the European Union are going after policies to promote digital twins and many other countries are expected to be added to the list.[1] Bangladesh can combine the digital twins with agile manufacturing applications including generative design and additive manufacturing, which can lead to significant reductions in scrap and energy use.[12]

Moreover, people are investing globally in digital real estate and cryptocurrency, and non-fungible tokens (NFTs), which are plots of land within the metaverse and currency used in the metaverse. Crypto trading in the metaverse has the potential to rise in price and render any early investors millionaires. If Bangladesh allows its people to invest in the metaverse, it will be able to boost economic growth. For example, a musician in Bangladesh can create a song and release it digitally as an NFT and can incorporate a feature to be paid an amount each time it is traded can support local artists financially. As virtual real estate keeps on growing, the blockchain-based platform Decentraland could be seen as a million-dollar property investment, where investment firms and corporations are betting on the future of online business and storefronts.

[10] https://www.ey.com/en_se/digital/metaverse-could-creating-a-virtual-world-build-a-more-sustainable-one
[11] https://www.prnewswire.com/news-releases/neom-tech--digital-co-unveils-xvrs--a-first-of-a-kind-cognitive-digital-twin-metaverse-platform-301472689.html
[1] https://blogs.worldbank.org/digital-development/can-metaverse-offer-benefits-developing-countries
[12] https://synapse.koreamed.org/articles/1149230

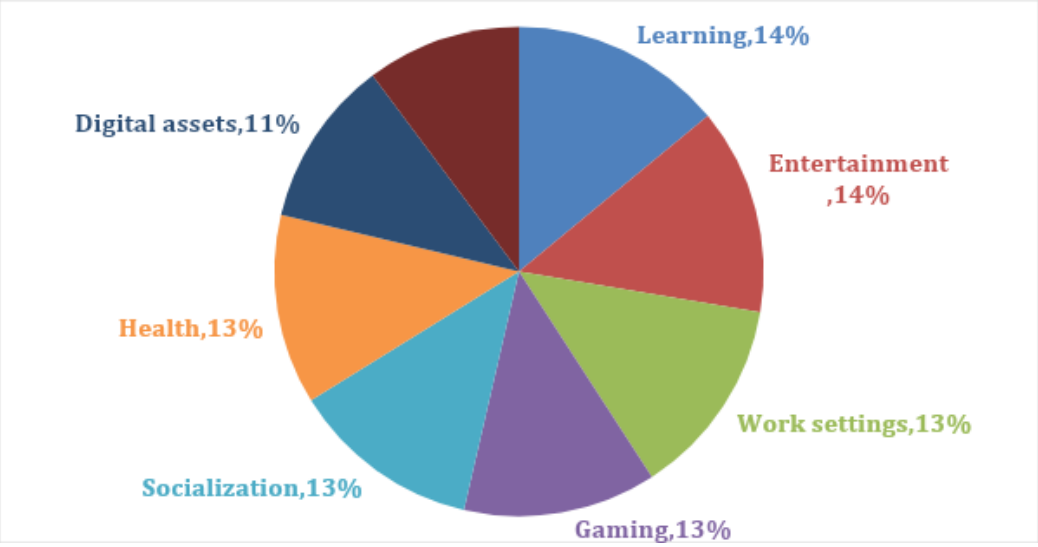
Market dynamics and estimation for Bangladesh

Table 1: Three potential ways the future of metaverse could unfold in Bangladesh by 2030

Low Orbit	Double Star	Big Bang
Overarching scenario: It excels in the area it's already superior at but does not become a regular using platform.	Overarching scenario: Growth of a handful major players eyeing to get a share of a dynamic marketplace.	Overarching scenario: An open interrelated metaverse becomes the dominant interface through which people perform most of the regular activities.
Cases: ● Spread out marketplace ● No dominant player and many choices ● Good user interface for certain uses but people struggle to integrate uses into regular life	Cases: ● Gap in interoperability requires users in the country to commit to a 'home' or 'remote' platform ● Ecosystems compete for user attention through exclusive content, sponsorships, and partnerships	Cases: ● A relatively seamless merge of the physical and digital environment by seamless user interface ● Identity in the metaverse is considered equivalent to that in the physical world
Conclusion: A strong market for certain applications to complement but not substitute dependency on other technologies.	Conclusion: A mainstream platform for many uses but split among the nation's future tech leaders.	Conclusion: The full replacement of current internet and beyond into an immersive environment by which businesses and consumers perform.

Source: Prospective Article, Deloitte

Fig 2: Percentage of contributions by the metaverse in the next 10 years



Source: World Economic Forum (2022)

A survey conducted by the World Economic Forum (WEF) stated that the excitement for the metaverse is much greater in developing countries than in developed countries, where 52% of adults are more familiar with the concept of the metaverse and only 50% are optimistic about its applications in daily life.[13] China, India, Peru, Saudi Arabia, and Colombia had the most optimistic views on the issue, while Japan had the lowest rating at just 22%, followed by the United Kingdom with 26%. Whereas, developed countries seemed to have more enthusiasm about crypto and blockchain across the board.

Challenges

The metaverse holds the potential to substantially reduce carbon footprint due to the substitution of physical goods for digital goods. While the COVID-19 pandemic halted the travel industry, which lead people to use virtual meetings more, metaverse travel could displace many discretionary trips and help reduce carbon emissions. The stakeholders, including businesses, are the critical agents in building the metaverse the country needs.

[13] https://cointelegraph.com/news/developing-countries-love-the-metaverse-rich-nations-not-keen-wef-survey

Moreover, to build a sustainable metaverse, cloud streaming data is needed, and generating this data will require huge computing power, a thousand-fold increase from the current ones.[14] Developing countries like Bangladesh can take advantage of this scenario by powering metaverse commerce by continuing to build green power systems nationally to create resilient distributed data center solutions. For instance, SOLshare in Bangladesh has created a revolutionary approach to bring green power to the people of the country. This chasm between the distribution of costs and benefits undermines the need for urgent intervention by the government, investors, consumers, and other stakeholders to make metaverse commerce sustainable now before exponential growth makes it difficult.[15]

A data breach is often heard of and metaverse will be storing more than just email addresses and passwords, including user behaviors. Privacy will be a concern over personal data such as eye-tracking, human reactions and tactile can be used by hackers (e.g. identity hacking). Moreover, monitoring children in the metaverse might be difficult, while VR hangovers, post-VR sadness, cyber addiction, and the bully will be real challenges among the youth. Legal and regulatory grey issues need to be sorted. For instance, it is still unclear whether a virtual act can be a crime. Although the metaverse allows people to experience events that would be impossible or restricted in the real world, preventing misuse of data needs to be critically assessed. Providing more personal data for personal verification might be required to identify ones and ensure security. Hence, before the country can reap the full benefits of the metaverse, it needs to ensure enhanced data security from what is expected today. The strategies for the applicable legislations and jurisdictions here are a concern, which will require well-thought strategies by the lawmakers. Moreover, digital currency like Bitcoin has become popular, which the people of the country could not take advantage of in the last few years.

[13] https://www.ey.com/en_se/digital/metaverse-could-creating-a-virtual-world-build-a-more-sustainable-one
[14] https://synapse.koreamed.org/articles/1149230
[15] https://bernardmarr.com/the-effects-of-the-metaverse-on-society/

Not only digital currency is not allowed in Bangladesh, but also, if it is allowed, the challenge will lie in convincing users to rely on and feel safe in using it to engage in any

trade within the metaverse. If the lawmakers of the country can successfully levy tax on income from virtual digital assets including cryptocurrencies and NFTs, the tax would imply not only recognizing crypto as an asset but also an asset that is successfully regulated.[16] For example, India has levied a 30% tax on digital assets.[17] The governance mechanisms for the metaverse also need to be aided with scaling and strengthening the efforts to promote digital literacy. User training, sensitization on digital safety, privacy, and digital well-being are crucial to the people of the country. In such cases, the government of Bangladesh needs to allocate a fiscal year budget. For example, the government of India has allocated $1 trillion to foster a digital economy and to expand the metaverse, driven by a large and growing population of youth.[17]

One way to ensure such a platform fully represents the community and its people is by tapping the current work of those existing innovations from scratch. These fundamental initiatives are informative, highlighting the needs of those at risk and unguarded as the metaverse grows. The government is usually criticized for acting too late in addressing emerging technologies and their implications for politics, environment, society, and business and such developments should be welcomed.

[16] https://epaper.assamtribune.com/national/1-tds-on-crypto-investments-in-india-industry-players-say-wait-and-watch-1376727
[17] https://www.weforum.org/agenda/2022/03/india-could-build-metaverse/