

Whither metaverse?

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About a year ago, the founder of Facebook, Mark Zuckerberg, made a dramatic business move by changing the name of his famous firm, Facebook, to Meta, and thus drew attention to the growing influence of the 'metaverse'. The metaverse refers to a three dimensional (3D) model of the world, built on the Internet and enabling platforms, to allow people to have a virtual life. This virtual life can include entertainment, gaming, meetings, work, interviews, romance, weddings, and practically anything else that can be dreamt up. This was the promise.

But Meta is in trouble. Zuckerberg's firm has lost significant market value, as investors have lost faith in the potential he had promised, and Meta is now not on the list of firms with the highest valuations. So, what is the story? Is the metaverse just a passing fad, or is there some possibility that the markets are not able to see? To find out, we started researching the potential applications of the metaverse and how firms were building products and services to utilize it.

The metaverse is a new 'avatar' (pun intended) of an old technology, what is referred to as virtual reality or augmented reality. The point is to show in three-dimensional form what we have always seen in two dimensions. Let us take the analogy of cricket. Some of us are old enough to remember ball-by-ball commentaries of cricket matches, broadcast live over the radio. This was a one-dimensional rendering where we heard a voice, very excitable at times, and imagined the match from it. Later, cricket became a television phenomenon, where the excitement was captured through live broadcast of matches, with additional features such as slow-motion replays, close up of players, animation rendering of ball movement, and live data visuals. This is the two-dimensional era. The three-dimensional era is what the metaverse is planning – where we see cricket in three dimensions, as if we are there in the

stadium, and with all the facilities of zooming in, seeing slow-motion replays, and being able to change our viewpoints and seating positions. And this is of live players who are being rendered in the 3D digital world. We have seen 3D movies in theatres, but they were recorded renditions; in the metaverse, the promise is to see live situations as they are unfolding.

We are not there yet. The metaverse requires massive developments in technology and infrastructure that is happening now and may take some time to mature. But then entrepreneurs and businesses are not waiting. Start-ups are rushing in to build technologies and applications for the metaverse. Headsets that enable the visual and audio displays are being developed. Sensors are being implemented to harvest data from the real world to enable their digital rendition. Blockchain technologies are being leveraged to create digital money for transactions.

Some prominent firms are leveraging their strengths to create metaverse products. The industries where products are being tried are banking – where JP Morgan is enabling virtual real estate ownership; food and beverages – where firms like McDonald's and Coca Cola are providing virtual victuals; creative – Adobe is developing 3D content creation softwares; fashion – where firms like Nike and Benetton are providing virtual clothing for people to try on; and gaming – where a large number of firms are providing sophisticated 3D games.

Our research shows that the early successes, the low-hanging fruit, are likely to be in entertainment and gaming. This was already a ripe area for commercial offerings and the metaverse has given this industry another boost. With increasing availability and reduced costs of bandwidth, and the rollout of 5G in India, this form of entertainment will earn massive revenues. Another domain in which commercial success is likely is advertising, where 3D versions of ads can be placed in 2D apps and games. Services from traditional banks, retailers, consulting, tourism, education, and healthcare, will leverage the metaverse

to offer unusual and richly enhanced experiences. This will include online meetings, sale interactions, classes, real and virtual surgeries, and commercial transactions.

Despite the immense possibilities, challenges do remain. The most important is the bandwidth requirement, as metaverse services will require massive data speeds to render images accurately and realistically. Apart from bandwidth, a key missing component is a low-cost headset; a good headset costs upwards of \$1000 , and though there are cheaper ones available, they cannot handle the full range of features required. Other challenges are those of compatibility with existing platforms and services. Many firms, like Meta and Microsoft, are building their own platforms and technology standards. Meta is building 'Horizon Worlds' that has a possibility of users moving to other metaverses, though identity verification remains an issue. It is possible that documents like digital passports will become the norm, with the added problem of who will issue them.

Governments will have to set up policies to regulate and control this space, as it will become ripe for new forms of crime and exploits. Cyber-bullying is already an emerging issue, along with trolling. The Interpol is already setting up an office in the metaverse to observe what is going on. Then, and not the least, there is the challenge of training an entire workforce that can build and work with these technologies, which are quite complex right now and not too many people are able to work with them.

Despite the challenges, and Meta's plunging valuation, the possibilities and dreams are growing. Maybe we will soon see the Indian team's batting from the umpire's position, in three dimensions, while seated on our living room couch.