



General Studies-3; Topic: Science and Technology- developments and their applications and effects in everyday life.

Metaverse

Introduction

- The term “metaverse” is used to **describe the vision whereby the internet will evolve into a virtual world.**
- One of the key features of the metaverse will be its ability to replicate the physical world within its virtual environment.
- It foresees the **internet as a 3D virtual living space, where individuals dip in and out, interacting with one another in real time.**

Potential of Metaverse

- The combination of augmented and virtual reality will not only introduce digital elements in the real world, but it will also merge Internet with the virtual world.
- Metaverse will incorporate current Meta products, like WhatsApp and Messenger, but also offer new tools like virtual homes, offices, and ecommerce opportunities for businesses.
- Users will have complete creative control over their virtual worlds.
- There is huge scope in the development of software applications to support the meta-verse ecosystem.
- Heightened sales of physical goods and services will be linked to the virtual ecosystem in the future.
- **Non-Fungible Tokens (NFTs)** – the claim of ownership for a unique, non-interchangeable digital asset that is stored on a blockchain – may be widely adopted.

Applications

- It will provide quick practical applications for most traditional businesses.
- The technology allows companies to develop digital twins—a digital representation of the physical area—of everything from the factory to the conference room.
- It will allow for more prosperous office meetings than today's relatively flat video conferencing tools.
- Metaverse tools have both civilian and military applications, from inspecting a building or a bridge to defusing a bomb.

Concerns / Challenges

- The metaverse requires infrastructure that currently does not exist.
- The current form of Internet is limited in its design to hold the digital space.
- Metaverse will most likely be created by big tech companies, giving **rise to concerns of walled gardens and cartelization**.
- The interoperable metaverse could also **raise questions of** data protection.
- The metaverse will need altogether **new rules for censorship, control of communications, regulatory enforcement, tax reporting and prevention of online** radicalisation.
- Another element of the metaverse that is still being worked out is its payment rails.

Way Forward

- This new era of the metaverse will unleash amazing creativity and open up new frontiers and horizons for brands and businesses.
- We will need to **agree on a set of open standards that will ensure interoperability across environments**.
- India needs to put in place regulations that encourage the development of these new virtual environments while ensuring that they can still function in an open, interoperable manner.
- If this is the next evolution of internet technology, we should ensure that the many features it is likely to offer are deployed to our advantage.

Conclusion

- India was a relatively late adopter of the internet, and, as a result, was unable to take advantage of its many features until much later.
- We have an extraordinary opportunity now to actively participate in the development of the metaverse.