3D Internet

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What is 3D Internet

The 3D internet is the successor of 2D internet. It connects people that share similar interests and services. These interconnected services can be seen as the Virtual Worlds. The 3D internet uses AI, 3D eyewear 6th sense technology, sensors, and holographic image projections.

What is the need for 3D Internet?

We already have 2D internet and it works just fine. So why do we need the 3D internet? In the present day we depend on the internet for many of our daily tasks. We pay our bills online, we shop online, we buy tickets to the movie theater online, etc. The 2D internet is useful, however, it lacks engagement and interaction, which is what makes the 3D different from the 2D internet.

What is the need for 3D Internet? (cont.)

For instance, typically a website is combination of several documents, 2D pages, images or videos. In order to navigate through a website we have a search engine, like Google. It is effective, but a again lacks engagement. On the other hand, with the 3D internet we would have virtual entities to represent their real-world counterparts. Take for example, looking for a document and placing it on a virtual representation of your desk at home.

Applications of 3D Internet

Education - 3D internet can be used for subjects such as Chemistry and English where more personalization is needed than traditional distance learning.

Embassies - Virtual embassies could be created in 3D internet, which will help the visitors to talk face-to-face with a compute generator ambassador to know about visas, trade, and other Issues.

Entertainment - 3D internet can also be widely used for entertainment purposes, including 3D Games and Movies.

Applications of 3D Internet (cont.)

Tourism - The 3D internet could be a useful tool in order to have complete information before deciding on the location to spend the holidays. With the 3D internet tourists could get view of the locations they want to visit and then plan accordingly.

Art - The 3D internet could also be used by artists to showcase their works to lot of people while they are making them and take suggestions in real time. Gallery openings can allow art enthusiasts to meet with artists (this has led to several sales.).

How 3D Internet Works

3D internet is based on networking and distributed computing and intelligent environment. 3D avatars have more information about users visiting 3D world than cookies which keep track of 2D world. These contain information about appearance and behavior of visitor as well.

Latentency is minimized while using 3D internet. It is secure channel as it authenticates users and avatars. 3D internet focuses on user friendly and efficient service support. Intelligent environment consists of intelligent services, intelligent agents and rendering.

Components of 3D Internet
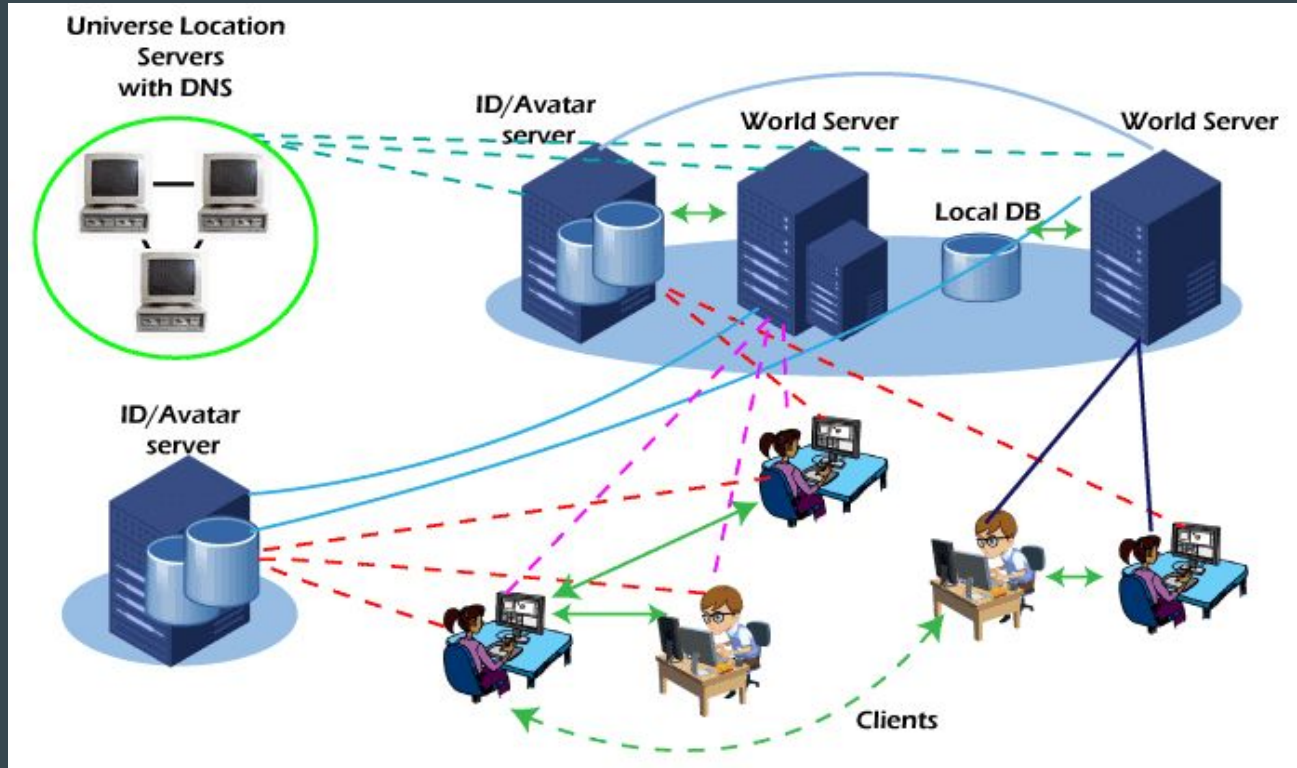
Components of 3D Internet (cont.)

<u>**World Servers:**</u> One of the first main components of 3D Internet is the world server. It provides static and dynamic content created by either user or server-side and generates a specific 3D environment or web place that includes visuals, avatar data, etc., to client programs. It's main goal is to coordinate with the connecting users, initiate communication between them, and ensure in-world consistency in real-time. It also provides different services to users, including email, instant sagging, and much more.

<u>**ID/Avatar Servers:**</u> The next component is a virtual identity management system that contains identity and avatar information along with an inventory of registered users. These servers provide all of this information to specific world servers and relevant client programs(owner) with complete privacy and security of contained information. These servers can also be a part of world servers.

Components of 3D Internet (cont.)

<u>Universe Location Servers:</u> The third component of 3D Internet is the Virtual location management systems which are similar to current DNS, which provide virtual geographical information. It also provides a connection to the internet using methods similar to SLurl. They can also work as a distributed directory of the world, avatar servers and users.

<u>Client:</u> The final component of 3D Internet are the Clients. Clients are browser-like viewer programs that run on the end-users device containing extensive networking, caching, and 3D rendering capabilities.

Technical Implications of 3D Internet

Speed: If we talk about the internet, then speed is one of the main things that comes out immediately to easily navigate web pages. If internet speed is not sufficient, then users may face various trouble during web surfing. To use 3D internet, speed is the most significant implication. Still, various countries across the world are not in the state of implementation of 3D internet.

Solution: Speed issues of 3D internet would be resolved by implementing high-speed cellular networks such as 3G and 4G (5G in the near future). These cellular networks have higher transmission rates to access the internet at high speed.

Technical Implications of 3D Internet (cont.)

Hardware: The main hardware implication for 3D internet is the screen display of the device to display the data. Currently, we are using the 2D display in all devices that can display images and other documents in 2D format only. But with the 3D internet, it would be difficult to display 3D objects on 2D screens. Current computer displays have a max 50-degree field of view which require the user to move the mouse in order to see the complete image, which is completely different from the real world. In the real world, we can use peripheral vision to see things beyond the direct line of sight.

Solutions: The hardware implication problem of 3D internet can be resolved by using 3D Goggles (for now). In the market, a variety of 3D goggles are available, which can be used to see objects in 3D 2D devices. Apart from using 3D goggles, with the use of Vision Station, we can solve the hardware implication issue. A vision station is a computer display technology which provides 180 degrees of viewing angles for users.

Metaverse

The metaverse is a vision of what many in the computer industry believe is the next iteration of the internet: a single, shared, immersive, persistent, 3D virtual space where humans experience life in ways they could not in the physical world.

Through the use of Virtual and Augmented Reality hardware and advanced 3D Graphics, users from around the world can connect in one shared space without physically having to be near each other.

High cost of entry and low adoption rates are currently limiting this form of social communication and collaboration.

History of the metaverse concept

The first mention of the term "metaverse" was in 1992. Neal Stephenson's science fiction novel Snow Crash, where humans, as programmable avatars, interact with each other and software agents, in a three-dimensional virtual space that uses the metaphor of the real world.

Later, in 2003, Linden Studios released Second Life, a shared 3D virtual space that allows users to explore, interact with others, build things and exchange virtual goods.

In 2006, Roblox first appeared and allowed users to create and play massively multiplayer games developed by other users. Users could try out their new ideas for a game, and the platform provided the infrastructure to scale the most successful ones rapidly.

Technology and Hardware used for 3D Internet

- HTML, CSS

- JavaScript and ReactJS

- SVG

- PNG, JPG

- Canvas API

- WebCGM

- Data Centers

- AR & VR engines

Advantages

- Open communication with other users.

- Discussion and sharing ideas is very easy.

- Business contacts can be expanded.

- Large audiences can be targeted.

- Unlimited canvas for advertising.

- Businesses can grow at a faster rate.

Disadvantages

- Increased hacking and malware attacks.

- It may also enhance online scams and fraud

- Limited ways to enable people in the virtual world.

- High cost of entry.

- Increased security and privacy risks.

References

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Thank you for listening!