

NFTs, Cryptocurrency & the Metaverse

A new dimension for IP

**Protect your
brand on the
blockchain**

**The new digital
world and the IP
risks involved**

**Could NFTs
transform IP into
liquid assets?**

What is the IP reality of the virtual world?

Ajay Yadav, Senior Consultant at UnitedLex, reviews the current developments of the Metaverse in relation to IP, evaluating the current leaders of metaverse advancement assets and how proceeding companies can prepare to integrate with the Metaverse.

Everyone is tapping their feet to join the Metaverse dance by announcing new business visions, acquisitions, rebranding, and much more. However, is their IP strategy on track?

The Internet has grown exponentially since its advent, from Web 1.0, which only gave us information, to Web 2.0 where users contributed the content to Web 3.0+, which offers a more personalized, interactive, and immersive user experience. Now, taking this evolution to the next level and to re-define the experience-quotient of the user, companies are investing and working aggressively toward the next generation of the Internet experience: Metaverse.

What is Metaverse?

Metaverse is a hyper-realistic, real-time 3D environment where you – via an avatar can interact and experience the virtually immersive



Ajay Yadav

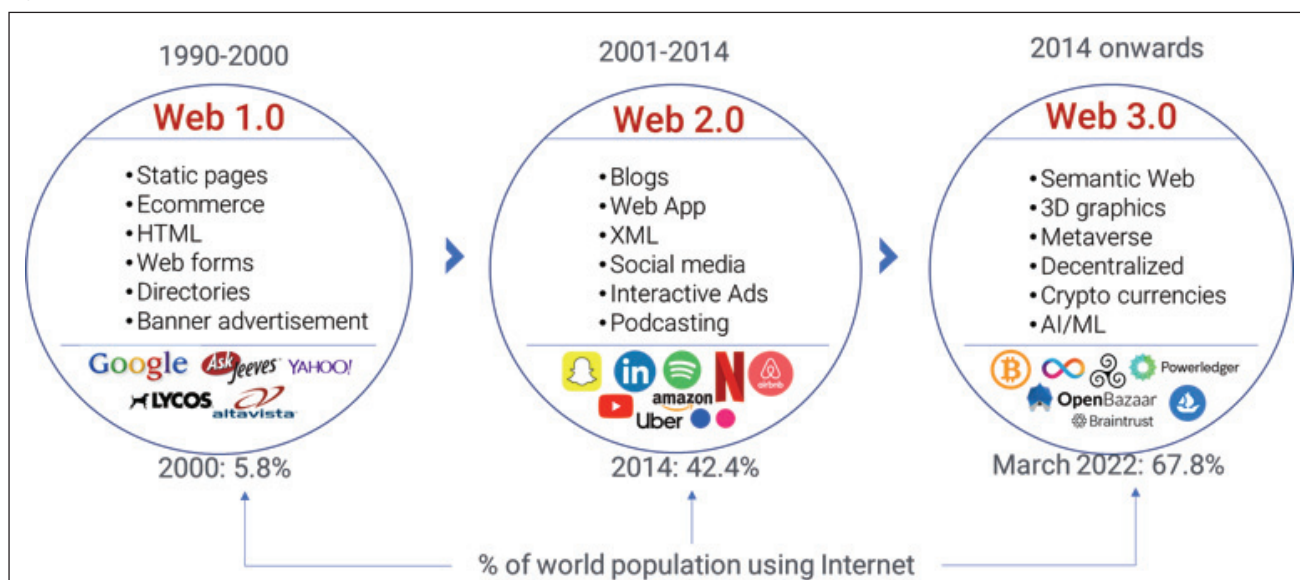
environment. Imagine a parallel digital world, where you can enter to meet friends, attend concerts and client meetings, buy/sell things and run a business, much like what you do in the physical world.

To lead the race of Metaverse adaption and make the business future-ready, companies are shelling out big. Based on a recent report published by researchandmarkets¹, the global Metaverse market is expected to reach a whopping US\$758.6 Billion by the year 2026 at a 37.1% CAGR. Such growth projection is only possible when there is length of innovation and breadth of commercialization from the companies.

For example, Facebook recently rebranded and renamed itself Meta Platforms, Inc. with its focus and vision on Metaverse. Furthermore, Microsoft, Nvidia, Intel, Alibaba, Walmart are a few of many names that are working aggressively toward Metaverse technologies and applications.

¹ <https://www.researchandmarkets.com/reports/5548465/metaverse-global-market-trajectory-and-analytics>

Figure 1: Web 1.0 -3.0 development



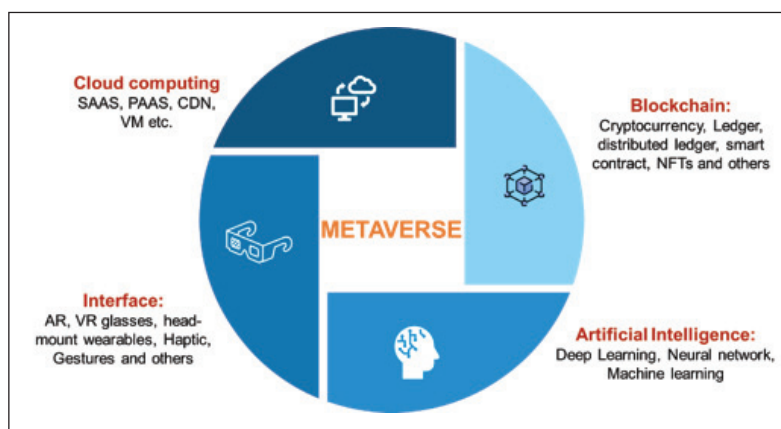


Figure 2. Major technologies in the Metaverse

What technologies will contribute to the Metaverse ecosystem?

To live up to its promise, the Metaverse will require an array of providers and technologies, which is why it will open a wide door of innovation opportunities and possibilities to secure IP. Above are a few major technologies that will lay the foundation of the Metaverse and the different players that will attempt to secure IP for their innovations.

Who is leading the Metaverse IP race?

In the next section, I will try to answer this question by applying a quantitative approach to the individual Metaverse elements:

1. Interface

This includes wearables that can generate an interface between the physical and virtual worlds. The wearables can be in any form - 1. Augmented Reality (AR)/Virtual Reality (VR) headsets, for example, Oculus Quest. 2. A glove that reproduces sensations in a virtual world, for example, HaptX Gloves DK2. 3. An entire bodysuit to simulate an experience, and provide haptic feedback, for

“**Blockchain is the heart of the Metaverse.**”

example Teslasuit.

Figure 3 shows what the current innovation trends look like for the Interface technologies.

The real boom in patent filing activities in these technologies took off around 2014, when companies started to focus on providing more realistic and engaging experiences to customers via mobile, video games, and others. Microsoft, Samsung, and LG together stand strong compared to the rest of the top players in the domain. Furthermore, Magic Leap, Meta, and Apple stood out by filing more than 40% of their patent applications related to Interface technologies in the last four years (2017-2020). Moreover, Samsung, Sony, and Alphabet have been consistent in securing IP for Interface technologies. Interestingly, Goertek (positioned in the top 11-20 innovators) has an arsenal of IP in Interface technologies. Goertek is a China-based public company that offers a growing range of VR products and is also a supplier to the top patent filers in this domain - Apple, Samsung, and Sony.

2. Blockchain

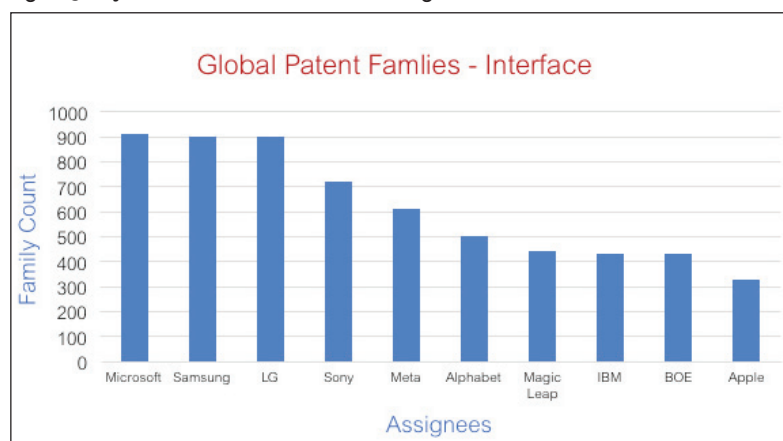
Blockchain is the heart of the Metaverse. Blockchain has been one of the fastest growing technologies in the past few years and has laid down successful initial implementation in different forms. Blockchain-based offerings will play a fundamental role in building the Metaverse, for example, Cryptocurrencies, NFTs, digital ownership, decentralization, and much more. See figure 4.

Résumé

Ajay Yadav is a Senior Consultant in the Intellectual Property team at UnitedLex. He has 14 years of experience in the IP industry with strong expertise in strategizing patent portfolio development and patent monetization for global companies operating in the Hi-tech, Automobile, Telecommunications, Medical, Semiconductor, and Aerospace industries.

He is adept at architecting custom IP solutions for corporates that helps their legal team in designing IP strategy to save cost and capture value from new innovations and existing patent portfolios. He holds a B.Tech degree in Electronics & Communication Engineering and PG Diploma in Embedded System and Design.

Figure 3. Major innovators in interface technologies



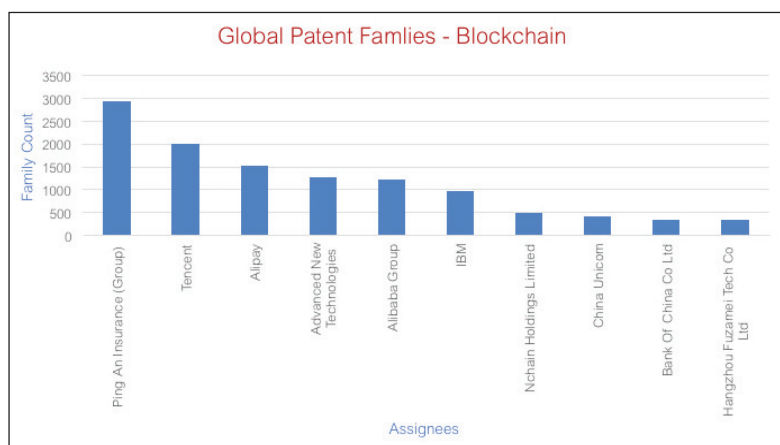


Figure 4. Major innovators in blockchain

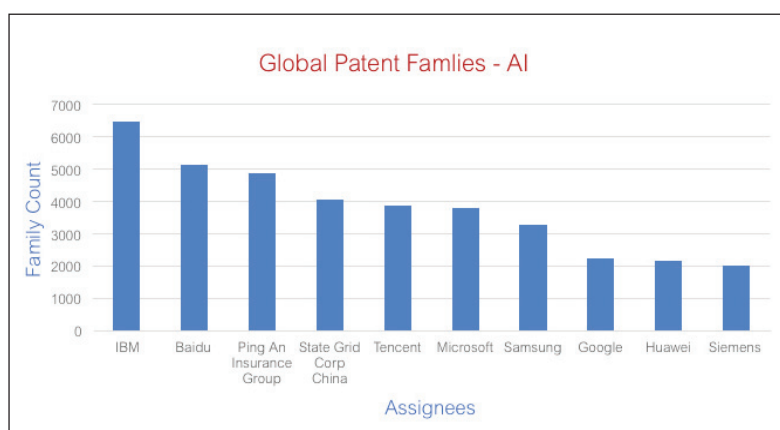


Figure 5. Major innovators in artificial intelligence

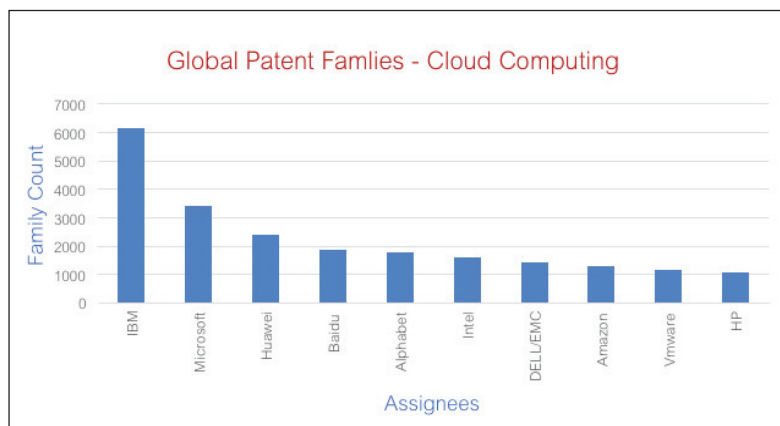


Figure 6. Major innovators in cloud computing

If compared, China is innovating at double the pace of the United States when it comes to securing IP for Blockchain-related technologies. This is evident when nine out of the top 10 global innovators are based in China. Also in the last few years, over 1,000 China-based companies filed 10,000+ Metaverse-related trademarks showing a strong approach toward Metaverse in China. In the United States – leading innovators are IBM, Intel, Mastercard, and Visa.

Patent filing activities rose from 2015 onwards when companies started realizing the versatility of the technology, and of course, the success of Bitcoin. China-based Ping An Insurance group stands top in terms of having the highest number of patent families, with a primary focus on China jurisdiction.

Furthermore, start-ups like Nchain; and private company Hangzhou Fuzmaei Tech. Ltd. increased their filing from 2017 to secure their position in the top 10 innovators in Blockchain technologies. Other companies trailing the top 10 innovators in Blockchain include Intel, Bizmodeline, Microsoft, and Baidu. These initial innovations from start-ups and other small actors will play a key role in the Metaverse as the filed patents cover the basics of Blockchain.

3. Artificial Intelligence

Artificial Intelligence and Machine Learning (AI/ML) are going to play a significant role in building the Metaverse. There will be many metaverses offered by different providers. Eventually, we expect interoperability to enable users to experience always-on Metaverse, where the scale of content, fresh content feeds, personalized content, and other digital experiences would require an enormous effort. To make this more efficient and accurate, AI would play a pivotal role. Companies have been innovating in AI/ML for the past few years and the Metaverse will certainly open new opportunities for more innovation. See figure 5.

IBM is one of the early adopters of AI technology and has retained the top innovator spot with continuous innovation, followed by China's four major players. These companies have innovated and integrated AI into manufacturing, the Internet, finance, commerce, and others. Other key players, which are trailing in AI but focusing more on AI and ML in recent years, are Alibaba, Meta, Amazon, Intel, and Sony.

4. Cloud computing

An always-running Metaverse would require an enormous amount of storage, processing, and performance. To keep everything humming, cloud computing is the only cost-efficient option Metaverse creators have. Knowing the scale of processing required, innovations in cloud computing will be critical for the Metaverse to exist. See figure 6.

IBM has been proactive in securing patents for cloud computing technologies followed by Microsoft, which is actively working toward Metaverse-based applications. Further, Huawei does have a strong IP and commercial offering under cloud computing. Other leaders in cloud computing – Baidu, Alphabet, Intel, Dell, Amazon, VMware, and HP would play an important role in

Assignee	AR/VR	Block Chain	AI	Cloud Computing	Metaverse
IBM	●	●	●	●	◆
Microsoft	●	●	●	●	◆
Tencent	●	●	●	●	◆
Alphabet	●	●	●	●	◆
Alibaba	●	●	●	●	◆
Baidu	●	●	●	●	◆
Huawei	●	●	●	●	◆
Samsung	●	●	●	●	◆
Meta	●	●	●	●	◆
Ping An Insurance	●	●	●	●	◆
LG	●	●	●	●	◆
State Grid Corp China	●	●	●	●	◆
Sony	●	●	●	●	◆

offering an always-on cloud to the Metaverse application enablers.

Who will dominate IP in the Metaverse?

Now we have seen which players own the most IP in different Metaverse elements; however, does that indicate anything about who leads the overall race currently?

The Metaverse is still in its infancy but is expected to grow with a series of investments and innovations in different technologies put together. However, to see the bigger picture of Metaverse

Figure 7. Matrix showing overall leader in the Metaverse based on contributing technologies

- Positioned as top 10 innovators in the category
- Positioned between top 11-20 innovators in the category
- Do not fall in top 20 in the category
- ◆ Fading blue colour indicates cumulative score of the four technologies expected to contribute in Metaverse

IP, it would be wise to combine the individual IP story of the four Metaverse elements as follows:

The matrix (figure 7) shows some patent overlap across each technical category. However, looking at the current state – IBM, Microsoft, Tencent, and Alphabet own most IP for



Metaverse's technology element. Furthermore, if we look at the current active and growing ecosystem for Metaverse along with the above IP stats, I think Microsoft and Tencent have an edge over others commercially. Microsoft's already-available infrastructure – Mesh, HoloLens, Azure IoT, Azure Digital Twin, and Azure AI gives them first-mover advantage. Moreover, Microsoft's acquisition of Activision Blizzard affords them another edge to become a leader in Metaverse, as I believe the gaming industry will be the first to offer true Metaverse. Similarly, Tencent, with its gaming dominance, also has a huge user base through gaming, Wechat, QQ, which gives them a solid base to offer an immersive experience to a large user base and lead China's Metaverse plan.

Other leaders in the above tally have also started exploring the Metaverse plan in their own way. For example, Apple, Alphabet, and Meta are focusing on the technology and affordability of VR/AR headsets for the masses. Baidu launched a Metaverse mobile application "Xirang" to allow users to create avatars and chat with other participants. Samsung launched its flagship mobile phone Galaxy S22 in Samsung's Decentraland Metaverse. LG is partnering with companies to build Metaverse-enabling technologies. And, Sony invested in Epic games to help them build a Metaverse.

All the companies, irrespective of their IP strength, are aggressively looking for avenues to secure their Metaverse plans through partnership, innovation, product launch, investment, filing trademarks, and more. In addition, potential start-ups and small players working on Metaverse technologies will see acquisition attempts by large players.

“**These initial innovations from start-ups and other small actors will play a key role in the Metaverse as the filed patents cover the basics of Blockchain.**”

What does the future look like for the Metaverse?

Metaverse is still a concept, and more breakthrough innovations are required that can make Metaverse-enabling products/technology affordable. I believe some serious Metaverse applications/implementations are still six to eight years away, where applications in Gaming, Fashion, and Digital Communication will be the flag-bearer followed by others. There is no doubt that the Metaverse will bring exciting possibilities and opportunities to different industries and businesses. However, in the race to adapt Metaverse, the IP strategy might get ignored.

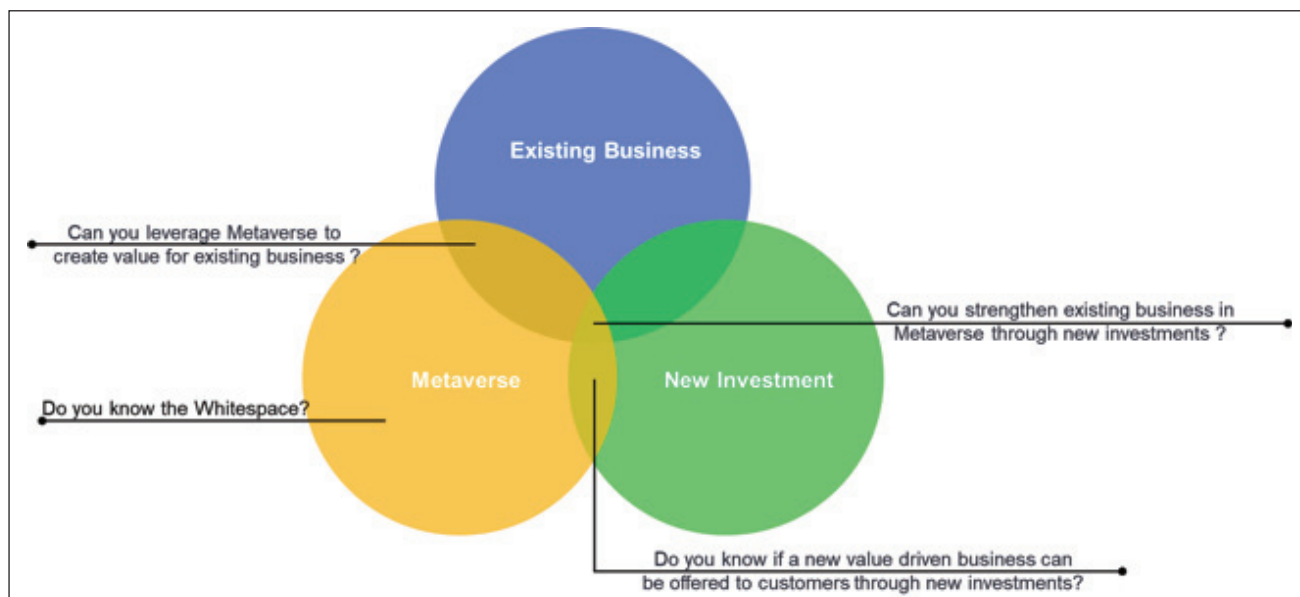
How should you plan your IP for the Metaverse?

Primarily, one should think about what your company's strengths are to assess if you should move toward integration with the Metaverse and evaluate the potential impact of the Metaverse on your business, product offerings and customers in a virtual environment. Figure 8 poses some relevant questions for such assessments.

Finding answers to the questions in the above diagram is not simple; the questions are complex and subjective. At this initial stage of Metaverse evolution, it's important to get clarity on the following:

- I. Value Assessment for business:
Understand what value you will create by offering Metaverse-based applications/products.
- II. IP strategy: Companies should not run to secure everything they innovate around

Figure 8. Relevant questions for planning Metaverse solution for the business





the Metaverse. Innovators should be conscious while filing patents and should consider the following:

- a. Do the due diligence before deciding to file a patent. As the Metaverse evolves, it will offer an ocean of opportunities to secure IP. However, filing patents for every innovation will result in more liability than opportunity.
- b. Screen your portfolio to locate potential patents for which a continuation application can be filed to cover relevant Metaverse embodiment. Not all innovations need to come out of Research & Development (R&D).
- c. Understand the landscape and identify the whitespace relevant for your business to strategize R&D investment and build the portfolio accordingly.
- d. Look for potential partners to accelerate the Metaverse application development
- e. Be vigilant while securing IP for your unique business offerings around the Metaverse if you are a startup. It will help you establish your business strongly as a first mover in the space. Further, start-ups and subject matter experts should try experimenting more

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Large, medium, and small businesses, and start-ups alike should sharply define their IP strategy to gain an advantage over the competition.
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with their Metaverse business offering to come up with new potential Metaverse implementation/applications, as the Metaverse will take a couple more years to grip a larger consumer.

Large, medium, and small businesses, and start-ups alike should sharply define their IP strategy to gain an advantage over the competition. Consider your company's strengths to assess if you should move toward the Metaverse and evaluate the potential impact of the Metaverse on your business, product offerings, and customers in a virtual environment. Remember, less can mean more when building your virtual reality patent portfolio. You want the ability to both defend your current portfolio as well as to seize proactive licensing opportunities for monetization.

Contact

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