

China Mobile Hong Kong leads the new era of the Metaverse with resourceful 5G spectrum

Comprehensive 5G infrastructure will become the best tech partner

中國移動香港憑藉豐富 5G 資源 引領元宇宙新時代 成熟的 5G 基建 將會成為絕佳的夥伴

Mr. Sean Lee 李帆風先生
Director and Chief Executive Officer
China Mobile Hong Kong Company Limited
董事兼行政總裁
中國移動香港有限公司



Interviewed by: Mr. Tony Hau
採訪者：侯東迎先生

Advances of blockchain technology amid NTF as a recent big hit, following the financially hyped cryptos and virtual assets, are giving rise to what tech giants believe is “The Next Big Thing” coined “Metaverse”, an umbrella concept inclusive of all the mentioned enriched terminology seen emerging on the Internet. Facebook’s move to rename itself Meta exhibits the determination of the world’s leading social media group to set sights on the Metaverse markets, which are envisioned to boom for years to come.

What is a Metaverse?

The Metaverse as an immersive digital universe users enter for work, studies, socializing, and entertainment, which in parallel to the reality is principally a next-generation virtual infrastructure for real-time online experience. As what’s next for digital transformation, it provides innovative solutions to today’s limitations of the Internet.

For example, when teaming up with buddies from miles away in a traditional online gaming setting, it would not allow you to feel them out by more than hearing their voices, not reading their facial expression or their body gestures. With broadband and 5G network fully deployed, the Metaverse removes distances between users with connections no longer bound by space and time. When your loved ones appear from afar, they are simultaneously right next to you, marking a revolutionary change in human life set to start surfacing.

隨著區塊鏈技術的發展，近年在網絡上衍生了大量的概念與名詞，除了在財經界別被炒得熱烘烘的加密貨幣、虛擬資產，新近又有 NFT 以至集上述大成而誕生的「Metaverse」、「元宇宙」，被不少科技界巨頭視為「The Next Big Thing」，竟連社交界龍頭 Facebook 亦從此改名「Meta」，為的就是劍指元宇宙市場，在未來的人類新世代佔上一席。

何為元宇宙？

從泛義而言，元宇宙就是一個獨立於現實、存在於網絡上的一個虛擬世界，是一個具備實時體驗的下一代互聯網基礎設施。用戶在這個虛擬世界上社交、工作、學習、娛樂，實現一些現時互聯網仍然無法進行解決的問題。

例如我們進行網上遊戲時，雖然能夠與千里之外的朋友共同衝關，但除了聲音，我們無法得知朋友的其他感受，例如面部表情，身體動態等等。在元宇宙世界裡，透過高速寬頻網絡以及 5G 連線，千里之外的朋友便如同坐在身旁一樣，情感的連繫不再受時空影響。用戶透過元宇宙將變成沒有距離，對人類生活造成革命性影響。

CMHK 5G as the first step into the Metaverse

In tune with the current Metaverse concept informed by blockchain revolving around the virtues of "decentralization", a matured economic model of the Metaverse shaped by future consumers, in pure consideration of the natural demands and supplies, will organically eliminate the monopolistic markets.

Moving forward from simple online gaming, the Metaverse virtuality is destined for integration with reality, incorporated with in-built features derived from blockchain including "open source" and "decentralization". With Metaverse's "always-on" characteristic, users will by then have acquired enough cyber sophistication to enter for instant and spontaneous interaction, across multiple applications anytime, anywhere. Textual and audio communication we have always clung to has nothing comparable to this new form of communication, which takes tremendous and instantaneous data transmission. This leads to a high demand for the 5G network, with its "high load capacity, high transmission speed, and low latency" features, for versatile applications in the future Metaverse .

As the city's and the world's leading network service provider, CMHK has established a set of comprehensive 5G infrastructure for stable provision of wide mobile coverage, ensuring reliable connectivity with low latency in support of seamless switches between devices. When AR / VR / MR / XR technologies are employed as the device interface, CMHK will certainly become users' best tech partner in the Metaverse.

CMHK 5G 將成絕佳的元宇宙入門門檻

現在最新的元宇宙概念，由區塊鏈技術引導而成，故非常重視「去中心化 (decentralized)」的概念，即是在成熟的虛擬世界中，去除單一機構壟斷生產的局面，內裡的用家會根據自然的供求關係決定元宇宙內的經濟模式。

與單純的網上遊戲不同，元宇宙的最終形態，定必為一個「虛實融合」的環境，具備「開源」以及「去中心化」等引伸自區塊鏈技術的特性。由於元宇宙講求「隨時在線」，用戶必須可以隨時隨地與不同的應用作出交互，又或是與其他用戶作實時的交流，這樣的交流已非昔日的純文字或語音可比，是近乎實時的資料串流，其產生的訊息量極為龐大，是以標榜「高負載、高速度、低延遲」的 5G 網絡在未來元宇宙的應用之上有相當大的需求。

CMHK 作為香港、以至世界首屈一指的網絡服務供應營運商，目前已建立一整套成熟的 5G 基建，可以提供穩定的覆蓋和連接能力，為用戶提供低時延且可靠的通訊，並支援設備無縫垂直切換，當用戶需要以 AR / VR / MR / XR 技術作為使用介面接入元宇宙，CMHK 將會成為絕佳的夥伴。



CMHK's blueprints for a Metaverse future

The development of the Metaverse can be roughly divided into several stages. Currently, a majority of commercial entities are creating their own blockchain-based metaverse applications on the Internet, with which users can access through mobile apps and browsers on their phones, computers, and even VR devices. CMHK's sophistication in 5G technology equips customers with the basics to kick-start their Metaverse journey.

In the next few stages for the new dimensions to develop, many separate metaverses are bound to mature, connect and interact before the markets come to agree on a common communication platform. The user's "avatar" can then travel across metaverses, with virtual products used and sold interactively between the multiple universes.

As metaverses interact and complement each other, they will end up merging into a massive web-based virtual space for everyone to access anytime. It becomes the one and only one Metaverse, leaving no more separate platform providers but brands and developers to connect to this boundless world based on their needs.

CMHK 為元宇宙的未來佈局

元宇宙的發展大概可以分為幾個階段，首先就是各大機構在網絡上自行打造出自己的元宇宙，用戶利用手機、電腦、甚至是 VR 裝備透過不同的 Apps 或瀏覽器使用這些建基於區塊鏈的元宇宙應用，在這個階段，CMHK 成熟的 5G 技術已經可以發揮作用，為用戶提供最基本的入門工具。

而發展到下一階段之後，各分散的元宇宙將會互相連接、並統整出一個統一的溝通協定，用戶的「化身」可以穿梭於不同的元宇宙之間，而產自各元宇宙的虛擬物件理論上可以在不同的元宇宙中交互使用及交易。

透過各自發展成熟的元宇宙互通、互補，無數個元宇宙最終成為一個建構於網絡之上、可隨時在線的巨型虛擬空間，從此元宇宙就是元宇宙，再沒有分開不同的品牌，只有不同的品牌或開發者因應需要而接入這個無邊無際的大千世界。


Blend into the Metaverse trend and progress with customers

Illustrating the fusion of the virtual and the real, the Metaverse will eventually develop into the next form of the Internet - Web 3.0, where users can socialize, chill, create, showcase, educate, and trade, actualizing a virtual life of social and spiritual combined. As users want to enter the cloud-based Metaverse, access to connection provided by the operator is a mandatory prerequisite. Extended from 5G and cloud computing are AR / VR / MR / XR technologies, which many see as today's core essentials of the Metaverse and definitely a big shot in the tech world tomorrow. Compared to Web 2.0 most mobiles install, the Metaverse and Web 3.0 will bring in enormous business opportunities.

Besides interpersonal bonding, the Metaverse will further enhance human-machine interaction as it continues to transform, creating greater room for development of and a higher demand for the application of artificial intelligence (AI).

However highly intelligent, agile, and closed-looped the AI technology is in current stage, its applications in the communication field still face bottlenecks in view of developmental costs. As the Metaverse is developing alongside the 5G network, AI technology will foreseeably integrate extensively with communication services, from hardware, software, systems to operations. The impact of the Metaverse will reveal itself when telecom operators and users benefit from "better quality, improved efficiency, and saved costs".

Despite the huge potential the Metaverse has, the virtual structure still remains to be explored in its early stage of creation, at both the technical and conceptual level, making it too early for anyone to claim an advantage over others.

CMHK possesses the most resourceful 5G spectrum in Hong Kong and a 1 million square feet large data centre soon to be up and running in Fo Tan. These will make an exceptional hardware addition for CMHK to develop the Metaverse, along with the contents on its UTV LIVE and synchronous online learning service. When the time is right, minor optimization will certainly turn the platform into a cornerstone in the bid to form the Metaverse. 

融入元宇宙發展趨勢、與客戶同進步

元宇宙標榜虛擬與現實交互融合，發展成熟後就成為互聯網的下一形態——Web 3.0，用戶能夠在其上進行社交、娛樂、創作、展示、教育、交易等社會性、精神性活動；一切既然都建立於「雲」上，用戶要進入元宇宙，營運商提供的網絡連接服務就成為必經門檻；而基於 5G、雲計算引伸的 AR / VR / MR / XR 技術，作為元宇宙的第一入口，將在未來更受重視，對比僅以手機連接的 Web 2.0，元宇宙、Web 3.0 所帶來的商機將更無遠弗屆。

除了人與人之間的交流，元宇宙的發展亦會進一步推進人機交互，為人工智能 (AI) 的應用帶來更強大的發展空間與需求。

現階段的 AI 技術，已具備廣泛的智慧化、靈活性和閉環等特點，但在通訊領域卻每每因為研發成本而造成應用瓶頸；但隨著元宇宙配合 5G 的共生發展，AI 技術與通訊網路的硬體、軟體、系統、流程等深度融合，電訊服務得以在元宇宙的影響下實現「提質、增效、降本」，營運商以及用戶都相得益彰。

雖然元宇宙的潛力龐大，但從技術、概念層面而論，「元宇宙」的整體仍屬早期摸索階段，於現時稱自己在元宇宙範疇有絕對或相對競爭優勢皆仍是言之尚早。

作為香港擁有最多 5G 頻譜資源的流動網絡營運商，配合即將在火炭落成面積達 100 萬呎的數據中心，足以成為 CMHK 於元宇宙發展的優秀硬件配套；加上 UTV LIVE 及網上同步課堂等內容。只要時機適合，稍作優化，自能成為元宇宙發展的一大基石。 