

## Telecoms Industry's Opportunities in the New 5G-Metaverse Era 電訊業於新 5G 元宇宙時代的機遇

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The COVID-19 pandemic has hastened the entrance of the 5G Metaverse Age, creating a wealth of business opportunities in the global market. One of the top telecoms operators, 3 Hong Kong, is strengthening its leading position in driving the growth of Metaverse. Mr. Kenny Koo, Executive Director and Chief Executive Officer of Hutchison Telecommunications Hong Kong Holdings Limited, explains how they are bringing Metaverse into life: "3 Hong Kong could enable corporations to provision their brands and services into the Metaverse/Web 3.0 to respective target consumer customers so as to improve customer experience and boost operational effectiveness through this virtual environment." This exemplifies the way in which 3 Hong Kong remains resilient in an ever-changing market environment.

For businesses to reach the worldwide audience, it is essential that the information transmission and communication are dependable with minimal latency. The concept of Metaverse describes how the internet and virtual worlds will interconnect and become a seamless part of our daily life. The new open and decentralized world reality that will exist in virtuality will be made manifest by Web 3.0's Metaverse and being outfitted with the increasingly developed 5G infrastructure.

3 Hong Kong launches the unique Bored Ape Gummy NFT at ARTAVERSE outdoor art exhibition together with BlueArk, an NFT marketplace, to enter the metaverse. 3 香港聯乘 NFT 拍賣平台 BlueArk，於 ARTAVERSE 戶外展覽中推出獨家無聊猿 NFT，踏足元宇宙世界。

2019 新冠肺炎疫情加速了 5G 元宇宙時代的來臨，為環球市場締造了源源不絕的商機。本港其中一家領先的電訊營辦商 3 香港，致力推動元宇宙市場的發展以鞏固領導地位。和記電訊香港控股有限公司執行董事及行政總裁古星輝先生為大家闡述 3 香港如何為元宇宙注入活力。古先生指，3 香港全力支援企業進入元宇宙和網絡 3.0，協助客戶於虛擬環境建立品牌，為目標消費者提供服務，進一步提升企業的客户體驗和運營效率；足證 3 香港在瞬息萬變的市場環境下，仍能維持穩定的業務發展。

可靠和低時延的資訊傳輸和溝通，是企業拓展業務至全球各地的必要條件。元宇宙的概念描繪了互聯網和虛擬世界將如何相互連結，成為我們日常生活的一部份。去中心化的世界實境將在虛擬世界中出現，配合迅速發展的 5G 基建，於網絡 3.0 的元宇宙中展示出來。



### 3 Hong Kong's vision for the Metaverse

According to Koo, the term Metaverse is simply a name given to the emergence of Web 3.0 which entails the expansion of user experiences and apps to the existing mobile internet. In order to provide an immersive experience, technologies like augmented reality (AR), virtual reality (VR), and blockchain are used. An essential question is on everyone's mind as the Metaverse's vision begins to take shape: how will the Metaverse impact the real world? Koo contends that the real and inhabitable Metaverse platforms will undoubtedly still require components of reality even though it appears to be altering the real-world connections in every possible way, from video games and movies to navigational tools. Although it's highly improbable that the metaverse will ultimately replace in-person physical interaction, it does have the enormous potential to change how it usually works. Brands across industries are delving deeper to discover their potential in the AR, VR, and AI-enabled Metaverse. Metaverse offers unlimited space for ideas and creativity, allowing social networking, e-commerce, concerts, expos, and other applications to thrive.

The metaverse has many different use cases. In general, it fulfills the purpose of providing us with an imaginative arena inspired by gaming and e-sport entertainment. The idea of interacting digitally through avatars has also given rise to the belief that many activities will no longer require face-to-face communication. Koo believes that transaction-based activities and virtual meetings are the most prevalent use cases at this point in the advancement of COVID-19, which has expedited its cross-country and industry applications. Employee engagement increases while maintaining a sense of presence by holding virtual meetings in the Metaverse where participants can interact as avatars. Interactive libraries, virtual communities, multimedia schools are all predicted for the future by visionaries. The adoption of smart contracts and digital signatures for transaction-based activities would greatly increase productivity in daily corporate operations. More uniquely for telecoms operators, two areas of attention are presented by the Metaverse - an environment the telecoms operators can contribute to and an ecosystem they can facilitate. 3 Hong Kong's task is to provide corporate customers a fast, reliable network that allows users to instantly transmit information from businesses to clients. 3 Hong Kong could improve customer experience and boost operational effectiveness through this virtual environment.

Cryptocurrency and the Metaverse are quite distinct from one another, yet they are concepts that go hand-in-hand and could become increasingly dependent on one another. By 2030, the metaverse might contribute US\$1.5 trillion<sup>1</sup> in additional value to the global economy, and a significant portion of that value may be realized in cryptocurrencies. More of us are getting acclimated to utilizing cryptocurrencies as a form of digital payment. 3 Hong Kong is the very first local telecoms operator to accept crypto payments. By working with FTX US, a leading digital assets exchange, 3 Hong Kong customers can

<sup>1</sup> PwC "Seeing is believing" report, 2019

### 3 香港對元宇宙的願景

古先生表示，「元宇宙」一詞是指網絡 3.0 時代的出現，是用戶體驗和應用程式由現時的流動互聯網延伸出來的現象。為提供沉浸式體驗，擴增實境 (AR)、虛擬實境 (VR) 和區塊鏈等技術相繼應用在互聯網上。隨著元宇宙的願景漸成雛形，不少人都有相同疑問：「元宇宙將如何影響真實世界？」古先生認為，即使元宇宙平台看似在各方面包括遊戲、電影甚至導航工具改變了現實世界溝通連繫的方式，但真實和宜居的元宇宙平台仍需依賴現實元素才可運行。縱使元宇宙最終不大可能完全取代人與人之間的日常互動，元宇宙卻具備改寫日常生活的龐大潛能。各行各業正深入研究元宇宙在 AR、VR 及人工智能等技術的發展潛力。元宇宙為意念和創作力提供無限空間，讓社交網絡、電子商務、音樂會、博覽會及其他應用得以蓬勃發展。

元宇宙有不同的應用實例，在遊戲和電競娛樂的啟發下，元宇宙為我們提供了一個極具想像力的空間。化身虛擬角色進行數碼互動，令很多活動毋須再面對面交流。古先生相信，在 2019 新冠肺炎疫情下，以交易為本的活動和虛擬會議是最常見的應用實例，在跨國活動和各行各業亦迅速應用。員工可化身成虛擬角色參與元宇宙的虛擬會議，為會議帶來更高的參與度及員工投入度。我們可預視，未來將出現互動圖書館、虛擬社區和多媒體學校。在進行交易活動時使用智能合約和數碼簽名，將大幅提高企業日常營運的生產力。針對電訊營辦商而言，元宇宙帶來兩個須重點關注的範疇，分別是讓業界可作出貢獻的環境和促進元宇宙發展的生態系統。3 香港的使命是為企業客戶提供快速和可靠的網絡，讓他們可即時向用戶傳送資訊。3 香港可透過此虛擬環境，提升客戶體驗和營運效率。

加密貨幣和元宇宙雖是兩個截然不同的概念，但兩者可相輔相成和互相依賴。有研究估計，直至 2030 年，元宇宙可為環球經濟貢獻 1.5 萬億美元的額外價值，當中很大部分是加密貨幣的貢獻<sup>1</sup>。愈來愈多人習慣使用加密貨幣作數碼支付。3 香港是首家接受加密貨幣支付的本地電訊營辦商。透過與領先的數碼資產交易平台 FTX US 合作，3 香港客戶可輕鬆使用「FTX Pay」以加密貨幣於網上支付電話費、購買產品及服務，此嶄新的消費平台有助帶動更多元宇宙相關的創新應用，同時為用戶提供使用加密貨幣的嶄新模式。



3 Hong Kong opens a virtual retail store in the Voxels blockchain platform, heading towards a new milestone of the metaverse. 3 香港於 Voxels 區塊鏈平台設立虛擬門市，邁向元宇宙的新里程。



pay for phone bills, products, and services online with selected cryptocurrencies. This is powered by FTX US's cryptocurrency exchange service "FTX Pay". This brand-new spending platform might spark more Metaverse innovation while giving users a newfangled method to engage with cryptocurrencies.

The form factor has been a crucial element of web 1.0 and web 2.0 to facilitate its use in public, signified by global booming use of computers and mobile phones. Although the ideal Web 3.0 solution has yet to be found, its form factor should be looked into in order to grow the user base. The purpose of promoting Metaverse is to foster social interaction and build a digital society that is centered around digital assets. We should make sure that the Metaverse is applicable and open to people of all ages, gender or race. Even though the term "Metaverse" is becoming more widely known, very few people have really experienced it or know what it actually is. 3 Hong Kong's ultimate objective would be making the Metaverse increasingly commonplace.

## Market advantages and disadvantages

3 Hong Kong possesses comparative advantage thanks to its strongest 5G network in Hong Kong. Ultra-fast connection and super low latency, both made possible by an extensive 5G network, support the operation of AR and VR gadgets. A fast network can make the Internet of Things possible through effective connections amongst devices and sensors. It is crucial to integrate components from the actual world as well as connecting gadgets in the virtual world. The metaverse was made possible by virtual and augmented reality, but the ultimate measure of this technology is how thoroughly a person can "live" inside the virtual experience. Embodied reality will radically alter the way we see reality by involving the senses to provide a more comprehensive view of our surrounding environments. For example, if it was pouring rain outside coupled with lightning, it seems a bit strange and misaligned to display a sunny sky in the virtual world. In order to provide people a more realistic experience, Koo thinks data analytics might be included into the system to imitate the real world.

The long-standing reputation of 3 Hong Kong and its capacity to win over customer confidence are another known advantages. Establishing trust creates a strong foundation and supports long-lasting customer loyalty. Koo comes up with an example - agents and customers rely on third party platforms for client acquisition and research respectively, and likewise, 3 Hong Kong serves as the middleman to help agents to locate potential clients. The digitized procedure could significantly cut down on agency fees and distribution costs. However, as people are wired to interact with other people and tend to trust someone who interacts in person, building trust online could be something to work on. The best way to ensure that the information exchanges and transactions in Metaverse are conducted coherently is to appoint a reliable intermediary. Users can visually manifest themselves and come up with an authentic digital representation in the virtual world thanks to avatars. To realize the full potential of the Metaverse, it should become a shared platform where a more realistic environment is present, and where trust and transparency are of the essence.

優良的裝備規格是推動網絡 1.0 和網絡 2.0 大眾應用的關鍵因素，從全球各地廣泛應用電腦和手機可見一斑。儘管理想的網絡 3.0 方案仍未出現，我們需要深入研究合適的裝備規格以增加客戶群。推廣元宇宙的目的是為了促進社交互動，並建設一個以數碼資產為中心的數碼化社會。我們應該確保元宇宙開放予所有年齡、性別和種族的人使用，即使元宇宙概念愈見流行，但其實很少人有真正體驗或確實認知，而 3 香港的最終目標，是普及元宇宙。



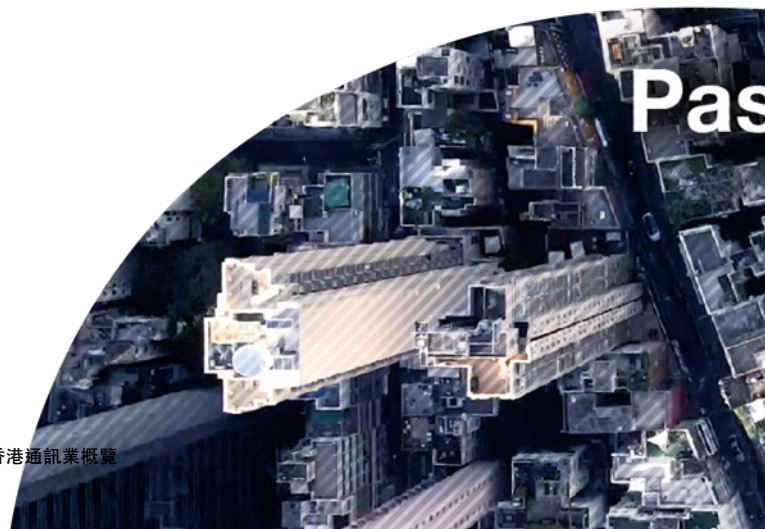
3 Hong Kong was the first in the telecoms industry in Hong Kong to embrace cryptocurrency payments by collaborating with FTX US.

3 香港領先業界，與 FTX US 合作推出加密貨幣付款服務。

## 元宇宙市場的優點和缺點

3 香港憑藉全港最強的 5G 網絡，在發展元宇宙方面具備相對優勢。5G 網絡極高速和超低時延的連接，支援 AR 和 VR 設置的運作。快速的網絡有效連接裝置和感應器，實現物聯網應用。整合來自現實世界的元素及連接虛擬世界的裝置，對元宇宙的發展尤其重要。元宇宙的出現有賴 VR 及 AR 技術，但最終成功與否取決於用戶是否能「生活」於虛擬體驗中。這個結合虛擬體驗的現實，透過讓我們全面檢視周遭環境，改變我們對現實世界的認知。例如室外下著傾盤大雨、雷電交加，若在虛擬世界晴空萬里，用戶難免會對兩個世界的不同環境感到困惑。為了讓用戶在元宇宙有更真實的體驗，古先生認為元宇宙系統可加入數據分析以模仿現實世界。


3 香港的長久信譽和客戶的信任，也是發展元宇宙的另一優勢。建立客戶信任締造了穩健的基礎，有助建立長久的客戶忠誠度。古先生舉例說，代理商和客戶分別依靠第三方平台上客和進行研究；同樣地，3 香港扮演中間人的角色，協助代理商尋找潛在客戶。數碼化的程序可大大降低代理費用和分銷成本；而現實世界中，大家仍習慣與他人互動並傾向信任面對面交流的人，於網絡建立信任仍須下苦功。確保元宇宙的訊息交換和交易能順暢進行，最有效的方法是委託可靠的中介人。全賴虛擬角色，用戶可在數碼世界中以被認證的數碼方式表現自己。要全面釋放元宇宙的潛力，必須讓元宇宙成為可信賴和具透明度的共享平台，以提供更真實的環境。






Earlier this year, a hybrid fashion show was offered both online and offline. The designer clothing was digitally shown on model avatars, allowing the audience to try on different clothes from the virtual closets, and finally projecting the final appearance on their own avatar. These fashion pieces were then worn by models to finish the catwalk in person, bridging up the virtual and physical worlds. For the fashion industry in particular, new business models that incorporate virtual fashion may stand a better chance in nowadays ever changing markets. Model avatars could walk 3-D virtual runways thanks to 360-degree vision technology and present seasonal collections via online showrooms. At the very least, fashion's journey into the Metaverse indicates exciting new avenues for consumer participation. While no one can foresee how this constantly expanding digital realm will develop, the prospects it brings are fascinating - for luxury companies, retailers, consumers, and for 3 Hong Kong.

The metaverse has a wealth of benefits, but it also has its share of problems and challenges. First, whose national law should foreign users or multinational corporations abide by, considering that the Metaverse is not bound by any actual boundaries? The problem of regulatory ambiguity becomes apparent since there is no longer a physical site to enforce upon. Koo adds that we must take shareholder interests into account while protecting asset values. Decentralization has been a contentious issue supported by certain companies that want to do away with government participation. These companies think that each business should be allowed to construct their own Metaverse values or policies. To further the discussion, we should shed light on the debate concerning whether the virtual world should be its own unique entity, or if it is merely an extension of the actual world.

Koo emphasizes the need of developing a trusting relationship with customers and enhancing online security as one of the approaches in overcoming the aforementioned difficulties. Though the majority of individuals are increasingly aware of their online transactions' security, some level of oversight and governance are still required. The development of standard user interaction protocols for virtual environments would be another recommendation. Having procedures in place will further assure fairness in our economy and safeguard not just customer purchases but also the value of content providers' work. Koo advises businesses to be clear about their position in the market, the underlying risks, and their role in the metaverse. A successful business should constantly adhere to its business values and establish long-term objectives in relation to its metaverse expansion. 

年初一場時裝展以線上線下混合形式舉行。設計師的服裝以數碼投射至虛擬模特兒身上，觀眾可從虛擬衣櫥中試穿不同服裝，最後讓自己的虛擬角色穿上。然後，模特兒在現實世界穿著與虛擬化身相同的衣服完成時裝展，連結虛擬和現實世界。對時裝行業而言，加入虛擬時裝的嶄新商業模式或能讓企業在現今瞬息萬變的市場中保持優勢。憑藉 360 度的視覺技術，虛擬模特兒可在虛擬的 3D 伸展台上表演，並透過網上陳列室展示新一季的時裝系列。時裝界邁向元宇宙，為消費者帶來嶄新體驗。無人能預知不斷發展的數碼領域將如何演化，惟對奢侈品公司、零售商、消費者和 3 香港而言，將帶來璀璨的前景。

元宇宙帶來很多裨益，但伴隨許多問題和挑戰。首先，元宇宙空間不受任何約束，海外用戶和跨國公司又該受哪個國家的法律監管？由於元宇宙沒有實質領土，監管權效模糊，問題嚴重。古先生認為，在保護資產價值的同時，須考慮股東的利益。去中心化一直備受爭議，被希望脫離政府監管的企業所支持。這些公司認為各企業均可以建立自己的元宇宙價值和指引。虛擬世界是否應該被當成獨立的實體看待？還是元宇宙只是現實世界的延伸？這些議題亦值得繼續討論。

要克服上述困難，古先生認為企業與客戶建立互信關係和加強網絡安全是其中一個方法。儘管大部份人已加強對網上交易活動的安全意識，不同程度的監督和管治仍然需要。為虛擬環境制定標準的用戶互動協議是另一可行方法。制定程序將進一步保持經濟公平，保障消費者的交易活動和創作者產品的市場價值。古先生認為企業須清楚其市場定位、潛在風險和在元宇宙的角色。一家成功的企業應不斷堅持自己的商業價值，並制定拓展至元宇宙發展的長遠目標。 

3 Hong Kong works tirelessly to enhance network coverage. It was the first local operator to announce the activation of the 700MHz band 5G spectrum, laying a solid foundation for the new era of Web 3.0 and the metaverse.

3 香港不斷提升網絡覆蓋，並率先宣佈啟動 700MHz 5G 頻譜服務，為 Web 3.0 及元宇宙新世代奠下穩固基石。

## Session Beyond Perfection

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