

5G changes vertical market operations

5G 改變各行各業的營運模式



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For decades, Hong Kong has had a comprehensive telecom infrastructure that provides stable and extensive coverage across the city. Since the 3G era, data coverage has spanned both indoors and outdoors, even in underground areas such as the MTR. Hong Kong's widespread connections are unparalleled worldwide and a great advantage for the city.

Besides the world-class infrastructure, Hong Kong is unique because of its small size and efficiency. According to Kenny Koo, Executive Director and CEO of Hutchison Telecommunications Hong Kong Holdings Limited, Hong Kong people and companies are agile and adapt quickly to new technological trends. As such, many business models are flexible, which are helpful in creating new ways to enhance e-health, e-education, and e-marketing as 5G unfolds.

Koo anticipates that 4K and 8K video streaming, together with 5G's ultra-low latency and Augmented Reality (AR) and Virtual Reality (VR) applications, will increase demands for business-to-consumer (B2C) and business-to-business (B2B) applications as well as entertainment in Hong Kong. In addition, synergy of 5G and Artificial Intelligence (AI) is expected to enhance 5G demands from the retail and service sectors.

However, there is one big challenge in the implementation of widespread 5G coverage, that is identifying, accessing and installing 5G infrastructure. Since these processes can be quite demanding in terms of time and resources, Koo suggests prioritising locations where data flows are needed most.

Fortunately, the Government and telecom industry have invested in many of the 5G projects already set in motion. The Office of the Communications Authority also streamlined the approval process for telecom operators to roll out cell sites at designated Government venues and lowered the costs of 5G spectrum to a reasonable level. Hence, many stakeholders, from young adults to the elderly, will all benefit from 5G.

多年來，香港一直擁有全面的電訊基建，提供穩定及覆蓋廣泛的電訊服務。自 3G 年代，數據覆蓋範圍已遍及室內室外，以至地底包括港鐵，無遠弗屆的連接於全球獨佔鰲頭，是香港的強大優勢。

香港除擁有世界級的基建，面積小和效率高也是其獨特之處。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指出，香港的人和企業都能靈活變通，迅速適應新的技術趨勢。因此，隨著 5G 的發展，靈活的業務模式亦有助促進電子醫療、電子教育和電子市場推廣。

古先生預期 4K 和 8K 的視像串流，糅合 5G 超低時延、擴增實境和虛擬實境的應用，將增加本港企業對消費者 (B2C) 和企業對企業 (B2B) 應用，以至娛樂活動的需求。此外，5G 與人工智能的協同效應，亦有望提升零售及服務業對 5G 的需求。

然而，要實現 5G 廣泛覆蓋須面對物色、接駁和安裝 5G 基建的一大挑戰。此過程對時間和資源運用相對嚴苛，故古先生建議在對數據流量需求大的地區優先進行 5G 工程。

幸好，許多由政府 and 電訊業投資的 5G 項目經已啟動，通訊事務管理局辦公室亦簡化了電訊營辦商在指定政府場地安裝基站的審批流程，同時把 5G 頻譜的成本降低至合理水平。因此，由年青一代以至長者等許多持份者，都可受惠於 5G。

5G for Businesses and Consumers

There is competition in every industry, Koo notes, adding that competition among telecom operators was tense during the 4G era. However, this trend will alter in the 5G era because 5G will transform the competitive landscape of the market. As 5G unfolds, market size will increase and in turn provide more potential opportunities for vertical markets and B2B specialised applications. 3 Hong Kong, the mobile arm of HTHKH, is part of the CK Hutchison Group which operates businesses spanning ports and related services, retail, infrastructure, energy, finance and others worldwide. The mobile operator has abundant opportunities to showcase 5G applications in different fields.

Telecom operators can use 5G to focus on their individual niches and competition will be even healthier. In other words, telecom companies could focus on how to adopt 5G to give them a competitive advantage and target a more specialised vertical market. Doing so will result in fewer clashes for the same segments of customers. For example, one of 3 Hong Kong's technology specialisations is conducting 4K live broadcasts using 5G, which gives it a relentless streaming speed. The mobile operator conducted 4K live broadcasts for concerts of the Hong Kong Chinese Orchestra and the Hong Kong Philharmonic Orchestra's using its 5G 4K Live Broadcasting Solution.

3 Hong Kong has also pioneered a 5G contactless car park solution to deliver a seamless drive-through experience for drivers. When a vehicle approaches a barrier gate, a multiple high-definition camera system will video-record the vehicle plate. Images will then be transmitted real-time on a 5G network to video analytics system matching the vehicle plate number with a database. Once the vehicle plate is verified, the car park system will transmit a gate opening instruction via 5G to the barrier gate which will then open automatically. This 5G solution is a significant step in smart parking.

Koo notes the pandemic propelled people across Hong Kong to adopt new technologies for work, pleasure and everyday life. Many people who do not extensively use technology have to transition to work from home, so they need to use online platforms such as Zoom as an alternative. While the pandemic may not be around forever, Koo predicts the new norms of integrating technology into everyday life would continue long after the pandemic subsides. As such, businesses will be able to meet consumers' increasing demand for new technologies by targeting the niches via vertical marketing.

However, adopting new technology is not easy for every profession. As more people work from home and avoid public gatherings, mobile operators need to find ways to help those professions that generally meet face-to-face. 3 Hong Kong has planned to be an intermediary for content producers, such as, key opinion leaders (KOLs), artistes, performers and private tutors who have been struggling during the pandemic. This includes collaborating with professionals to create their own contents accessible by the public in the comfort of their own homes.

企業和消費市場的 5G 應用

古先生指出，每個行業都存在競爭，而電訊營辦商在 4G 年代的競爭亦相當激烈。然而，由於 5G 將改變市場的競爭格局，營辦商之間的競爭形勢亦將隨之改變。5G 的啟動擴大了市場規模，並為垂直市場和企業對企業 (B2B) 的專屬應用創造更多潛在機會。3 香港是和記電訊香港控股有限公司 (和記電訊香港控股) 的流動通訊業務，而其母公司長和集團在全球經營遍及港口及相關服務、零售、基建、能源、金融及其他環球業務，為 3 香港提供在不同行業和領域應用 5G 的機會。

電訊營辦商可各自覷準其自家的專業發展 5G，市場競爭亦因而變得較健康。換句話說，電訊公司可集中思考如何運用 5G 獲得競爭優勢，以專門的垂直市場作為發展目標，可減少同業競逐相同目標客戶群。例如，3 香港其中一項技術專長是利用 5G 進行 4K 現場直播，有關服務帶來極速的串流速度。3 香港便利用此優勢，為香港中樂團和香港管弦樂團的音樂會提供 5G 4K 直播方案，以進行網上 4K 現場直播。

3 香港亦率先推出 5G 免觸式智慧停車場方案，為駕駛者帶來無縫的駕駛體驗。當車輛抵達停車場閘口，攝錄系統會以多支高清晰鏡頭拍攝車牌號碼，並利用 5G 網絡把實時影像傳送至影像識別系統，配對數據庫已登記的車牌號碼。確認車牌後，停車系統即以 5G 網絡傳送開閘指示。此 5G 方案是邁向智慧泊車的重要一步。

古先生認為，新冠肺炎疫情加促港人應用新科技，以方便日常工作、生活和享樂。許多平日對科技敬而遠之的人，由於要在家工作，亦須採用如 Zoom 等網上平台工作。古先生預期即使在疫情過後，將科技應用於日常生活的新常態亦將繼續維持。因此，企業可因應其專長，鎖定專門垂直市場而進行推廣，滿足消費者對新技術與日俱增的需求。

然而，採用新技術並非每個行業都能輕易做到。隨著愈來愈多人在家工作及避免聚會，電訊營辦商需要為慣常面對面與人接觸的行業尋找出路。因此，3 香港為受疫情嚴重打擊的內容供應者，例如網紅 (KOL)、藝人、表演者和私人導師等擔任中介角色，包括與這些專業人士合作，讓公眾安坐家中欣賞他們的創作。

Another example of 3 Hong Kong's B2B 5G applications is a robotics solution widely applicable to shopping malls, exhibition centres and public facilities such as hospitals, schools and transportation hubs. It helps save manpower and enhance work efficiency, and is particularly useful during the pandemic when social distancing and lockdown are strongly emphasised. Different types of robots can be deployed for functions such as patrolling, humanoid services and meal delivery. Equipped with an automatic navigation function and a 360° camera, robots can operate automatically on their own or be remotely controlled. High-definition images and videos captured by the camera are transmitted for analysis on a 5G network to suit specific industries and their unique requirements.



3 香港另一 B2B 5G 應用例子是機械人技術方案，能廣泛應用在商場、展覽中心、醫院、學校及交通樞紐等公共設施。有關方案有助節省人力資源及提升工作效率，在疫情期間強調社交距離和限聚的情況下尤其適用。不同種類的機械人各有不同用途，包括巡邏，模仿真人服務和送餐功能；而配備自動導航和 360° 攝影機的機械人，則可以自動運作或遙距操控，攝影機拍攝到的高清影像和視頻，可透過 5G 網絡傳輸進行分析，能切合特定行業及其獨特要求。

5G for Young Adults

Today, young adults in Hong Kong are growing up with the Internet and living in the digital age. Many of them are highly creative and accustomed to learning and using emerging technologies in their everyday lives. Oftentimes, they are the first to notice and adopt the latest social media and viral marketing trends. Koo notes that among the institutions' advisory boards and committees he sits on, there are school curriculums that teach tech-related skills such as producing and editing videos to create original content. These skills are in demand in many job markets for young job seekers nowadays.

Youths will strongly benefit from a platform to showcase their creative ideas. 5G provides such a platform since mass data coverage and ultra-low latency produces a multitude of internet channels and reliable social media updates, such as livestreaming. Many Hong Kong youths learn quickly about crafting a public image and impression management that could easily attract their desired niche. For instance, some specialise in sharing latest food trends, what games to buy on what consoles, the newest fashion trends and so on. Young people can build their images and potentially collaborate with brands to become KOLs.

Koo suggests young people to adopt the KOL economy as a lifestyle as this is becoming prevalent, especially in mainland China. Many industries already rely heavily on KOLs for advertising campaigns as more audiences could be reached than the traditional media. With 5G, youths can produce, edit and disseminate their original content in ways that are far more natural than before. The most important aspect of supporting creative youths is to provide them with a platform, and 5G satisfies this goal.

年青市場的 5G 應用

香港現今的年青一代生活在數碼時代，與互聯網一起成長。他們當中有很多都極具創意，並習慣在日常生活中學習及活用新科技，通常他們亦是最先留意和採用最新社交媒體和病毒式營銷 (Viral marketing) 的一群。古先生表示，在他擔任院校諮詢委員會職務時，留意到有學校課程教導與科技相關的知識，如影片製作和剪接，以製作原創內容，而現今就業市場很多時亦要求年青求職者具備相關技能。

5G 為年青人提供展示創意的重要平台。5G 憑藉龐大數據傳輸和超低時延的特性，創造了大量升級的互聯網渠道和可靠的社交媒體，直播串流便是其中一個例子。很多年青人已迅速學會利用此途徑，建立自己的公眾形象和進行印象管理，以吸引目標支持者。例如，有人會專注分享最新的飲食潮流、打機情報及最新時裝趨勢等。年青人可藉此建立自己的形象，並有機會與品牌合作而成為網紅。

網紅經濟愈見盛行，尤其是在中國內地，因此古先生建議年青人善用此經濟模式作為生活方式。許多行業已非常倚賴網紅作為廣告宣傳，與傳統媒體相比，以網紅作宣傳可以接觸更多受眾。年青人透過使用 5G，能較以往輕鬆製作、編輯和發放他們的原創內容。而支持年青人創作的最重要一環，在於為他們提供一個平台，而 5G 正可滿足此需求。

5G for Elderly

5G not only benefits youths, it is also extremely advantageous to senior citizens. While youths focus on their careers and networking, the elderly tend to prioritise staying healthy. With 5G, they will be able to undergo regular body checks remotely. They can submit their health data via sensors, and with sufficient data, the adoption of individualised, remote healthcare will be widely available.

Once 5G can help the elderly maintain their health, entertainment can be considered as a second priority, since senior citizens generally have more time to spare. As 5G provides services such as real-time 4K HD streaming, in addition to a plethora of apps for countless entertainment options, the elderly can watch videos about anything instantaneously without broadband on a widescreen TV via different devices.

The elderly can also make use of VR technology to virtually attend concerts, soccer matches, and crowded places senior citizens do not normally visit. VR enables people to watch an event from various angles and may even provide a more enriching experience than physically being there. And a VR headset can unlock a multitude of entertainment options, all in the comfort of one's own home.

In addition to entertainment, the elderly can use the Internet and 5G for continued learning. Currently, some real-time livestream platforms may sometimes experience unstable connections. With 5G on both ends, the elders can stream real-time online classes without any connectivity issues. They could even video chat with their relatives and friends across the world at any time without worrying about inadequate data.

Increasing Exposure to 5G with Alliances

Given that 5G applications benefit businesses and customers of all ages, it is imperative that the public is aware of 5G developments to spark interest in 5G applications. Koo anticipates that novel 5G applications such as 8K videos, AR, VR, and ultra-low latency will increase demand for entertainment. To this end, 3 Hong Kong formed a 5G alliance with the Hong Kong Chinese Orchestra and together launched Hong Kong's first 5G 4K live-streaming Chinese music charity concert. The performance included online drum games with various levels of difficulties. Moving forward, alliances like this will prove invaluable as it synergises telecom operators with other professions such as the performing arts. In addition, by combining 5G technology with AI, the Internet of Things concept and big data, and applying the sum of the parts comprehensively, telecom operators will achieve massive connectivity and redefine mobile communications – creating a superlative all-round 5G user experience for all. ●

Save Rent by Going Live

5G LIVE Outpace the Rest



長者市場的 5G 應用

5G 不但惠及年青人，同時亦為長者帶來極大好處。當年青人專注發展事業和人際關係時，長者則較注重保健。使用 5G，長者可定期進行遙距身體檢查，透過感應器提交健康數據，當有了充足的數據，個性化的遙距醫療服務便可廣泛應用。

長者一般擁有較多閒暇，當 5G 能有助他們保持身體健康後，5G 的娛樂應用便成為第二優先項目。5G 提供了如實時 4K 高清串流等服務，再加上大量娛樂應用程式選擇，讓長者可隨時隨地在不同流動裝置，即時收看任何影片。

此外，長者亦可利用虛擬實境技術，觀賞虛擬演唱會、足球比賽和遊歷長者避免前往的人多擠擁地方。虛擬實境技術讓觀眾可從多角度欣賞一項活動，甚至帶來比親身出席更豐富的體驗。長者只需配備虛擬實境眼鏡，便可安坐家中舒適地享受多種娛樂體驗。

除了娛樂享受外，長者還可透過互聯網和 5G 持續進修。現時，有些實時串流平台的連接或會出現不穩定的情況，若網絡的兩端都使用 5G，長者便無須擔心連接問題，安心實時網上學習，甚至隨時與世界各地的親友以視像通訊，而不必擔心數據不足。

利用策略聯盟促進 5G 應用的展示

由於 5G 的應用惠及各行各業和所有年齡層的客戶，故必須讓大眾瞭解 5G 的發展，才可激發他們對 5G 應用的興趣。古先生預計，嶄新的 5G 應用如 8K 視頻、擴增實境、虛擬實境和超低時延等，將會增加娛樂服務的需求。有見及此，3 香港與香港中樂團組成 5G 策略聯盟，並推出全港首個 5G 網上 4K 直播中樂慈善音樂會。該表演活動亦包括不同難度的網上打鼓遊戲。展望未來，此類合作將可突顯電訊營辦商與其他業界如表演藝術界合作帶來的協同優勢。此外，透過結合 5G 技術與人工智能、物聯網概念和大數據，並全面運用各技術，電訊營辦商將可達至大規模的連接，讓客戶突破流動生活界限，盡享全方位的 5G 服務體驗。 ●