

後疫情時代：重塑物流業

Reshaping the Logistics Industry for a Post-pandemic Era





新冠疫情陰霾未散，持續衝擊全球貨運業；過去一年，多個主要港口積壓大量貨櫃，令物流時間和成本飛漲。與此同時，疫情帶動「宅經濟」迅速發展，對方便、快捷的物流服務需求殷切。各種挑戰和機遇正促使全球物流業加快轉型，今期《企業雄才》請來業界代表和數碼化專家，探討疫情下物流業的發展，以及如何利用科技，應對日新月異的物流需求。

The global COVID-19 outbreak has had an ongoing effect on the global freight transportation industry. Over 2021, the huge backlog of containers at nearly all the world's major ports has caused the time and cost of logistics to soar. At the same time, the pandemic has driven the rapid development of the "Stay-at-Home-Economy", which has demanded convenient and quick logistics services. Tremendous challenges and opportunities are therefore accelerating the transformation of the global logistics industry. In this issue of *Hong Kong Entrepreneurs*, industry representative and digitisation experts are invited to discuss the development of the logistics industry and assess how to utilise the latest technology to cope with ever-changing logistics demands.

“ 如果貨運瓶頸的情況持續，將會對供應鏈構成很大影響，物流成本不斷飆升對經濟發展亦不健康，成本最終可能會轉嫁到消費者身上。

If the shipping bottleneck continues, it will significantly affect supply chains. Ongoing surging logistics costs are not beneficial to local economic development, and such costs are ultimately passed on to consumers.

” 物流業支撐着香港以至全球貨物的流通，其中海運以載貨量大、成本低等優勢，一直是貨運業的首選運輸方式。現時全球逾 8 成貨運量都是依賴水上運輸，然而去年新冠疫情引發航運業 65 年來的最大危機；一度有多達 353 艘貨輪被迫滯留在全球各主要港口外等候卸貨，海運時間和成本被大幅推高。聯合國警告，若海運成本持續飆升，將刺激全球通脹，拖慢經濟復甦步伐。

貨櫃供應失衡 海運成本倍升

香港物流協會會長袁美儀解釋，去年美國、歐洲以及東南亞主要製造業國家如泰國和越南等相繼因為疫情而實施封城措施，多個主要港口僅維持有限度運作，導致大批貨櫃堆積在港口未能按時卸貨，繼而影響貨櫃流轉速度，令貨櫃供應短缺；「疫情下海運成本之高是我們前所未見的，貨櫃價格由疫情前的 2,000 美元，飆升至 20,000 美元。」還有一些無形成本如貨物運輸延誤，以及貨櫃滯留在碼頭衍生的額外成本，大大增加企業負擔。

貨運瓶頸仍待解決

海運塞港問題持續，企業轉為尋找其他物流方式。袁美儀指，疫情下，不少原本以海運出貨的企業會考慮改以空運出貨；「然而，空運載貨量遠少於海運，而運費又因為疫情增加了3倍，在成本考慮下，不是所有商品都適合以空運運輸。」一般都是電子產品、醫療用品等高增值商品才能負擔高昂的空運成本。

除了空運，陸路及鐵路運輸又是否可行的替代方案？袁美儀指，陸路及鐵路貨運的成本介乎於海運和空運之間，如果是香港與內地之間的貨物運輸，陸路及鐵路運輸是一個不錯的選擇。然而，當涉及跨國運輸，企業需要考慮執行上的難度；「首先是需要經過不同地區的海關關卡，路面狀況亦不穩定，而且無論陸路抑或鐵路運貨，是需要人手將貨品擺放上車，商品損毀的機會增加，故包裝上需要倍加小心。」

全球貨運瓶頸的困局難解，袁美儀指，年末和新年是傳統物流旺季，尤其是廠商正趕在農曆新年前出貨，仍有大量貨櫃積壓在港口有待消化。更令人擔心的是，在新變種病毒Omicron的威脅下，特區政府收緊貨機組人員抵港後的檢疫安排，削弱空運運力，並令空運成本進一步增加3至5成。袁美儀擔心，成本最終可能會轉嫁消費者，預期貨運瓶頸的情況在今年中旬才有望得到改善。



美國長灘/洛杉磯港的壅塞情況嚴重，大批貨櫃積壓在港口有待卸貨

The ports of Long Beach/Los Angeles in the United States have been experiencing heavy congestion, and large numbers of containers are stacked up, waiting to be unloaded

電商崛起 衍生新物流需求

疫情為物流業帶來前所未有的挑戰，但同時亦為業界升級轉型帶來契機。袁美儀指，物流商一直從事「B2B」業務為主，服務進出口廠商；「客戶以往只供應貨品予大型超市和零售商，但隨着網上購物的蓬勃發展，他們開始涉足電商業務，將商品直接擺送在電商平台銷售。」這驅使物流業界跟隨客戶轉型，發展高增值的電商物流業務。

電商物流是整個電商供應鏈中，最接近顧客的環節，負責將商品出貨後，送到消費者手中的所有流程。袁美儀表示，電商對物流服務的需求與傳統「B2B」物流截然不同；傳統物流主要是按照船期或者飛機航班來安排運送貨物，籌備的時間較充裕。反觀電商物流，消費者幾乎24小時全天候下單，訂單數量難以預測，對運送時間的管理要求嚴謹，需要不同的科技和營運系統配合；「電商物流重視實時追蹤和定位功能，我們必須利用科技，增加物流過程的透明度，提升客戶體驗。」

加快數碼轉型步伐 迎合電商物流需求

據國際速遞公司 FedEx 預測，到了 2028 年，電商物流市場的規模將達 1,188 億美元，龐大的商機驅使物流業界加快數碼轉型的步伐。國際物流科技公司極智嘉，專門研發倉庫機械人和人工智能技術，為物流業提供數碼化方案，公司海外事務執行董事馮家浩指，以往香港物流業界習慣以人手操作，對數碼轉型多抱觀望的態度。然而，電商的崛起，令物流人手不足的問題加劇，尤其在黑色星期五、雙十一、聖誕節等網購旺季，物流商難以聘請足夠的人手，在短時間內應付如此龐大的訂單，而「搶人潮」亦會推高勞動成本。因此近年，物流商對智慧物流方案的需求愈來愈殷切，以減低對人手的依賴。

馮家浩認為，智慧物流的最大優勢在於可以縮短倉務員走路的距離和時間，提升營運效率。他解釋，傳統物流依賴倉務員不斷在倉庫來回行走，一邊行一邊揀貨，營運效率低。但實施智慧物流的方案後，可由倉庫機械人充當「跑腿」，員工只須留在揀貨區，待機械人將貨品送到他們面前，便可直接揀選貨品和分類，令執貨的時間顯著縮短，同時可節省 6 成人手。而倉庫亦無須再預留大量通道讓員工行走，貨架可改為密集式排列；「香港地少、勞動成本高，應用倉庫機械人就可以幫物流商節省人力成本和善用每一寸倉庫存儲空間，一般只需 2 至 3 年就可以回本。」



倉庫機械人可以在狹窄巷道及貨架底部行走，貨架可改為密集式排列，有效提升倉庫存儲空間
Warehouse robots can operate in narrow aisles and at the bottom of the shelves, freeing up more space for high-density racks to increase overall warehouse storage capacity

應用人工智能 處理複雜的電商訂單


馮家浩表示，智慧物流除了能解決人手不足的痛點，亦可以幫助業界處理複雜的電商訂單；「電商平台有成千上萬種產品，訂單數量龐大，每張訂單包含少量、多樣的產品，一些產品如化妝品、保健品和食材更有不同的有效期，因此處理電商訂單遠比傳統『B2B』複雜，單靠人手並不可行。」而透過人工智能演算法，系統可以預先將訂單進行分類，把訂購類似商品的訂單組合起來，這樣倉務員在揀貨時，便可在同一時間，處理多張訂單。

另外，系統亦會按貨品的種類和熱賣程度等因素，靈活調整貨架的擺放位置，讓機械人和倉務員能以最短的路線運送貨品，進一步優化營運效率。馮家浩指，公司的智能物流方案，已獲香港、內地、台灣、南韓和澳洲的主要電商平台採用。

物流一直被企業視為麻煩累贅的成本，但馮家浩認為，在電商發達的時代，消費者愈來愈重視個人化的購買體驗，方便、快捷的物流服務已成為企業提升

競爭力的優勢；「企業愈來愈重視送貨體驗，有些商戶會向消費者承諾，在下單後翌日送貨，有的甚至提供免費的退貨物流服務，雖然會增加物流成本，但同時亦令生意額大增，令商戶在市場上更受歡迎。」

把握國家機遇 發展電商物流樞紐

電商的蓬勃發展正在重塑全球物流業的產業格局，袁美儀認為，香港地理位置優越，貨運碼頭在疫情期間無間斷地運作，航班數量亦是最多，香港應好好運用這些優勢，發展成為連接內地和國際市場的電商物流樞紐。她表示，國內的電商市場龐大，而香港擁有完善物流網絡，清關手續便捷，來自世界各地的商品，可以經由香港轉運至內地，過程中，香港可提供存貨管理、貨物檢查和分揀等增值服務，「還有很多易變壞、需在短時間內運輸的商品和食品，需要依賴可靠優質、嚴格控溫的冷供應鏈來處理，這些都是香港物流業未來的機遇。」



全球物流業都正面對人手不足的問題，再加上電商的蓬勃發展衍生龐大的物流需求，為物流業界提供誘因，發展智慧物流。

The global logistics industry is facing a labour shortage. The huge demands generated from booming e-commerce businesses are driving the logistics industry to adopt smart logistics solutions.

The logistics industry supports the movement of cargo from Hong Kong and the world. With its large capacity and low cost, maritime transportation has always been the first choice of the cargo industry. Currently, more than 80% of global freight volume is transported by sea. However, the pandemic triggered the biggest crisis in the shipping industry in more than 65 years. Over 350 cargo ships were once stuck outside major ports around the world, waiting to be unloaded, all the while costs were increasing significantly. The United Nations warned that if ocean freight rates continue to rise, they would stimulate global inflation and impede the progress of economic recovery.

Imbalanced container supplies cause a tenfold increase in shipping costs

The severe epidemic situation has led to the imposition of lockdown measures in the United States, Europe and major manufacturing countries in Southeast Asia, such as Thailand and Vietnam. Ms Elsa Yuen, president of the Hong Kong Logistics Association, explained that various major ports were only able to

operate on a limited scale, resulting in a pile up of containers at ports. The turnover speed of containers was affected, which led to a shortage of container supplies. As Yuen explained, "The shipping rates were unprecedented during the pandemic, and the price of containers spiked from USD 2,000 pre-pandemic to USD 20,000." There have also been intangible costs, such as delays in cargo transportation and demurrage and detention charges in terminals, which have greatly increased the burden on businesses.

Unsettled shipping bottleneck

As the problem of port congestion continues, alternative transport methods have been sought. Yuen indicated that some businesses that originally shipped cargo by sea had to consider air transportation during the pandemic: "However, the cargo capacity of air transportation is much less than that of sea transportation, and air freight tripled due to the pandemic. Air transportation is only cost-effective for commodities with high added value, such as electronic products and medical supplies."

Are land or railway transportation feasible alternatives to air transportation? According to Yuen, the cost of land or

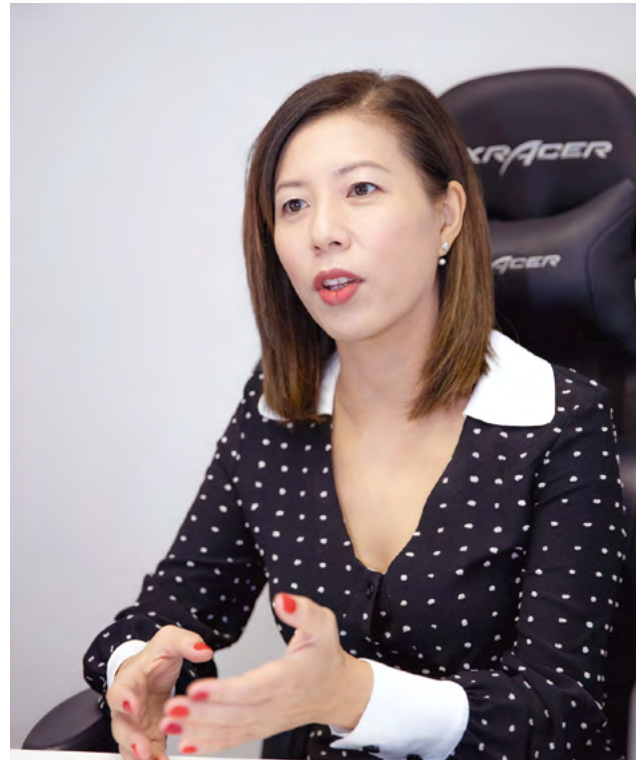
railway transportation sits somewhere between maritime and airline transport, and both forms of transportation are suitable options for transporting cargo between Hong Kong and the mainland. But for transnational freight, Yuen noted, enterprises need to consider a few challenges: "First, the cargo needs to go through customs clearance in different regions. Then there are the relatively unpredictable road conditions, and the cargo must be loaded manually on either road vehicles or railway carriages, increasing the chance of damage to the goods. Packing is a matter that requires specific attention."



特區政府收緊貨機機組人員的檢疫安排，會削弱航空運力和推高物流成本

The Hong Kong government has further tightened quarantine arrangements for air cargo crews, which has decreased airline capacity and further inflated freight costs

The logistics industry sees no early end to the global shipping bottleneck. Yuen observed that the year-end is a peak season for logistics, and manufacturers often rush to ship cargo before the Chinese New Year. However, containers are still stacked high in ports for further handling. What is even more worrying is that the Hong Kong government has tightened quarantine arrangements for locally based cargo aircrew following the threat of the new Omicron variant, thus reducing air cargo capacity and further increasing air freight costs by 30-50%. Yuen expressed concern that the increased costs would ultimately be passed on to consumers and that the shipping bottleneck would not improve until the middle of this year.



袁美儀指，疫情下市民的消费模式轉變，愈來愈多物流商轉型開拓電商物流業務

Elsa Yuen says that the pandemic has changed our consumption patterns, and a growing number of logistics operators have expanded into the e-commerce logistics business



電子商務銷售在疫期間迅速增長，帶動物流需求上升
E-commerce growth during the COVID-19 pandemic contributing to an increasing demand for logistics services

Rise of e-commerce generates new logistics demands

Although the pandemic has created numerous challenges for the logistics industry, it has also brought opportunities for upgrades and transformation. According to Yuen, logistics operators have always focused on B2B businesses, serving importers and exporters. "Our clients used to wholesale products to chain supermarkets and retailers. With the online shopping boom in pandemic, they have begun setting foot in the e-commerce business and directly selling products on e-commerce platforms." This change in customer demands has driven the transformation of the logistics industry to develop high value-added e-commerce logistics businesses.

E-commerce logistics is the process by which the industry is directly connected to consumers across the entire e-commerce supply chain, and it covers all procedures for delivering products to consumers. Yuen explained that the demands of e-commerce for logistics services are completely different from those of traditional B2B logistics. Traditional logistics mainly arrange the delivery of cargo based on a sailing or flight schedule, with a relatively substantial amount of time for preparation. For e-commerce logistics, consumers place orders 24/7, and it is difficult to predict order volumes. The management on delivery times is rigid, which requires the implementation of different



利用人工智能技術，系統會按貨品的熱門程度編排貨架位置，提升揀貨效率
By leveraging AI technologies, goods on shelves are positioned based on popularity

technologies and operating systems. “E-commerce logistics demands real-time tracking and positioning functions. Therefore, we must improve the transparency of logistics processes and improve customers’ experiences by using the latest technology.”

Accelerating digital transformation to meet e-commerce logistics demands

According to the FedEx forecast, the global e-commerce logistics market will reach USD 118.8 billion by 2028. This tremendous business opportunity is driving the rapid digital transformation of the logistics industry. Geek+, a global smart logistics technology company, specialises in the application of advanced robotics and artificial intelligence (AI) technologies in smart logistics solutions. Mr Lit Fung, vice president and managing director of Geek+ APAC, UK and Americas, indicated that the logistics industry in Hong Kong relies on manual operations and has adopted a wait-and-see attitude towards digital transformation. With the rise of e-commerce, the manpower shortage has been exacerbated, particularly during the peak online shopping periods, such as Black Friday, “Double 11” and Christmas. During these peak times, it is difficult for logistics operators to recruit casual workers to handle huge volumes of orders in a short timeframe. The labour shortages have resulted in increased operation costs, and the demand for smart logistics solutions has mushroomed in recent years to reduce the reliance on manpower.

Fung believes that the biggest advantage of smart logistics is that it can eliminate the time spent walking around the warehouse, improving operation efficiency. Traditional logistics require warehouse workers to run around the warehouse to put orders together, which is not efficient. The introduction of smart logistics solutions allows warehouse robots to run errands, while warehouse workers can stay at the picking station, focusing on picking goods brought to them by robots. This can significantly reduce the order-picking time and decrease manpower by approximately 60%. Companies no longer need to reserve a large area of aisle space for workers to operate the warehouse, and shelves can be arranged in a more compact way. Fung noted, “With the land shortage and high labour costs in Hong Kong, the application of warehouse robots can help logistics operators save labour costs and make good use of every inch of warehouse storage space. The payback period is attractively low, estimated at around two to three years.”

Application of AI technology to process complicated e-commerce orders

According to Fung, smart logistics not only solve the labour shortage problems but also help the industry process complicated e-commerce orders: "E-commerce platforms involve tens of thousands of products of huge volumes of orders. Each order features diversified products. There are also different shelf lives for commodities like cosmetics, healthcare products and food. It's more complicated to process e-commerce orders than those of traditional B2B. It just doesn't work if we rely on manpower alone." By applying AI algorithms, the system can perform order grouping in advance and combine orders with similar commodities. Stockkeepers can then process multiple orders simultaneously when picking orders.

The system also adjusts the positions of products on shelves based on factors such as type and popularity and allows robots and warehouse workers to move goods via the shortest route, further optimising operational efficiency. Fung indicated that the smart logistics solutions of Geek+ have already been adopted by mainstream e-commerce platforms in Hong Kong, mainland China, Taiwan, South Korea and Australia.



利用倉庫機械人可以縮短倉務員在倉庫來回行走揀貨的時間，並節省 6 成人手
Warehouse robots can shorten the time spent on order-picking procedures and reduce manpower by 60%



馮家浩指，來自電商平台的訂單，遠比 B2B 的貨運訂單複雜，難以單靠人手處理

Lit Fung points out that orders from e-commerce platforms are far more complicated than those under the B2B model, and manpower alone is not the solution

Although logistics have always been deemed a troublesome cost, Fung believes that as consumers expect a personalised shopping experience in the era of e-commerce, convenient and efficient logistics services offer businesses a competitive advantage. "Businesses place greater importance on the delivery experience, and some merchants promise to provide next-day delivery. Some even provide free returns. Despite the increased logistics costs, such practices increase business volumes and make these merchants more popular in the market."

Seize national development opportunities to promote e-commerce logistics hub

The flourishing e-commerce industry is reshaping the global logistics landscape. In Yuen's view, in addition to its fortuitous geographic advantage, Hong Kong has one of the most efficient international container ports. It has remained uninterrupted during the pandemic. Hong Kong also has the highest number of flights across the globe. Hong Kong should make good use of these advantages and transform into an e-commerce logistics hub that connects to the mainland and international market. Yuen pointed out that the mainland e-commerce market is huge. With a comprehensive logistics network and an efficient customs clearance regime, commodities from all over the world can be transported to the mainland through Hong Kong. Hong Kong can provide value-added logistics services, such as inventory management, cargo inspection and sorting. "Furthermore, there are a lot of perishable goods and food that require high quality of cold chain logistics and expedited delivery. These are the development opportunities for Hong Kong's logistics industry." **商訊**