

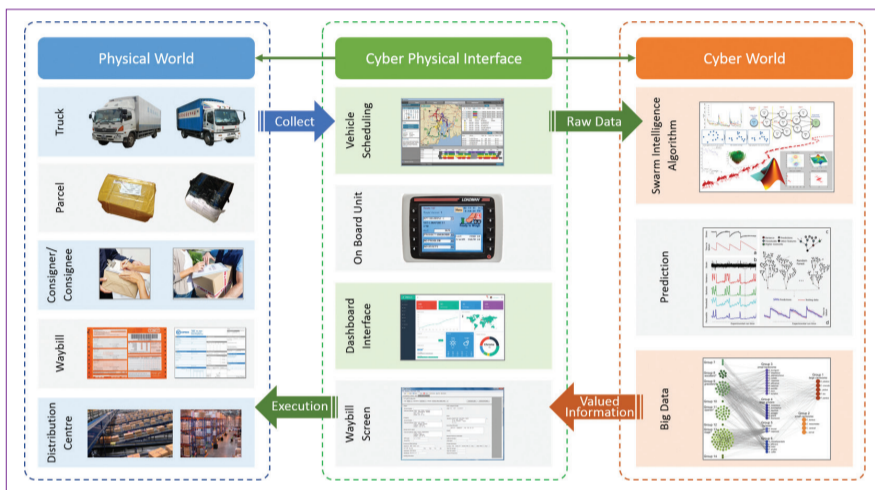
適用於跨境電子商務的信息物理物流系統

Cloud-based Cyber-Physical Logistics System for Cross-border E-commerce Industry

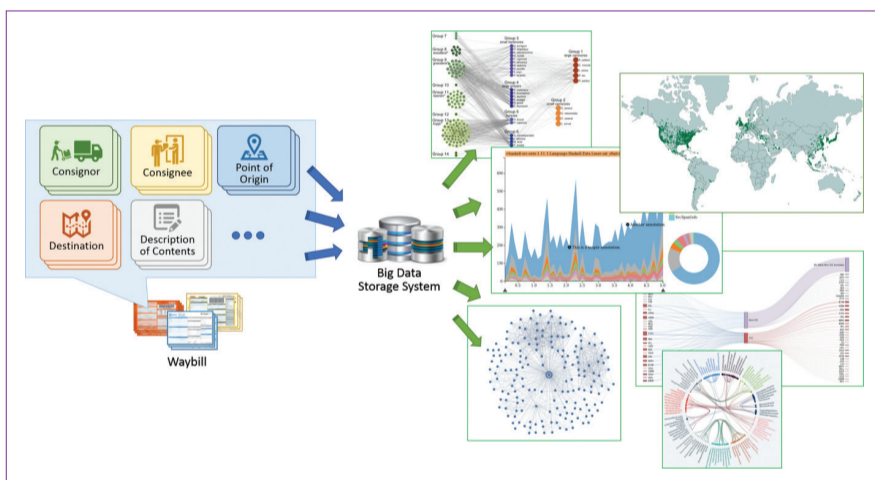
提高物流運作的準確性和效率 優化人力資源

Enhancing accuracy and efficiency in logistics operations and optimizing human resources

隨著跨境電子商務的急速發展，物流服務需求持續增加。近年網購集運興起，消費者購買的物品款式多而數量少。這種新的購買行為使物流運作更為複雜。理大與業界通過雲端運算、大數據分析、群集智能，合作研發一套信息物理物流系統以應對不斷變化的消費模式。此系統結合了實時數據採集、自動分配送貨及收貨訂單、優化物流車隊安排、可視化貨物運送狀態等等，從而實現最佳的營運管理。



信息物理物流系統的系統架構
Architecture of the Cloud-based Cyber-Physical Logistic System



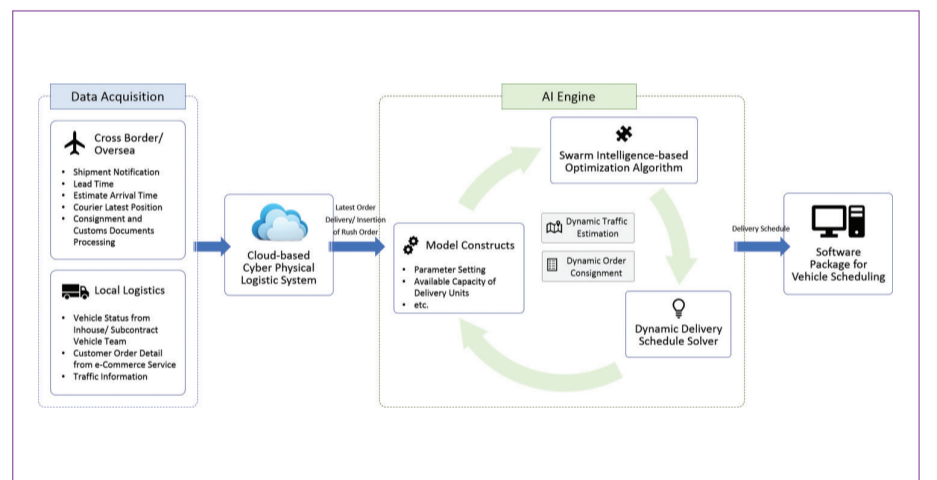
大數據可視化
Big data visualization

特色與優點

- 實時採集數據
- 以群體智能規劃車輛調度及分配訂單
- 為客戶提供卓越的貨物集運服務及體驗

應用

- 配送中心
- 第三方物流服務供應商
- 最後一哩運送服務



以群體智能優化車輛調度的運作原理
Principle of swarm intelligence-based vehicle scheduling optimization

The demand for logistics services keeps rising owing to a high volume of throughput across the border. The rise of e-commerce results in the purchase of a wide variety of products in low quantities. This new trend of consumer behavior increased the complexity of logistics operation. To cope with the challenges created by the changing consumption patterns, PolyU collaborates with an industrial partner to develop a Cloud-based Cyber-Physical Logistics System with big data analytics technology and swarm intelligence. It provides real-time data acquisition, automatic assignment of pick-up-and-delivery orders, optimal vehicle scheduling and visualization of delivery status. With the proposed system and e-commerce platform, logistics service providers can enhance their accuracy and efficiency in logistics operations and optimize human resources, while consumers can have better experience in the pickup and delivery of the products.

Special Features and Advantages

- Real-time data acquisition
- Swarm intelligence-based vehicle scheduling and order assignment
- Excellent goods consolidation and delivery experience for customers

Applications

- Distribution centres
- Third-party logistics companies
- Last mile delivery services

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