Logistics and Supply Chain MultiTech R&D Centre

Implementation of Smart Mobility in Hong Kong - What is Missing?

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① Towards Hong Kong Smart City Blueprint 3.0

② Data is the Key

③ Suggestions on Smart Mobility Initiatives

Content

How Does Technology Help in Enhancing Transport Planning, Traffic Management and Traffic Enforcement?

1. Towards Hong Kong Smart City Blueprint 3.0

IMPLEMENTATION OF SMART MOBILITY IN HONG KONG – WHAT IS MISSING?

NAME OR LOGO

智慧城市藍圖

Key Elements	What Does It Mean
Hardware	Smart transport infrastructure with the adoption of advanced technology lays the foundation of smart mobility.
Data	Data collected could be analysed and disseminated to assist in traffic management and planning, and to meet road users' expectations and diverse needs.
Application	The Government and I&T companies develop smart mobility applications and services to tackle individual traffic problems and improve transport services to enhance the efficiency and effectiveness of traffic management.

A United, Interrelated System

3 key elements for the implementation of the smart mobility strategy

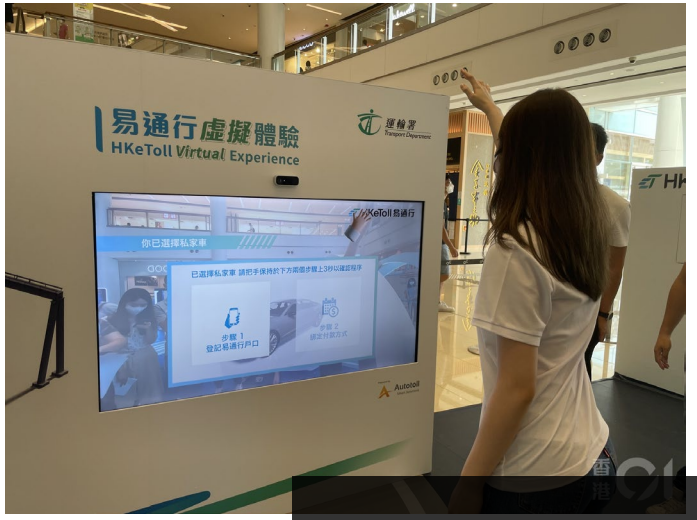
A. Smart Transport Infrastructure

Multi-functional Smart Lamppost 「多功能智慧燈柱」試驗計劃

Until mid-2023, some 400 smart lampposts will be installed in phases in 4 districts with higher pedestrian and traffic flow, namely Central/Admiralty, Causeway Bay/Wan Chai, Tsim Sha Tsui and Kwun Tong/Kai Tak Development Area.

Each lamppost is a coordinated platform of various kinds of 'smart function' and also a command centre of public data processing with adequate security compliance. With the vast amount of public data collected, it also serves as a centralized analytic function for more advanced and innovative data applications.

Examples	Status
Traffic Detectors	1200 traffic detectors on all strategic routes and major roads to collect real-time traffic information
Free-Flow Tolling System (FFTS) 不停車繳費系統	Enables motorists to pay tolls of government-tolled tunnels and Tsing Sha Control Area 青沙管制區
Pilot Real-time Adaptive Traffic Signal Systems (RATSS) 實時交通燈號調節系統	Implement at 5 selected junctions to detect real-time traffic and pedestrian volume, the allocation of green time could be optimised, thereby reducing congestion and unnecessary delay.



A. Smart Transport Infrastructure

HKeMeter App
入錶易

Around 10,000 new parking meters are installed currently. The sensors in the new parking meters make use of the technology of millimetre wave radar to detect whether roadside parking spaces are occupied.

The real-time information will be disseminated to motorists through HKeMeter, HKeMobility and PSI Portal (Public Sector Information Portal資料一線通), to assist motorists in finding vacant parking spaces.

On 26 Sep, HKemeter malfunctioned again and its remote transaction function was temporarily unavailable.

Room for improvement:
- Real-time data does not apply to all districts.
- Ease of use
- The comprehensiveness of solution: Improve by edge computing?

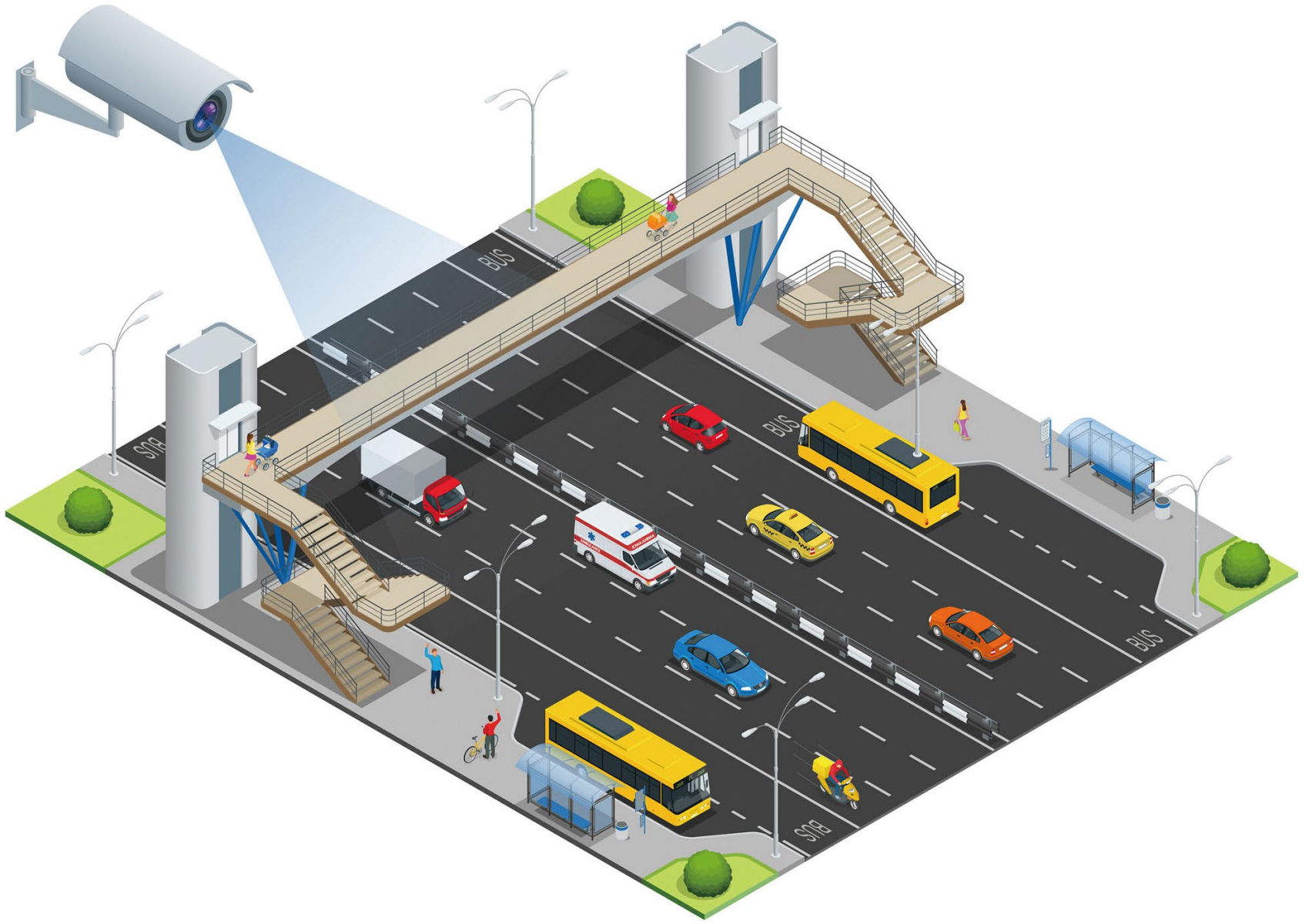
B. Data

The Office of the Government Chief Information Officer and TD jointly developed the Traffic Data Analytics System through the application of big data.

Through the Government's "Big Data Analytics Platform", the system provides real-time and the next 15 to 90 minutes estimated journey time, by analysing the historical and real-time traffic and transport data and weather data, as well as the forecast weather data from the Hong Kong Observatory.

The related information has been disseminated via "HKeMobility" and the PSI Portal starting from end April 2022.

B. Data



C. Application

Electronic Licensing

TD expects to implement ePermits in Q4 this year, electronic vehicle licence (eVL) in 2023 and electronic driving licence (eDL) in 2024.

Traffic e-Enforcement System
電子交通執法系統

The Government is preparing to serve Fixed Penalty Notices (FPNs) on parking-related contraventions and traffic offences by electronic means.

2. Data is the Key

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HKeMobility Mobile App
香港出行易

As of end-June 2022, HKeMobility recorded over 2.6 million cumulative downloads with an average daily hit rate of about 50K.

A. Data Collection - Case Study of HKeMobility

HKeMobility helps cultivate more innovative applications by the industry through data sharing. Most of the data in HKeMobility has also been disseminated via the PSI Portal 資料一線通, which involves information from over 30 datasets.

The public can access the ETA data of all regular bus routes, 453 green minibus routes and 5 railway lines via HKeMobility. These data have also been disseminated via the PSI Portal.

Suggestions

(1) Hong Kong should create a “strategic data security system”, with the Security Bureau taking the overall lead in policy formulation, assigning departmental responsibilities and coordinating security efforts.

(2) Develop a licensing, inspection and investigation mechanism to ensure that key stakeholders comply with the requirements of data protection and critical infrastructure protection.

(3) As Hong Kong is part of China and the protection of national security is a kind of national strategy, it is appropriate for Hong Kong's Cyber Security Law to converge, to a certain extent, with the Data Security Law and the Personal Information Protection Law already in force in the Mainland.

(4) Explanation to the general public and public relations strategies

(5) Advancement of technology

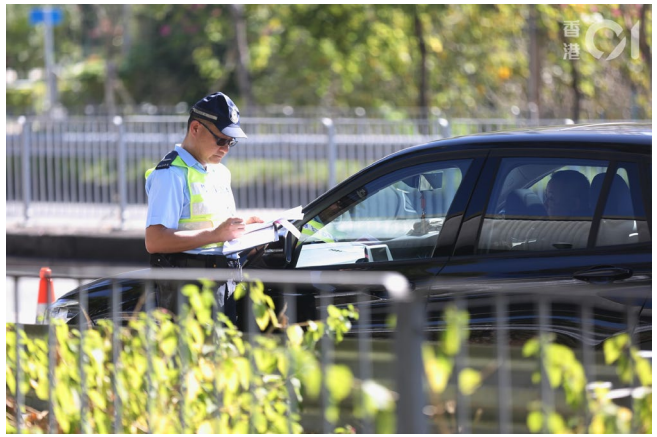
B. Data Protection

The Security Bureau is still preparing the legislation of Cyber Security Law. The consultation paper is not expected to be released until the end of the year.

Current limitations in data security in Hong Kong:

(1) Lack of an overall responsible department and coordination. Policies may be introduced at different paces, making it difficult to create synergy.

(2) The lack of regulation of critical infrastructure and its operators in Hong Kong makes it difficult for the authorities to effectively eliminate risks from the Internet and respond to emergencies.



C. Data Practice - Case Study of Hong Kong Police Force

Transport Department can monitor traffic conditions comprehensively. Traffic information is disseminated to key stakeholders in handling traffic incidents including the Hong Kong Police Force and the Fire Services Department.

Traffic data collected are also disseminated through HKeMobility 香港出行易 and the Public Sector Information Portal 資料一線通.

In the face of the threat of inaccurate information, many countries have recently begun to emphasise and promote Media and Information Literacy (MIL, 媒體素養) education programmes, through education campaigns to improve people's ability to read and think about the various types of media available today.

MIL refers to the development of the public's ability to access, analyse, evaluate, create and act on information to become responsible media users.

To safeguard against the adverse effects of disinformation on the Internet, the Government will enhance the media and information literacy of teachers and students, and optimise the use of the Quality Education Fund (QEF) to support schools in promoting media and information literacy education, teaching students how to distinguish the authenticity of information and nurturing their critical thinking skills, thereby consolidating values education.

D. Data Education

3. Suggestions on Smart Mobility Initiatives

IMPLEMENTATION OF SMART MOBILITY IN HONG KONG – WHAT IS MISSING?

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報章 香港經濟日報

29°C 香港時間：2022年9月27日 (週二) 17:33

熱門關鍵字： 收息 退休 財務自由 退休組合 存款利息 疫情 疫苗 美國大選 中美關係 專題: 退休理財

要聞 評·析·天下 金融 中國 國際 投資理財 地產 港聞 政治 評論

過海「擠塞徵費」 倡隧道券推行

評論 2022/07/06 讚好 9

關注文章 儲存文章 分享:

三隧擠塞的問題，困擾本港多年，隨着西隧的專營權於明年8月1日屆滿，港府將可首次同時營運3條過海行車隧道，有望以調控收費的形式，緩解這個延宕日久的問題。

筆者上月中旬在一場會議中，聽取原運輸及房屋局簡介「過海隧道擠塞徵費」的概念。初步構思是將平日劃分為3個收費時段：一般時段將收取「一般收費」、早上及傍晚的繁忙時段額外加收「擠塞徵費」、非繁忙時段則提供減價優惠。

當局期望透過這種方式，分散和遏抑繁忙時段超額的交通需求，即鼓勵駕駛人士改變出行習慣，於一般或非繁忙時段才使用隧道，甚至放棄駕車，轉乘公共交通工具；總體而言，其原理與港鐵推行的65折早晨折扣優惠類近。然而，運房局現階段只是就措施的原則徵詢議員意見，相信要到今年第四季進行公眾諮詢時，才會提出徵費的具體數字，故現在難言社會對徵費的接受程度。

Suggestions

(1) Private car drivers can buy and use a set of electronic "Tunnel Coupons" with the use of Toll Tags. This will in effect bring the tolls of the three tunnels to the same level, encouraging motorists to choose the most direct route to cross the harbour, reducing the number of detours caused by the different tolls of the three tunnels, and alleviating the problem of cross-district traffic congestion caused by queues of vehicles spilling over onto multiple connecting roads.

(2) This suggestion puts the decision to use the tunnel in the hands of the driver: As most private cars are now equipped with navigation systems and drivers are aware of the real-time traffic conditions, they can choose to continue to use the busy tunnel or take a detour to another tunnel during peak hours.

Congestion Charging 擠塞徵費

Free-Flow Tolling System (FFTS) 不停車繳費系統

FFTS will provide the essential infrastructure for Congestion Charging, the objective of which is to charge different tolls at different periods based on the prevailing traffic condition of the tolled tunnels and TSCA with a view to regulating traffic flows and alleviating traffic congestion during peak hours.

In-vehicle Unit (IVU) (Same as Toll Tag 繳費貼)

TD will consider gradually expanding the application of IVU to paying parking fees of government car parks, Electronic Vehicle Licence, Congestion Charging and Electronic Road Pricing.

QUESTION:
In the long run, will TD apply the relevant experience of developing the RATSS to develop a Hong Kong-wide smart traffic management system and expand it to Lok Ma Chau Loop?

Many Mainland cities have been actively developing smart traffic management systems to relieve traffic congestion in their urban areas. They installed high-definition video cameras at junctions to collect real-time traffic data and images, and employ artificial intelligence to analyse the traffic conditions and adjust the traffic signals in real-time. The systems can also analyse the images captured by high-definition video cameras and adjust the priorities of the traffic signals according to the vehicle types (such as buses and ambulances), conduct detailed traffic surveys, and manage traffic incidents more efficiently.

Tung Chung: A Sandbox of Future Smart Traffic Management System?

TD is in the progress of conducting a trial of an area-wide RATSS 實時交通燈號調節系統先導計劃 to cover multiple linked signalised junctions in Tung Chung town centre.

QUESTION:
Are our AVs going to have the same Internet of Vehicle (IoV) standard as GBA?

Suggestions:

- Laws and regulations should be more accommodative.

- Technology demonstration area is necessary for vast data collection, e. g. 深圳民用無人駕駛航空試驗區

Connectivity to GBA

By the end of June 2022, Movement Permits were issued to 12 autonomous vehicles to conduct trials in eight different locations, covering the university campus, air cargo terminal, cultural district, private roads and public roads.

To allow wider and more flexible trial and use of AV in Hong Kong, TD plans to introduce an amendment bill into LegCo by end 2022 to embrace the changing AV technologies and allow the adoption of AVs as a new mode of transportation, while at the same time ensuring public safety.

Thank You

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