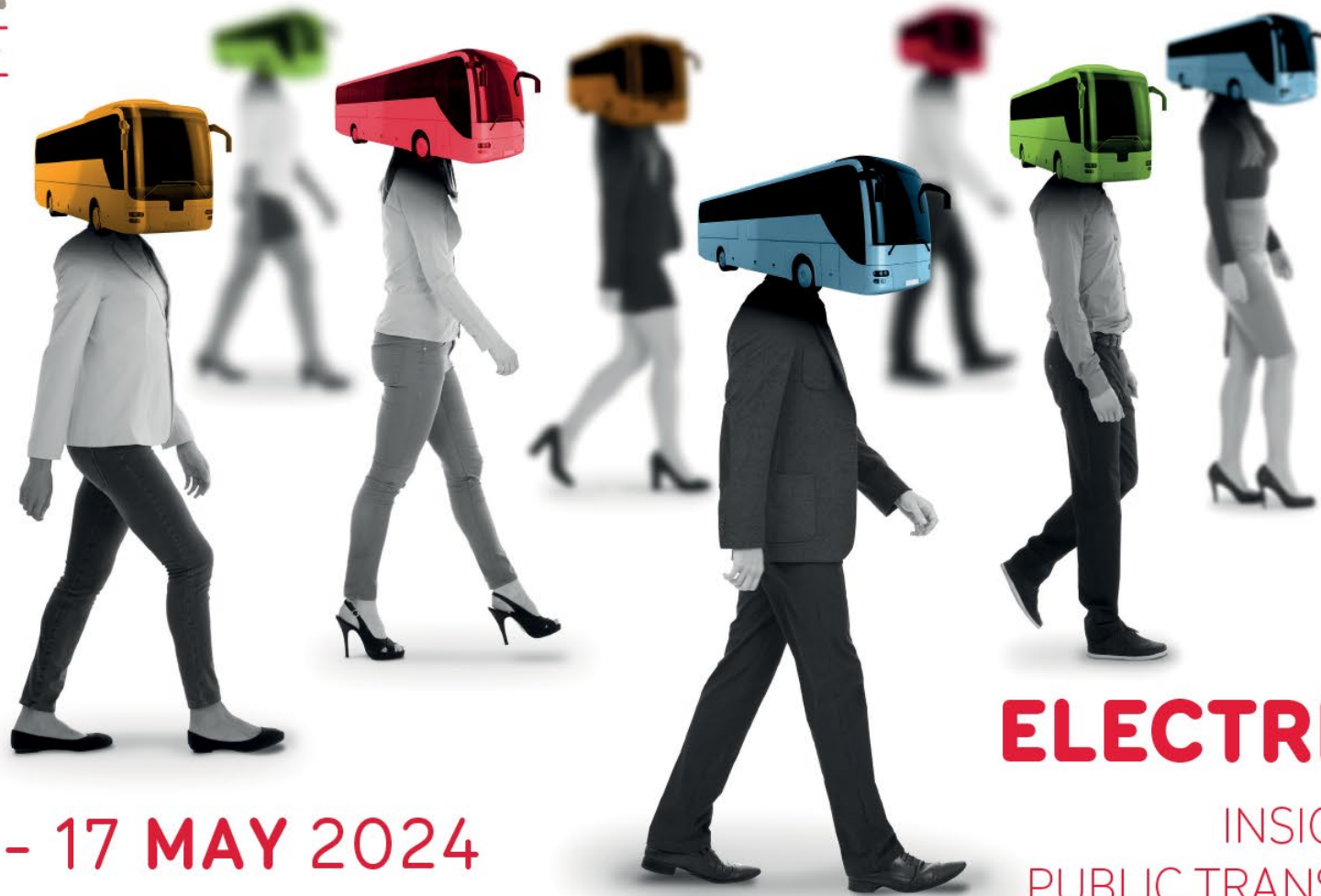


# busworld<sup>®</sup>

SOUTHEAST ASIA  
CONFERENCE

WWW.BUSWORLDSOUTHEASTASIA.ORG



16 - 17 MAY 2024

## BUS FLEET ELECTRIFICATION:

INSIGHTS FROM GLOBAL  
PUBLIC TRANSPORT INNOVATORS

ORGANIZED BY



BUSWORLD  
foundation

ALL ABOUT BUS, COACH AND **PEOPLE**

# busworld<sup>®</sup>

## SOUTHEAST ASIA CONFERENCE

ORGANIZED BY



# 16 May 2024

## Session 01

The First Step towards decarbonization – The efficiency  
mindset: The Hong Kong Story

*Alok Jain 程艾樂*

*CEO Trans-Consult, Hong Kong*

*Member, Council of Decarbonization of Transport in Asia*

WWW.BUSWORLDSOUTHEASTASIA.ORG



## **BUS FLEET ELECTRIFICATION:**

INSIGHTS FROM GLOBAL  
PUBLIC TRANSPORT INNOVATORS

ALL ABOUT BUS, COACH AND **PEOPLE**

Let's do a quick show of hands!!

How can we achieve Decarbonisation of Public Transport (more specifically, the buses)?

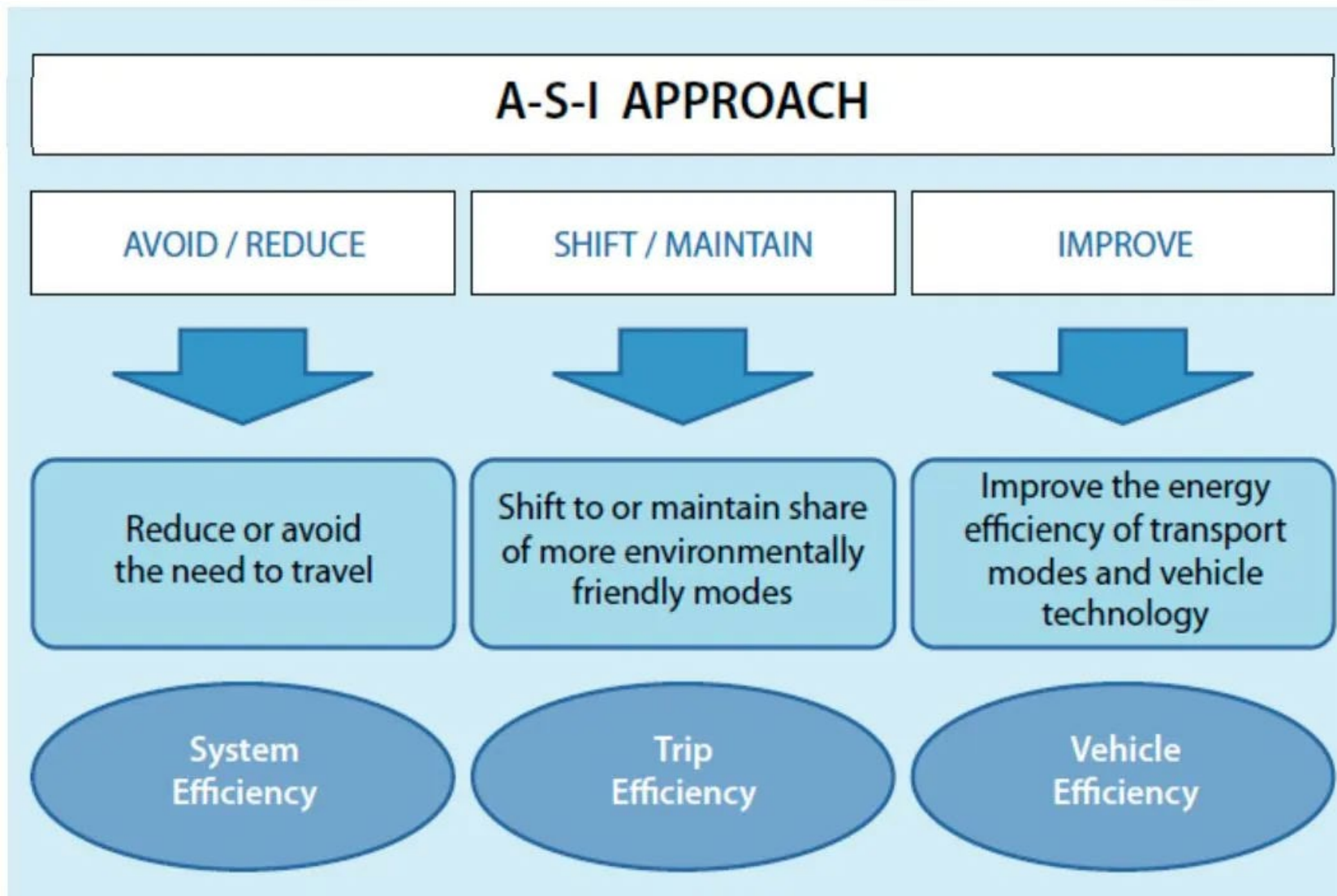
(A) Stop Travelling Altogether

(B) Replace existing fossil fuel buses with Clean Fuel / Electric / Zero Emission Buses

(C) Run the existing fossil fuel buses in the most efficient way



## Decarbonization: Where is the current Focus?



How much of decarbonization can be achieved from efficient operation of fossil fuel buses?

Estimates vary but most of them are between 35% to 70%!

Can it also make bus operation profitable?





# Hong Kong Story: A city of public transport





One of the most densely populated cities





# Many Choices, efficient and high satisfaction

*Extensive railway coverage...*



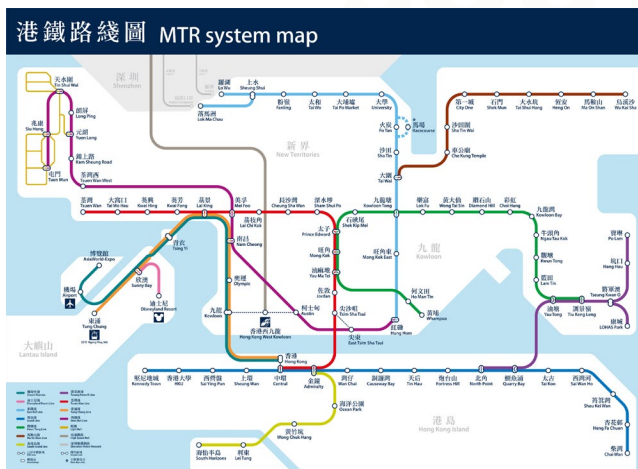
*... With even wider Franchised Bus coverage*



*Passengers typically have more than one choice...*

*All operators running fully commercially*

*... no subsidies and by and large profitable*



*Public Light Buses are everywhere (as feeders)*



*Extensive non-franchised bus services*

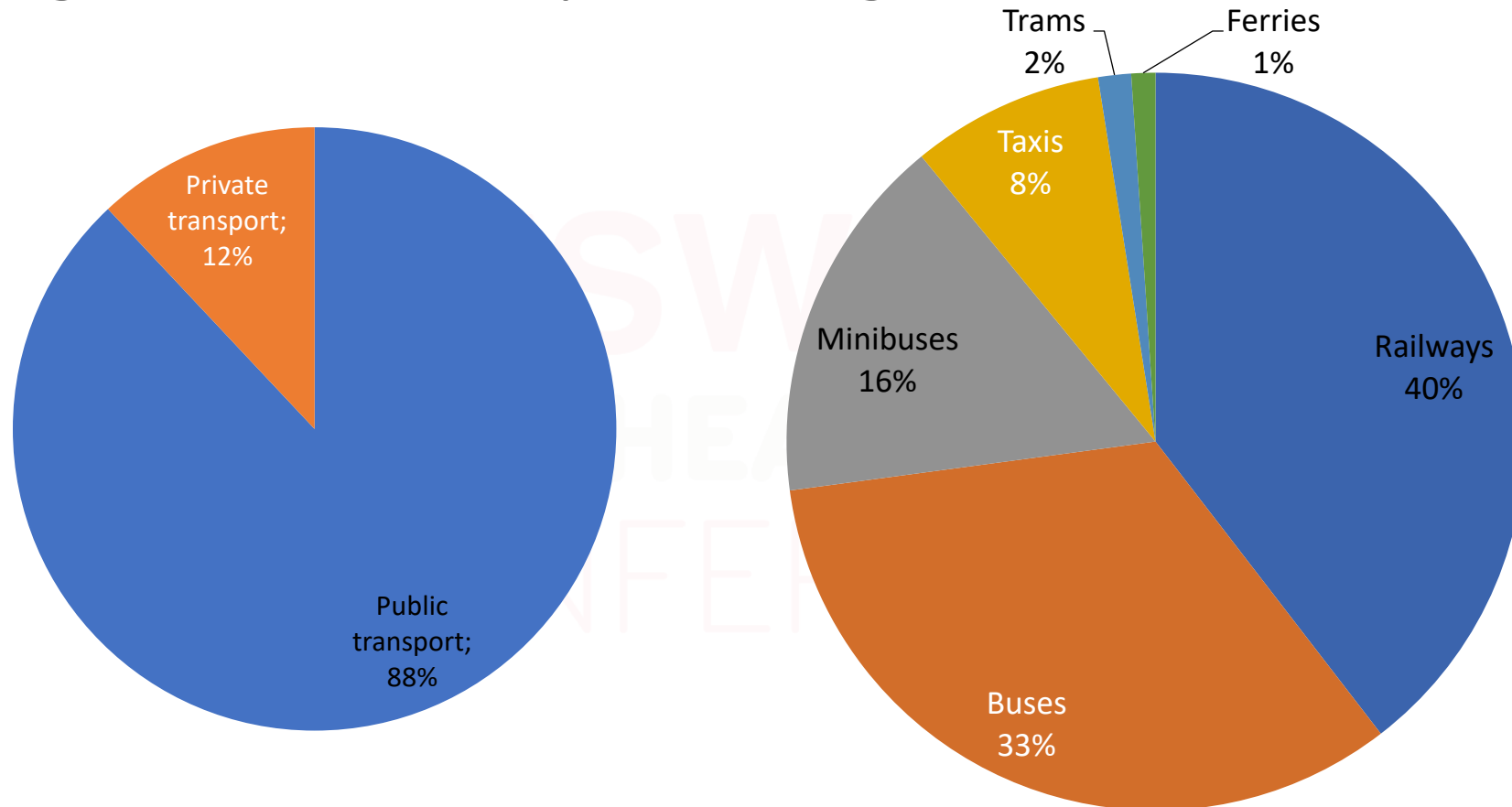
*Taxis widely available*

*... and ferries too*



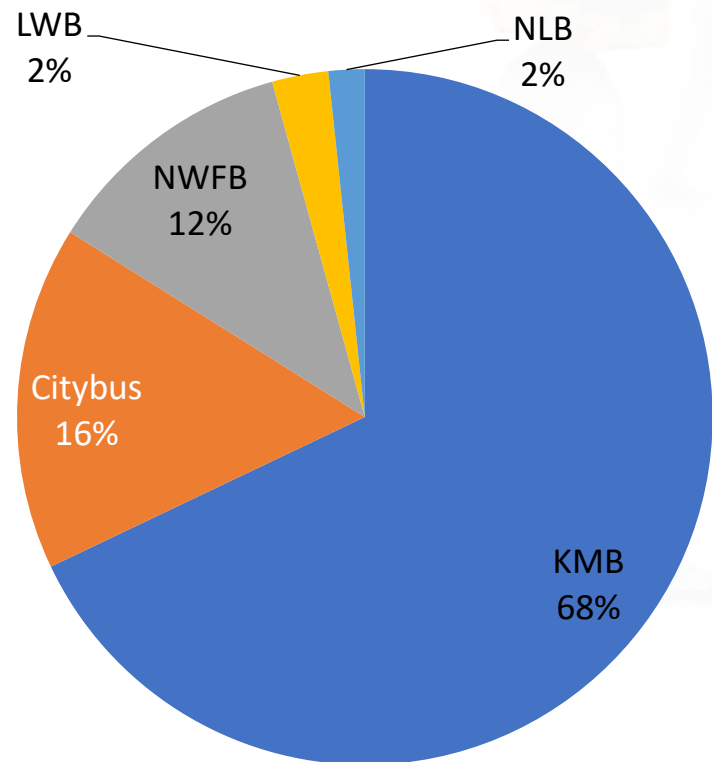


# High Public Transport Usage



# Market share of bus companies

Average daily passengers  
journeys





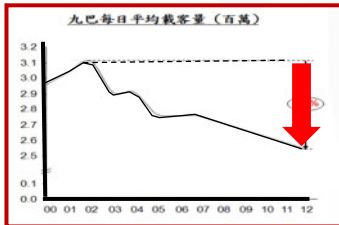
# KMB: At the brink of failure in 2012



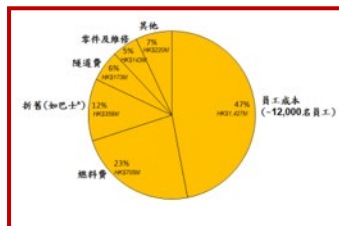
- More than half of KMB's routes were loss-making



- Major cost components (e.g. wages) were constantly rising



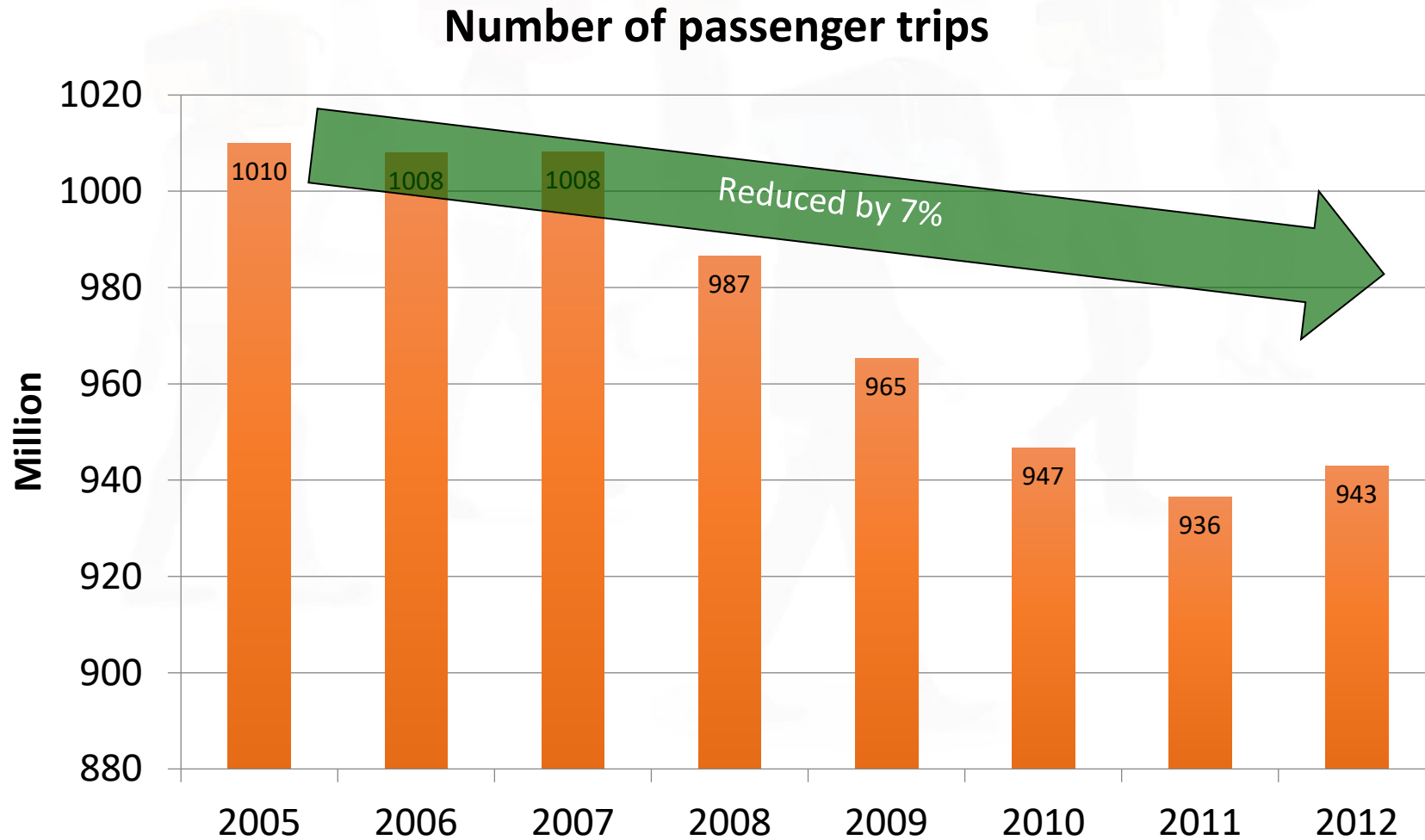
- Average daily ridership declined by 18% from 2002 to 2012



- Cost structure inflexible and not entirely under its control

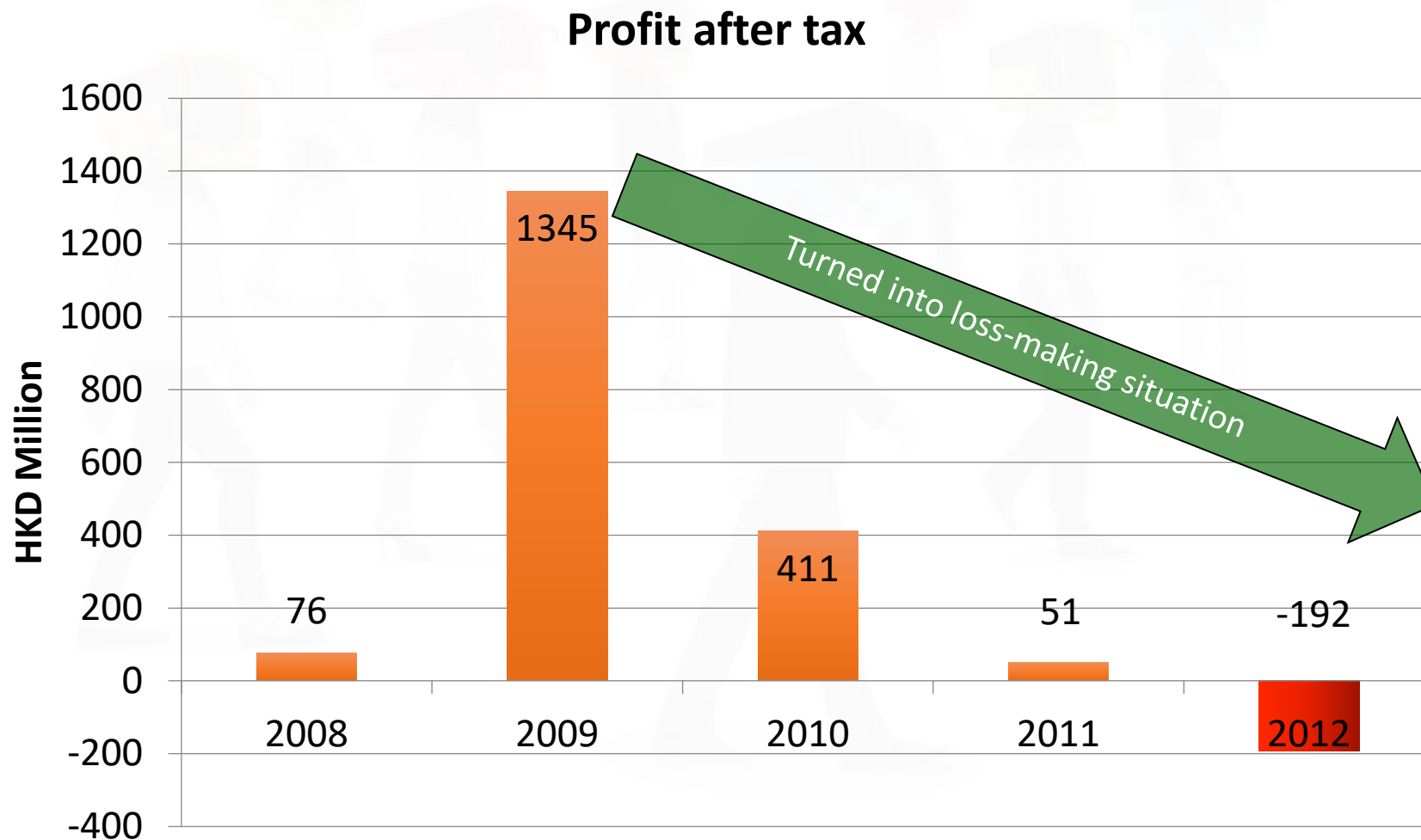


# Declining ridership

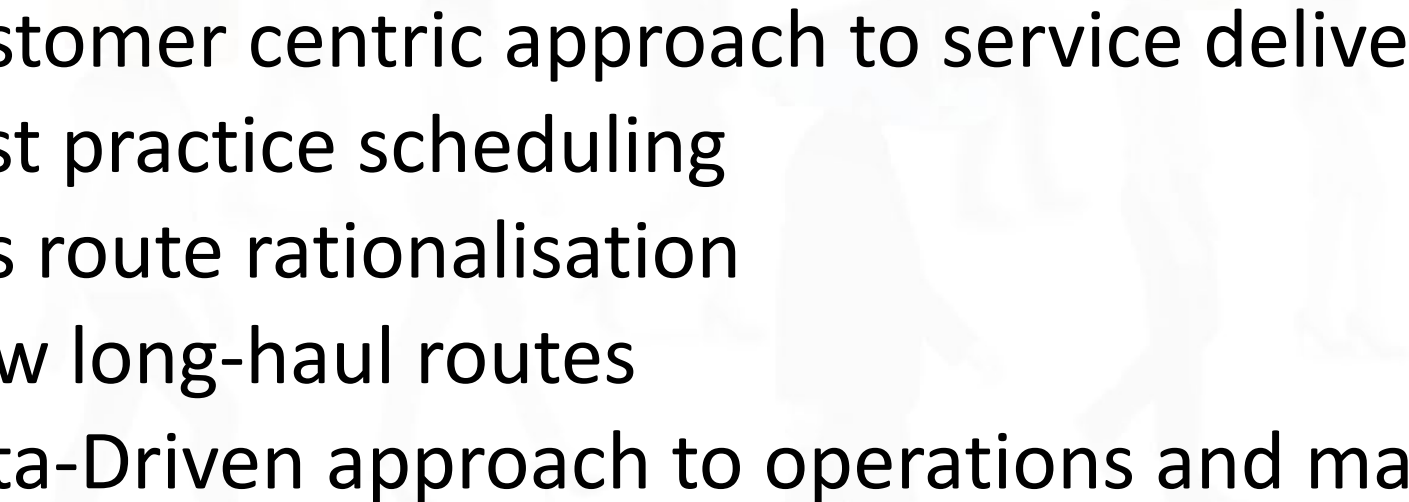





# Direct Impact to bottom-line



# 2013-At crossroads: Succeed or Withdraw

- Customer centric approach to service delivery
  - Best practice scheduling
  - Bus route rationalisation
  - New long-haul routes
  - Data-Driven approach to operations and maintenance
- 
- 



# Bus Scheduling Platform

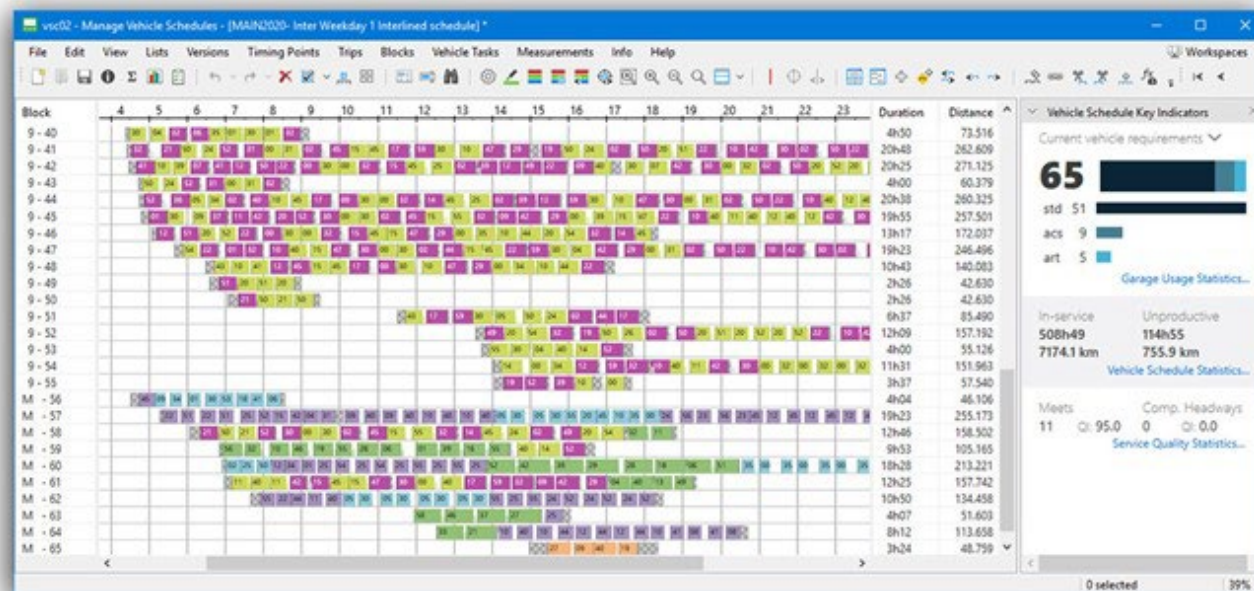
- Scale of the problem
  - ~4,000 buses
  - ~11,000 drivers
  - ~400 routes
  - ~4,000 bus stops and termini

Required good data

- Journey time
- Dispatching records



Telematics and  
Real-time Operation  
Management



# Telematics System

- Bus fleet management
- Real-time operation management
- Driver behaviour analytics
- Journey time and route planning
- Vehicle health monitoring
- Maintenance planning



## Improving Service Reliability

- Creating punctual timetables
- Unbeatable timing points

## Easy to remember timetables

- Clockface headways



# Improve operational efficiency

## Express Routes

**978 全日特快**  
Whole Day Express

粉嶺 (Fung Ling) — 上水 (Sheung Shui) — 大欖隧道 (Tai Lam Tunnel) — 西隧 (Western Harbour Crossing) — 中上環 (Shuang Wan / Central) — 金鐘 (Admiralty) — 灣仔 (Wan Chai)

**T270 上水 ↔ 尖沙咀東麼地道**  
Sheung Shui ↔ Tsim Sha Tsui East Mody Road

特快 Express

2014年8月25日起 予您所想  
Effective from 25 August 2014

上水 (Sheung Shui) — 粉嶺 (Fung Ling) — 翠濠庭 (Tsui Hang Ting) — 九龍站 (Kowloon Station) — 尖沙咀東 (Tsim Sha Tsui East)

更快捷! Faster  
**晨早青沙特快**  
Morning Tsing Sha Express  
約需 **45** 分鐘 直達市區  
About 45 min Direct to Urban

## Bus-Bus Interchange

**青沙公路 轉車站**  
Tsing Sha Highway Transfer Station

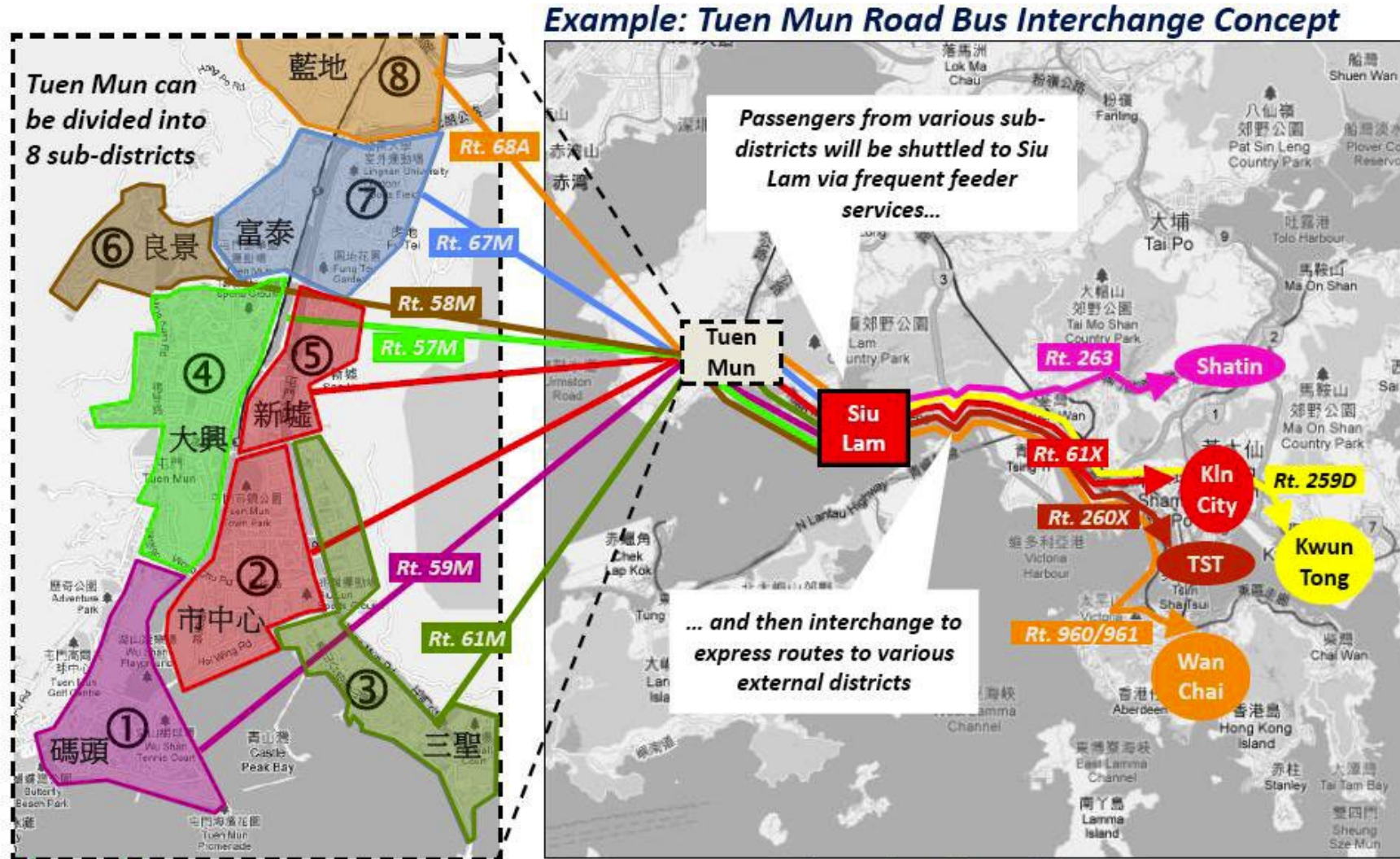
青沙公路 Tsing Sha Highway

**屯門區外路線圖**  
Tuen Mun External Route Map





# Hub and spoke systems





# Interchange Hubs

- New bus interchanges and the facilities are welcomed by passengers ...



Tsing Sha Interchange



1. Next bus arrival time display
2. Covered waiting area
3. Route information directory and clear signage
4. Seating
5. Free Wi-Fi access



**Enhanced  
coverage and  
passenger  
experience**

# Improving Customer Touchpoints

## Estimated Time of Arrival (ETA)



Date	ETA installed
Jan 15	21
Mar 15	123
Jun 15	269
Sep 15	350
Dec 15	442

## Distribution Channels

### Website



### Shelter Display Panel



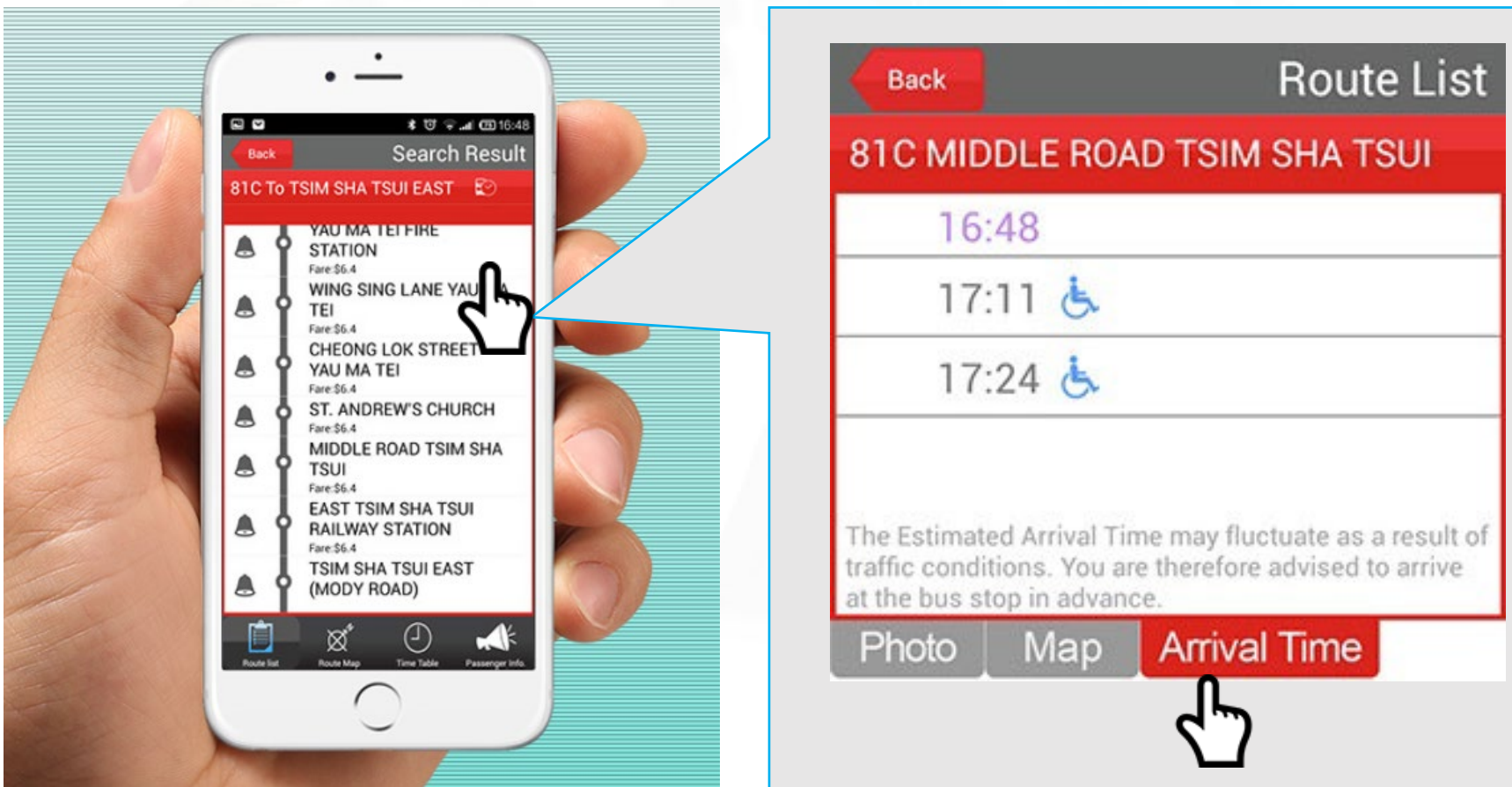
### Mobile App





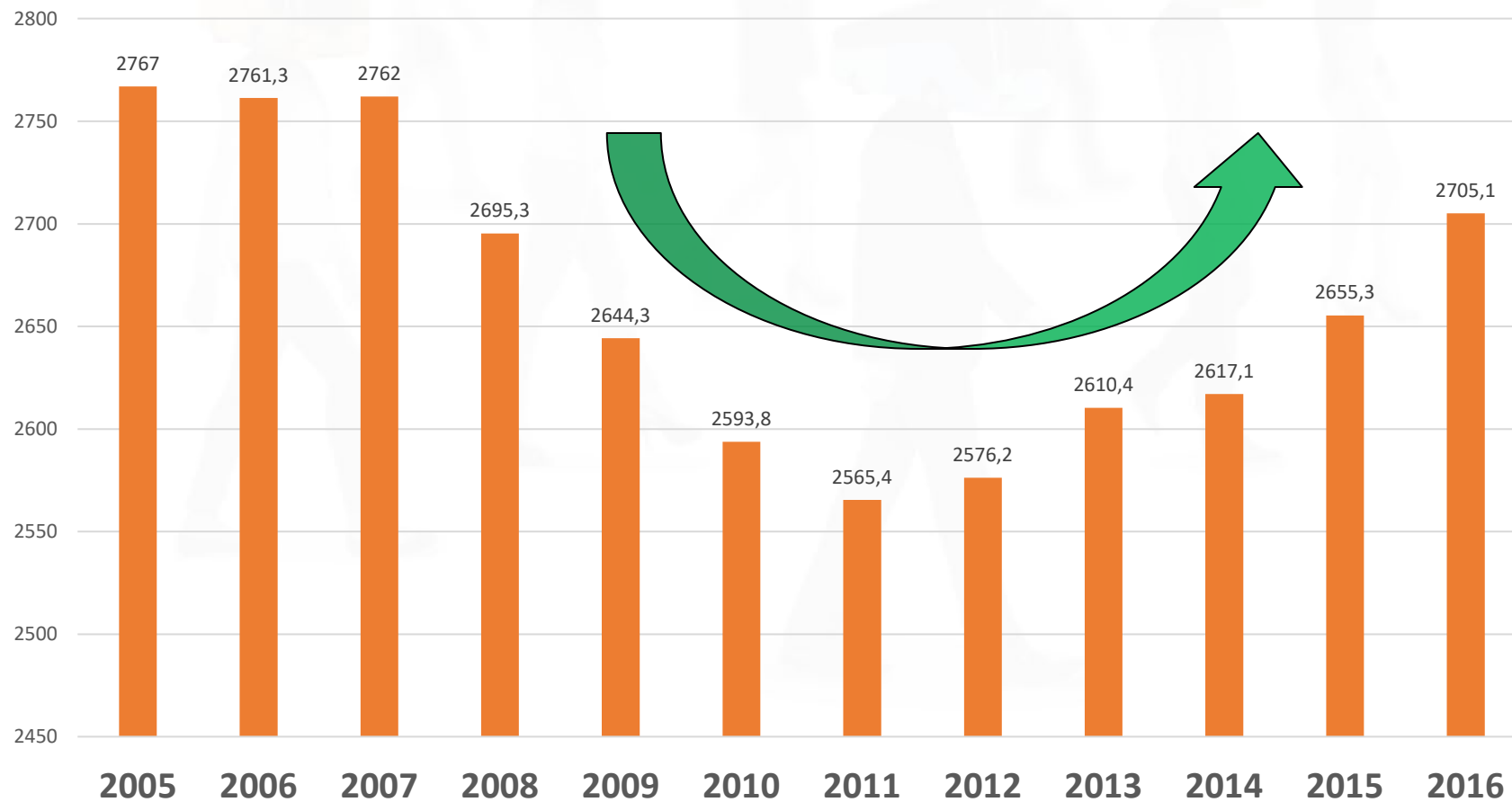
## Smart Delivery of Bus Information

- bus estimated time of arrival and route finder functions
- live chat between passengers and customer service representatives
- nearby bus stop display, and bus alighting alert



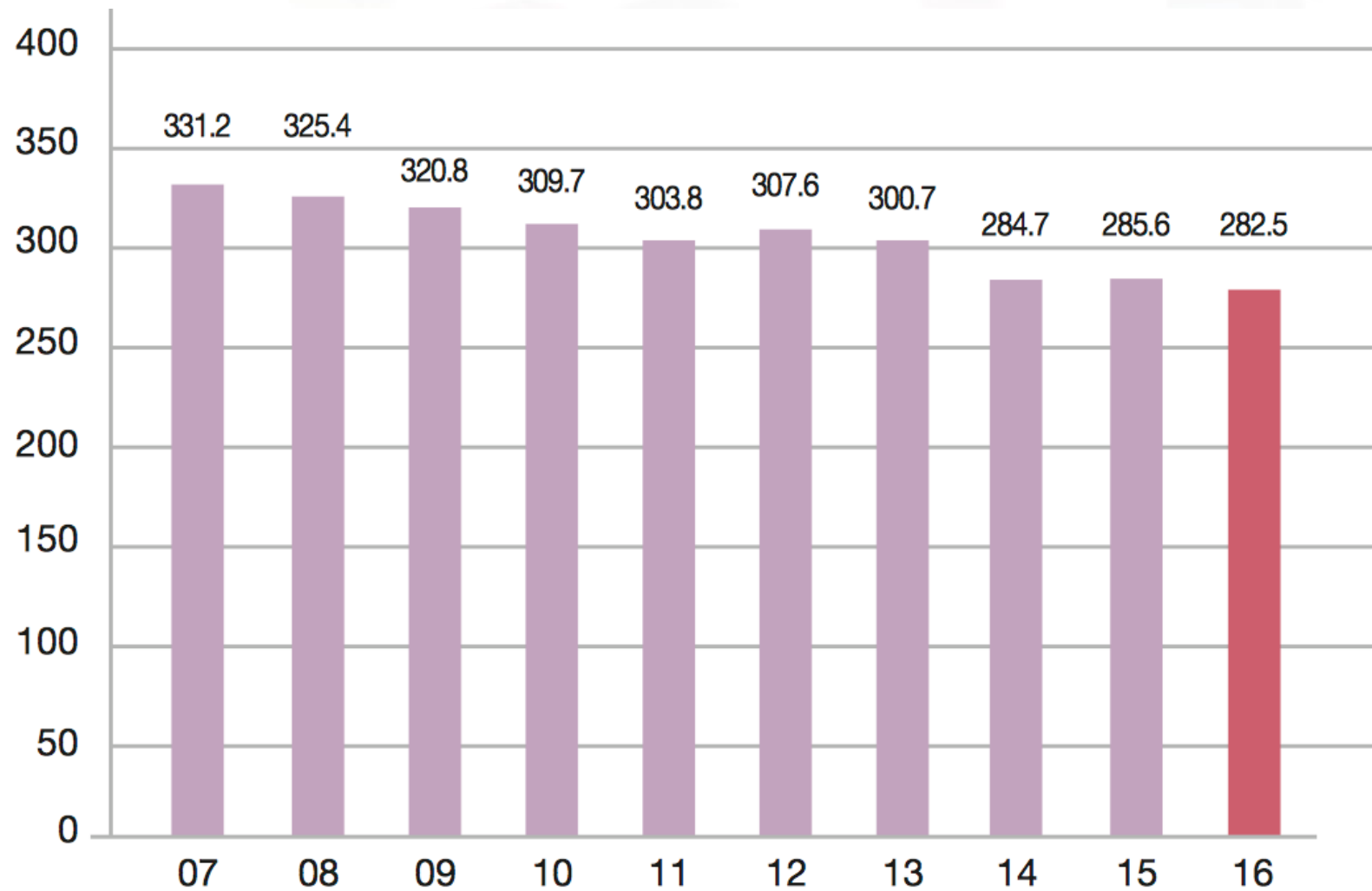
# Proof of the pudding is in eating!

Number of Daily Passenger Trips (in '000)

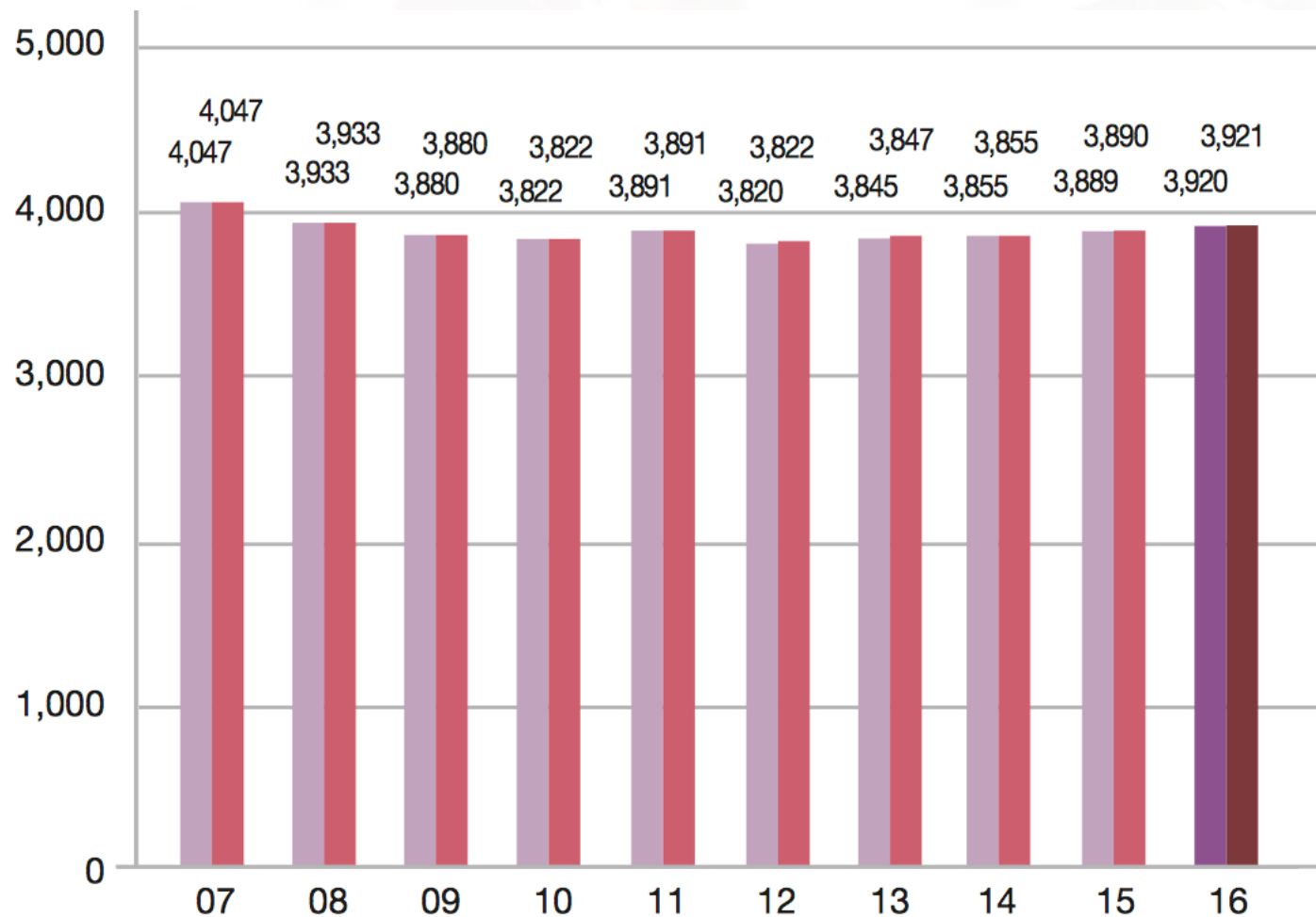




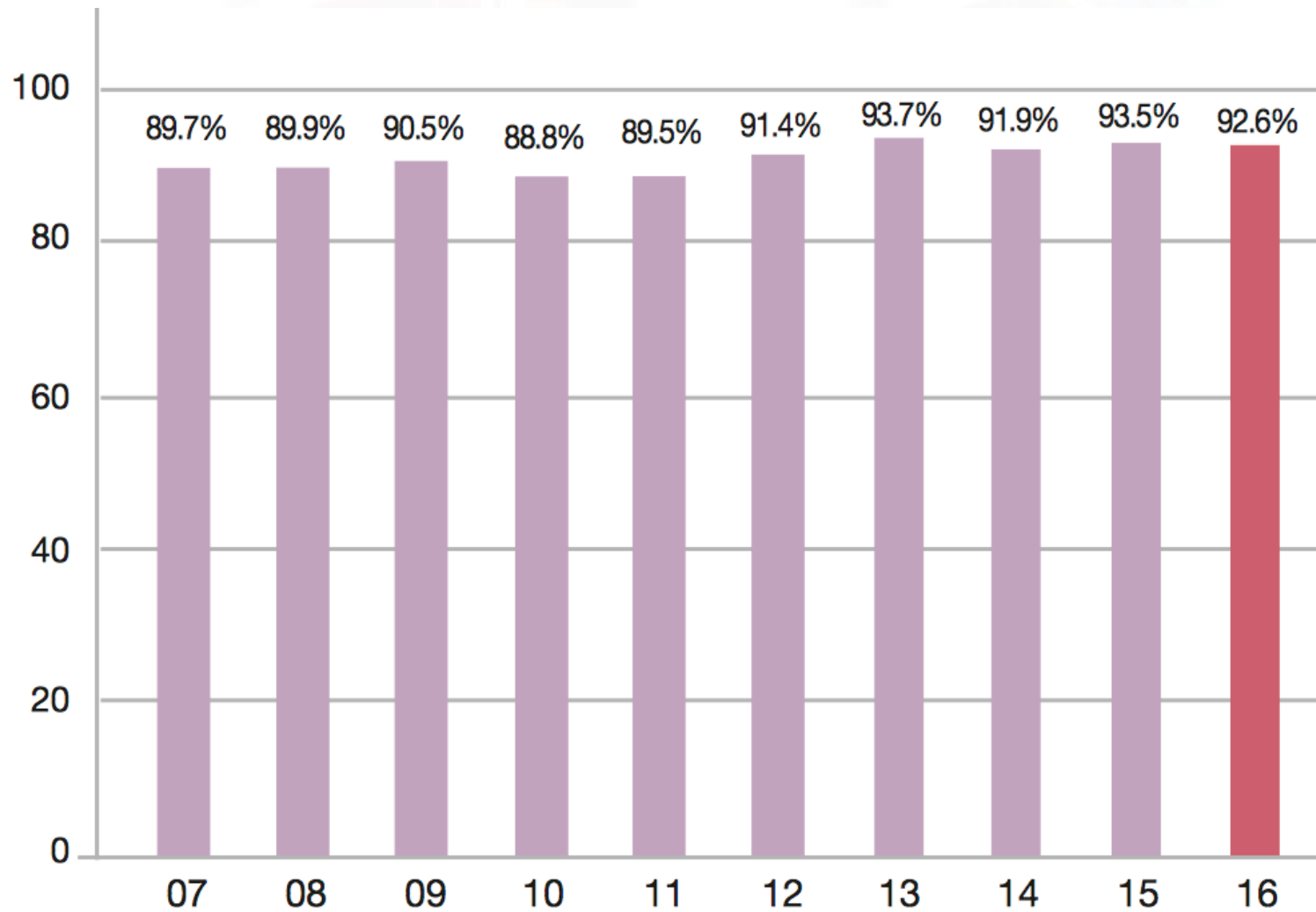
# Bus KM operated – 11% reduction



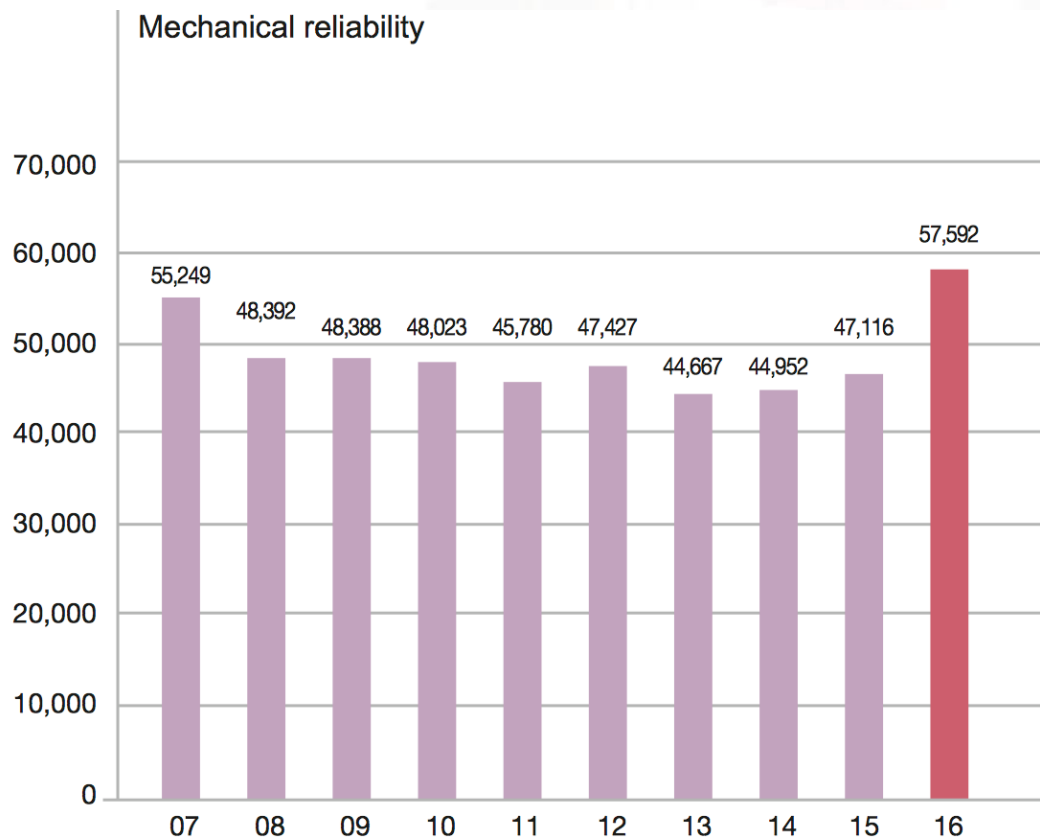
# Bus Fleet – Almost Constant



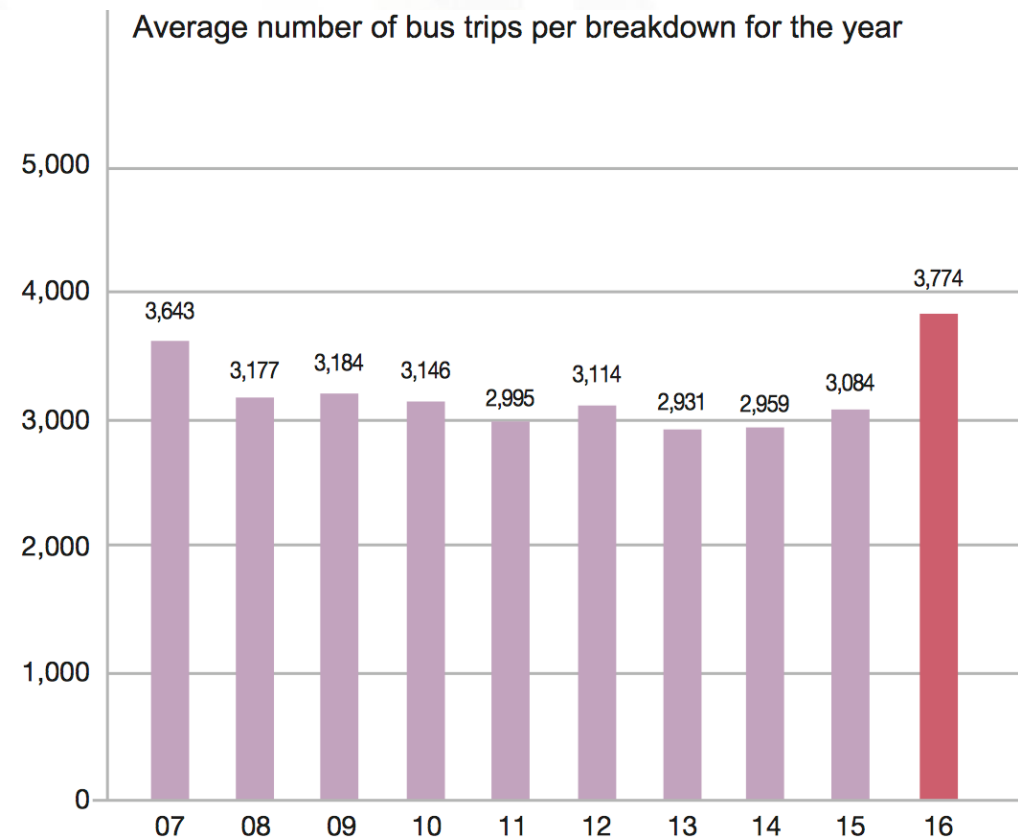
# Fleet Availability



# Engineering parameters



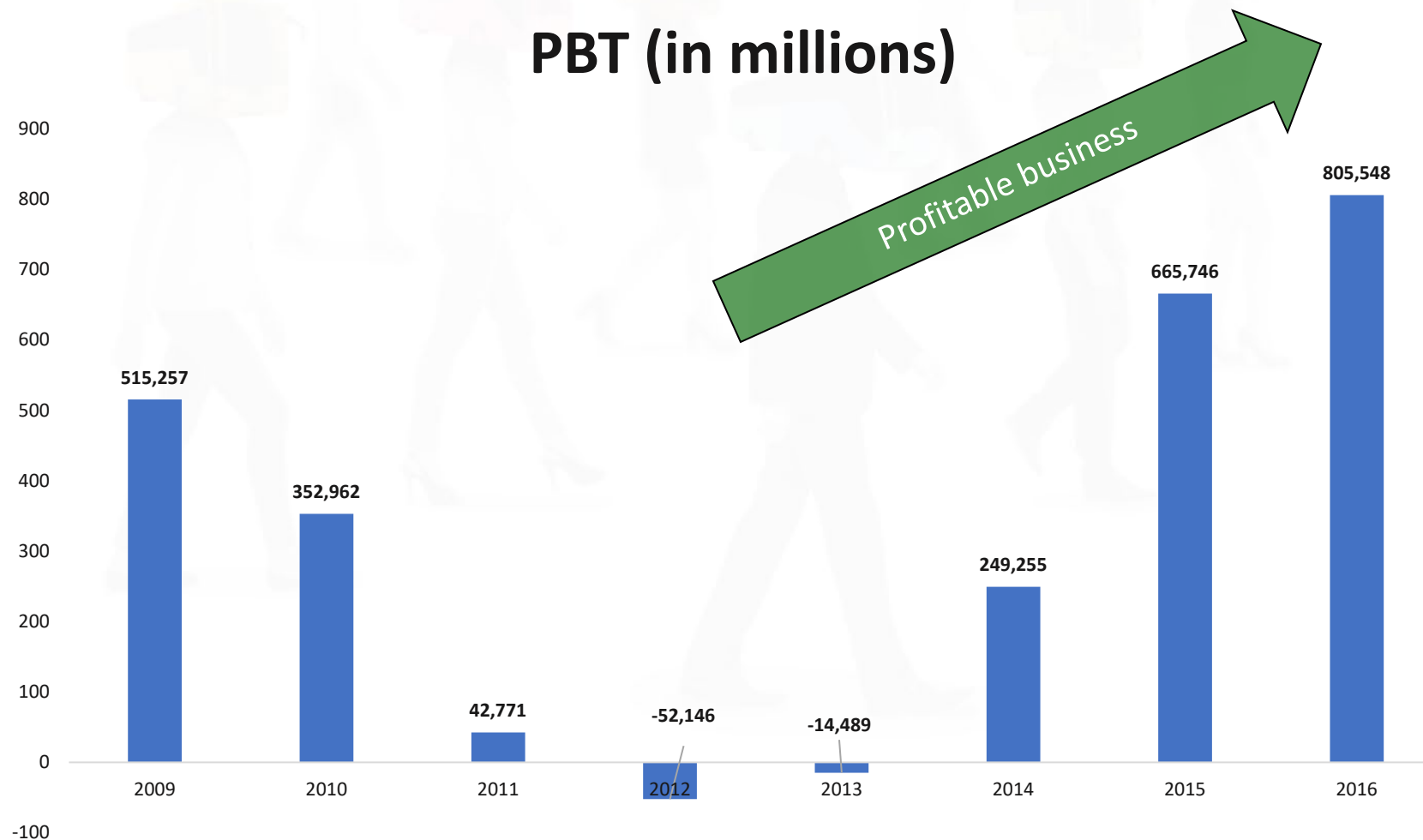
每一部巴士平均行走多少公里後才會在載客途中發生機械故障  
Average number of kilometres operated before a bus has one mechanical breakdown while passengers are on board



每一部巴士平均行走多少班次後才會在載客途中發生機械故障  
Average number of trips operated before a bus has one mechanical breakdown while passengers are on board



# Profitability – Setting New Records



# busworld<sup>®</sup>

## SOUTHEAST ASIA CONFERENCE

ORGANIZED BY



BUSWORLD  
foundation  
the global bus alliance

# Thank You

*Alok Jain 程艾樂*

*CEO Trans-Consult, Hong Kong*

*Member, Council of Decarbonization of Transport in Asia*

[alok@transconsultasia.com](mailto:alok@transconsultasia.com) +852 97689080

<https://www.linkedin.com/in/alokjainhk/>

Twitter: [@alokjainhk](https://twitter.com/alokjainhk)

[www.trans-consult.co](http://www.trans-consult.co)

[www.linkedin.com/company/trans-consult/](https://www.linkedin.com/company/trans-consult/)

Twitter: [@transconsult1](https://twitter.com/transconsult1)

WWW.BUSWORLDSOUTHEASTASIA.ORG



## **BUS FLEET ELECTRIFICATION:**

INSIGHTS FROM GLOBAL  
PUBLIC TRANSPORT INNOVATORS

ALL ABOUT BUS, COACH AND **PEOPLE**