Cashless Payment in Ground / Public Transportation

Purpose: Information
Submitted by: KPMG
Cashless payment in ground/public transportation

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Presented by
KPMG
Agenda

01 Cashless payment market for public transport
02 Impact of Covid-19 on transport ticketing
03 Future of transport ticketing
Asia-Pacific is expected to account for one-third of the global cashless payment investments in public transport.

**Regional AFC investment size projection by 2025**

- **Global size (2025): USD ~12.8b**

  - **North America:** 2,204
  - **Latin America:** 900
  - **Asia Pacific:** 4,169
  - **Europe:** 4,273
  - **Middle East and Africa:** 1,313

**Key takeaways**

- Asia Pacific will account for 33% due to abundance of urban mass transit projects in China.

- 94 cities in Asia Pacific have planned rail projects: 8351 km, 4,524 stations.

Notes: (1) Includes banks cards with stored value functions and ABT functions

Sources: Global Mass Transit, KPMG analysis
Majority of Asia-Pacific cities use contactless smartcards with a growing number of cities planning to deploy bank cards as fare media.

Current fare media split in Asia-Pacific (120 cities)

- Contactless smartcards, 93
- Mobile ticketing, 44
- Bank cards¹, 31
- RFID tokens, 25
- Paper tickets, 78

Notes: (1) Includes banks cards with stored value functions and ABT functions; (2) Cities may adopt multiple fare ticketing media

Key takeaways

- Contactless smartcards are the most prevalent fare medium in Asia-Pacific region
- 27 cities and 7 regions in Asia-Pacific plan on integrating their public transport ticketing in the future
- 25 cities have unveiled plans to deploy banks cards on transit for the first time and 20 cities are looking to deploy mobile ticketing for the first time

Sources: Global Transit Ticketing
Account Based Ticketing (ABT) is expected to become the mainstay of ticketing in the future.

Key takeaways:
1. Cities planning to deploy ABT in Asia-Pacific:
   - 2016: 2
   - 2017: 8
   - 2018: 19
   - 2020: 26

2. ABT is a critical precursor to Mobility-as-a-Service (MaaS)

3. China has incorporated ABT for public transport ticketing in payments apps such as UnionPay, AliPay, and WeChat Pay.

4. Transit centric smart cards will continue to be in play with or without ABT; these are needed to cater to transit customers without mobile devices or bank cards. E.g. unbanked, elderly, children, tourists.

Sources: Global Transit Ticketing, Press search, KPMG Analysis
Mobile ticketing is becoming a popular fare media and is fuelled by ubiquitous use of smartphones.

Key takeaways:
- Digitalisation of the transportation sector is the key driver for mobile ticketing.
- Increasing adoption of mobile devices.
- Rising popularity of e-wallets and mobile transactions.
- Growing utilisation of QR codes and bar codes.

Mobile ticketing market size in Asia-Pacific:
- ~$0.35b in 2018.
- ~$1.2b in 2025, with a CAGR of 19%.

Sources: Technavio, KPMG Analysis.
Fare integration and interoperability is a global trend that will continue driving smart ticketing adoption in Asia-Pacific.

167 cities in the world have fare integration plans of different levels.

1. **Public transport modes integration**
   - Preferred by cities developing smart cities

2. **Non-fare business integration**
   - 18% of cities have plans to integrate ticketing with other services

3. **Economy-wide integration**
   - Several Asia-Pacific cities are exploring economy-wide integration

Sources: Global Mass Transit, KPMG analysis
In COVID-19 context, contactless payments are key enablers for seamless mobility

**Mobility trends enabled by contactless payments ...**

1. **Contactless ticketing for safer travel**: The role of contactless payment in ensuring safety of passengers in the context of COVID-19 is equally, if not more important than increasing the efficiency of passenger movement in and out of public transportation.

2. **Tighter transport integration**: Businesses and drivers will increasingly favor shorter and more flexible mobility that offer minimal stoppages or checkpoints and favor the development of integrated multi-modal services.

3. **Integrated mobility ecosystems and data**: Well integrated systems can harness the power of data analytics to design routes, reduce travel time, manage congestion, improve safety and regulatory compliance, support traffic control and enable dynamic policymaking.

4. **Rise of multimodal transportation hubs**: These hubs will drive a need for private and public organizations to tap into each other’s expertise and data. Public-private coalitions will accelerate the development of safer and more efficient multimodal solutions and innovations.

Sources: KPMG analysis
Tech enablers have opened new doors in contactless ticketing, improving overall efficiency in transit access.

### Ticketing methods
- Hands-free Ticketing
- Mobile Ticketing
- Facial Recognition

### Tech enablers
- RFID & bluetooth
- QR code (including dynamic) and smartphones
- Artificial intelligence

### Case Studies
- **Land Transport Authority of Singapore** has announced a pilot programme for hands-free ticketing in trains and buses using RFID and bluetooth technology.
- **Hainan Highspeed Railway Co.** has launched facial recognition devices for train access in place of physical tickets.

Sources: SCMP, NFCW, Railpost, KPMG analysis
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