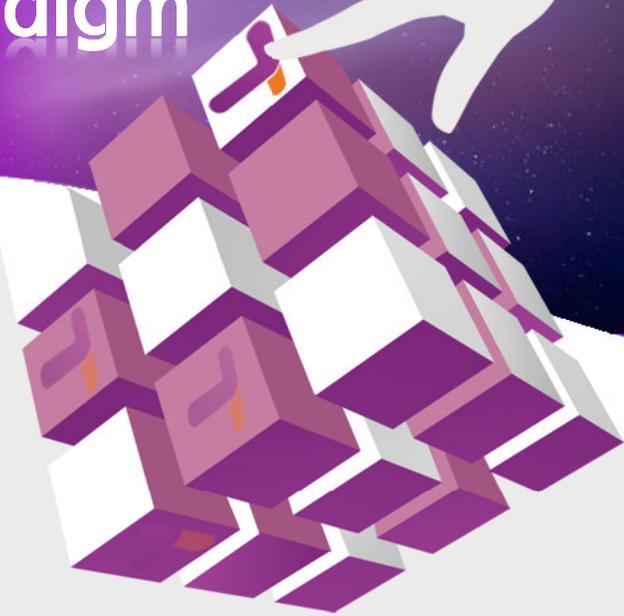




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New Public Transport Paradigm using Smartcard



30th October 2019

Tmoney

Contents

- 1** Background
- 2** Introduction to Tmoney
- 3** Inside of Tmoney System
- 4** Global References
- 5** Key Success Factors

1

Background

Bus Operators

- Operational Difficulties/Bankruptcy + subway construction → losing passengers

Reducing bus passengers	Bankruptcy of bus operators
1996 : 30%	1997 : 103
2002 : 26%	2003 : 57

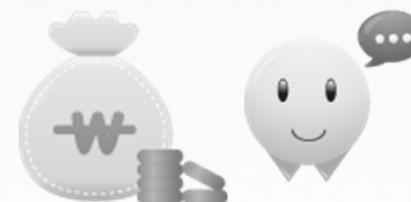


Passengers

- pleasant subway as alternative vehicles
- using their own car is more better
- : personal car was increased as much as 46 times

Problems in government policies

- high subsidies burden for bus
- inefficient bus routes



01

New Smartcard system



- Seamless Integrated ticketing
- Adopting distance based fare
- Multiple card issuers
- Various Card specs (Type A/B)
- Flexible platform
- Various Mobile Services

02

Trunk-Feeder Scheme



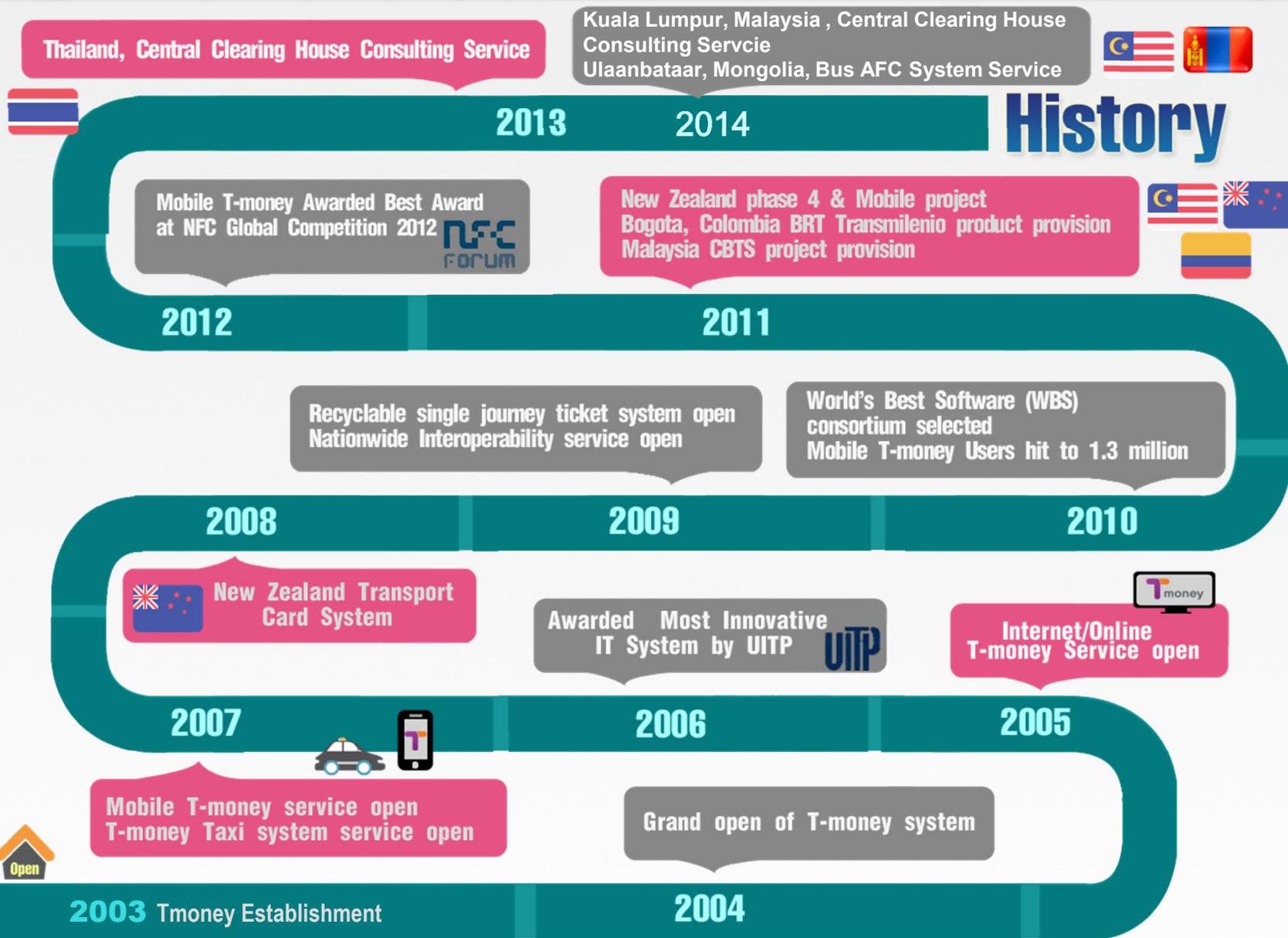
- Suburban
 - Regular headways
 - Increasing ridership
- Inner City
 - Reduced traffic
 - No competition
 - Reduced operation cost

03

Semi Public Operation



- Strict control over bus operations and driving practices
- re-construct old winding routes/schedule by city
- Keeping the operation cost transparent and under control



Main Biz Areas

1. Card Issuer



2. Owner of AFC Asset & Infra



7 Rail/Subway Operators

20,000 Bus

120,000 Taxi

80,000 Retail etc

3. Settlement Operator



50 Mil transactions/day

Unique Features

- Implementation of Unified Public Transport Network in Seoul Metropolitan Area
- Achieved Nationwide Interoperability
- EACOPS Leader : Multi-national Interoperability



Card Usage Rate

Subway 100%
Bus 98.3%
Taxi 53.5%



“More than 600 transactions per second.”

50,000,000

Data Transaction / day 



“Everyone has more than one Tmoney card.”

97,000,000

Card Issuance Accumulated



“Total Cost that Tmoney manage every day.”

USD 19,000,000

Fare Settlement /day 



Multi Issuer Multi Channel Clearing / Settlement / Apportionment Multi Operator

End-Users

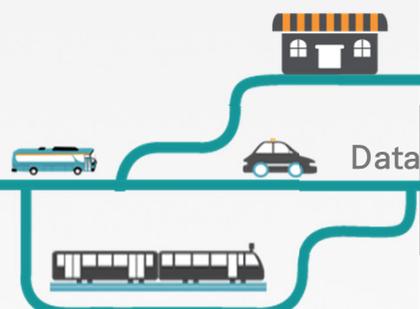
Pre-paid Card



Credit Card (Post-paid)



Terminal



Issuance



Data Management Center

Issuance System	Public Service
Bus Web	Taxi Web
Management System	Monitor System

Totalization System
Central System



Charger

Settlement System

Record

File Collection

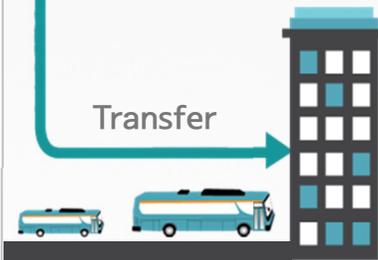
Charge System



Inquiry



Transfer



Data Sum

1) Distance - based Fare

Fare is collected by Distance - based Fare, it is measured by GPS sensor of reader, combined with Bus Management System and its route.

2) Tag In-Tag Out

Passengers are obliged to tag the readers at their boarding and alighting. For missing tag, designed penalty would be applied.

3) Transfer between Bus and Metro

Within 5 vehicles, Passengers are to transfer their vehicles with deducted fare rate.

4) Concession fare for special purpose

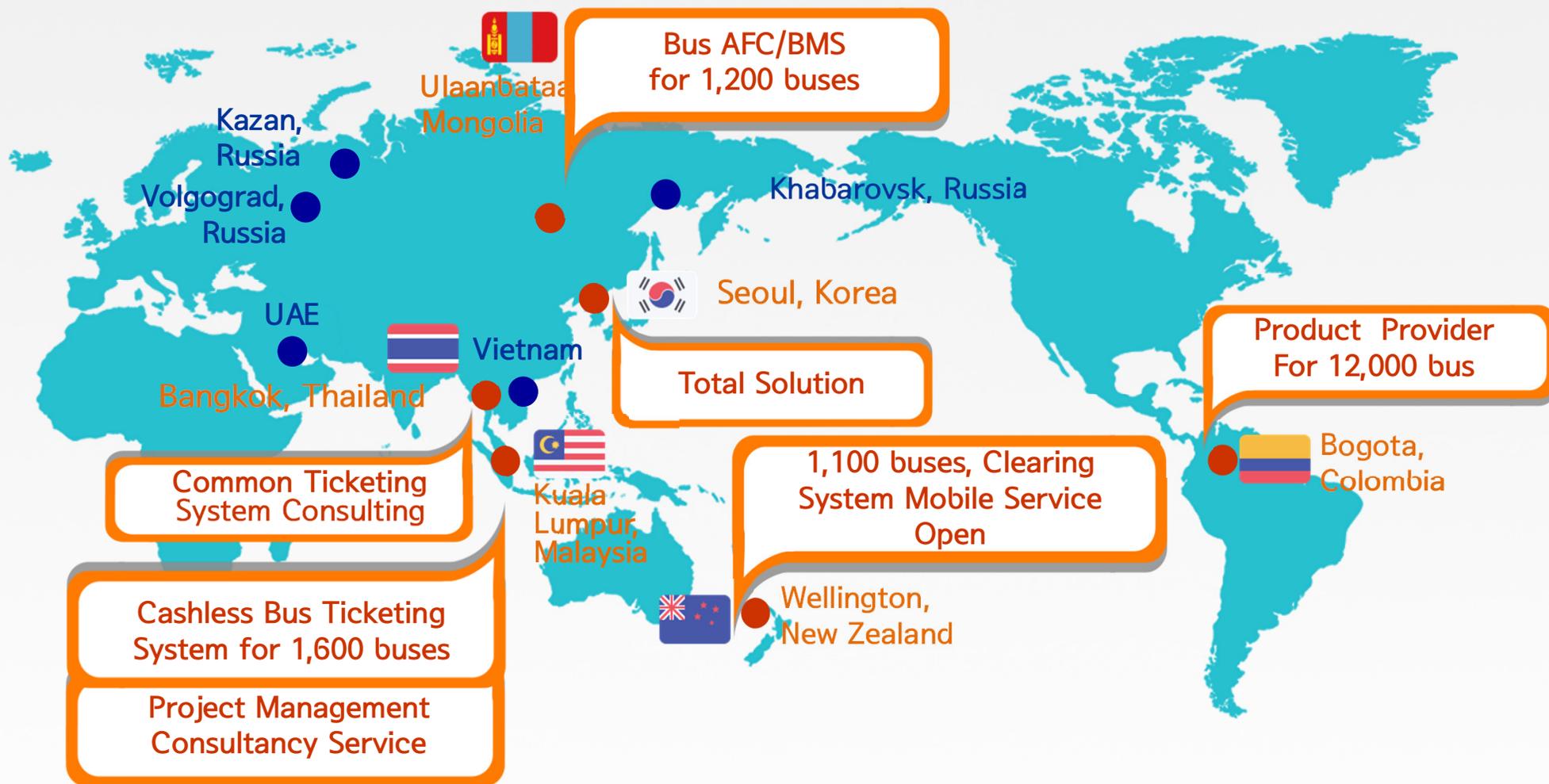
Concession card is available for kids, students, seniors and special persons. They could use public transportation with special discounted or free fares.

5) Integrated Clearing and Settlement

Determining appointment and monetary claim is fully integrated and done by Tmoney.

● **Actual Biz Area**

● **Feasibility Study Experience**



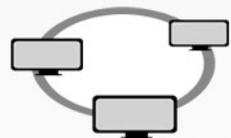


New Zealand

New Zealand



- Wellington, New Zealand
- Tmoney provides total solution
- Tmoney is the settlement agent
- Installed 1,100+ buses, 400+ retails, 3,000+ taxis



Malaysia



40%



- Kuala Lumpur, Malaysia
- KSCC provided Turn-key Solution for CBTS (Cashless Bus Ticketing System)
- 6 months to deliver
- Currently servicing 1,500 + buses
- 40% Increase of card usage in 3 months




Colombia



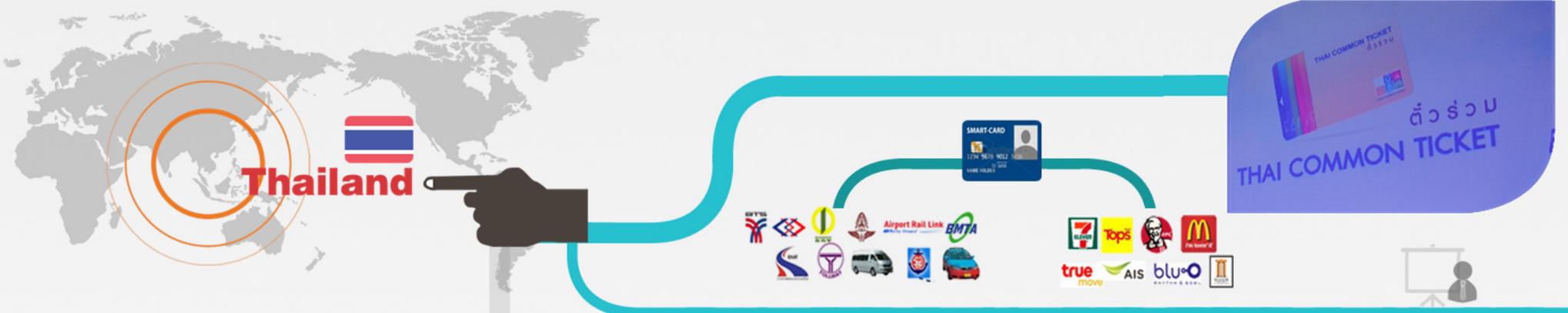
Colombia

- Bogota, Colombia
- Tmoney provided On-bus units
- 36 BRT stations, 10,000+ bus
- Hand-held device
- Many other development activities



Thailand

- Bangkok, Thailand
- PMS (Program Management Service)
Consulting 48 months span
- Consultancy service on establishing
CCH (Central Clearing House) and
CTO (Common Ticketing Office)
Quality Consultancy IN PROCESS

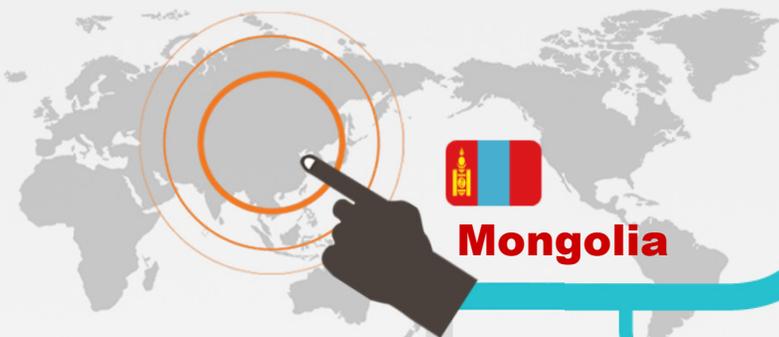


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Mongolia

Mongolia

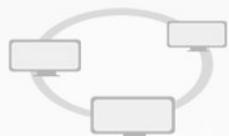


card

New Zealand



- Wellington, New Zealand
- KSCC provides turn-key solution
KSCC is the settlement agent
- Currently servicing 1,100+ buses, 400+ retails, 3,000+ taxis



- Ulaanbaatar, Mongolia
- Tmoney provides total solution
- Automated Fare Collection with integrated Bus Management System
- Planned to service for 1,200 buses
- Service starts in mid 2015

• Snapper, only 5 years old and already highly recognized

5

Key Success Factors



Government

- Strategic Planning
- Strong Will
- Powerful Persuasion
- Issue/Risk Management



SI / Operator

- Experiences in AFC and SI
- Communications w/ Gov. and Operators
- Migration Planning
- Change management



Operators

- System Requirements
- Change Management



Control Tower



Citizen



- Decrease civil burden
- Satisfaction **21.5%** ▲
- Fast and easy riding w/o long queue



Green City

Carbon Emissions **5.5%** ▼

Traffic Volume **24%** ▼

Government



- Smart Management by Scientific Analysis
- Less CO₂



Operator

- Bus Passengers **16%** ▲
- Bus Average Speed **39%** ▲
- Operators Revenue **8%** ▲



Thank you