



# Presentation to the Prague municipality

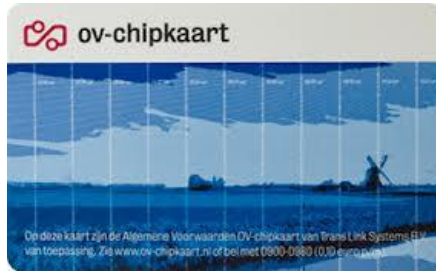
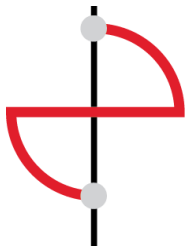
February 2013

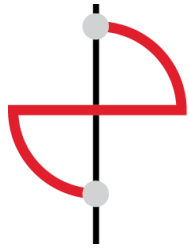




# SMARTCARD LESSONS



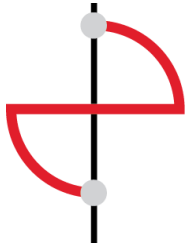




# Smartcards

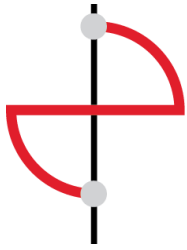
- 25 year old 'new' technology
- Innovations applied to the market mostly by technology sales forces (equipment vendors)
- Lack of innovation from program owner's perspective
- Proprietary approach in most cities/regions
- Most of the existing solutions are card-centric
- Total-costs-of-ownership usually high





# Smartcard applications

- For most systems, ticketing is the major application
  - Ticket-centric approach may limit the ability to enhance other functionalities
- Micropayments
  - For transport, including taxi payments
  - In retail & other services
  - Identification/Concessions
- eVouchers/Loyalty programs
- Identification functions
  - municipality services, reliable electronic ID, etc.
  - library access, school access/pantries, etc.
  - campus services, etc.



# Approach to ticketing systems

- Bespoke
- One-stop-shop / Cloud-based or not
  - Trend for the 1st generation ticketing programs
- In-house by Scheme Owner
  - Trend for the 2nd generation ticketing programs
  - London TfL, NYC MTA ongoing, HK Octopus, Taipei EasyCard, Singapore MSI, ...
- Component-based
  - Control is retained by an independent Level 4 business entity
  - Infrastructures are owned by public transport business entities
  - Least common denominator PT organisations (ex: Oslo IOS)
  - Greatest common denominator PT organisations (ex: The Netherlands)





# 'OV-Chipkaart' in Netherlands

## Key data

- Number of active cards : 15.5M (for a population of 16.5M!)
- Functions
  - CI/CO
  - Ticketing(Transport) - Pay as you go and all existing transport products
  - Railways
  - Taxis

## Key aspects

- Well-designed ecosystem
- A Joint-Venture between transport companies
- Interoperability nation wide in all public transport since 2011
- Convenience through automated reloading of the card
- Use made mandatory by national government
- Very high TCO due to card centric model and complex infrastructure
- Struggle to enhance use to near-transport retail functions





# Octopus in Hong-Kong

## Key data

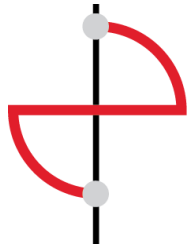
- Number of active cards : 20M (for a population of 7M!)
- Functions
  - CI/CO
  - Ticketing(Transport) - Pay as you go
  - Micropayments/Retail (20,000 merchant points)
  - Public site access (libraries, ...)

## Key aspects

- A joint-venture between transportation companies
- Closed-loop proprietary system all the way
- From 4M transaction a day to 11M over 15 years
- No fundamental change since its inception in 1997







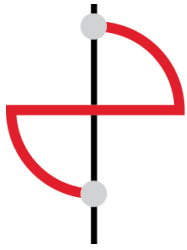
# Oyster in London

## Key data

- Number of active cards : 23M (for a population of 8M!)
- Functions
  - CI/CO
  - Ticketing(Transport) and some railways for the London fare area only
  - Pay as you go with daily cap

## Key aspects

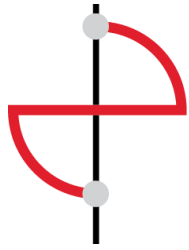
- Under the full control of TfL, although initiated as PPP
- Use encouraged by a substantial discount compared with cash
- High TCO due to one-stop-shop solution approach, ITSO, and EMV
- Failed attempts to enhance into retail
- Struggle to use open-loop (bank) cards instead of closed loop



# Current situation

- Most city card programs are ticketing-centric
- Equipment technology vendors responses are not convincing
  - Certain schemes are using banking platforms and cards (Ex: Dutch OV-Chip, Taiwan Easycard, etc.. with GP, SmartMX/InfineoSE)
  - Further degrading their business balance sheet!
- Others are attempting to externalise their card programs all in all (TfL, MTA, several US schemes), but...
  - Open-loop payment networks risk model cannot be adapted to their transport program needs
  - 'Unbanked' customers still lack a solution
  - Acquirers' and card issuers' costs are not affordable to all
  - Cities with little or no online infrastructure are left out



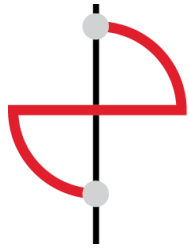


# The market is shifting...

Scheme owners needs to decrease TCO and enable a more flexible approach to security and services enhancements

- Card centric solutions are not a sufficient answer to future needs
  - Mifare, Felica, Calypso, OSPT, VDV, ITSO, OTI, etc...
- One-stop-shop solutions are not the answer
- Bespoke solutions are not the answer
- Open-loop-payment networks are not the answer
- NFC is not the answer





# The road to the future...

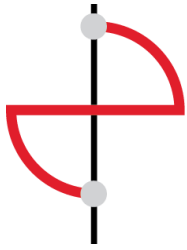
- The card ecosystem must be re-designed and managed
  - Every city-card program faces a different context
  - There isn't really a market for a generic ticketing solution
  - Without a proper understanding of its ecosystem, no card program is future-proof
- The integration of best-of-breed components, risks, and cost-of-ownership must be built on a solid, proven foundation
  - Increasing integration complexity cannot be ignored
  - Increasing threats call for an upgradable security architecture, not a new card technology!
  - Cost-of-ownership targets call for an effective industrial partnership strategy with local market players





Opencard

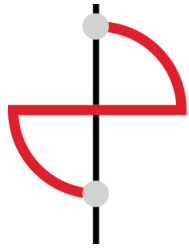




# Our view on Opencard

- 1M+ users – fundament for future growth of use and introduction of new services
- Multi-vendor situation
  - Different vendors of equipment within the system, ability to add without substantial additional cost
- Multi-application environment
  - Enabling to enhance under-used applications and add new applications
  - Strong fundament for identification functions
- No real retail/micropayment services
  - lack of load infrastructure
- Absence of service-level management and clear responsibility for operation
  - Confusing to users
  - Inability to manage quality of services and enhance the actual services





# Opportunities for Opencard

- Further enhance ticketing (transport)
  - Add single-fare payment (Pay-as-you-go) functionality (which will also enable micropayment/retail)
  - Integrate with overlapping ticketing schemes to enable interoperability (like InKarta)
  - Introduce/Enhance Micropayments
  - Establish load network (potentially through retail partners)
  - Focus to near-transport functionalities (including parking)
- Other functions



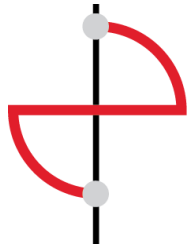


# Recommendations

February 2013



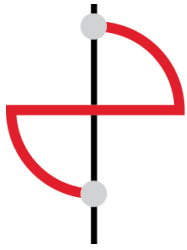




# Our recommendation

- Apply Joint-Ecosystem-Design approach to setup objectives for OpenCard scheme going forward
- Enhance existing conventional multi-application solution through implementing JSF (Joint Foundation Solution)
- Transform the card from a cost item to becoming an asset, by enabling commercial functions and enhance ticketing
- Apply digital ecosystem account management solutions



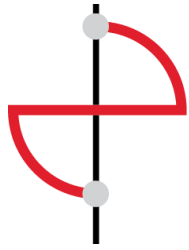


# Joint Ecosystem Design

Create the foundations to enable managed trust between authorities and program participants

- Alignment of interests of key stakeholders
  - Municipality
  - Transportation companies
  - External parties
  - Etc.
- Proven process for (re)setting agenda for card schemes
  - Foundation for future-proof strategy
  - Prioritization by needs of scheme, instead of by technology





# Joint Foundation Solution

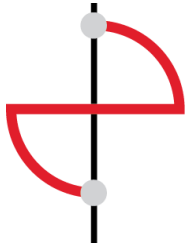
- End-to-end security layer as the key enabler
- SAM-centric solution enabling multi-vendor equipment
- Enables integration, risk management, and optimised total-cost-of-ownership
- System integration assistance to local Program Owners and Industrial Partners of choice
- Unique hybrid ticketing/payment programs
- Open to other applications (city card concept, retail networks, eVoucher management, etc.)
- Compatible with EMV based infrastructure





ABOUT



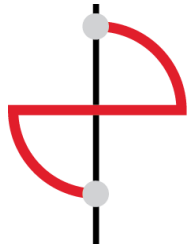


# WHAT WE DO

EMONEY GROUP provides services and solutions for modern digital ecosystems, especially in public services for citizens

- City-card, Region-card systems
- Fare collection systems for transportation and parking
- Micropayment solutions
- Mobile services & solutions





# OBJECTIVES

EMONEY GROUP responds to the needs of all stakeholders including scheme owners, transportation companies, citizens as well as general public with the aim to:

- Reduce the total-cost-of-ownership
- Enable participation of local industrials
- Simplify integration complexity
- Protect from vendor lock-up
- Provide a managed security upgrade mechanisms
- Leverage existing payment networks, i.e. E.M.V.



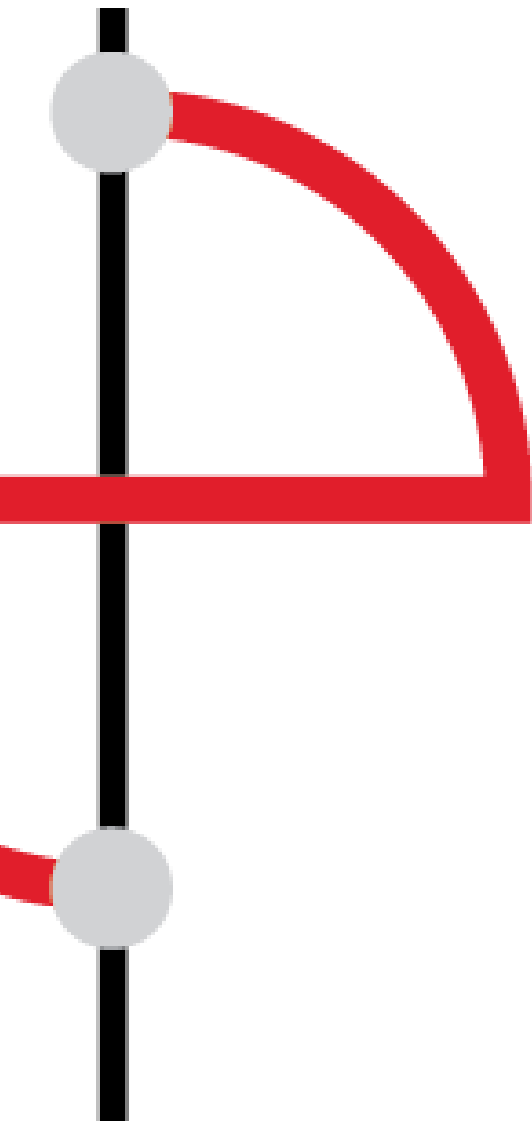


# SERVICES

EMONEY GROUP provides the right answer to the individual needs of every customer by combining unique set of services & solutions:

- Technologies & Security
- Software Solutions
- System integration and Managed Services
- Consulting
- City-card, Micropayments and fare collection Outsourcing & Operations
- Financing Services





If you have any questions,  
please do not hesitate to contact us

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