New Approaches To Transport Ticketing

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Evolution - Ticketing

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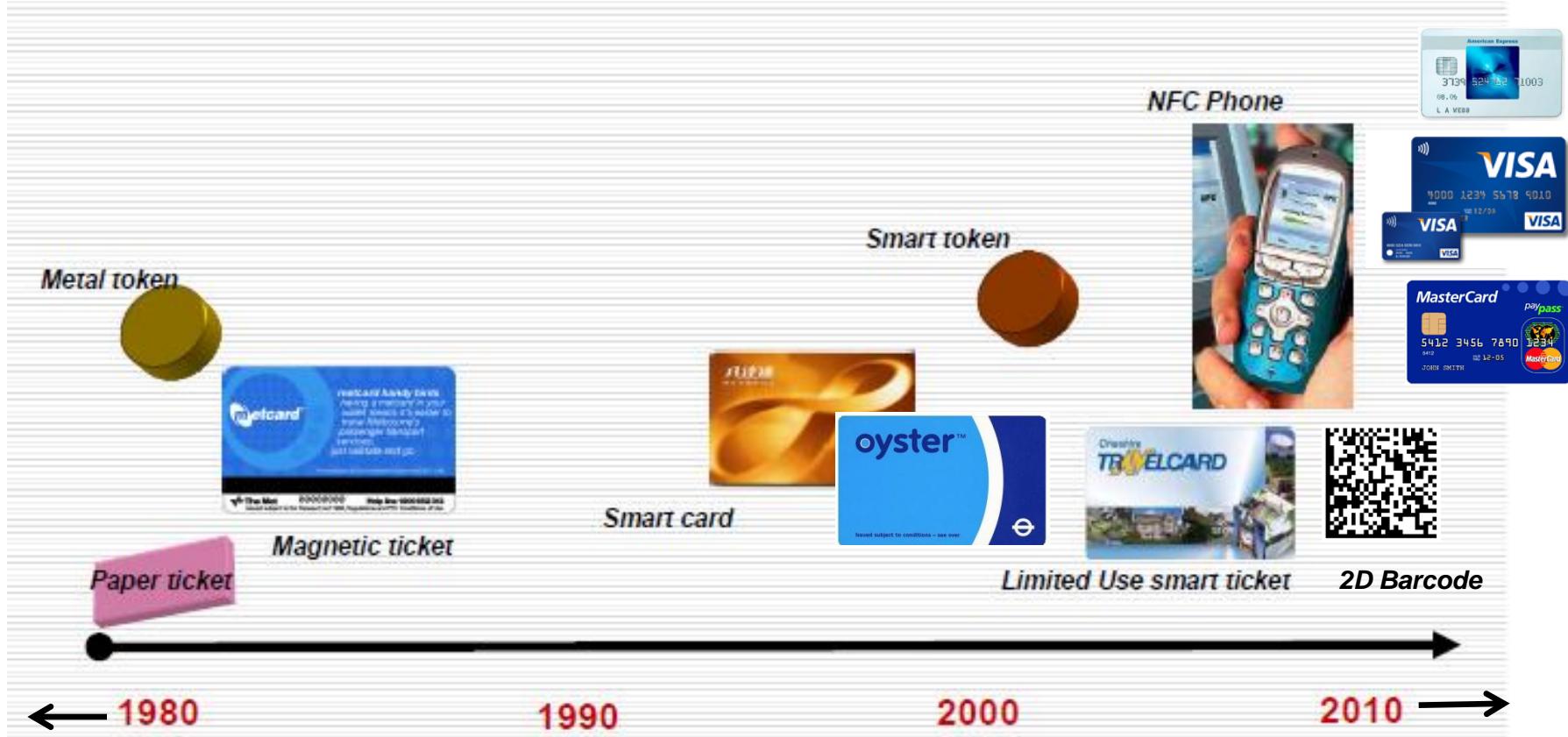
Evolution - Ticketing

Ticketing technology has evolved over the last 30 years

Contactless Bankcard

NFC Phone

Smart token

Metal token

Smart card

oyster™

Magnetic ticket

Limited Use smart ticket

2D Barcode

Paper ticket

1980 1990 2000 2010

Evolution - Ticketing

Banks worldwide are issuing contactless payment cards

Low value transactions

Fast transaction time

Convenience

Merchants seeing increase in transactions

The end of the cash menace?

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Evolution - Ticketing

Convergence of Banking and Mobile Sectors

Mobile POS
- Square
- Paypal
- iZettle

Pingit

DWOLLA

Mobile Payments
- Google Wallet
- ISIS
- Barclays / Orange
- More on there way

Peer-to-Peer
- Pingit
- Dwolla

MetroRail

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Evolution - Ticketing
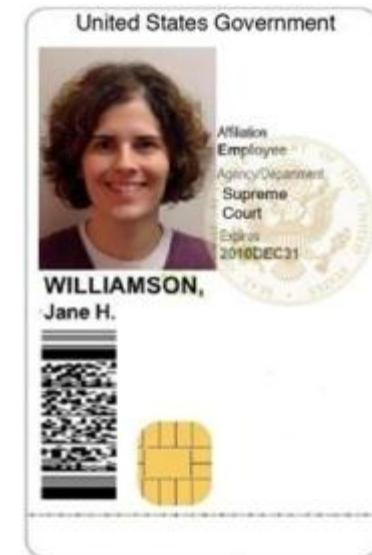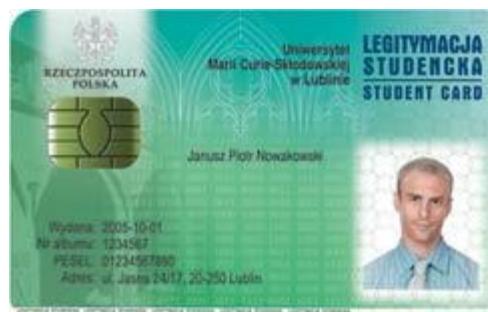
Governments are issuing Smartcards....

Transit

- **ITSO (ENCTS)**

ID

- **PIV**

- **EU Driver Licence**

- **Student Cards**

- **Social Security**

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TRANSITION – LEGACY TO OPEN

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CHANGES - OPERATIONS

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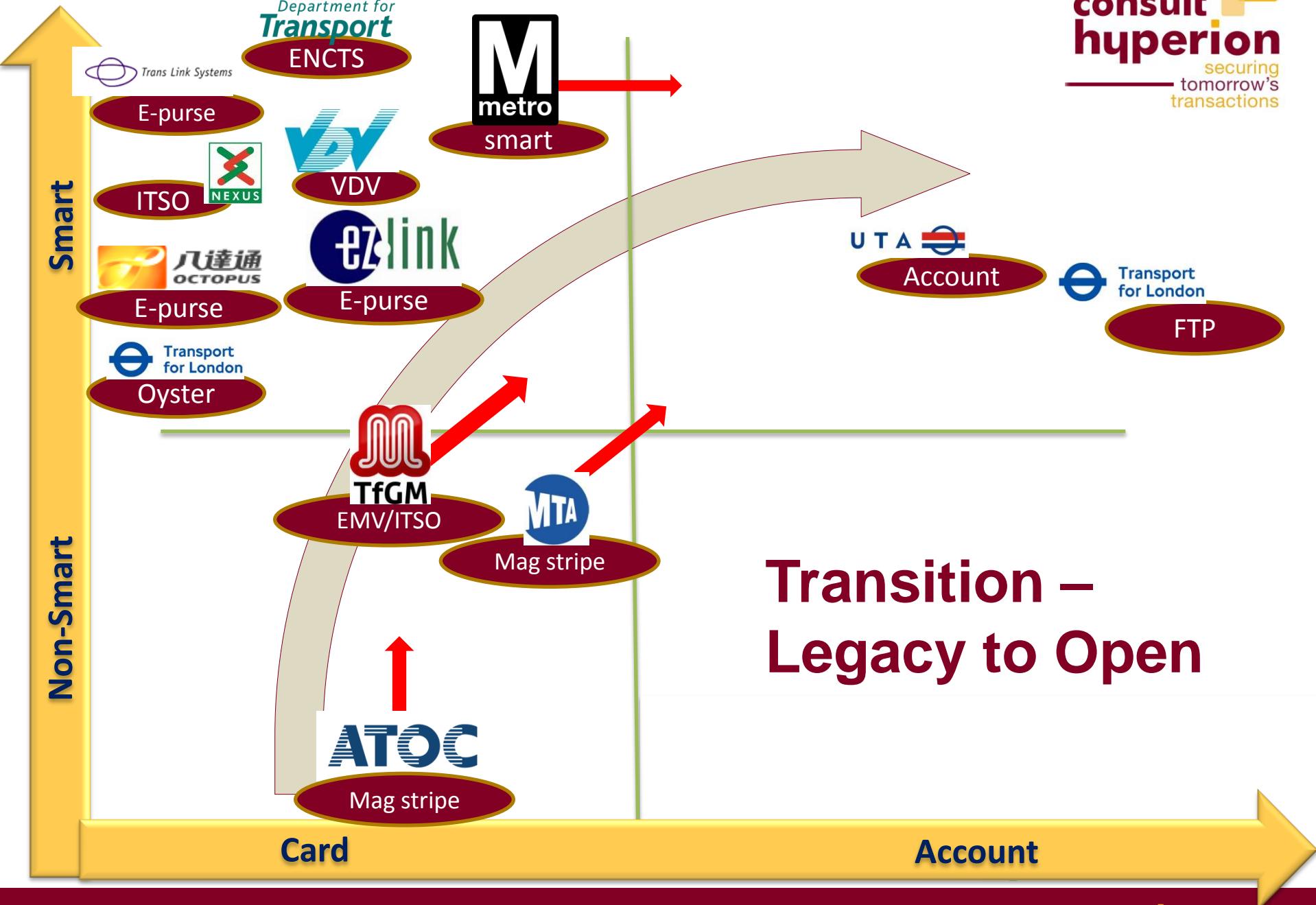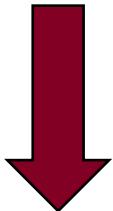
Changes - Operations

Ticket sales and distribution channels

Ticket Office

Self Service Machines

On Vehicle (Bus and Rail)

**Internet**

Print-at-Home

PAYG Ticketless travel

Mobile

- **2D bar codes**
- **NFC**
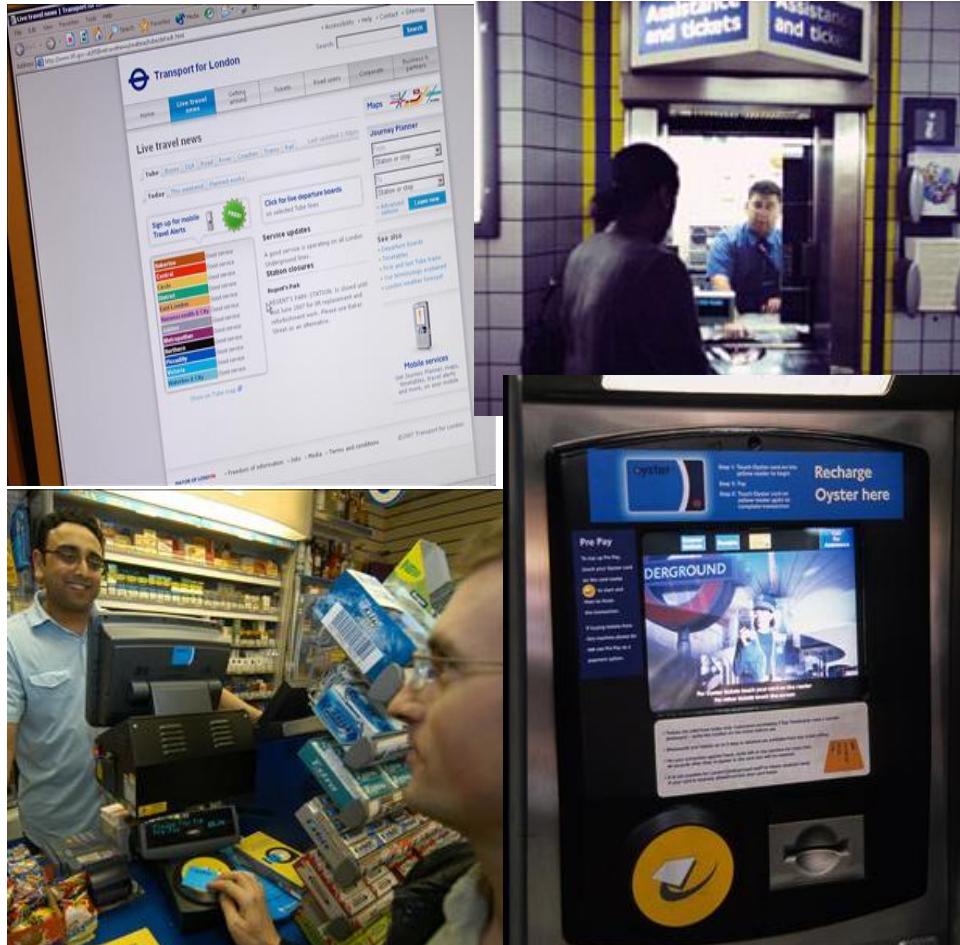
Changes - Operations

UK banks have developed a new transport transaction model for current cards

General rules	Challenges implicit in transport PAYG	Agreed new rules for transport PAYG
Price is known	Price not known until rail journey is completed	Tap = £0, Price calculated at end of day
Card counters to manage risk - Chip & PIN	• Max transaction time of 500ms • No PIN pads	Operator manages risks: • ODA • Deny Lists • Online Authorisation
Terminal field activated	No time to activate field for customer	Always active - maximise throughput

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Changes - Operations

Several alternative architectures are in existence:

Traditional Card Based, Closed loop
- Octopus
- Oyster
- OV Chipkaart (NL)

Account Based
- UTA, Salt Lake City
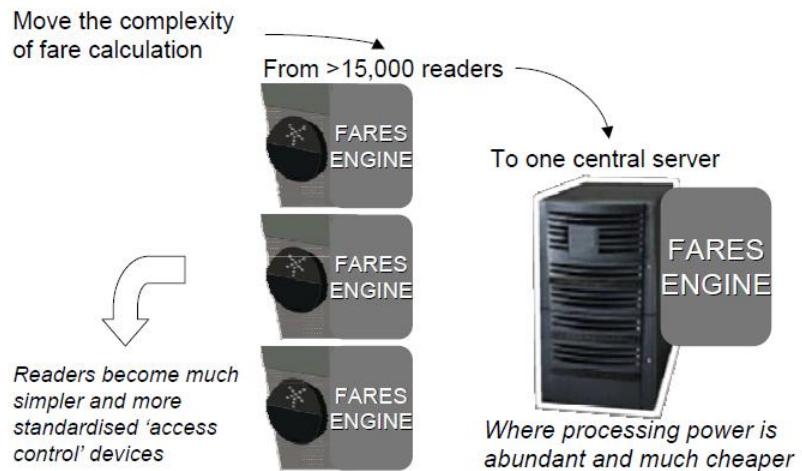
Retail Payment
- Liverpool / Stagecoach

Open Payment
- NY Pilot
- TfL
- FTP

Apps
- Arriva Buses

Use your **mobile** as your **bus ticket** with **m-ticket** from ⊘ ARRIVA

Move the complexity of fare calculation

From >15,000 readers

FARES ENGINE

FARES ENGINE

FARES ENGINE

To one central server

FARES ENGINE

Readers become much simpler and more standardised 'access control' devices

Where processing power is abundant and much cheaper

ISSUES

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ISSUES

How to make readers work...

Maintain proprietary technology

Include existing National or Regional schemes

Accept Payment cards

Accept new form factors

Make use of prototyping

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ISSUES

Security

- **Need to meet the PCI-DSS guidelines**

- **Maintain a deny list**

- **Authentication of non – EMV cards**

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SUMMARY

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In future ticketing systems readers will have a minor role

- ➢ **Transition to Back Office centric rather than Reader centric**

- ➢ **Readers will simply authenticate the credential**

- ➢ **Payment transactions will be processed in the background**

- ➢ **Passenger devices could be any contactless device they have:**

  - ▪ **Payment cards**
  - ▪ **Mobile wallets**
  - ▪ **ID Cards**

- ➢ **Integration will be underpinned by national & industry standards**

What then?

NFC will provide additional opportunities as applications converge onto mobile devices

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