

Keeping up with Technology – Smart Cards

North West Bus Summit

Jeremy Meal | 26 November 2009



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Topics

MVA Consultancy and our Smart Card experience

- Track Record (Smart Card Projects and Clients)
- Typical Project Contents

ITSO Progress Highlights

- NoWcard – illustrates steady (if sometimes fraught!) ITSO progress
- Other schemes now going live in volume across the country

ITSO Smart Cards

- The ITSO World (its about smart products only) – needs system integration/configurability among the key components (part of a jigsaw)
- The Card types – normal cards (and additional 'low-cost' for commercial tickets) and Interoperability – the 'Martini' principle
- Key Products - Concession Entitlements, STR, Period Passes, Carnets

Opportunities for the Future

- ITSO can be delivered 'hard-coded' or as a platform – it's about managing supplier outcomes
- Concessions has given the excuse for national re-equipping
- Time to think creatively about building revenue benefits, cost savings and passenger (customer) convenience on the platform we have created

MVA Consultancy – Smart Card Track Record

Standards/Specifications/Migrations

- ITSO, London Routemap, CEN – IOPTA (EN1545 & EN15320)

Design/Implementation – Concessions, Fares & Ticketing etc

- DfT/ITSO ENCTS - CPICC/OID structure & ITSO Technical Notes
- Singapore, Melbourne

Concessions (Reimbursement/Payments) Advice

- PTEs, Scotland Regional, Scotland National, Wales, Operators

Implementation Advice - ITSO Projects (and Legacy)

- NoWcard, Yorcard, Centro, GMPTE, Nexus, Scotland, Wales, DfT ENCTS, Cambridge, TfL, (Northern Ireland, Republic of Ireland)

Rail Advice – ATOC, Chiltern, First TPE, First ScotRail

Conferences – Regular updates on our *implementation* experience

MVA Consultancy - Typical Project Contents

Concessions Advice

- reimbursement & delivery via smart

Fares & Ticketing Advice

- Fares policy and structures (ie not just smart cards)



"Beginning to End" Smart Projects

- Policy setting
- Business case
- Funding
- Governance
- Specification
- Procurement
- Implementation
- Testing
- Critical friend

Other Activities

- Technical specifications
- Testing – cards, ETM software, Card POSTs
- Data – its importance and analysis from first principles

NoWcard & Other ITSO Progress Highlights

MVA Input

- Business Case to secure initial funds
- Procurement Advice
- Critical Friend role
- Delivering the scheme on the ground
 - Testing
 - Configurability of products
- Business Plan – for next steps



NoWcard - Pioneering ITSO

- 2004 Blazefield – two card types in 2 overlapping local authority schemes (NoWcard/GMPTE concession rules)
- 2006 Blackpool smart live
- 2007 Rossendale smart live with configuration editor (Editor used for DfT ENCTS card tests)
- 2008 ENCTS cards and STR tests
- 2008 NFC ITSO phone trial
- 2008 Blackpool ENCTS smart live
- 2009 ITSO Fully-certified

Currently live (MVA assisted)

- NoWcard 1,700 buses smart live
- Scotland 4,300 buses smart live
- Wales - 1,800 buses smart live
- GMPTE – Arriva Bolton
- Whippets (Cambridge Busway)
- Centro roll-out begins next weekend

Getting the most out of ITSO – a key issue

Configurability – linking business rules to ITSO card processing

Are we seeking to deliver isolated concession/commercial schemes.....?

..... or a configurable and integrated 'smart card platform'?

- Configuration Editor – smart product set-up in the hands of the user
- Sale/Usage acceptance rules linked to the ITSO-secure enablement of products – eg price, ticket-class, local validity (time & geography)
- Supports operational variations – ticket/no-ticket, auto-transact or driver intervention for keying alighting stage to collect fare forgone [NB data-quality trade-offs versus operational issues (boarding times)]
- Parkeon (Wayfarer) as ETM suppliers have led the roll-out in the NW with a 'Product Editor'; MVA now working with other suppliers testing similar Configuration Tool software eg Almex, ERG
- Same with Bureau card producers (Nowcard working with ESP-Systex)

If smart isn't as easy to set up as paper ticketing, operators won't go smart! (nor would Local Authorities find it easy to extend schemes)

Key ITSO Smart Card Environment Features

Interoperability – allows card-sharing to reduce costs

- Public transport - 'Martini' principle (anytime, anywhere, any place)
- Non-transport – LASSeO specification for card partition on DESfire (or any multi-application card)

Concessions – has tested the ITSO card types in volume

- CMD1 MIFARE® 1k (pre-ENCTS, some ENCTS)
- CMD2 (Aberdeen, Bolton)
- CMD3 MIFARE® 4k (ENCTS) 7.2 million cards in England
- CMD7 MIFARE® DESfire works and is now the major Mifare 'replacement'
- CMD8 Calypso – DfT ENCTS tests

Stored Travel Rights

- ITSO 'stored value'
- ITSO Specification being updated to support longer period 'fares capping' [week, month..]

Period Passes and Carnets – rudimentary products all tested/working

- Travelcard-type period tickets
- Carnets or multi-ride tickets
- MIFARE® Ultralite and Innovision Jewel – small memory model or low-cost cards

Interoperability – ITSO ‘Martini’ principle!

Smart card benefits of interoperability

- examples of shared infrastructure reducing costs
- Seamless ticketing – e.g. addition of a peak entitlement to an existing off-peak concessionary card
- Common and extendable on-bus configuration in the hands of the bus operator
- Reserved for future use – e.g. National STR scheme and the remaining card space still available for use
- Card potentially partitioned for transport and non-transport use (eg ENCTS 4k cards split 2k/2k – DfT/ITSO’s recommendation)



New products – ITSO Stored travel rights

A transport stored-value payment card

- Prototyped pre-ITSO by Cheshire CC
- Trialled and due to go live in NoWcard in Autumn/Winter 2009
- Allows local authorities to offer a joined-up inter-available card, but Operators retain commercial freedom to control and set fares
- Capping, as in Oyster, to follow??
- Shows how STR could be added to a concession when not valid for peak fare payment
- Top-up and usage on bus
- Auto-top up after web payment probably to be trialled next
- Needs FSA approval if interoperable [rather than a closed scheme like TfL Oyster]



New Products – ITSO Period Pass

3 forms of period pass for different combinations of days e.g. 1, 3, 7, 28 or more:

- on a re-usable card, which can be topped up with added days
- for a single entity use on a cheaper low-cost card [e.g. for tourists; ie NO top-up of days]
- as above, but as a 'carnet of stored passes' – e.g. 3 days from 5, or 5 from 7 for tourists or shift workers and occasional travellers



New Products – ITSO Carnets

3 Forms of carnet tickets for ride-based journeys

- On a re-usable card, which can be topped up with added journeys of a prescribed area-validity or journey-length
- On a single entity use on a cheaper low-cost card [e.g. for tourists]
- As above, but as a carnet denominated in ‘coupons’, which allows a single carnet to be used for journeys of variable length

Lesson from history: -

- Bus Commercial carnets withdrawn nationally in 1986 due to fraud [re-use of stamped/validated tickets]
- *smart carnets overcome these issues*



Example trends from ITSO schemes - 1

Local Authority Partnerships and National ITSO procurements

- NoWcard – Lancashire and Cumbria CCs Blackpool and Blackburn with Darwen Councils - £7.5m capital funding for formal partnership since 2002
- Wales - 22 Councils responsible for reimbursement but ETM equipment via SEWTA, TAITH, TraCC, SWWITCH regions and WAG for AMS HOPS
- Yorcard – Metro and SYPTTE c£8m pilot including rail and check-in/out smart cards (research reporting phase underway)
- Northamptonshire/Cambridgeshire – Northants umbrella procurement had regional HOPS clause, being used for Cambridge scheme (Busway)
- Scotland – 32 council/regional concession schemes made national allowing single AMS-HOPS procurement by Transport Scotland

Trend is for cost-sharing synergies and partnerships

Example trends from ITSO schemes - 2

Bus Operators

- Big transport groups may procure own bus AMS-HOPS for bus or on back of rail commitments – but ITSO design works in data terms irrespective of data-routing via different HOPS; whether for ENCTS or on a product-owner basis
- AMS-HOPS (or even smart cards and equipment?) may be unaffordable for small operators – local authorities have found role in creating a level playing field – eg Managed Service (NoWcard, SEWTA, TAITH, Centro)

Rail – early days of contained scheme roll-outs, moving to interoperability

Seeking financial benefits (even “invest to save” is a challenge in present economic climate)

Opportunities and Challenges for the Future

ITSO can be delivered 'hard-coded' or as a platform – it's about managing supplier outcomes

- Think 'big picture' in planning scheme (5 years?); but
- ITSO/LASSeO allows incremental delivery thereof

Concessions have given the excuse for national re-equipping

- Complete the national roll-out (including rail for next franchise renewals)
- Evolve real add-on schemes, not just pilots, to build on infrastructure

Time to think creatively about delivering cost savings, building revenue benefits and maintaining passenger (customer) focus

- Don't view cost changes in isolation (nor just as a barrier!)
- Broaden project scope to capture more benefits (but be realistic about deliverability - eg if an incremental approach is demanded by funding constraints)

Contact

Jeremy Meal

Director Smart Card and Ticketing Strategies

MVA Consultancy

25th Floor

City Tower

Piccadilly Plaza

MANCHESTER

M1 4BT

Mobile 07831 218683

Email jmeal@mvaconsultancy.com

Web www.mvaconsultancy.com