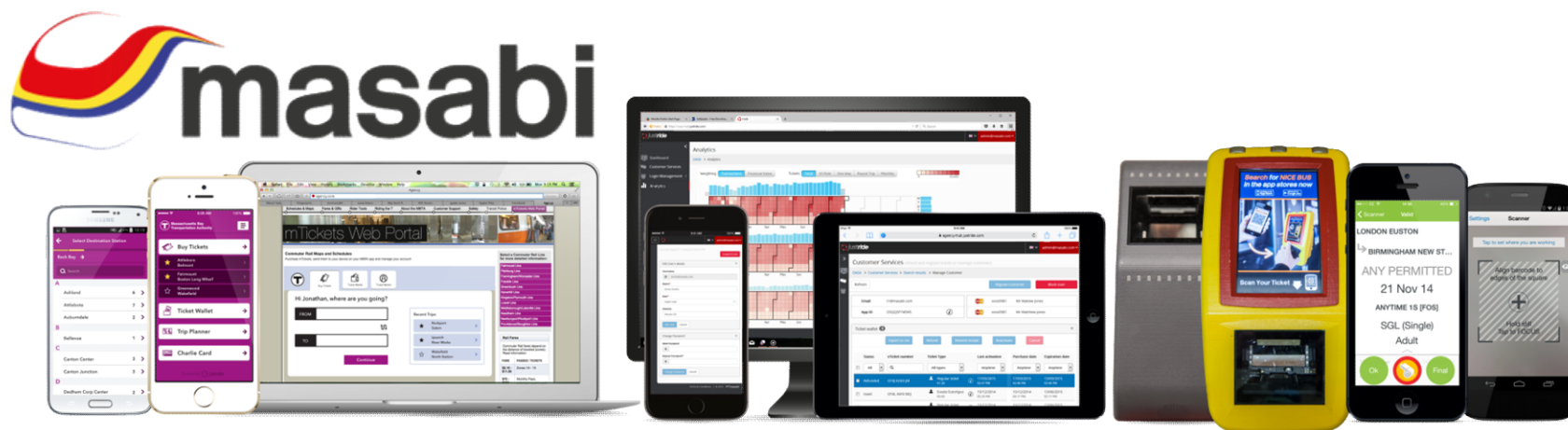# Up-cycle & enhance your fare collection Don't replicate and replace it.

Ben Whitaker @benMasabi

Head of Innovation at Masabi

Newton, MA; London, UK

2017 Fare Collection/Revenue Management & TransITech Conferences

Key Presentation Take-Aways

- The new world of outsourcing and SaaS is different
- Procure what you **need** with less guesswork through Outcome Based Procurement, not big RFP specs
- Being open to off-the-shelf and SaaS can lead to faster deployment, lower risk & cost.

- BYOT can **halve** the cost of your fare collection
- The future is >80% self service, but the key question is how to efficiently serve the final 20%

Masabi Experience: >10 years of successfully delivered innovation

- Set UK Rail mTicketing standards

- >25 Global clients including New York, Boston, Las Vegas, LA and in UK, France, Holland, Greece, Australia

- All modes: Train, Subway, Bus, Tram, Light Rail, Ferry

- Investors include global payments and transit experts Mastercard and Keolis

Spec the solution wanted or the outcome needed?

Primary Need:
"I need to get to town"
(solution-neutral)

Solution Want:
"I want a car"
(states a preferred solution)

Procurement based on Wants: (meta-problems)

Vehicle spec (lease/buy, cupholders, engine sizes, trim, color, wheel design)
Insurance
Driving training
Maintenance
Refuelling
Parking in town
Parking at home

Outcome based procurement:

I will pay to arrive safely and happily in town

Q: if the car turns out to be the wrong solution because gasoline is banned from the city next year – who picks up the tab for making the wrong solution choice?

RFP's –want vs need? Solution vs outcome?

- This RFP listed 25 "MUST HAVE" priorities, including:
  - Provide a solution to dispense Smartcards in-station
  - Convert to a Back-Office Account-based AFC system with NO requirement to "Read/Write" all transactions onto the Smartcard

- Are these solutions required for the *actual needs* of public transit; or wanted to solve *meta-problems* of historic Fare Collection approach?

- Do increased numbers of priorities enhance focus on delivering the primary needed outcomes?

Big specification RFP's = customisation?
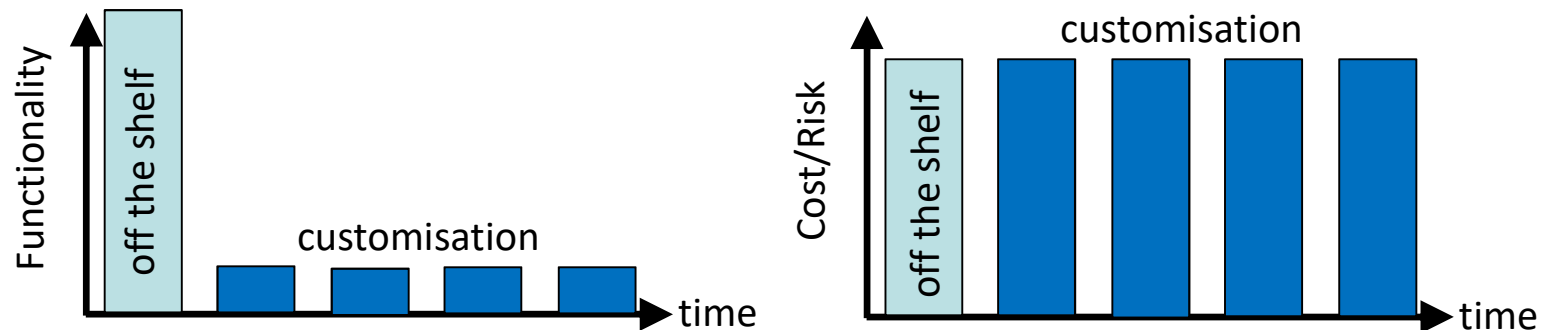
- If an RFP includes a detailed **solution** specification, how can we ever avoid the cost of customisation, and how can there be innovation, other than on the fringes of a procurement?

- How would an RFP be written to avoid heavy customisation?

- Maybe in the world of SaaS, RFP's should have a detailed OUTCOME specification, rather than a SOLUTION specification

- Then vendors can leverage SaaS and bring their A-Game quickly at a great price. 80:20 rule – why spend 80% of budget on the lowest value 20%?

What's the real outcome needed here?

- Recover money from riders (sell)

- Check that riders have paid (validate)

- Keep each major demographic of riders happy (SLA's)

- Cost the agency as little as possible in time, space & money while doing so (efficiency)

So – why not write an RFP that *rewards* those *outputs:*

<< OUTCOME BASED PROCUREMENT >>

Note: the *outputs* tend to be long-term unchanging things, as opposed to *technology specific solutions* which may be short-term. An *outcome based* contract insulates the agency.

APTA

Suggestion: Set the desired outcome. Leave the detail to the bidders to propose

RFP Outcome Targets:

1. Halve the all-in cost of fare collection from 15% to 7.5% over 5 years.

2. Maintain ticket purchase&use satisfaction ratings for each major demographic category

3. Financial reward linked to achieving or beating the above

Note: this approach leaves far more room for off-the shelf, and innovation throughout the contract as a particular custom approach solution isn't baked in.

So – What's our proposal?
Mobile First, *NOT* mobile only

- US adults smartphone penetration **rocketing**, already above 77%
- But we must also support riders unable to utilize mobile, e.g. cash-only
- Can then avoid cost of legacy system just for diminishing ~20% of riders

% of U.S. adults who own the following devices

Cellphone

Smartphone

[Source: Pew Research]

2004   2006   2008   2010   2012   2014   2016

Fare Collection – two major activities

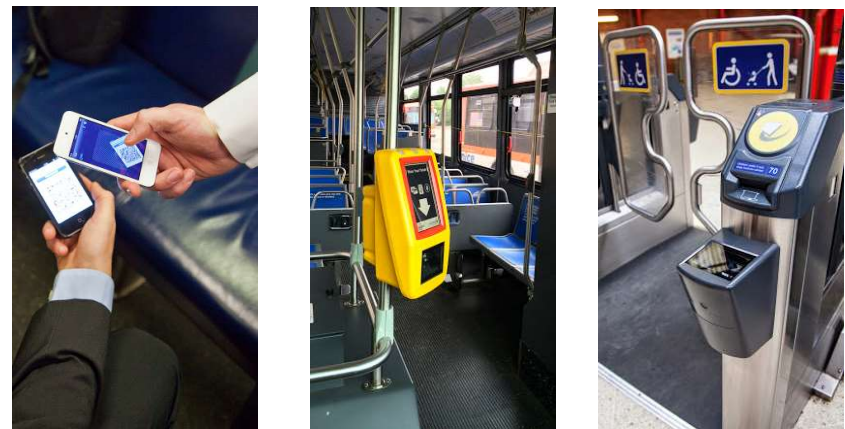## 1: Sell & Issue Media:

Physical infrastructure:
Sales Windows, TVM's, on-bus Fareboxes

Custom Physical media:
Smartcards + Mag Stripe

2: Inspect & Validate:

Validation locations:
Handheld, on bus, fare gates

Fare Collection – two major activities

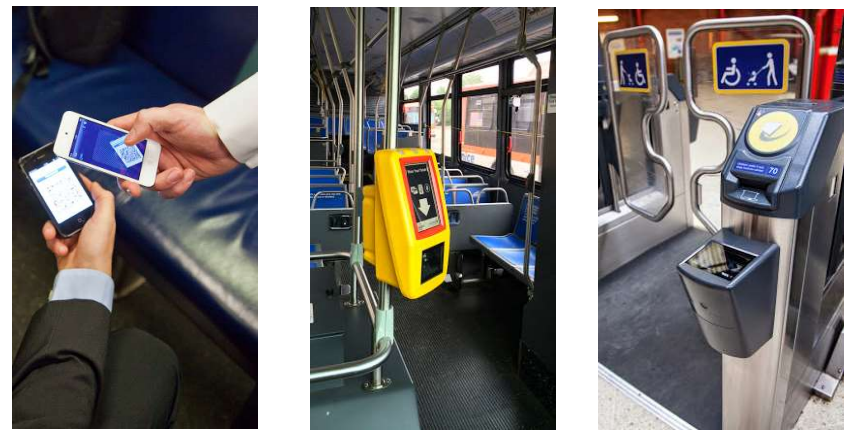## 1: BYOT sales via cloud

Dematerialized Sales:

Mobile, Web (concession) self-print, contactless payment cards

Cash Riders:

Barcode on receipt paper from convenience stores

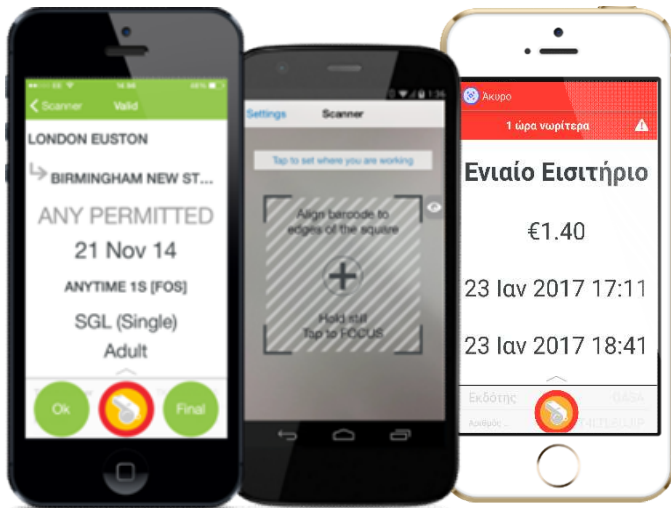## 2: Inspect & Validate:

Validation locations:

Handheld, on bus, fare gates

Validation – upgrade and go multi-format
Hand-held   Subway Gates   Bus & Tram

Multi-formats supported: Barcode (paper & mobile), NFC
EMV Contactless Payment, Bluetooth, ISO14443 id cards

Bring Your Own Ticket – so much choice

- Mobile / Smartwatch:
  - Visual
  - Barcode
  - NFC
  - Bluetooth LE
  - EMV
- Web:
  - Self print (great for concessions)
  - Send-to-phone
  - Account Based association with other tokens (e.g. corporate card)
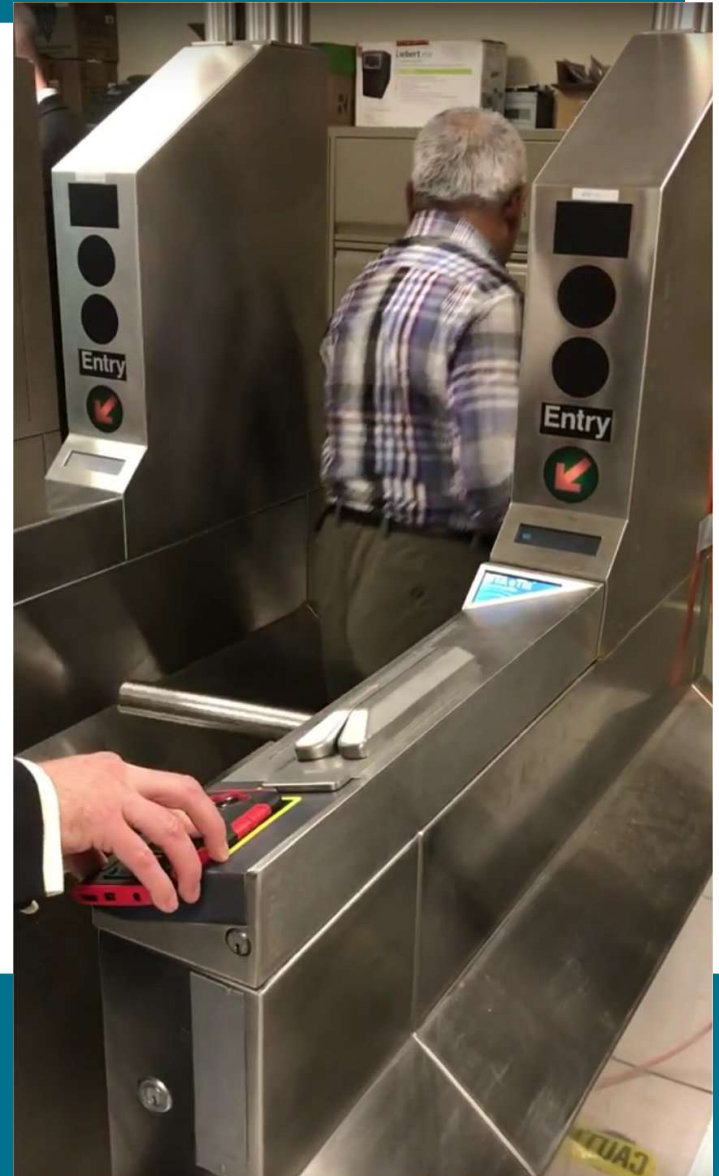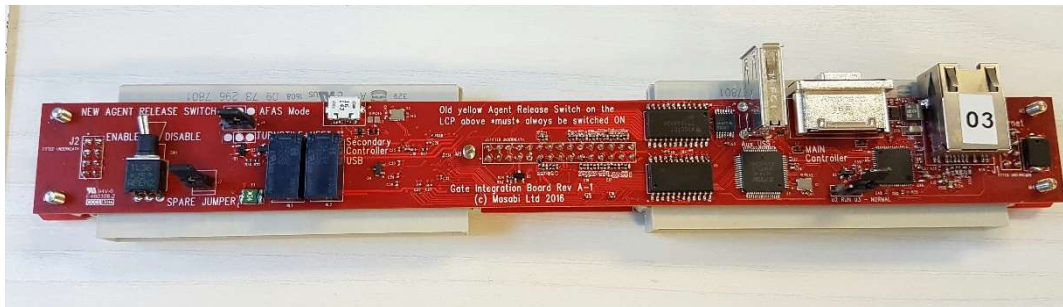- Receipt Paper
  - 7-Eleven, ACE Cash Express
- Contactless Payment Cards

Up-cycle gates to IoT and multiformat

Proposal: migrate over 5 years to BYOT re-use/phase out legacy equipment

1. Mobile first – on bus with viz-val

2. Phase in new multi-format validators on bus

3. Up-cycle fare gates to have multi-format validator

4. Phase in new self-deploy and self-maintain 3rd party retail channel, just printing thermal barcode from existing cash registers

5. Phase in Account Based contactless bank card and ID card

6. Re-cycle small number of TVM's to remove expensive ticket printers and smart card issuing equipment – just print thermal barcode

7. Phase out smartcards, fareboxes, TVM's, in-station sales and legacy back office = totally dematerialized cloud-based sales.

Result:

- Capex/lease built into the costs.
- Transfer management of fare collection budget
- Risk on fare collection cost and technology choice passes to the vendor.