

Mass Appeal

How Public Transit is Driving the
Adoption of Contactless Payments

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Open Payments in Transit Around the World

South America

Countries like Brazil and Peru have begun adopting open payments. Contactless penetration expanding across region

United States

Chicago, Vancouver, New York, Portal are a few notable releases. Cal-ITP promises to bring open payments to smaller agencies

Europe

Europe and the UK have seen hundreds of agencies of all sizes adopt open payments

Africa

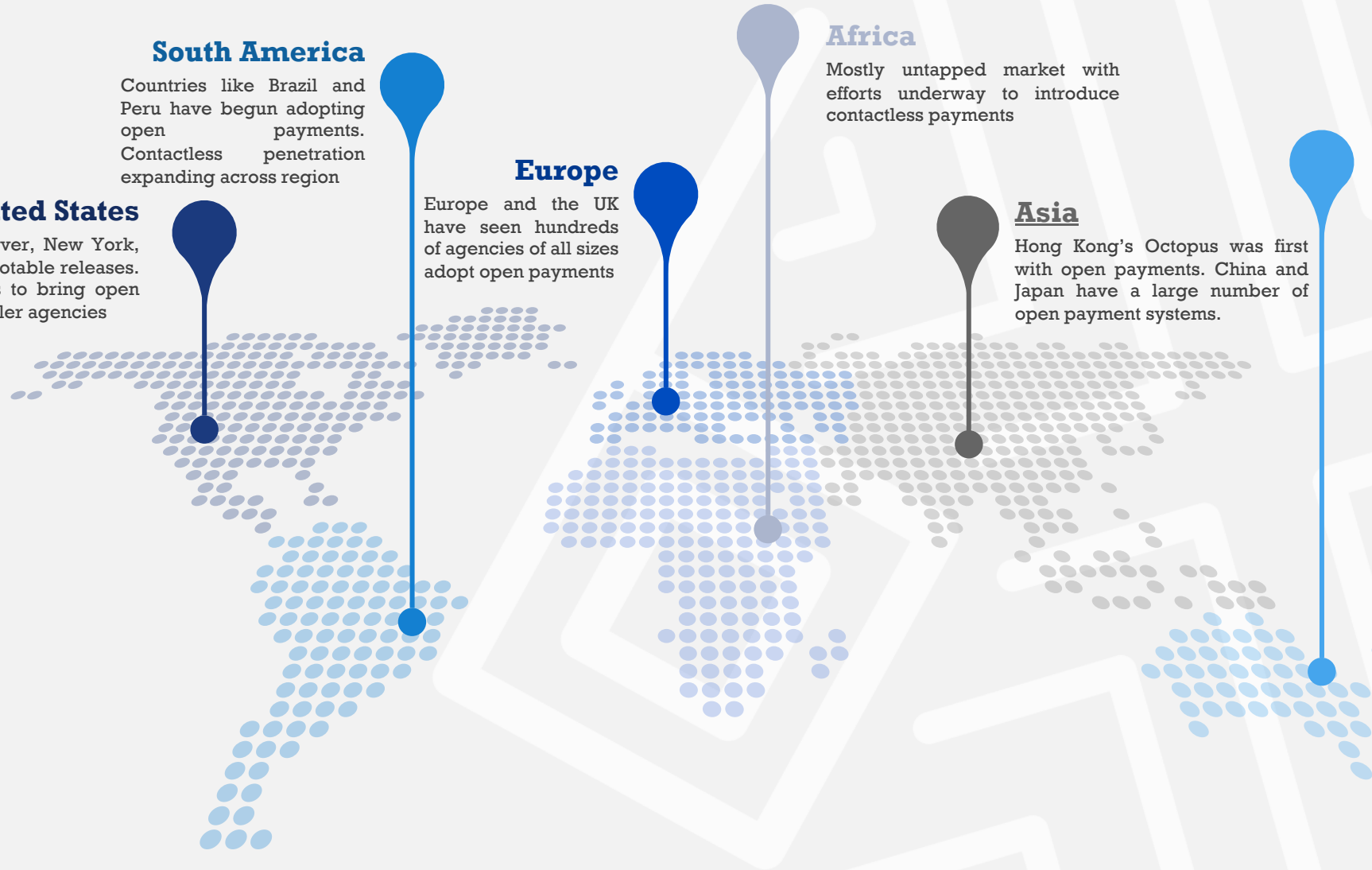
Mostly untapped market with efforts underway to introduce contactless payments

Asia

Hong Kong's Octopus was first with open payments. China and Japan have a large number of open payment systems.

Australia

Sydney's Opal card launched with great success. Contactless penetration expanding.



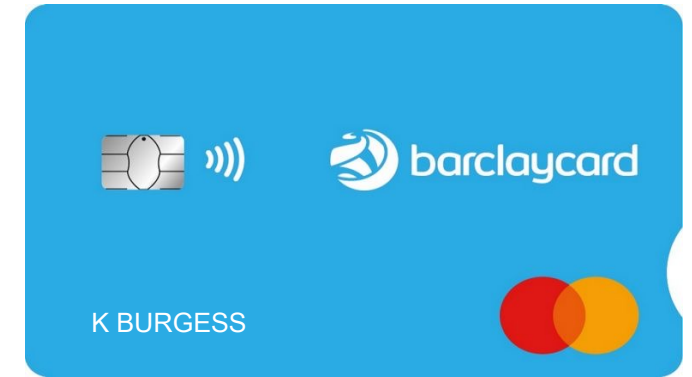
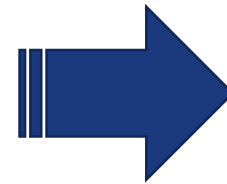
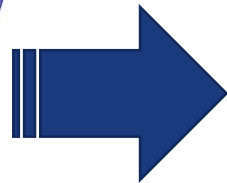
Open Payments in Transit is Contactless Credit and Debit



- Contactless
- EMV
- NFC



This isn't Just a Public Transit Topic



2003

Contactless

2.5B Taps

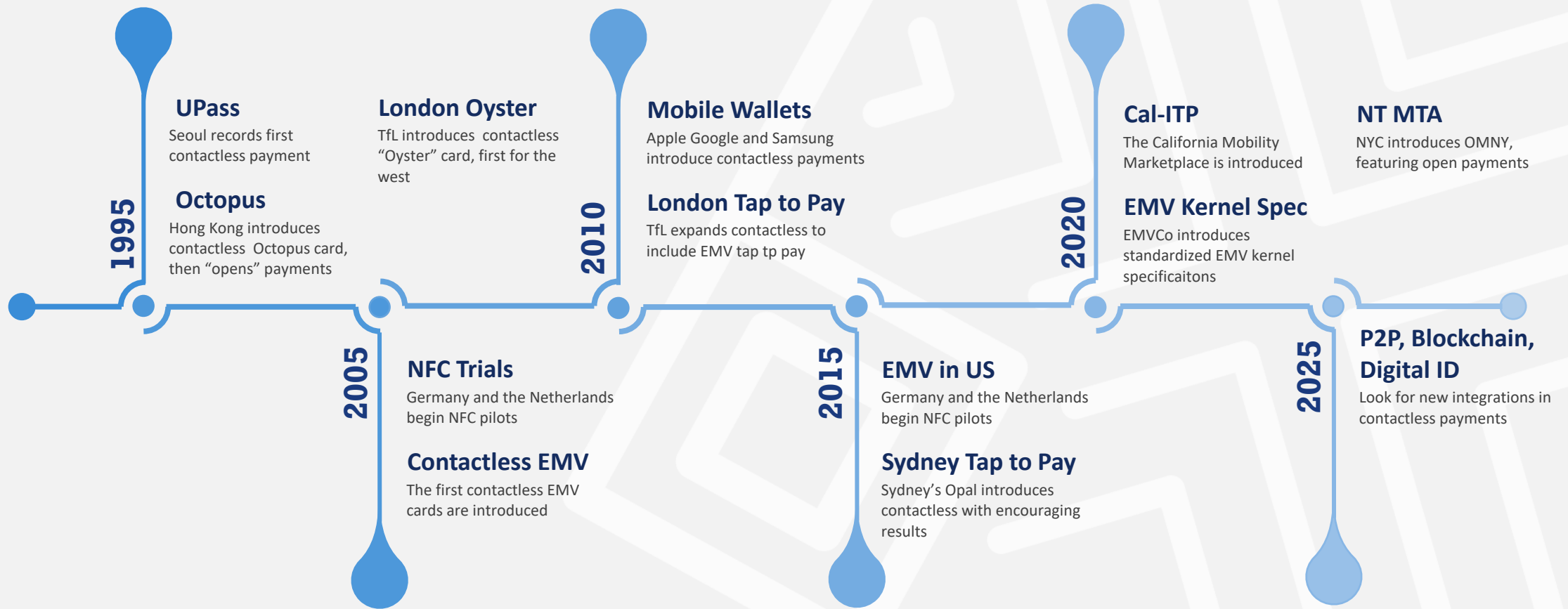
Since 2012

Pay-as-you-go

92%

Contactless

Historical Timeline of Contactless Payments



Successful Implementation of Open Payments

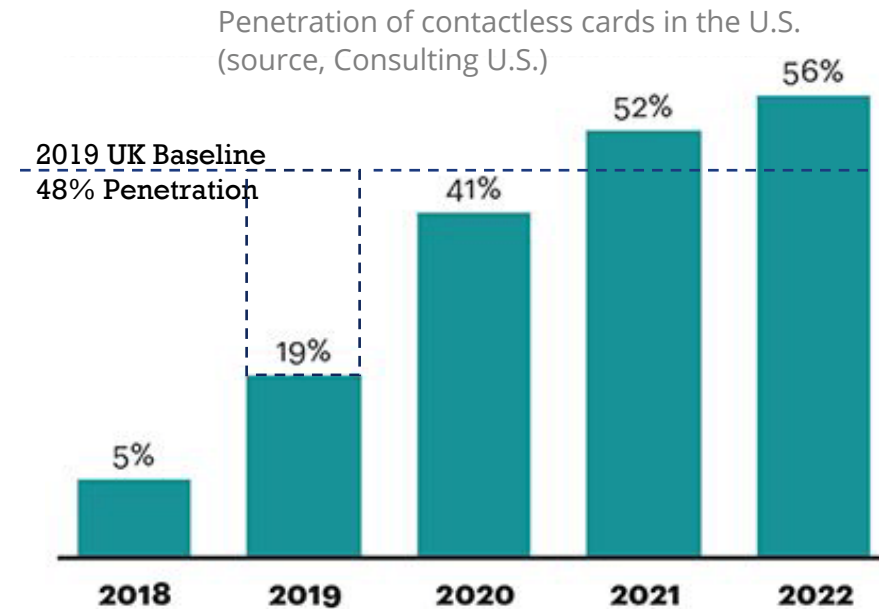


Sydney Opal (TfNSW) full implementation 2018

- 4% ridership growth with 48% cEMV penetration in 2019
- 19% of closed loop users switched to open payments

Analysis

- Choice users prefer convenience
- Open payments grows ridership
- Ease of use attracts new users, tourists, and infrequent users
- Potential for even greater success with 56% cEMV penetration in USA in 2022



How Open Payments Works

As early adopters, transit systems have refined payment models that other contactless providers may learn from.

The Easiest Way to Board Public Transit



- Easy – Tap and Go
- Uses cards we already have)))



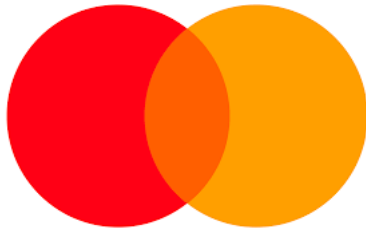
- Transactions are post-paid
- Certified EMV L3 compliant
- Designed to meet strict card brand requirements



Open Payments Models



Visa Mobility and Transport Transaction (MTT)



Mastercard Transit Solutions Guide

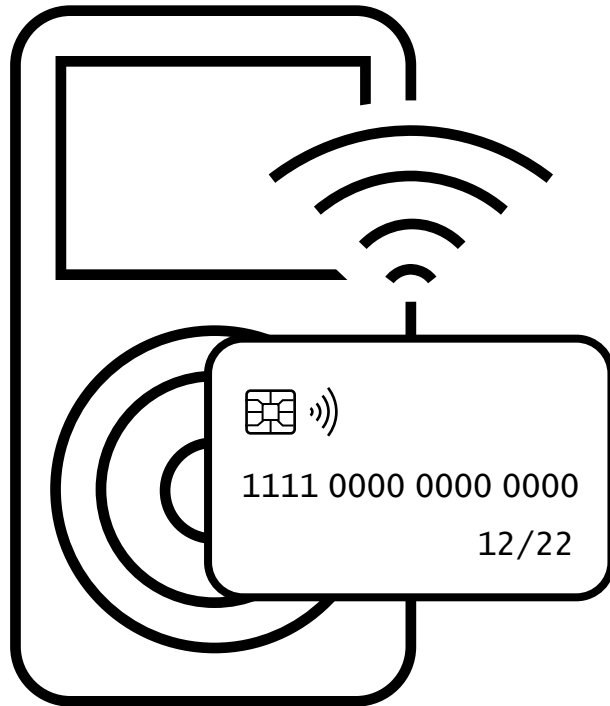


Amex Expresspay Transit



Discover Contactless D-PAS

How Does it Work? (First Ride)



First Ride

Ride Fare Validator

1

1. Tap validator
2. ODA check
3. Deny list check
4. Access granted

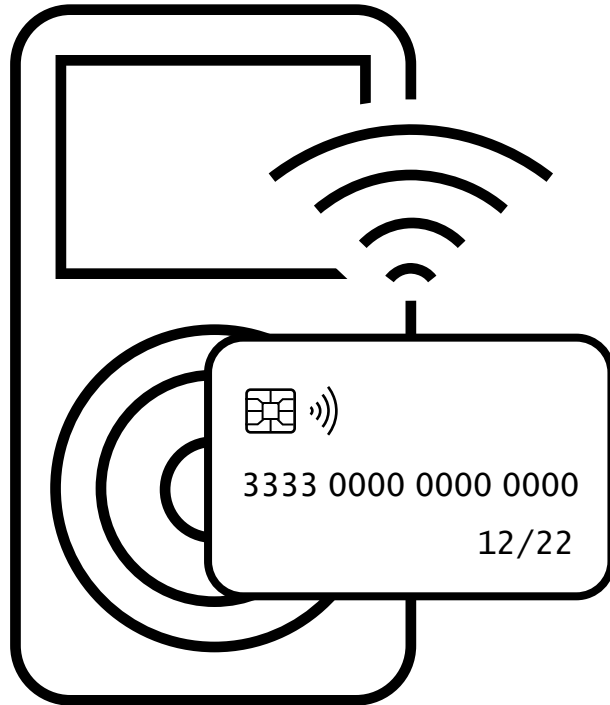
Manage Fare Calculation S/W

5. Price and add to trip
6. Request pre-authorization
8. **Alt – Add to deny list**

Settle Payment Processor

7. Authorize card account

How Does It Work? (Denied Card)



Denied card/ Debt Recovery

Ride
Fare Validator

1

1. Tap validator
2. ODA check
3. Deny list check
4. **Access denied**

Manage
Fare Calculation S/W

5. Request debt recovery
7. **Remove from deny list**

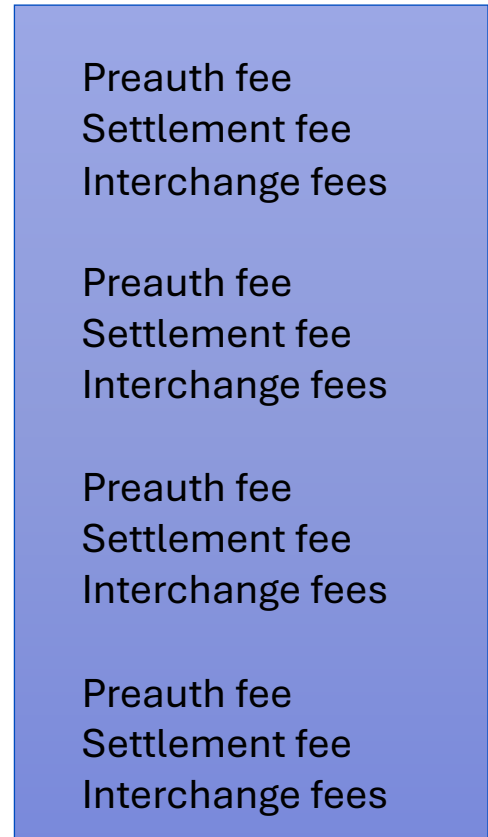
Settle
Payment Processor

6. Authorize card account

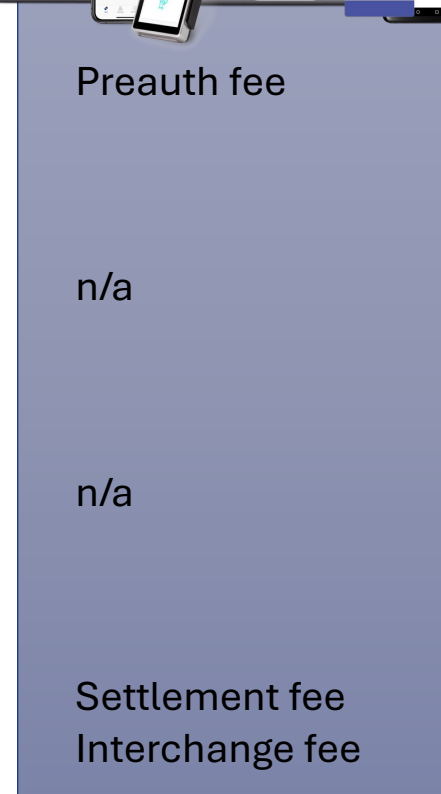
Reduce Interchange Fees with Payment Aggregation



Legacy Open Payment System



Charged fees n times



Charged fees 1 time

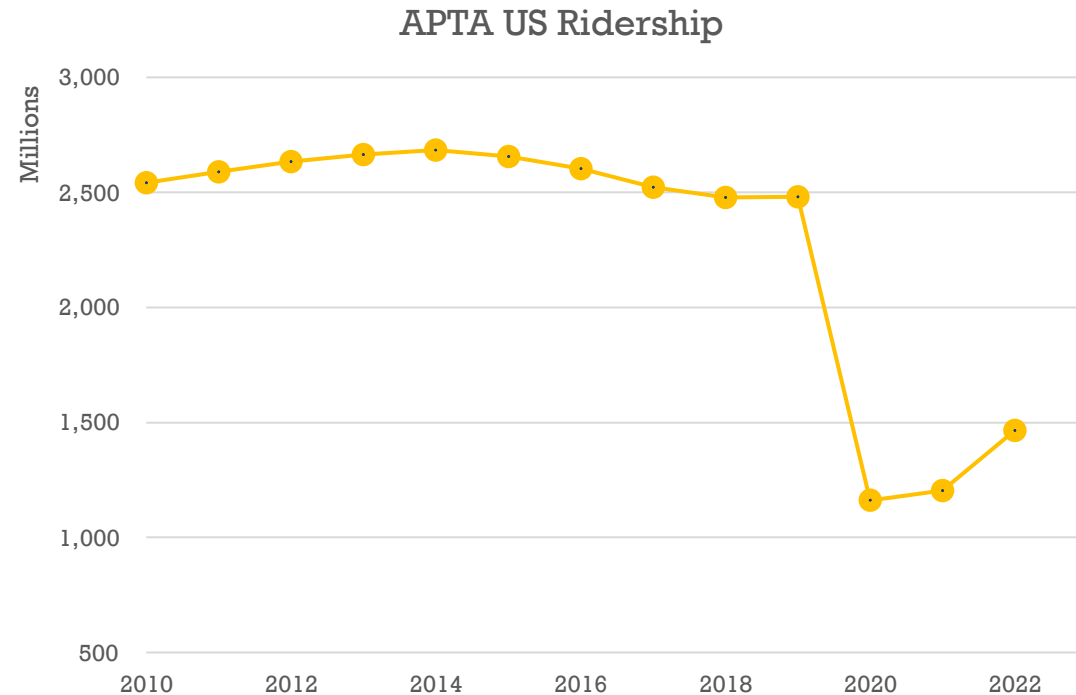
Keeping the Momentum

Recent developments in transit that will push more rapid adoption of contactless across the USA.

Complications Facing Public Transit



- Ridership Trends
 - 50% down from 2014 peak
 - Remains low after recent improvements
- Operating Budget
 - Weak revenue
 - High operating costs
 - High inflation



How to Maintain Momentum

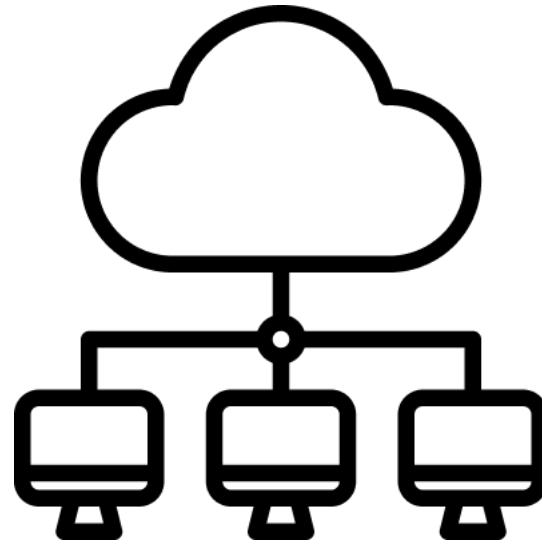


- Stronger push toward Open Payments
- Reduced focus on cash
- Modular approach
- Customer focus

Out with the Old



Modular Approach

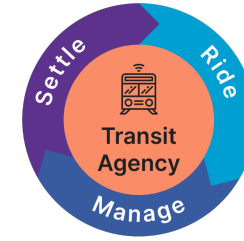


Ride

Manage

Settle

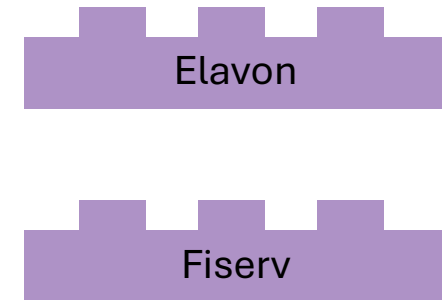
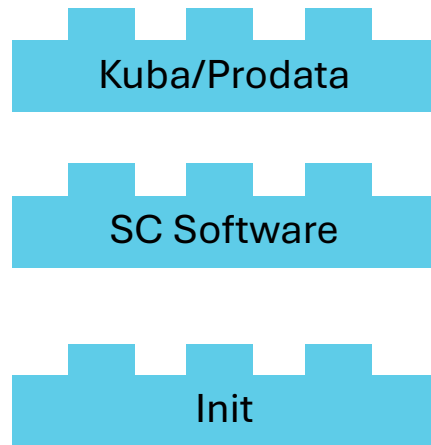
Cal-ITP Simplifies Onboarding of Open Payments Systems



Ride
Fare Validators

Manage
Fare Calculation S/W

Settle
Payment Processor



Consumers Learn Contactless Behavior



- Muscle Memory
- Building Trust
- Network Effect



What's Next?

Ideas we are investing in for transit can serve to make the entire contactless payments marketplace more inclusive.

Yes, We're

Open



Open EMV Certification



EMV Contactless Kernel Specification

- Simpler standardized
- Split device and cloud-based functions
- Improved security
- Royalty free

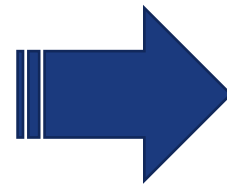
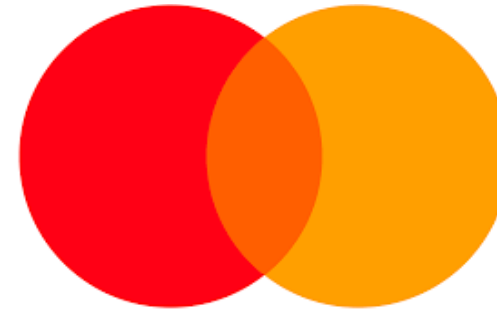
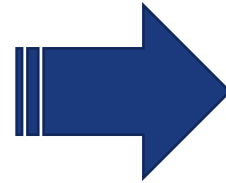


Digital ID



- EMV/NFC enabled
- Smart account linking tools
- Biometric security

Existing P2P Integrations



Improved P2P Integrations

- Adopt EMV
- Mobile Wallet integration



Blockchain Transactions



24,810.80 USD

+ Follow

-13,578.20 (35.37%) ↓ past year

Feb 20, 5:59 PM UTC - [Disclaimer](#)

1D | 5D | 1M | 6M | YTD | 1Y | 5Y | Max



Redefining Open Payments

- Transit was early, but doesn't move quickly
- We all drive innovation
- Look for ways to make payments more efficient
- Reduce friction for small ticket purchases
- Let's redefine "open"

