Enabling today’s mobility with open loop and ABT

Far North Group, Ukiah
California

June 2-3, 2022

Nelson Julien, SC SOFT – VP Sales & Marketing Americas
About Us

SC Soft is a technology powerhouse focused on delivering innovative solutions to create value and efficiency for our customers. The fundamentals of our success are based on valuing our customers, empowering our people, and trusting our strategic partners.

1450+ Employees
6 Offices in 6 Countries

Singapore
Global Headquarters
URBAN MOBILITY IS EVOLVING

Rider Experience
Current fare management and distribution methods are expensive

Congestion & Aging Infrastructure
Lack of Simplicity, Speed, Convenience

Traditional Mobility

On-Demand
Since 2019, the COVID pandemic has severely impacted global economic activities, mobility included. It will also have set in motion an evolution towards contactless fares payment in the industry.

Globally, we see a move towards contactless open loop and digital ticketing systems for public transport which allows easier interoperability among transit systems, brings in economies of scales, higher digital penetration and lower cost of fare management.
“As an AFC specialist, what do you believe is the future of mobility?”
- Major operator senior executive, USA

* The answer lies with your ridership *

Simplicity and ease of use will define successful adoption of solutions. Open loop and account base ticketing (ABT) provide the shortest and most cost efficient path to success.

Pay with your card, pay with your phone, pay with your wearable.
BYOF, Bring Your Own Fare. Your ridership already has the tools to ride
The UBER experience

Many people believe the *simplicity of Uber’s user experience* (UX) was the driving force behind its *rapid success*. By taking heed of the notion that the “user is all” and through following well-established UX principles, Uber set an industry standard and created a myth in the process – *the myth of simplicity*.

Stop the meter, driver – Uber’s UX is anything but simple. *It's complex but easy to use* – and that’s the gold standard of UX design.

- Bansi Mehta, koruux.com
The optimal User Experience in Mobility is already available, ridership owned. Enabling mobility solutions around this notion offers a path of least resistance to ridership adoption.

Mobility users already have phones in hand, cards in pocket and wearables to match. Open loop and ABT solutions provide our myth of “the easy”

“The complex”, or cross-technology and multi-partner integrated fare and payment solutions, should be transparent to the riders and intuitive to the operators.
OUR EXPERIENCE TOWARDS MOBILITY OF THE FUTURE
01 FEBRUARY 2021

BLOOMBERG
CITY LAB

CONTACTLESS TRANSIT FARES GET A PANDEMIC BOOST

Long in the works, open-loop payment systems that let riders use smart cards and mobile devices have found their moment among U.S. transit agencies.

“The pandemic has increased the perception that buying transit fare like you buy a coffee is here to stay.”
The Cal-ITP project

California is one of the leading economies in the USA, and home to many of the private sector’s new mobility and financial innovators, as well as one of the largest and most complex public transportation system in the United States.

California Integrated Travel Project (Cal-ITP) is making riding by rail and bus simpler and more cost-effective — for operators and riders through contactless payments, automating customer discounts, and standardizing information for easy trip planning, thereby bringing industry standards to California’s transit operators.
CALIFORNIA OPEN LOOP

Features

• Riders can just tap their card or phone to contactless readers
• Open-loop system will offer fare capping – Advantage for low-income riders
• Square accounts – To the unbanked
• Social Programs & Loyalty – Account Based

VISA  mastercard  Elavon  littlepay
Validator Software Features

Validator Screens

The screens shown here throw light on the main User Interface of the application installed in the SCV500 Validators, including Card Accepted Screen, Card Denied Screen, and Maintenance Screen.

- Touch Enabled
- Remote download of parameters
- Upload and Download of Logs
- Self Diagnostic Tool
- Supports multiple Key Injection method
- Secured and Certified Payment Transaction

L1
EMV LEVEL 1 Certified

L2
EMV LEVEL 2 Certified

L3
EMV LEVEL 3 Certified

Card Accepted

Card Denied

Maintenance Screen
SC Soft Central Backoffice

The SC Soft Payment application component provides a framework to support sub-second (less than 500 milliseconds) validation of fare media (EMV and Closed loop cards) when used at the point of entry (POE) locations across the agency network.

When a transit customer presents the fare media at the POE location to gain access to the transit system, the captured fare media information is forwarded encrypted, in real-time to the centrally managed Media Validation system over a broadband-based wireless or wired network.

PCI Certified
Supports SaaS
VAPT Certified

CORE AFC COMPONENT
Intelligent Fare Engine
Transaction Management
Parametrization
Financial Management

NON- AFC COMPONENT
Equipment Monitoring
GTFS Integration & Real Time Tracking
Supports QR & Online Seat Reservation
Maintenance and Incident Management

And more
And more
The Fare Policy Management system provides the interface to configure fare products and business rules as defined by the transit agency. SC Soft Intelligent Fare Management system gives all flexibility to transit agency to configure any fare products according to business requirement. Based on the associated role, agency can create, update, or view rights to the Fare Policy Management system, such as:

Fare policy
- Define tariffs and transfer rules
- Versioning — create/edit multiple versions and set current version

Agency rules (configurable parameters)
- Fare decisions (e.g., default fare)
- Passback (e.g., allowed, time between transactions)

The module also performs the fare policy calculations using:
- Tariff tables
- Best fare logic, if multiple products are available for the account
- Distance Based, Time Based, Flat Fare, Event Based Fare, Transfer Fare

Choose any Product Types
- Senior Pass
- Adult Pass
- Child Pass
- Military Pass

Choose any Tariff Types
- Distance Based
- Time Based
- Flat Fare
- Event Based Fare

Choose any Capping Rules
- Daily Capping
- Weekly Capping
- Monthly Capping
- Other Capping
SC Soft Transaction Manager component processes ridership transactions against the transit customer accounts. The ridership transactions are created at the POE locations (such as buses, gated subway turnstiles, and open platform environments) and are processed using the following general guidelines:

- Identify the transit customer appropriate account that applies to the ride
- Identify the fare products linked against the fare media used
- Make transfer processing decisions
- Use the Fare Policy Management module to determine agency fare policy business rules and select appropriate fare products and fares for customer account postings
- Apply transaction to account
  - Balance update processing
  - Trip count updates

The following fare capabilities are supported:

- Configurable by the time of day, day of week, holidays and calendars
- Configure fare products — Period Passes, trip-based, value-based, transfers, etc.
- Associate fare products with transport modes and congestion pricing schemes
- Daily, Weekly and monthly capping
The Financial Management module handles the management and reconciliation of all financial activities, including:

- Daily revenue and ridership transaction summaries
- Reconciliation reports
  - Daily
  - Hourly
  - Weekly
  - Monthly
  - Capping Reports
  - Journey Reports
  - OD Matrix Reports
  - Banking Reports
  - The number of bank card transactions versus the amount sent to the bank after clearing
- A settlement interface with the Acquirer Bank (Clearinghouse)
- Interface to transit agency General Ledger system
SC Soft Parameter management module is core components that enables to register AFC field Equipments with AFC Backoffice for effective communication. The other features that SC Soft offers as follows:

- Provides a centralized location for all field equipment configurations, monitoring, and control functions.
- Provide users the capability to define and update asset groups based on transit agency topology information such as line and or station.
- Provide users the capability to configure field equipment:
  - Updating software of field equipment when a new version of the field equipment software is released.
  - Updating operating data files on field equipment, which includes hotlist cards, positive list cards, and field equipment configuration.
- Enable field equipment to perform time-sync.
- Retrieve transaction logs from field equipment for reporting and reconciliation, including ridership batch files and event log files.
Traditionally, all driver consoles and on-board validators require the driver or bus operator to feed information such as route number, line, etc. into the device before the start of each shift so that the information is accurately calibrated with the Central Backoffice. But with our SC Soft Backoffice driver don’t have to feed and manual information such as line ID, Route ID etc., SC Soft Backoffice is GTFS 2.0 ready and can easily integrate with agency GTFS feed, which essentially ensures that it operates as a no-touch validator, requiring absolutely no input from the driver at any stage.

The system seeks information from the GTFS service and tracks the bus movement, stop details, and all other vital information based on that as well as the card-tap information received each time a passenger taps their card on the validator. The fares and stops are also calculated determined based on the information available from the card-tap of the passengers.
Non-AFC Component – Equipment Monitoring

SC Soft Equipment Monitoring

Enable users to monitor field equipment in real-time to detect abnormal behaviour and security breaches.

Enable system users to perform day-to-day and scheduled operational control of field devices, which includes:

- GPS Cell Signal
- GPRS Accuracy
- Online/Offline Buses/LRV
- Statistics
- Preventative Maintenance schedule
- Current Location
- Pending Transactions
- Software Version Details
- Error Code Details
- Create/Update Incident
- Manage devices remotely
The main functions of the SC SOFT Incident Management is to allow transit agency to create tickets for any issue or question and track the progress of these tickets to their conclusion.

User will be able to fill out all the details required to create a new ticket, including the Ticket Type, Subject, Description, and attach any evidence which might be beneficial for the SC Soft Support team to investigate. The incidents can be related to Hardware, Software or any Financial issues. An unique ticket ID is generated and Email is sent to the relevant user for further action.
END TO END AUTOMATIC FARE COLLECTION SOLUTIONS

Validators and Driver Consoles
Mobile Ticketing
Account Based Ticketing
AFCS Backoffice

Reservation and Web Booking
Automatic Fare Collection Gates
Ticket Vending Machine
Upgrade of Gates and SLE to EMV Open Loop
Hybrid AFC system with Reservation Portal

Seat Allocation and Blocking – Based on ticket type and class

Validation for boarding gates and ticket checker machine

Journey Planning with App and portal

Fare capping and Loyalty discounts

Pass allocation in near future with end of the month and quarter billing
Scope of Work

- Onboard Validators for Buses and Ferry Boats
- Ticket office machine for Bus Depot and Ferry terminals
- HHT for Inspectors
- EMV Account Based AFC Central Management system
- Transport Management system with AVL, Fleet management and Passenger Information system
- Online Booking Reservation Portal
- Mobile application for IOS and Android
- Deployment by March 2022 for QR, June 2022 – Cobranded card; August 2022 for EMV

Fare media: CSC EMV, QR, NFC, connected to Mastercard MPGS
Interoperable city-wide system with use of same common mobility card which can be further extended to other cities and states.

“The system is capable to be multi-issuer single acquirer system and facilitate an interoperable and multimodal payment mechanism”

Cities going live in 2021 for SC SOFT
- Delhi NCT – 4000+ buses on NCMC & DMRC card + QR code ticketing
- Kolkata Metro – Upgrade for hardware to accept NCMC and QR
Mobility as a Service is a combination of public and private transportation services within a given regional environment that provides holistic, optimal and people centred travel options, to enable end-to-end journeys paid for by the user as a single charge, and which aims to achieve key public policy objectives.
VISON: COMMON MOBILITY PLATFORM

- **Single card** for multiple purposes
- **Save time** by avoiding queues for purchasing tickets
- **Transact securely** with EMV cards
- **Earn Loyalty points** with continued usage

*Consumer*

- **Unified card** for all transactions
- **Reduction of operating cost** due to lower cash handling
- Run **proprietary loyalty schemes**
- **Fast deployment of digital payments**
- Gain insights on travelling patterns

*Operator*

- Generate **additional revenue** opportunities
- Increase Brand publicity of banks
- Gain rich insights on customers
- **Increased use** of banks cards for transit

*Banks*

- **Higher digital payments penetration**
- Reduced cash circulation in economy
- Could be used to provide **targeted government incentives**
- Increased usage of public transport
- **Reduced leakages** across the value chain

*Government*

- **One card for all payments would encourage more usage of CMC at retail stores**
- **CMC card could be used as a loyalty card thereby reducing cost**
- Tap & pay could reduce **average time** to collect a payment
- **Gain insights on travelling patterns**

*Non transit retailers*

- **Generate additional revenue opportunities**
- **Increased use** of banks cards for transit

*Service Provider*

- **Huge market opportunity** as the number of people using public transport is high and there is an increase in overall digital payment literacy

---

<table>
<thead>
<tr>
<th>Consumer</th>
<th>Operator</th>
<th>Banks</th>
<th>Government</th>
<th>Non transit retailers</th>
<th>Service Provider</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Single card for multiple purposes</td>
<td>• Unified card for all transactions</td>
<td>• Generate additional revenue opportunities</td>
<td>• Higher digital payments penetration</td>
<td>• One card for all payments would encourage more usage of CMC at retail stores</td>
<td></td>
</tr>
<tr>
<td>• Save time by avoiding queues for purchasing tickets</td>
<td>• Reduction of operating cost due to lower cash handling</td>
<td>• Increase Brand publicity of banks</td>
<td>• Reduced cash circulation in economy</td>
<td>• CMC card could be used as a loyalty card thereby reducing cost</td>
<td></td>
</tr>
<tr>
<td>• Transact securely with EMV cards</td>
<td>• Run proprietary loyalty schemes</td>
<td>• Gain rich insights on customers</td>
<td>• Could be used to provide targeted government incentives</td>
<td>• Tap &amp; pay could reduce average time to collect a payment</td>
<td></td>
</tr>
<tr>
<td>• Earn Loyalty points with continued usage</td>
<td>• Fast deployment of digital payments</td>
<td>• Increased use of banks cards for transit</td>
<td>• Increased usage of public transport</td>
<td>• <strong>Gain insights on travelling patterns</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Gain insights on travelling patterns</td>
<td></td>
<td>• <strong>Reduced leakages</strong> across the value chain</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Thank You

Nelson Julien
+1.514.979.0088 | www.scsoft.com | nelson.julien@scsoft.com