SFMTA
Municipal
Transportation
Agency

The Next Generation Customer Information System

SFMTA Board of Directors
Policy and Governance Committee
May 19, 2017

WHY NOW?

- Since the current NextBus system was implemented, there have been many changes in technology and transportation choices
- The current NextBus contract is expiring

2000

2017

NEXTbus

REAL-TIME INFORMATION BENEFITS

Real-time information can result in increased ridership and customer satisfaction, while lowering actual and perceived waiting times

1.7%: Increase in New York City weekday ridership

92%: Seattle customers reporting increased satisfaction with public transportation

2 minutes: Waiting time savings for mobile real-time information users compared to customers using a schedule

13%: Decrease in perceived waiting time

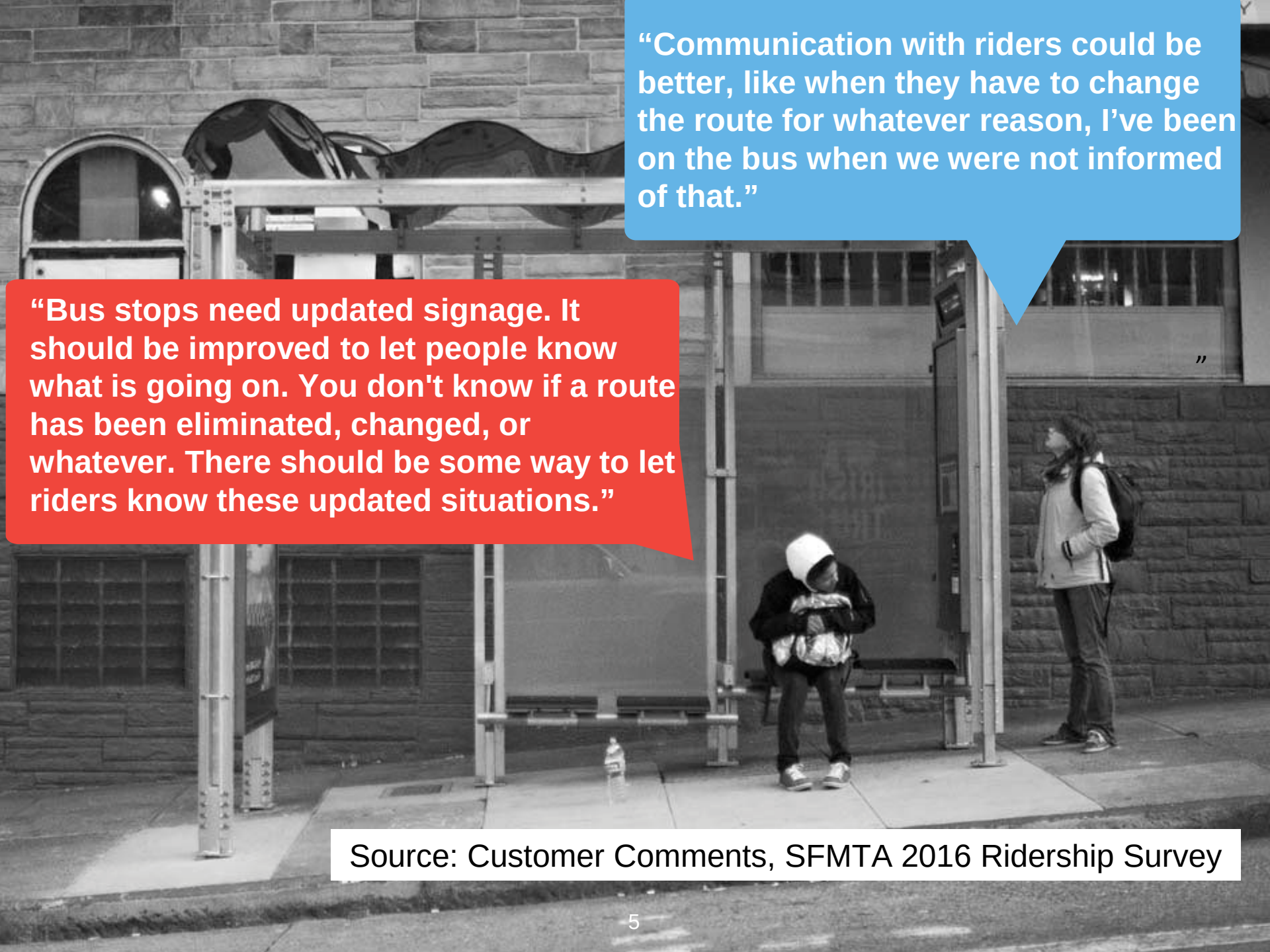
Source: OneBus Away Research Project

REAL-TIME INFORMATION BENEFITS

Rush Hour Service
(Generally every 15 minutes or better)

Late Evening Service
(Generally every 20 to 30 minutes)

- Real-time information is especially critical when service is less frequent
- Customers are generally willing to wait 10-15 minutes maximum



Source: Customer Comments, SFMTA 2016 Ridership Survey

GOALS & OBJECTIVES

Provide accurate real-time information

Offer alternatives during long waits or service delays

Retain customers who might otherwise use less sustainable transportation modes

Increase discretionary and off-peak ridership

Increase public confidence in Muni so that customers can take transit to their destinations quickly and reliably

FUTURE VISION

Keeping Customers Informed Continually Informed

Leaves Chinatown

Shelter sign shows next vehicle arrival

Bus detoured due to Market Street special event

Screen on-board bus alerts customers of route detour

Connecting bus route also detoured

Screen on-board bus shows all connecting transit routes and arrival times at transfer point

Transfers to Muni Metro

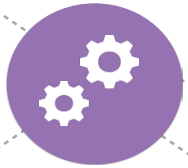
Shelter sign at transfer point shows detour for regular connecting bus and suggests a potential Muni Metro alternative

Arrives in Upper Haight on time after a short walk from the train

SYSTEM ELEMENTS

Surface Vehicle Locations
Gathers vehicle locations from CAD/AVL System

Underground Locations
Gathers vehicle locations from Automatic Train Control System



Intelligent Predictions Software
Applies logic and algorithms to generate predictions, recommended alternatives, and other valuable information to be uncovered through further user research

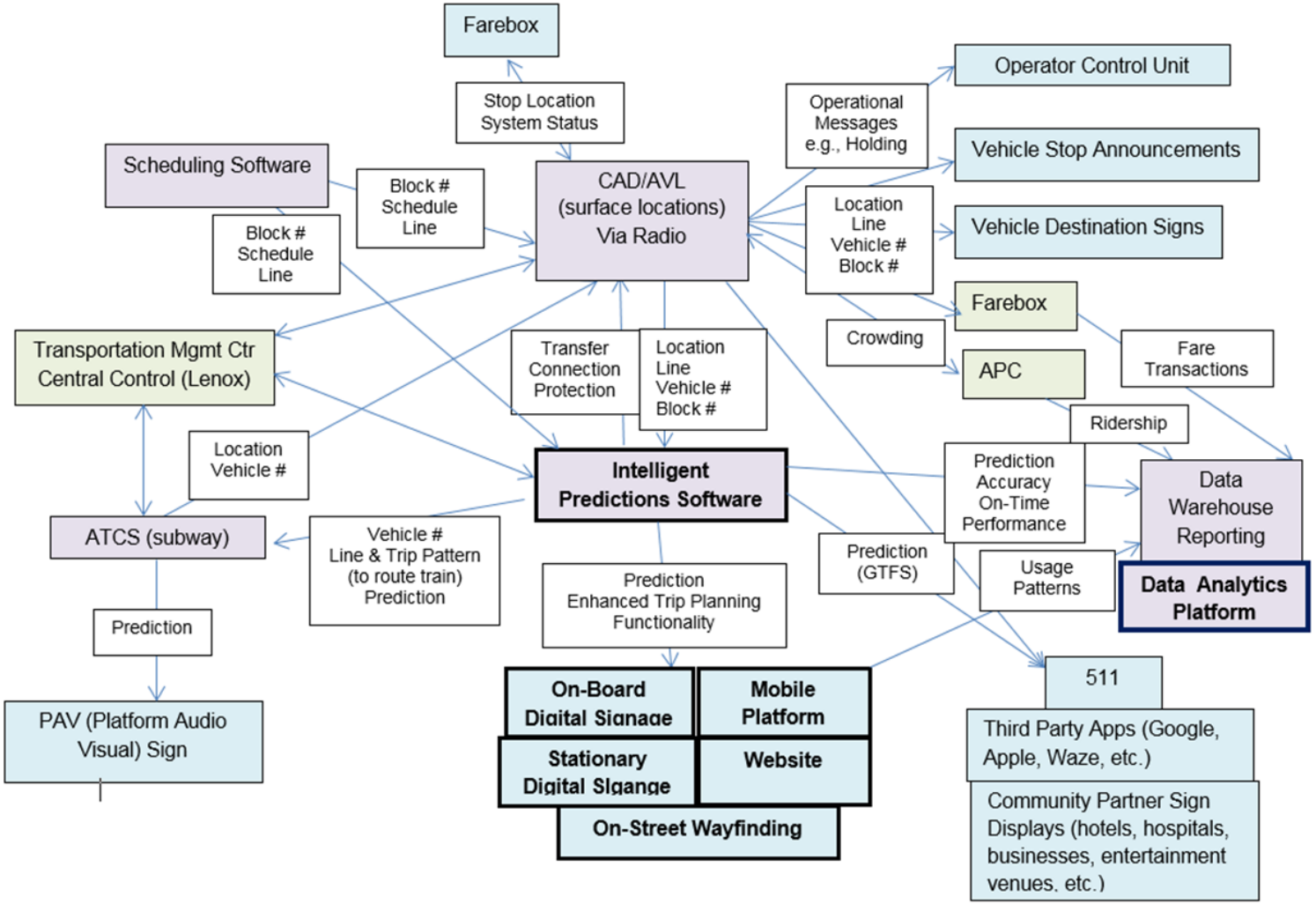
Analytics Platform
Processes data from the Intelligent Predictions Software, Mobile Platform & Website to assist in operational and usage analysis

Stationary Digital Signage
Displays real-time arrivals and other valuable information at shelters, underground stations and on rail platforms

On-Board Digital Signage
Shows service updates, transfer connection times and other information on-board vehicles.

Mobile Platform & Website
Delivers travel information in mobile and online formats; app collects customer behavior insights to inform planning decisions

AN INTEGRATED SYSTEM



Bold font: Vendor-provided components under the RFP
Regular font: Third-party provided components (requires integration)

Potential Features

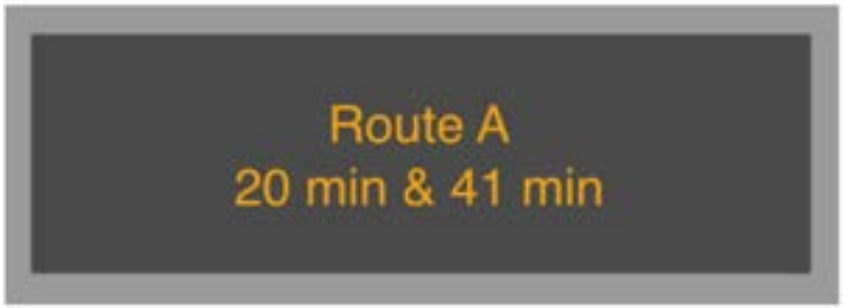
POTENTIAL SYSTEM FEATURES

- Issued a Request for Information (RFI) to vendors to explore the technical feasibility of potential next generation system features

Potential System Features	Current	Future
Intelligent Predictions Software		
Prediction Algorithm	✓(generally accurate but "ghost bus" issues exist)	✓
Crowding Level Alerts	x	✓
Alternative Route Suggestions	x	✓
Connections with other systems	x	✓(depends on API availability)
Stationary Digital Signage		
Powered Shelters	✓	✓
Unpowered Shelters	x	✓(depends on technical feasibility)
On-Board Digital Signage		
Stop Announcements	✓	✓
Transfer Connection Times	x	✓(depends on technical feasibility)
Service Delay & Reroute Alerts	x	✓(depends on technical feasibility)
Mobile Platform		
Mobile App	✓(limited capabilities)	✓
Usage Trends	x	✓

PREDICTIONS AND ALTERNATIVES

CURRENT



Sign with arrivals

FUTURE

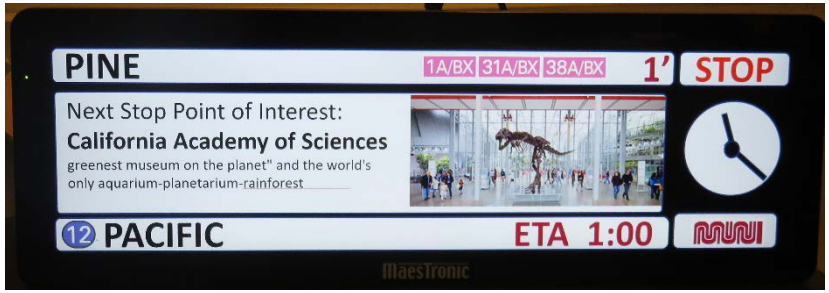
Sign with arrivals and
potentially better alternatives

(Note: Photos do not imply SFMTA endorsement of a particular vendor.)

STATIONARY DIGITAL SIGNAGE

CURRENT

FUTURE



LCD Stationary Digital Signs

(Note: Photos do not imply SFMTA endorsement of a particular vendor.)

ON-BOARD SIGNAGE

CURRENT

- Display next stop

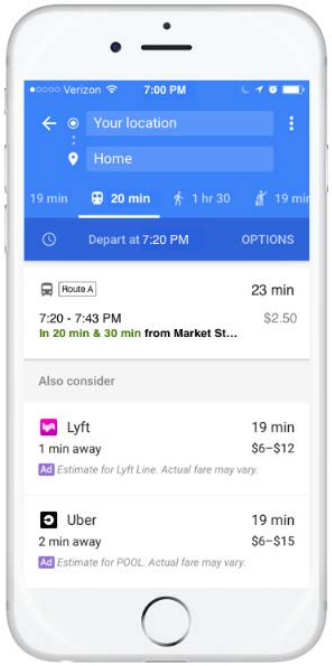
FUTURE

- Display connecting routes and arrival times
- Show nearby points of interest
- Provide updates on detours and delays

(Note: Photos do not imply SFMTA endorsement of a particular vendor.)

MOBILE PLATFORM

CURRENT



Third parties display arrival info
No data on usage patterns

FUTURE

Partner with a mobile platform provider
Ensure accuracy of directions and predictions
Gather customer insights on system usage

(Note: Photos do not imply SFMTA endorsement of a particular vendor.)

Public Outreach

Key Objectives

- Understand how different customers characterize, locate and use valuable information (late at night/early morning travel, multiple transfers, transfers to external systems, etc.)
- Understand contextual factors, reasoning, and motivations behind mode choice and information needs.
- Identify usability issues across the current customer information system user experience
- Identify desired features and improvements for the next generation system

OUTREACH STRATEGY

Methods

Quantitative
Online Survey

+

Qualitative
Concept Testing
Stakeholder Interviews
Ride-alongs

Stakeholder Examples

311	SF Travel
BART, Caltrain and other transit agencies	SFMTA Citizens' Advisory Council (CAC)
Chinatown Community Development Center (CCDC)	SFMTA Multimodal Accessibility Advisory Committee (MAAC)
Hotel Council	SFMTA Policy and Governance
Independent Living Resource Center	SFUSD-Access
Lighthouse for the Blind	Senior Action and Disability Network
Mayor's Office on Disability	Small Business Commission
Save Muni	SF Transit Riders
SF Board of Supervisors (including constituent representative from each district)	Youth Commission

SAMPLE RESEARCH FINDINGS TO DATE

Topic	Observations
Accessibility	• Many customers with disabilities use Muni extensively and know routes well, but must monitor disparate sources of information to find out about accessible stops and elevator/escalator outages. • Customers with wheelchairs are concerned about not being able to board crowded vehicles.
Branding	• Muni doesn't have to be "cool" like newer forms of transportation. It has to function effectively within its constraints.
Perceptions of Time and Accuracy	• Many customers perceive that a vehicle is "late" when it does not arrive according to NextBus predictions. This contrasts with the official definition of "late" (4 minutes later than the schedule). • Many customers on high-frequency routes understand that arrivals can be fluid due to traffic congestion or other factors. • Knowing the precise timetable is less than valuable than knowing one can arrive generally on-time. • Customers want to feel that Muni respects their time.
Information Tools	• Customers are heavily reliant on technology for trip planning, including live maps. • Many seniors and customers with disabilities prefer speaking with a live person on 311.