Technology Innovations at New York City Transit





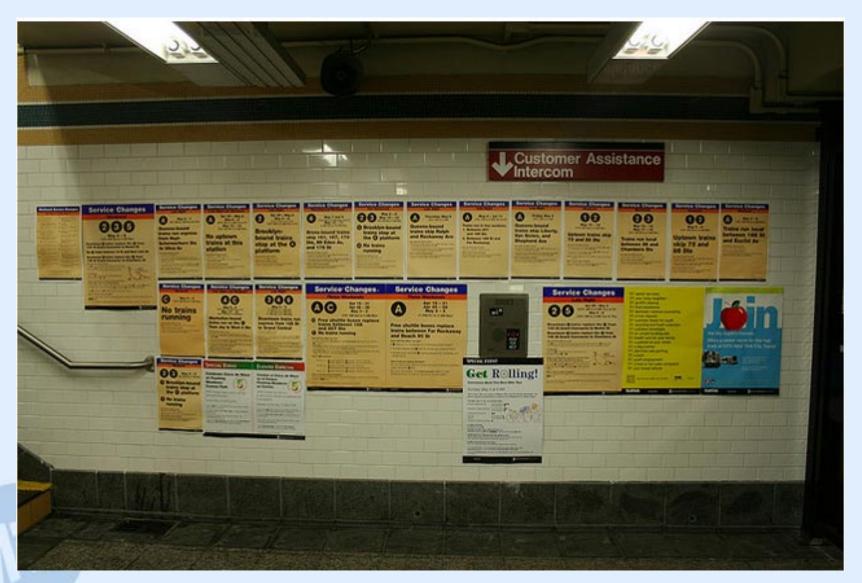
Customer Communication

20th Century – Static signage, paper schedules

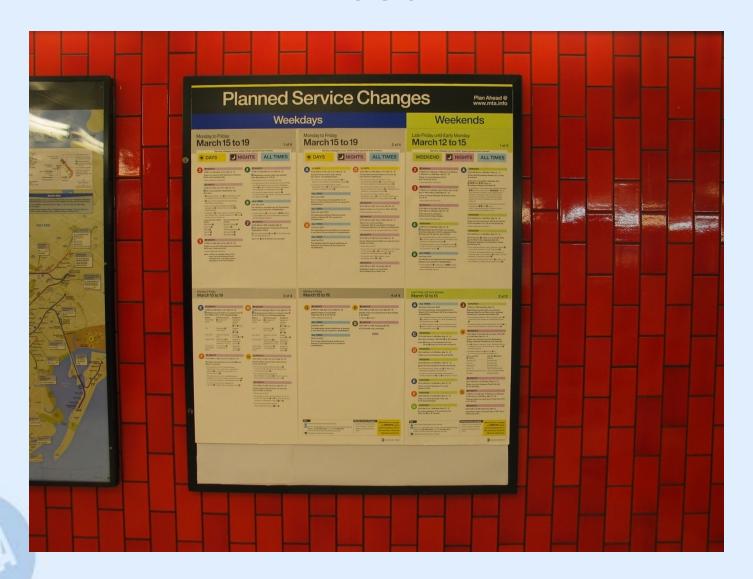
 21st century – Interactivity, two way communication, personal customization, REAL TIME!

 People want to know what they need to know and don't care about things that are irrelevant TO THEM

Past



Present



Future



Some new NYCT initiatives



"SAID" Signs

- "Snapshot" status on all Subway services
- Displays agency messaging
- Deployed at key station entrances
- Advises riders before paying!





PA/CIS

- Installed on the A Division
- Implemented with CBTC on L line
- Clear announcements
- Countdown clocks CIS
- Released real time data on apps
- Ongoing R&D and program development for the B Division





On The Go!

An interactive, touch screen, digital information center

- Trip Planning
- Bus Time
- Real-time service and E&E status
- Neighborhood maps
- Service diversions
- Shopping and dining options (3rd party apps)
- News and weather





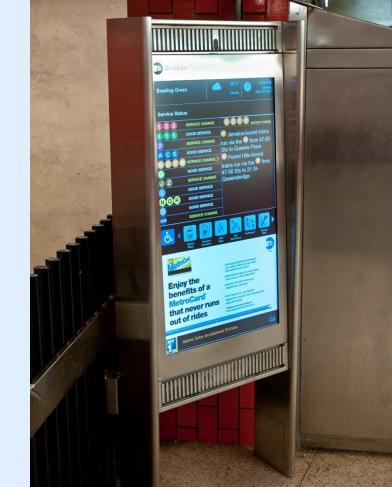
On The Go! – Project Goals

- Improve customer communication via better access to relevant data
- Replace paper signage
- Create a touch screen device
- Revenue generation (advertising)
- Positive image of MTA network



Design Features

- Award winning sleek, stainless steel design
- 46 inch 1080p touch screen
- Video camera and microphone
 - future option
- Ease of maintenance





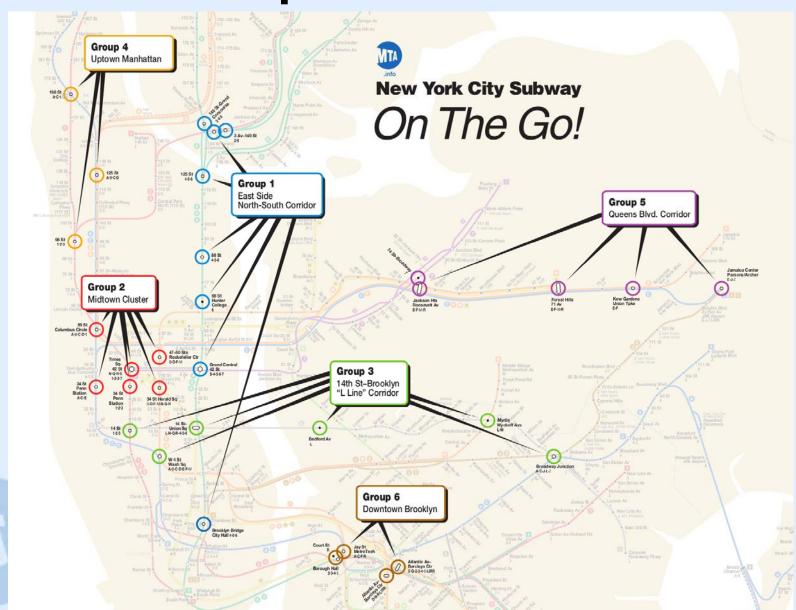
Design Features

- Each kiosk can be programmed individually from a central computer
 - Content can be changed according to usage, time of day, weather, or any other variable
 - Gives NYCT and advertisers flexibility





Expansion Plan



Integration with TrackWork

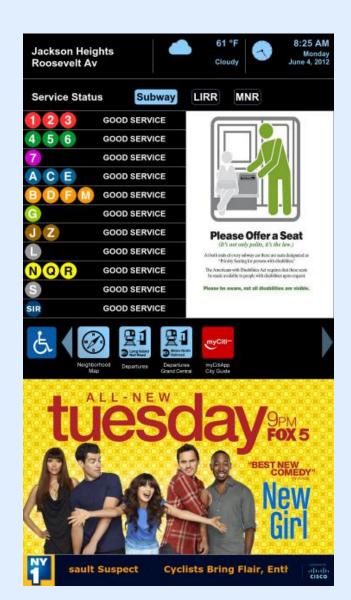
- FasTrack new program to shut down whole lines for multiple nights
- Instant delivery of rapidly changing information





Revenue Generation Potential

- Public/Private Partnership
- Kiosks expected to pay for themselves over time via advertising
- Potential for highly-customized national, local, and hyperlocal advertising opportunities
- Interactive advertising including clickability on ads



Future of OTG

- MTA system wide rollout across all its agencies
- Multiple units per location
- New features to be considered
 - Virtual Station Agent (part of extended pilot currently under testing)
 - Real time bus arrival information (BusTime)
- Software is highly customizable for future updates
- Station navigation
- Near field communications Interactivity with mobile devices



We will have them all over soon!



MTA Bus Time

Delivering Real Time Bus Location Information to NYC Customers



Nearby routes:

S40 Richmond Terrace

St. George - Goethals Rd North

- to GOETHALS RD via RICH TR
- to ST GEORGE FERRY via RICH TR

S42 St. Marks Place / Jersey Street

St. George - Clyde Place

- to CLYDE PL ARNOLD ST
- to ST GEORGE FERRY

S44 Richmond Avenue

St. George - Staten Island Mall

- to S I MALL YUKON AV
- to ST GEORGE FERRY

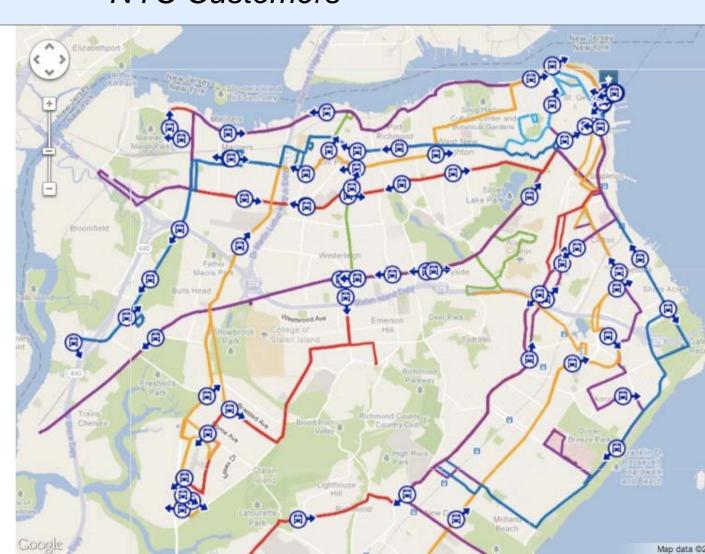
S46 Castleton Avenue

St. George - West Shore Plaza

- to ST GEORGE FERRY via CASTLTN
- to W SHORE PLZ via CASTLETON

S48 Forest Avenue

St. George - Mariners Harbor



Bus Time Project Goals

- Enhance the bus-riding experience for customers
- Improve scheduling, service management, and emergency response based on real time data
- Use open source technology
 - Cost-effective, quick to deploy, simple to maintain and operate, and supports expansion as needed in the future
 - Other developers can use the data
- Leverage hardware investments
 - GPS and wireless communications being used for Fare Payment System and Bus Time

Bus Time Project Overview

- Provides the location of the next several buses that will arrive at a particular stop
- Uses GPS hardware and wireless communications technology to track the realtime location of buses
- It is available using:
 - Desktop website
 - Mobile website (smartphones)
 - SMS text messaging (any mobile phone)
 - DIY signs

Desktop Website http://mta.info/bustime



- Interactive map
- View current locations of buses and the next stops each bus will make
- Find bus arrivals by:
 - Using the map
 - Searching for an Intersection
 - Searching for a bus route
 - Searching for a bus stop



Mobile Website http://bustime.mta.info/m



- Visit mobile website or scan QR code at bus stop
- Accessibility-friendly text-only version of Bus Time
- Find bus arrivals by:
 - Using smartphone's GPS
 - Bus stop code
 - Route
 - Intersection
 - Zip code



SMS / Text Messaging

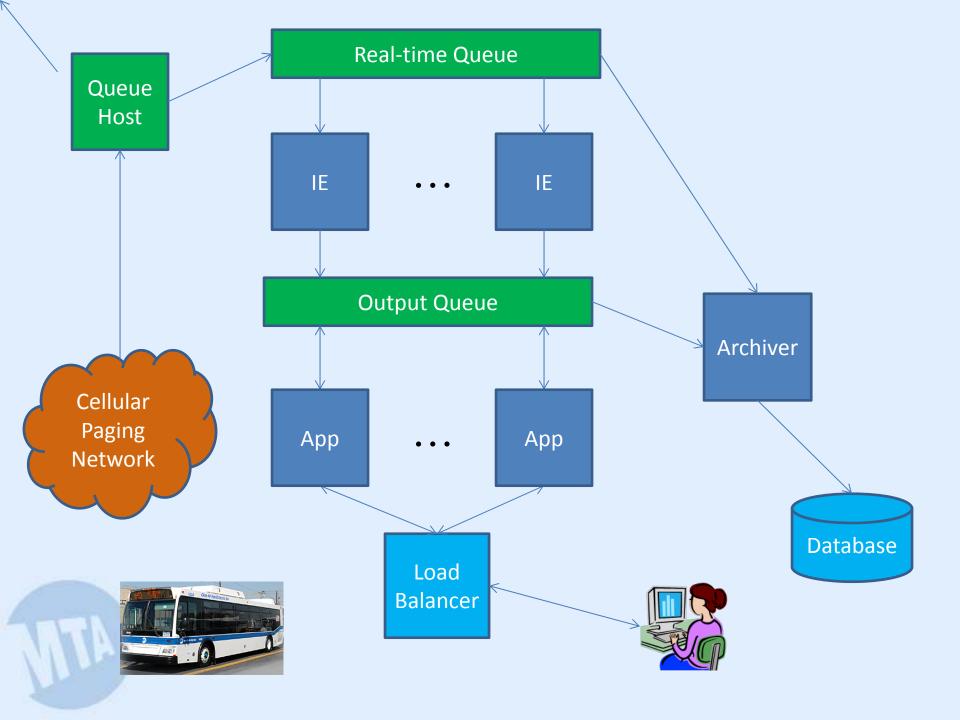


- Send a text message to 511123
- Find bus arrivals by:
 - Sending a bus stop code and route
 - Sending an intersection and route



How does it work?



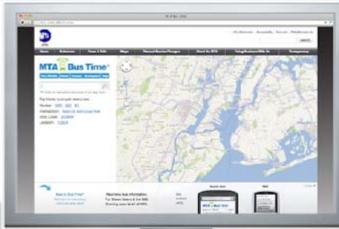


BusTime

- Real time bus location information – coming to all boroughs
 - Visit mobile website or scan QR code at bus stop
 - Accessibility-friendly text-only version
 - Find bus arrivals by:
 - Using smartphone's GPS
 - Bus stop code
 - Route
 - Intersection
 - Zip code









MTA info on Mobile devices

MTA.info mobile website

Weekender App

 Coordination between MTA and developer community for open data access





Apps and Feeds

- MTA develops its own apps as well as supports
 3rd party developers
- MTA provides real-time data feeds to the public
- SubwayTime went live with feeds on the 1,2,3,4,5 and 6 lines



New Fare Payment System

Building Blocks:

Contactless Payments Technology

- Next generation payment/access design (Tap & Go)
- Multiple forms of payment media

Open Architecture

- Maintain control over system interfaces/interconnections
- Equipment supplier-agnostic

Account-Based

Value stored in back-office account, not on card; media an identifier

Payment Industry Standards

Electronic payments are secure, proven, widely used in retail environment



New Fare Payment System

Customer Service

 Call center and website for customer information, account management, and sales

Multiple Payment Options

- Customers can pay using a contactless credit or debit card (bank-issued or pre-paid)
- Mobile payments, including NFC wallets and mobile application, will be incorporated.
- A "transit-only" smart card will complement other options and be available to all customers.

Fare Rules

- Existing fare polices and products at minimum
- Simplified application of fare policies at back-end.

New Fare Payment System

Reduce Reliance on Vending Machines

- Vending machines are relatively costly to procure, operate, and maintain.
- Nature of unattended terminal doesn't permit optimal customer feedback or experience.

Focus on Self-Directed Sales and Account Management

- Anytime, Anywhere
- Call center and website to handle all customer needs

Focus on Retail Distribution Strategy

- Leverage existing MetroCard retail sales network
- Shift media distribution to convenient channel



Bike Share

Washington, DC



Hangzhou, China





New York City, launched May 2013

Bikes in Transit



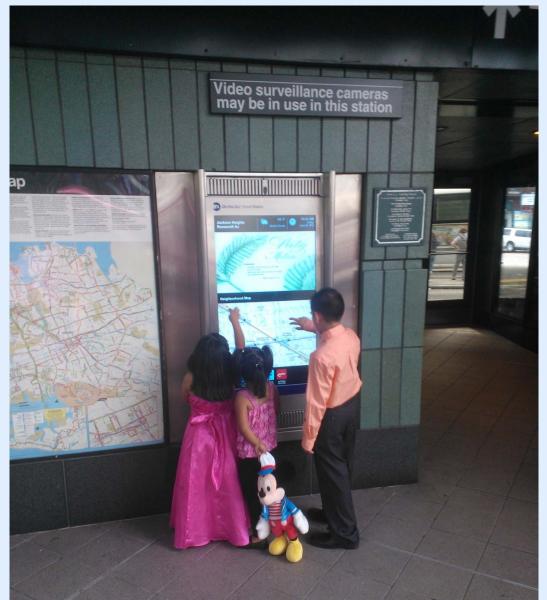
• Integration of BikeShare program with fare payment programs

• Challenge for transit to accommodate

Automated Metros Worldwide



Demands of the next generation





Concluding Thoughts

- The auto is here to stay but there is increasing recognition that it is an outdated model for the dense urban environment – needs realization and reinvention
- Urban transit is being rediscovered but needs technology and convenience enrichment for better acceptance
- Automated travel mode is best and only safe with a dedicated right or way – that was invented and is well used by transit
- Technology applications are successful only with ease of use features for the masses



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