



Leveraging Data

(in a very complicated world)

Michael Smith, CTO NextBus
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Our job is to increase ridership

Good News!

Our job is to increase ridership...

- 10.4 Billion Trips on US Public Transit in 2011
- Second highest since 1957

“The exponential growth of apps to track bus and rail arrival times is demystifying the ridership experience and attracting new customers to public transportation. More and more people are now able to find out when the next bus and train will arrive through public transit apps. This is making public transportation more attractive.”

- APTA President and CEO Michael Melaniphy

Our job is to increase ridership...

Bad News!

Our job is to increase ridership...

Edict from GM and Board:

Improve Services

Not giving you any money

In fact, reducing funding!

Nuanced approach

- No right or wrong
- I will appear to contradict myself several times
- No, I'm not running for political office

Traditional Trip Planning

I am here, want to go there. How do I do so?

The screenshot shows the Google Maps interface with a search bar at the top. The search results show the starting point 'A' at 536 Broderick St, San Francisco, CA 94117, and the destination 'B' at City Hall. A suggested route is highlighted in blue, starting from point A, going south on Broderick St, then east on Turk St, then south on Webster St, then east on Fell St, then south on Oak St, then east on O'Farrell St, then south on Van Ness Ave, and finally east on Geary Blvd to City Hall. The route is estimated to take 13 minutes and is scheduled for 6:08pm to 6:20pm. Other suggested routes are shown below, including one taking 15 minutes and another taking 13 minutes. The map also shows various streets and landmarks in San Francisco, such as Alamo Square Park and the Central Freeway.

Traditional Trip Planning

- Ubiquitous
 - on Google, Microsoft Bing, etc.
- Consistent
 - Algorithms well understood
 - Get consistent results across platforms
- Most use GTFS standard

Tradition Trip Planning Drawbacks

- 60% of trips are commuting to work. Same every day.
- Most of other trips are also regular: school, shopping, friends, etc.
- Only small percentage, well less than 10% are for when user doesn't already know best route(s).



Tradition Trip Planning Drawbacks

- Passengers just need to know when next bus is going to come, and they want the simplest interface possible.
- Yes, for certain percentage traditional trip planning is still critical.
- For most people **real-time info = trip planning**
- Real-time info doesn't significantly improve a trip plan

Real-Time Passenger Information (RTPI)

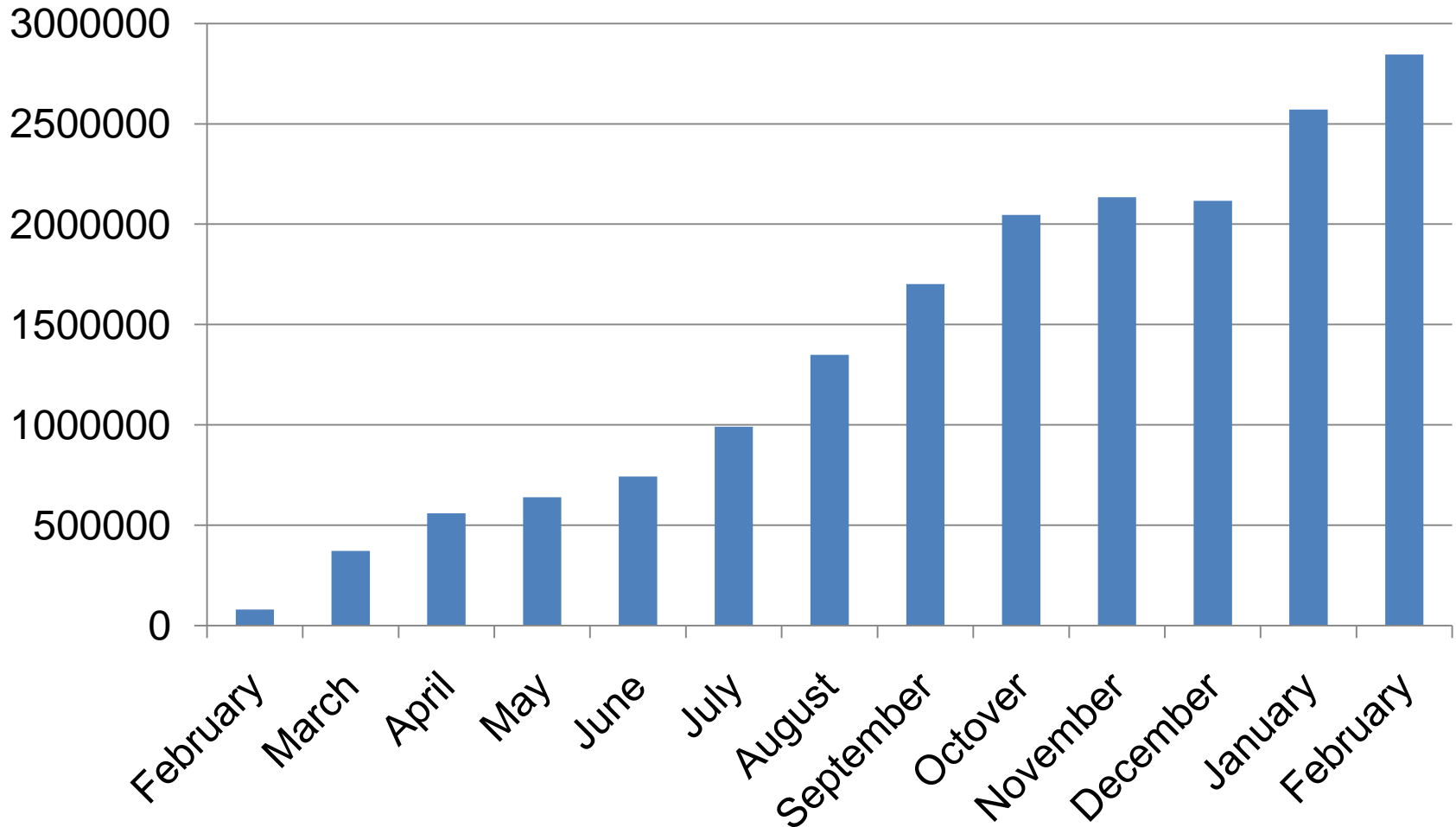
“NextBus in 5 minutes”

- Saves people time
- Reduces uncertainty
- Incredibly popular
- Completely addictive



Real-Time Passenger Information (RTPI)

Smart Phone Visits for NextBus App



Problems with Real-Time Info

- **Complicated**
 - Difficult to generate accurate information
 - Patent issues (including ArrivalStar)
 - User Interface issues
 - So many different phones out there

Problems with Real-Time Info

- Costs money
 - Money not available
 - Toronto TTC looking at \$0.5 million to \$1.3 million just for SMS
 - Looked at charging passengers \$0.15/msg (not a popular idea!)



Use Third-Party Developers

- You can't do the work on your own
- Buy what you need to buy
- Make data available so that others can help



MBTA App Showcase

- 49 Apps at http://www.mbta.com/rider_tools/apps/

T Massachusetts Bay Transportation Authority

18 Sunday March 2012
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Rider Tools

Riding the T → App Showcase

- Trip Planner
- Service Nearby
- Service Updates
- T-Alerts
- T-Alerts FAQ
- App Showcase**
- Developers

App Showcase

Where's the T? New apps built by independent developers let you know where your bus or train is and when it will arrive. Check them out below!

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[Image View](#) [Sortable List](#)

Real Time Apps

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App Disclaimer
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Are you a Developer?
Check out the [MassDOT Developer page here](#) to gain access to our developer tools.

Want to be included on this page?
Please send a listing to t-trackertrial@mbta.com with the App Title, Developer Name, Platform, and an image that is 150 * 250.

Other examples of success

- San Francisco Muni
- Los Angeles Metro
- Toronto TTC
- Portland Trimet
- Chicago CTA
- and more...

Feed standards

- More apps if developers can leverage work
 - They don't want a region specific feed
 - Only large agencies can motivate developers
- There won't be just a single standard
 - Multiple feeds exist
 - Single committee-based feed will never be adequate
 - Feeds modified to suite needs (NYC MTA)

Feed Standards

- TCIP –complicated US standard
- SIRI – complicated British standard
- Modified SIRI
 - NYC MTA – RESTful instead of SOAP. Modified and optional elements.
- Agency Specific feeds
 - Trimet, WMATA, Bay Area 511
- Vendor feeds
 - NextBus, Clever Devices, etc.
- GTFS-real time
 - Specifically for feeding Google

Problems with Third-Party Developers

- Most apps not professional quality
- Apps not complete
 - ADA,
 - multi-lingual,
 - information messages
 - Maps
 - Automatic configuration updates
- Apps disappear or atrophy

Drawbacks of Apps

Article in NY Times on 3/2/2012:

- Great initial enthusiasm
- Apps often not innovative
- Grand-price winner **Roadify** has attracted almost no users.
- **Sportaneous**, second place winner, withdrawn



The New York Times

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APP CITY

Contest Whose Winners May Not Succeed

By JOSHUA BRUSTEIN
Published: March 2, 2012

New York's [BigApps](#) contest, now in Version 3.0, has won no small amount of praise. Using data supplied by public agencies, Web developers compete for \$50,000 in prizes, awarded based on voting by the public and a panel of judges. Voting on this year's entries ends on Thursday.

Drawback of Apps...

- Third-party apps good for complementing system
- Not enough on their own
- They will help
- But will not solve your problems

Definite benefit of Apps...

- Helped motivate opening of city data
- Shown that people are interested in more data

Conclusions

- Passengers really, really want RTPI
 - Apps are a great thing
 - Apps will not solve all your problems
 - Widely used data feed important
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- You can leverage the work of others, but with limits.