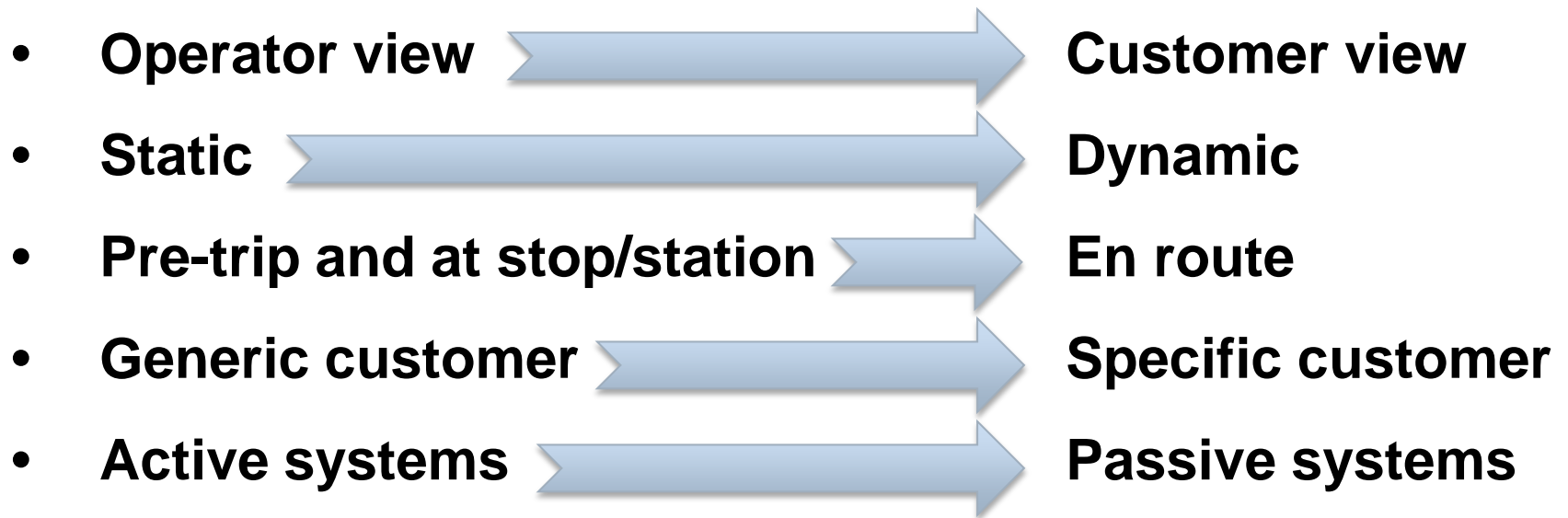


# Advanced Customer Information Strategies

by

John Attanucci and Nigel Wilson

# Evolution of Customer Information



# Enabling Technologies

- **AVL provides current vehicle locations**
- **Automated scheduling systems make service plan accessible**
- **Google Transit standard formats provide universal trip planning**
- **GPS- and WIFI cell phones provide current customer location**
- **AFC provides database on individual trip-making**
- **Wireless communication/Internet apps**

# State of Research/Knowledge in CI

- **Pre-trip journey planner systems widely deployed but with limited functionality in terms of recognizing individual preferences (e.g., Google Transit)**
- **Next vehicle arrival times at stops/stations well developed and increasingly widely deployed**
  - both often strongly reliant on veracity of service schedules
  - ineffective in dealing with disrupted service
- **Real-time mobile phone information**
  - many new apps, some great, some not so great
  - Google's entry last week may be game-changer in the long run

# Example of Well-Designed Mobile Web App: [NextBus.com/webkit](http://NextBus.com/webkit)

- **First finds your location**
- **Lists all services and nearest stops for each within 1/4 mile radius**
- **Scrolls to show next two vehicles for each service in each direction**
- **[www.nextbus.com/webkit](http://www.nextbus.com/webkit)**

# Emerging Possibilities

- **Exception-based CI based on stated and revealed individual preferences, typical individual trip-making, and current AVL data**
- **Integration of AFC and CI functions through payment-capable cell phones**
- **Can CI actually attract more customers?**
  - **multi-modal trip planner/navigation systems**

# Medium-term Vision

## **Transit becomes a virtual presence on mobile devices:**

- **Transit is information-intensive mobility service**
- **Cell phone is mobile information device, a perfect match**
- **People (will) have their lives on their smart phones**
  - **Single device for payment and information**
  - **“Station in your pocket”: no need to restrict countdown clocks, status updates, trip guides to stations or fixed devices**
  - **Lifestyle services: guaranteed connections, in-station navigation, bus stop finder, transit validation, rendezvous, ...**

# Remaining Challenges

- **Getting more systems to release all real-time data**
- **Establishing a standard format (e.g., Google Transit) so apps can work wherever you travel**
- **Determining how to make better real-time arrival predictions**
- **Determining how best to communicate during major disruptions, when real-time predictions are less useful**
- **Providing more CI quickly and cost-effectively w/o disturbing disabled advocates**
- **Can/should we become multi-modal with our real-time apps? (e.g., Avego video challenge)**



# Potential Research Questions

- **Can arrival time predictions be improved when congestion occurs?**
- **How can analysis of real-time information better inform development of the operating plan?**
- **Can we really change travel behavior (e.g., by targeting drivers with better transit and ridesharing information)**
- **What is the impact of real-time info on transit rider behavior?**

# Research Update: Impact of Real-Time Information on Transit Rider Behavior

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June 17, 2011

# Research Objective & Methodology

- **Research Objective:** Quantify transit rider behavioral and attitudinal effects due to the provision of real-time information
- **Experiment Design:** Pre- and post-wave ridership surveys
- **Survey Questions**
  - Travel Characteristics (on/off, transfer, wait time, etc.)
  - Transit Information Provision (website, etc.)
  - Customer Satisfaction & Quality of Service (ranking scales)
  - Standard Demographic Information & Technology Adoption

# Case Study 1: MTA B63 Bus Route

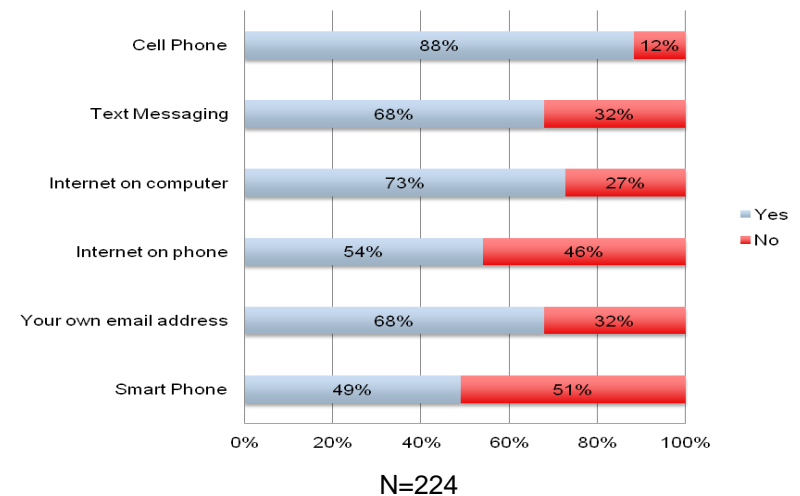
- **BusTime Launch:** February 1, 2011
- **System:** GPS on 30 buses
- **3 Customer Interfaces:**
  - Desktop Web Interface
  - Mobile Web Interface
  - SMS Interface
- **Survey Dates:**
  - Pre-Wave: January 2011
  - Post-Wave : June 2011



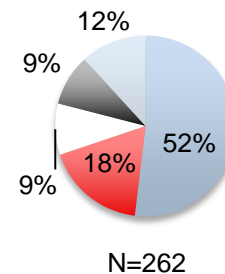
# Case Study 1: Summary of B63 Pre-Wave Survey

- **Technology Adoption:** approximately *half* of riders have smart phones, with iPhone being most common
- **Information Sources:** most customers show up without checking a schedule or simply look at the bus stop schedule sign
- **Customer Satisfaction:** mostly satisfied, except with wait times

Technology Used in Past 30 Days



Wait Today



Usual Wait Time

