



R | S | G INC.
RESOURCE SYSTEMS GROUP, INC.

Smartphones & Data

RSG Applications

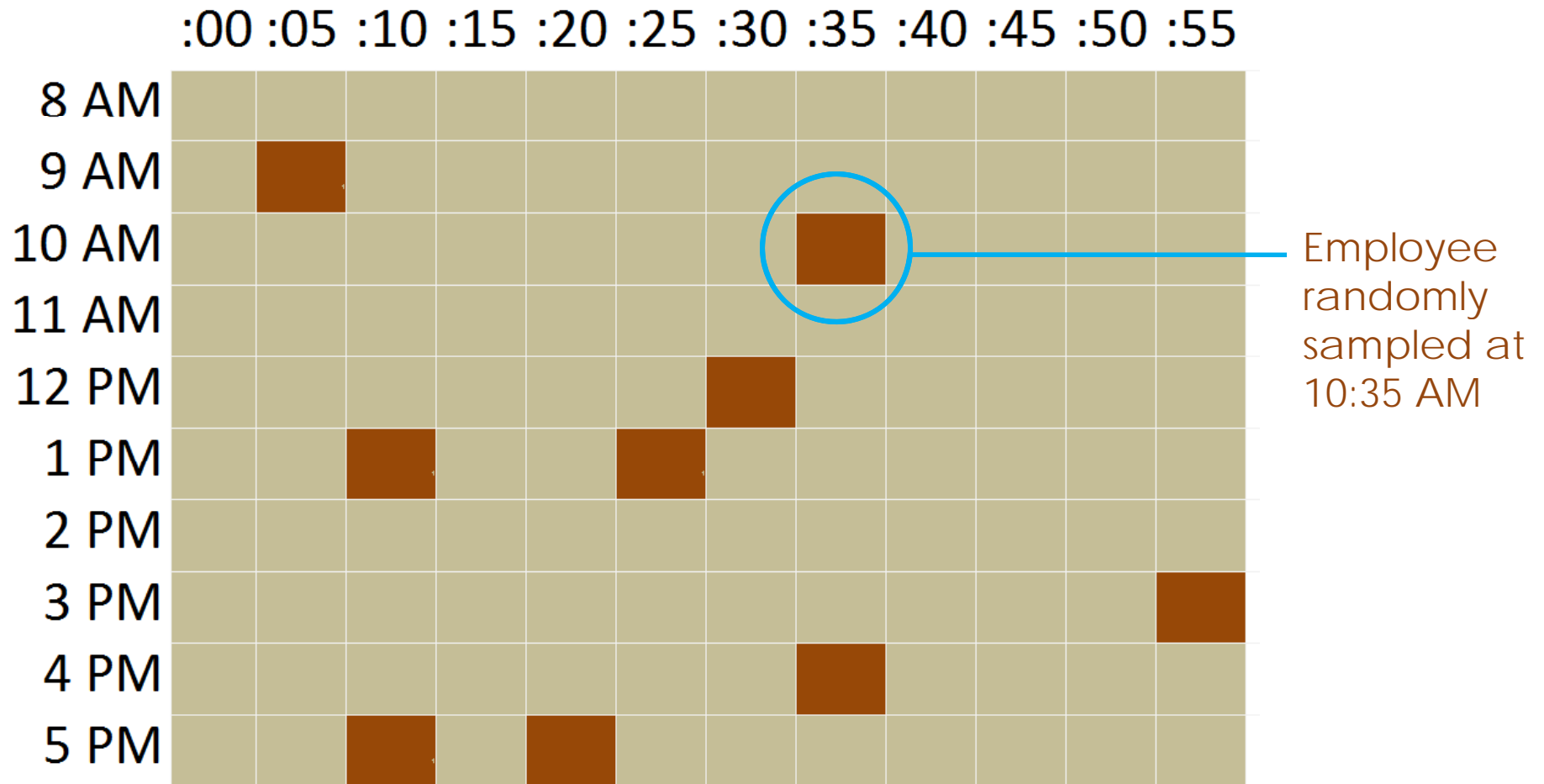
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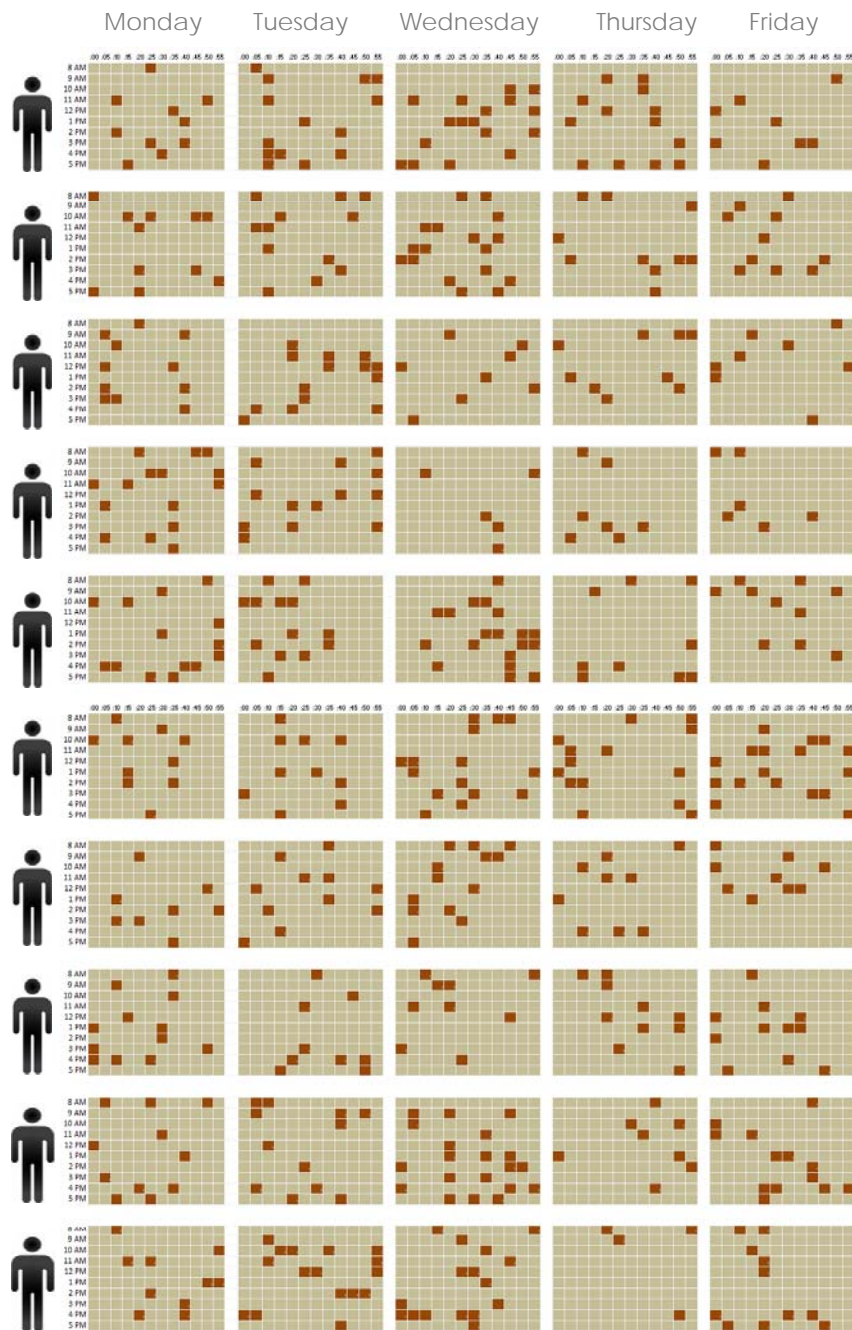
HUD Random Moments

2011

- HUD employees administering a voucher program
- The question:
 - How are people spending their time?
 - How much is it costing to administer the voucher program

5-minute periods in an Employee's Day



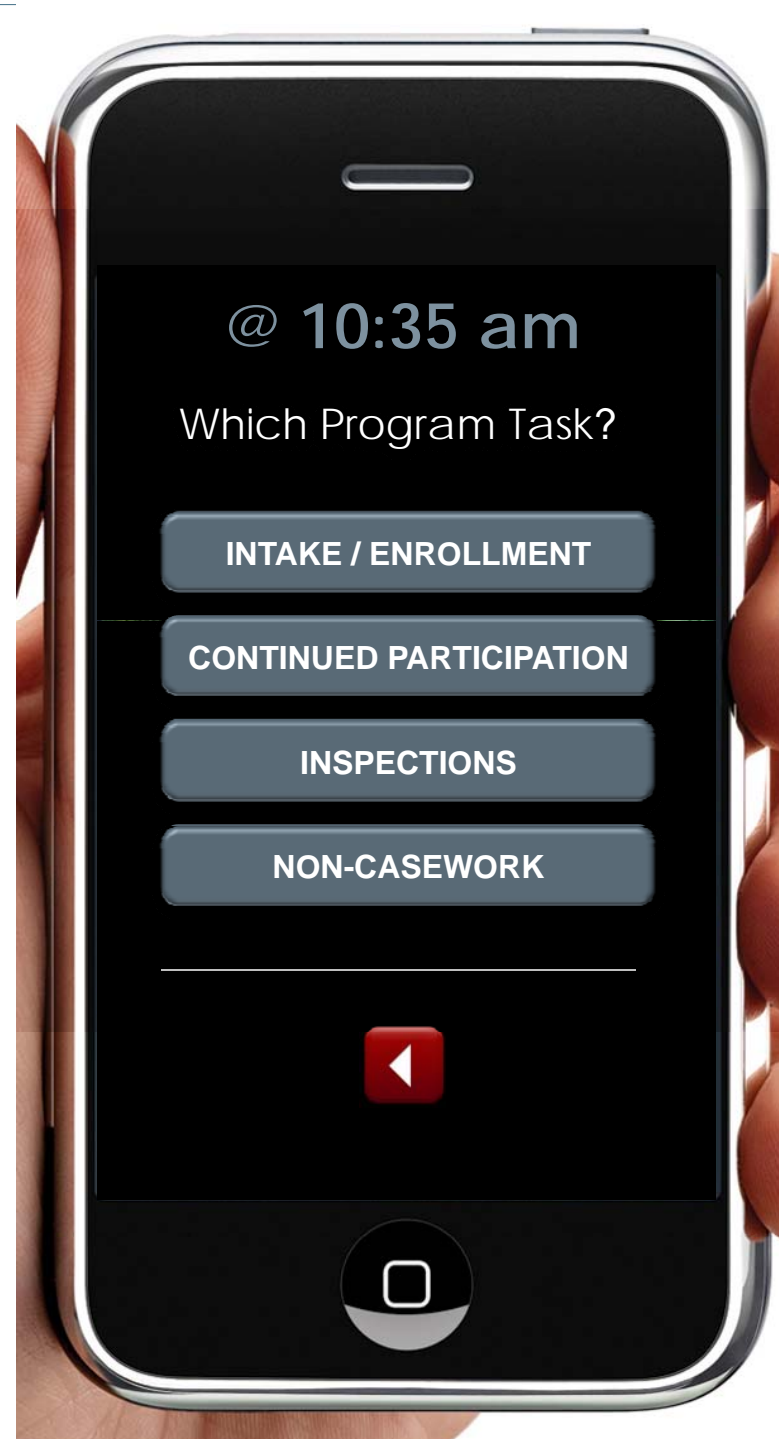
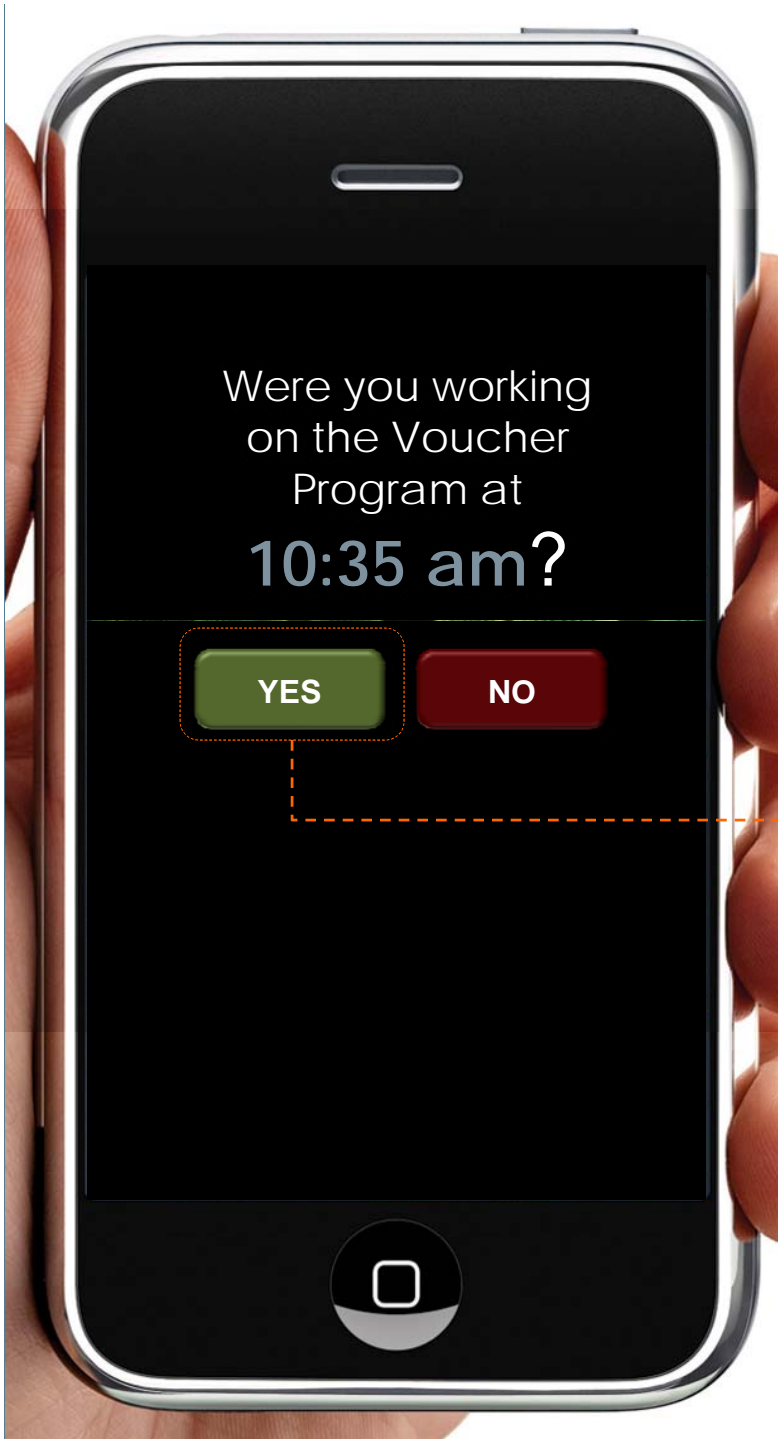


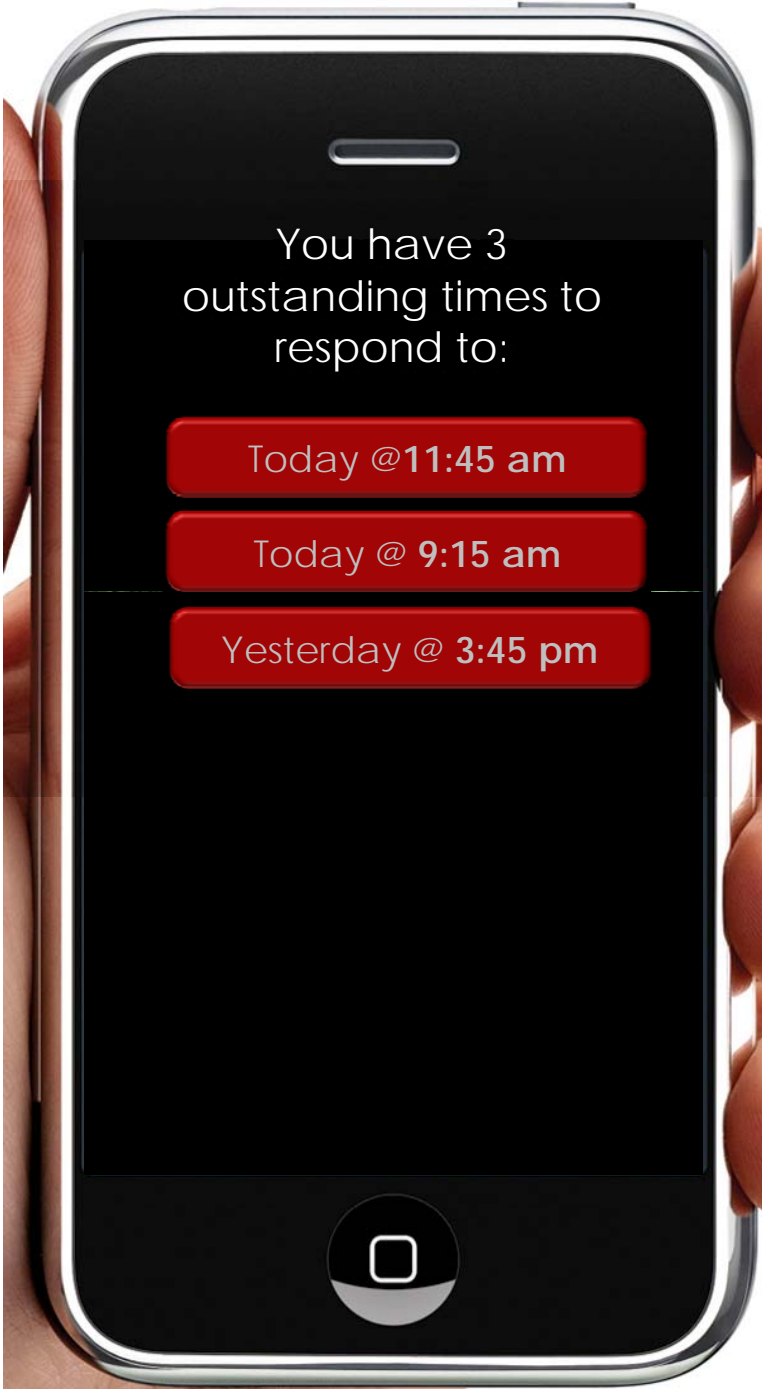
Ten (10) hypothetical employees at an agency sampled for one week might look like this. However, this assumes that any given task is just as likely to be performed in the morning as the afternoon or evening. Further, this simple random sample also assumes that tasks can happen with equal probability on any day of a week.

Only after discussions with our test agencies, will we finalize our sampling scheme. For instance, a stratified grid sample may be more appropriate if particular tasks are more likely to be performed at specific times. In this case, we would randomly survey within time subblocks.

Technologies

- Android platform using Android SDK (Java).
- The servers used to synchronize the survey results:
 - running Microsoft SQL Server 2008
 - Microsoft .Net 4.0 C# leveraging the MVC 3.0 framework.



An iPhone is held in a hand, displaying a notification screen. The screen has a black background with white text. At the top, it says "You have 3 outstanding times to respond to:". Below this, there are three red buttons with white text. The first button says "Today @11:45 am", the second says "Today @ 9:15 am", and the third says "Yesterday @ 3:45 pm". The iPhone's home button is visible at the bottom.

You have 3
outstanding times to
respond to:

Today @11:45 am

Today @ 9:15 am

Yesterday @ 3:45 pm

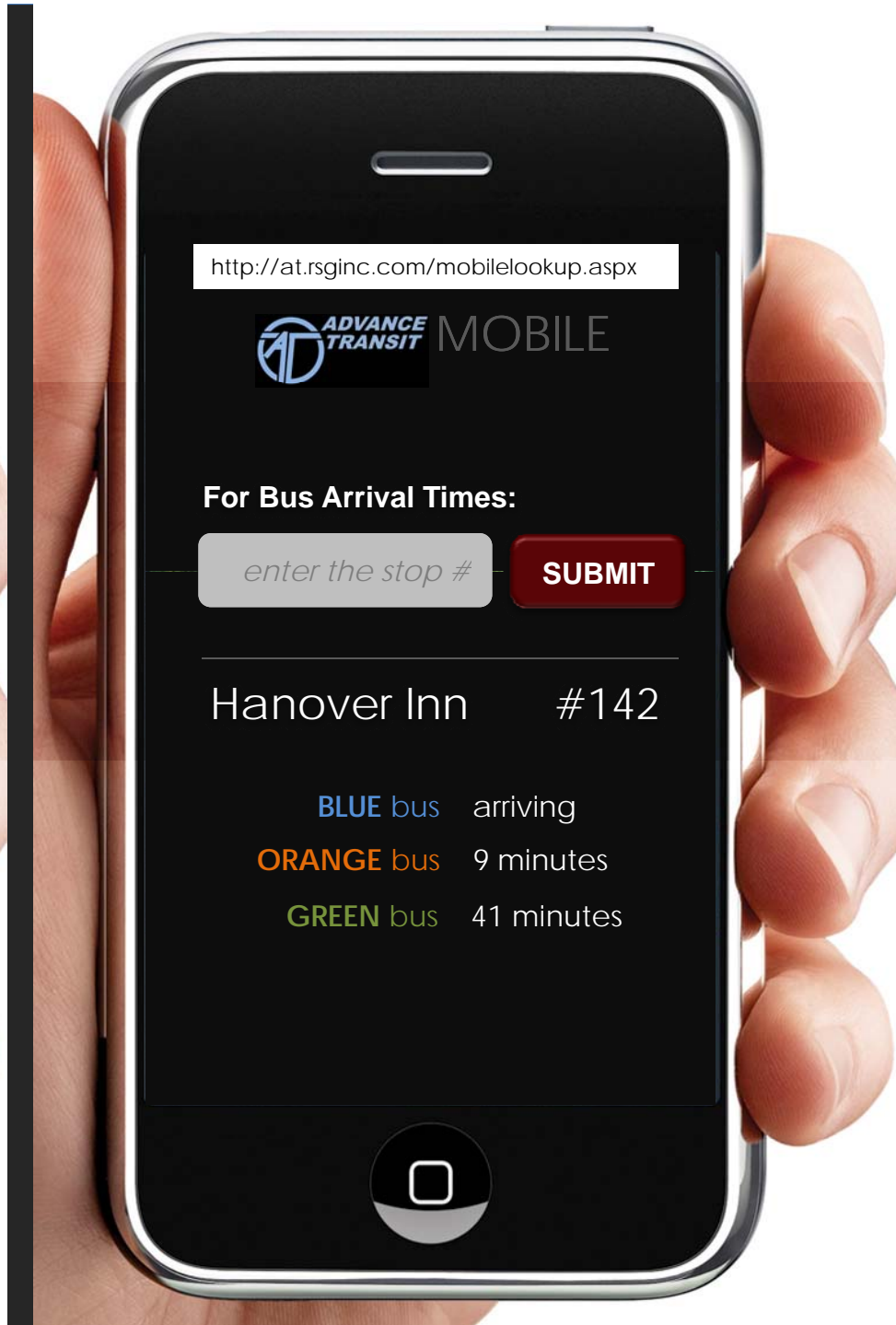
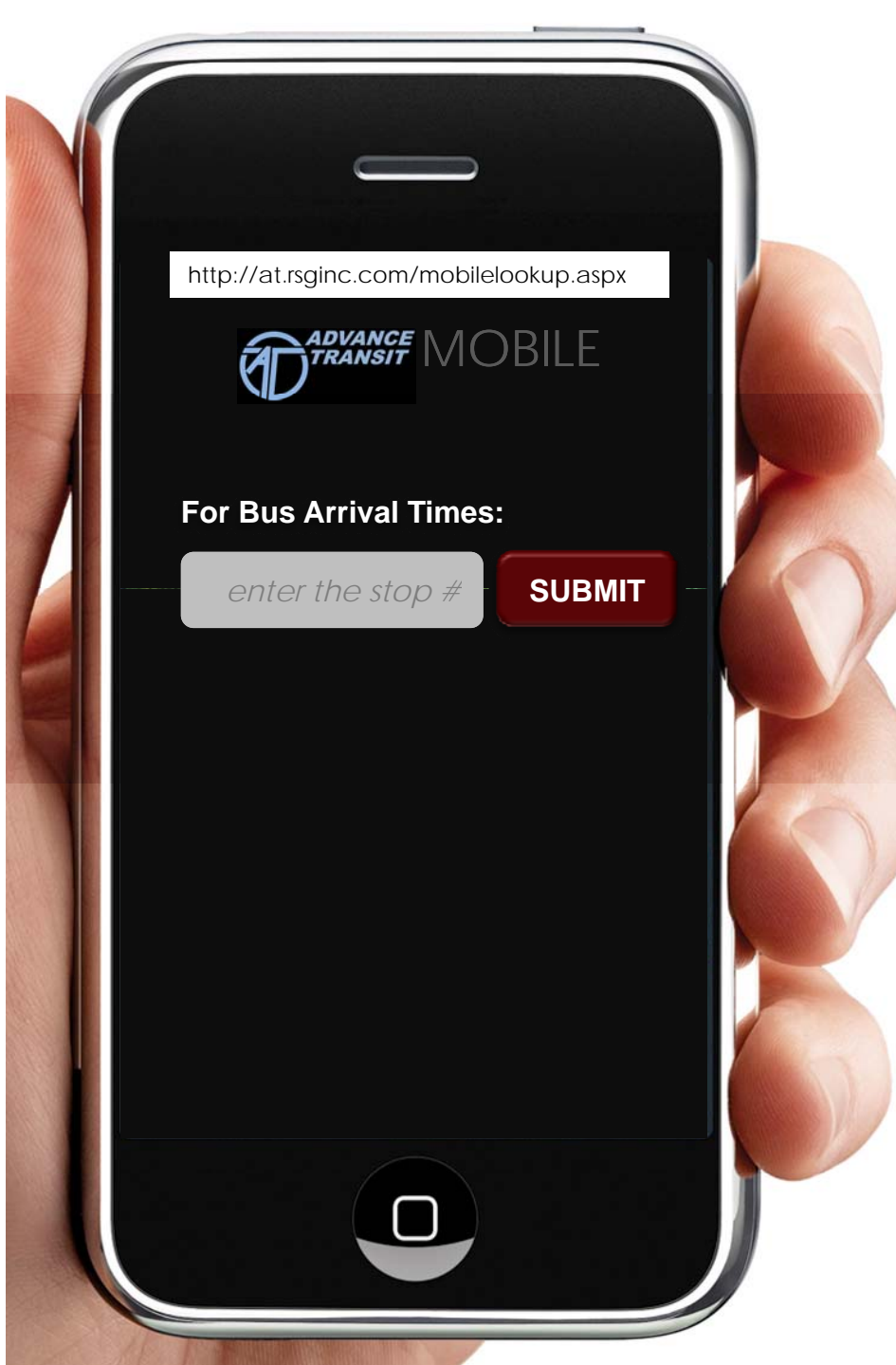
Bus Arrival Time Application

2010

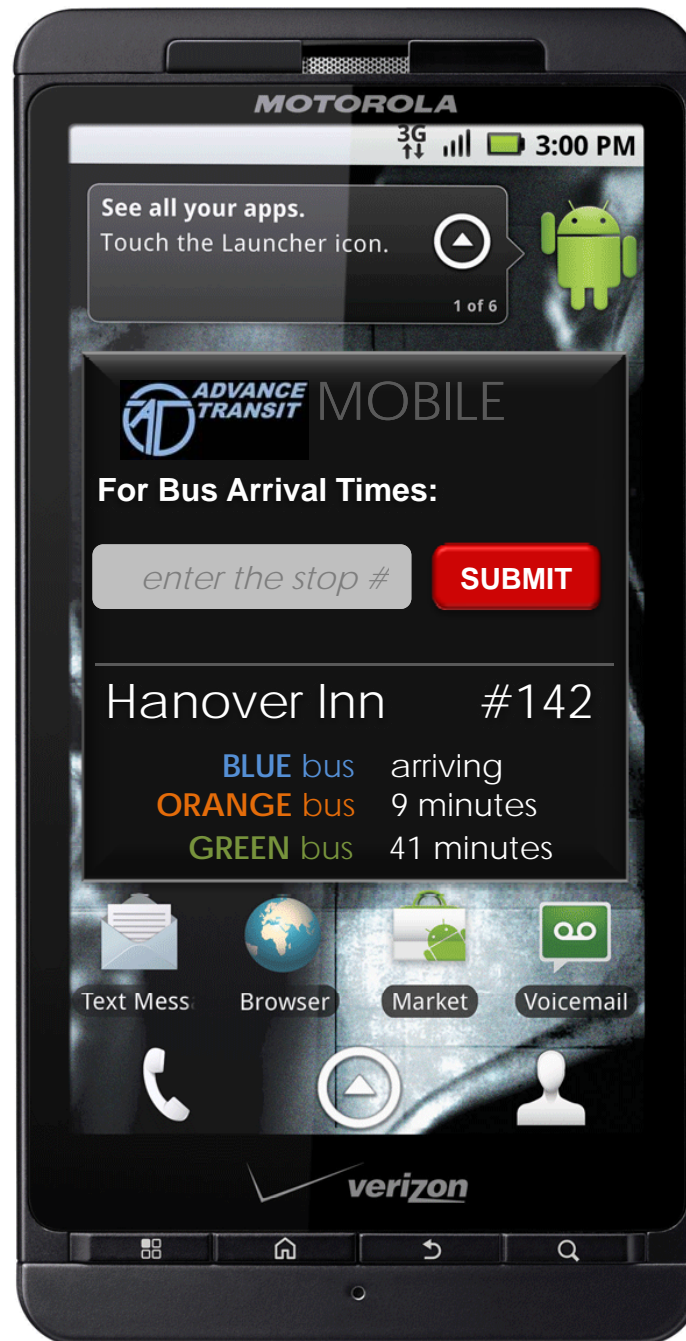
- Low cost bus tracking using smart phone apps
- The question:
 - Can a bus tracking system be inexpensively built for a rural transit provider?
 - How will cell phones work both as data transmitters on the bus and retrieval of results

Technologies

- Buses equipped with IDEN i335 phones hardwired to start with the bus. The phone application which continuously logs to our server is written in Java (J2ME).
- The server is running Microsoft VB/C# .Net 3.5 and Microsoft SQL Server 2005.
- The algorithm which combines historical time of day data for segments on the routes is executed using stored procedures as the data arrives to the server.
- Administration and mapping display leverages the Google Map API v2 and allows users to easily interact with the map both in laying out the trips as well as for system overview.
- The application can be viewed on smart phones through our simplified website.



Push mobile web apps to run locally on iOS or Android



Research & Development

Mobile Household Travel Diaries

2011

- Employs random moment technology
- Sampling over the course of a month or more
- Building individual travel patterns
- Refined sampling over time to fill in ODs

Thank You