

Building a Transportation Information System Using Only GPS and Basic SMS Infrastructure

Goals and Problem Space:

- **Context:** Marshrutka bus system in Bishkek, Kyrgyzstan
- **Design ethnography** and **survey data** identify transportation as a common challenge: unpredictable, unsafe and inefficient.
- **Challenges:** Marshrutka buses have set routes but no set stops or expected arrival times
- **Goal:** help users determine when next bus will arrive. Allows safer, more efficient system, encouraging ridership.
- **Survey data** points to high mobile phone penetration and use of SMS, but low Internet usage rates.

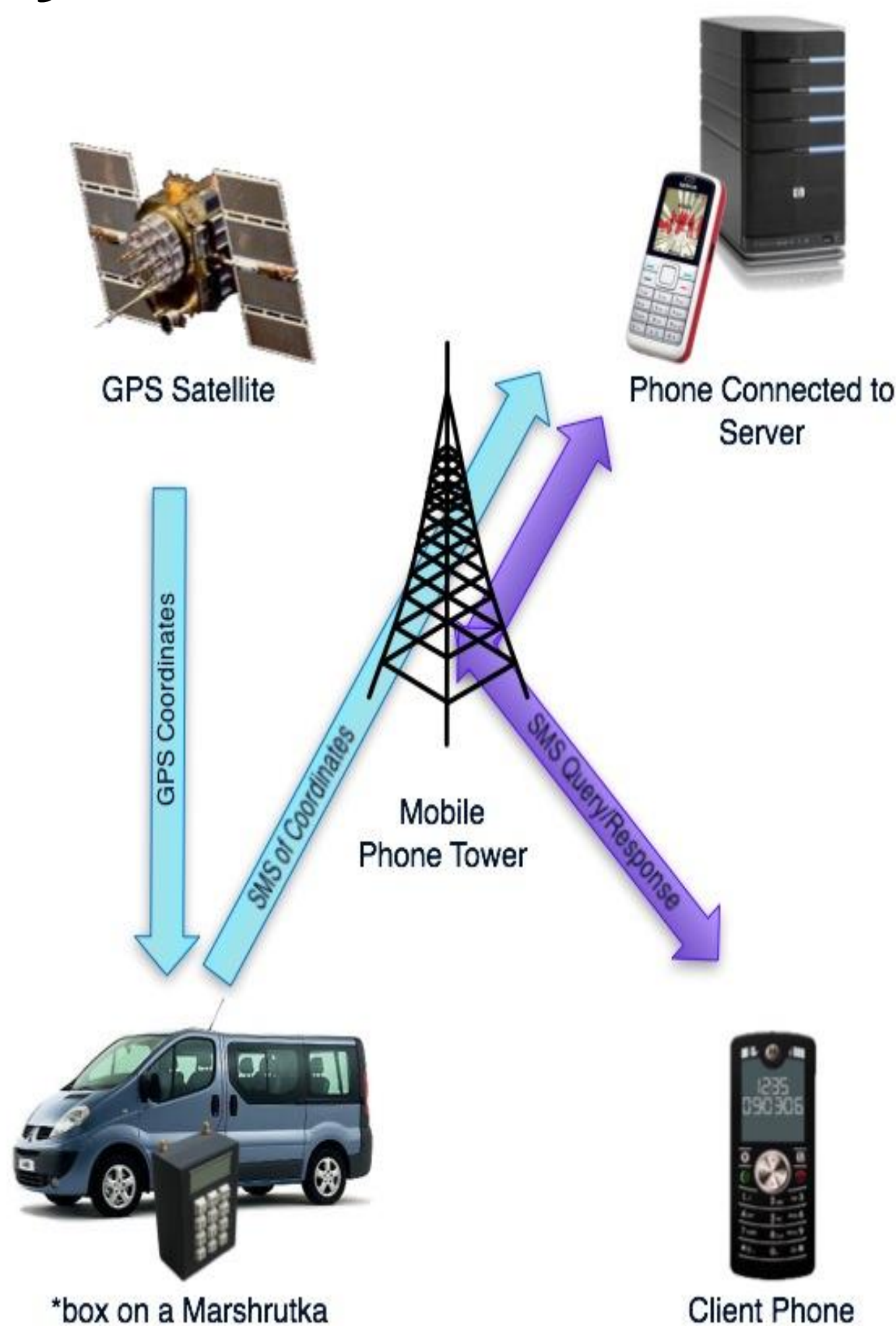


Marshrutka buses in Bishkek, Kyrgyzstan

Mobile phone and SMS-based solutions have best potential for wide adoption.

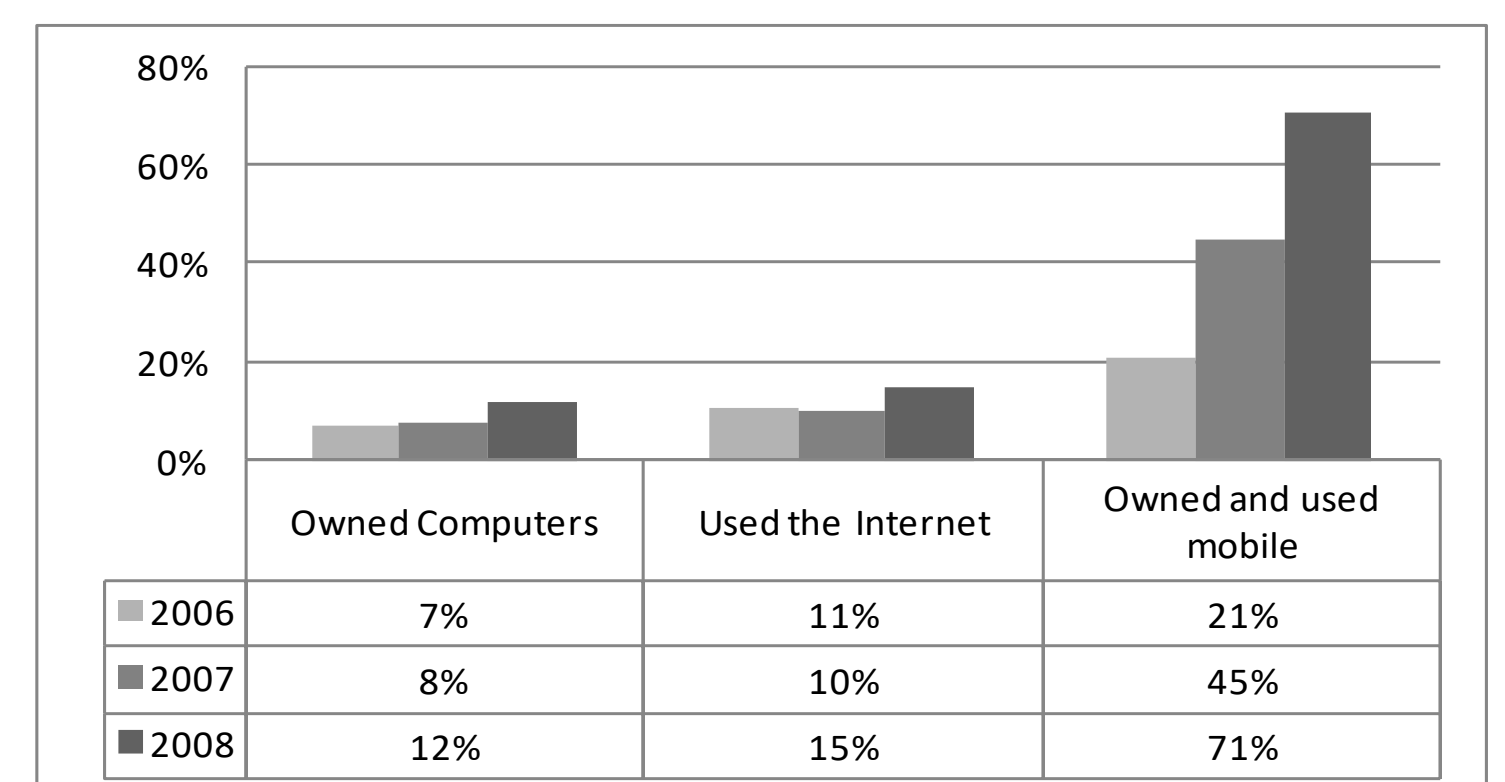


System Architecture:



System Components:

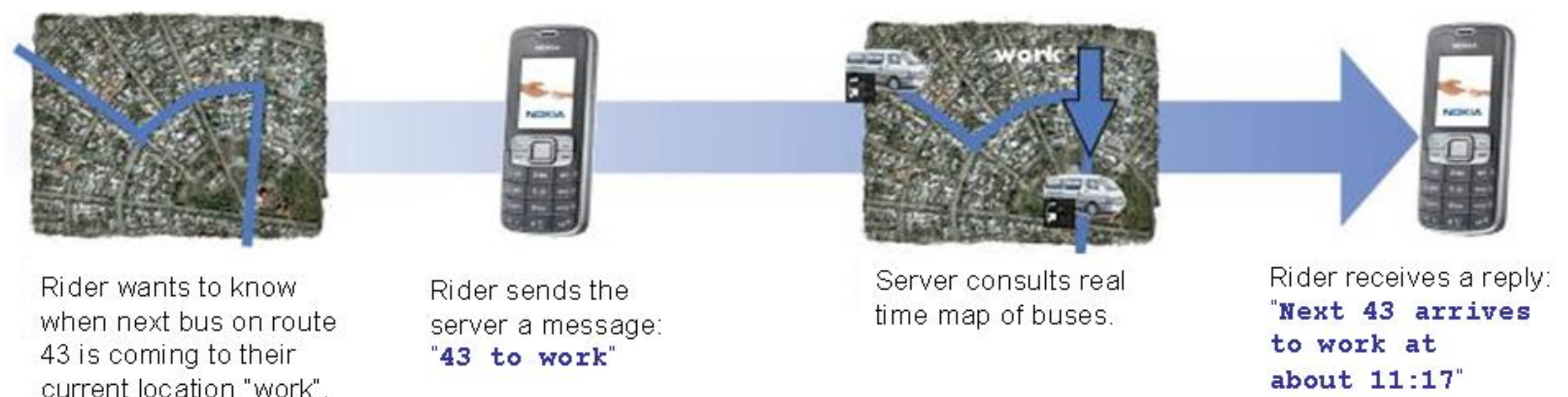
- ***box:** low-cost vehicle tracker containing a GSM modem and a GPS unit.
- **Server:** Laptop or desktop connected to phone capable of sending & receiving SMS messages.
- **Users** communicate with server via SMS (aka "text") messages.



Personal Technology Use in Kyrgyzstan

Example User Interactions:

Query the Arrival Time of a Bus

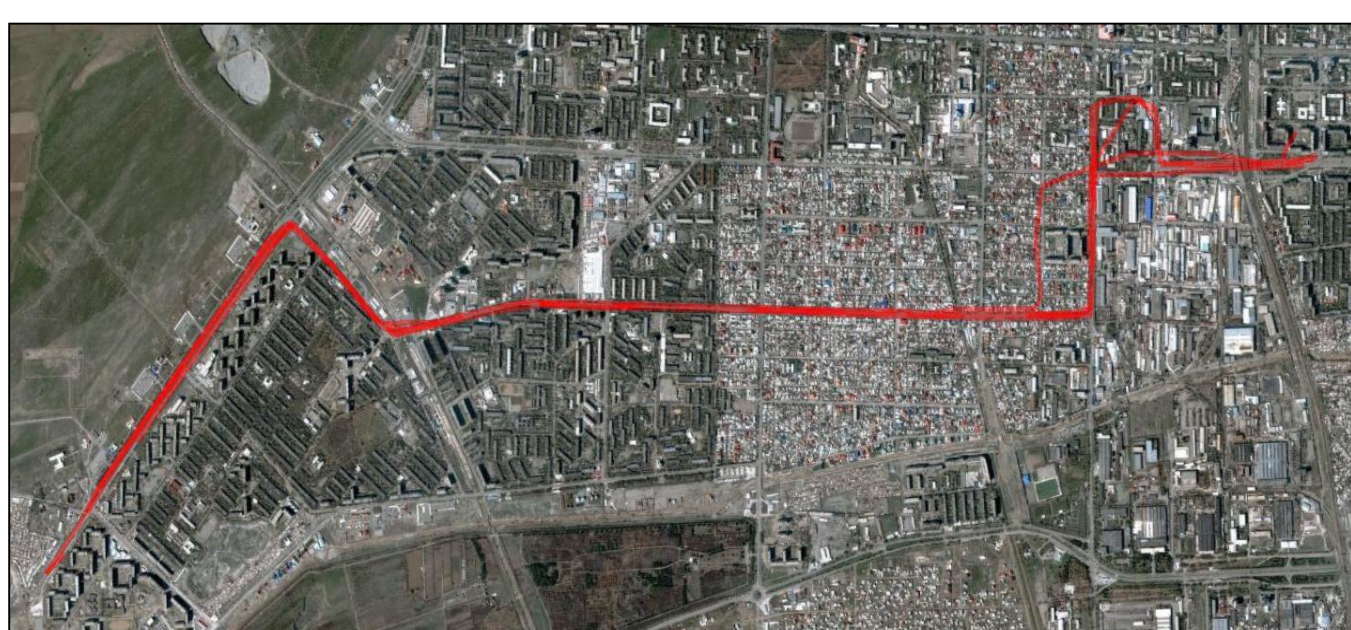


Tagging Locations



Current Status:

- Prototype Tested in Seattle
- Tested in Bishkek in March 2009



Marshrutka route in Bishkek, Kyrgyzstan

