Problem Space

- Donor mothers (DMs) request pickups at odd times & often with minimal notice
- Sometimes, more than one courier at a time goes for a specific pickup
- Couriers sometimes don’t know which milk bank (MB) to bring the breast milk (BM)
- Two Goals:
  - Make the couriers’ job easier during pickup
  - Standardize process DMs contact MB
Project Description

• Organizes dispatching of couriers who collect BM
• Used by DMs and couriers for deliveries
• Preconditions:
  o DMs have a phone with SMS capabilities
  o Couriers have a smartphone with internet access
• Hospitals gather information
Current Workflow

- Screening of donor mothers
- Excess milk collected from donors
- Samples sent to microbiology
  - Milk pasteurized, then frozen
  - Samples sent to microbiology
  - Pass

- Feed to infant
  - Keep frozen defrost as needed
  - Pass
Related Work

- Decentralized Human Milk Banking with ODK Sensors
  - Rohit Chaudri, Gaetano Borriello, et al

- Related areas of interest:
  - Taxi dispatch apps: Dispatch! (Android)
  - AceRoute, Amerilert First Responder (SMS), Comtekk, Digital-Dispatch, RapidSMS, TaskRabbit (Web & iOS), TaxiCentral
Current Findings

• Communication
  o Rohit: CSE grad student
  o PATH: Seattle based non-governmental organization
  o Human Milk Banking Association of South Africa in Durban

• Central roadblock: Lack of infrastructure

• Currently...
  o Investigating possibilities in Cape Town
  o Designing for a general scenario
Basic Scenario

1. Screening of donor mothers
2. Excess milk collected from donors
3. Samples sent to microbiology
4. Pass
Basic Scenario

- Courier goes to pick up BM
- Courier is sent new SMS while out doing first pick up
- New mother SMSs with location
Basic Scenario

Courier picks up BM from second mother
Architectural Diagram
Mockups

Donator (non-android)

Courier
Design and Evaluation

- **Database**
  - Personal information, courier information, key locations, transactions
  - Central; no client should be hosting it
  - Privacy

- **Automation**

- **Cross Platform**
  - Website
  - Android
Next Steps and Project Plan

• Further Research
  o Explore Voxeo more with Nathan (as needed)
  o Gather more information about the South African situation (ongoing)
  o Find a free database

• Coding
  o Voxeo (20%)
  o Django (70%)
  o Database data entry (10%)

• Interface Design
  o Web app interface
  o Native app interface