Cold Chain Equipment Visualization

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Background

PROBLEM SPACE
• Cold chain a key factor of vaccine programs
• CCEM database for tracking and modeling is complex, not intuitive to use
• Many health ministries and NGOs need to be able to easily model current and possible situations for action and funding

DESIGN QUESTION How can public-health officials use a map-based visualization interface to improve their ability to model vaccine cold-chain equipment scenarios?

SOLUTION A map-based, interactive visualization for modeling equipment scenarios
Early prototypes
Early prototypes
Fieldwork

LITERATURE REVIEW
- Cold chain
- Games
- Visualization
- Health care logistics
- Algorithms

RELATED PROJECTS
- PATH Cold Chain Equipment Manager
- Vaccine Modeling Initiative
- UNICEF Cold Chain Logistics taskforce

INTERVIEWS  Richard Anderson/UW, Sophie Newland/PATH, Mark Chen/UW

TURN-BASED GAME ANALYSIS
Early evaluations

FEEDBACK ON DESIGN CONCEPTS FROM PARTNERS
- Meeting with PATH
- Input from Mark Chen
- Ongoing guidance from Richard

USABILITY TESTING
- Basic paper prototype
- Goal: testing ease of use, navigability
- Tested with four people

Evaluations incorporated into design on ongoing basis
Architecture

SQL database

Ruby on Rails framework

Google Maps

Internal data models
Accomplishments

- Prototyping and user testing
- Implementing a Ruby-on-rails framework
- Setting up data models
- Multi language support
- Mapping clinic locations
- Calling clinic information when clicked
DEMO

LINK
Remaining Tasks

- Drag and drop functionality
- Algorithms/heuristics
- Finalize UI - Map data layers, icons, navigation
- Aesthetic improvements
- Usability testing
- Functional users
Evaluation plan

Next week: PATH touch base

Next two weeks: Usability testing

Next three weeks: Possibly get input from district managers

Test with users based on common tasks, incorporate lessons in updated version. Likely tasks:

- Allocate units using new funding
- Re-allocate existing units
- Run allocations manually and automatically
Timeline

Week 6 Meet with PATH, usability testing, finalize map UI, full facility data from database to map, drag-and-drop

Week 7 Usability testing, populate inventory data, develop algorithms, drag-and-drop

Week 8 Usability testing, finalize algorithms, overall UI polish, meet with PATH

Week 9 Final usability testing and overall polishing, final presentation