Designing an Architecture for Delivering Mobile Information Services to the Rural Developing World

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Overview

- In this article Parikh and Lazowska present a new framework, CAM, for developing mobile applications targeted for users in the developing world based upon their experience with the limitations of current mobile platforms.

Why do we need a new framework?

What limitations of previous systems does CAM address?

- Intermittent Connectivity - applications must seamlessly work in both online and offline modes.

- Text-Dependent UI - hardware and operating system constraints often prevent effective localization of text-centric UIs.

- Excessive Documentation - interface should be easy to use, and require minimal training to learn how to operate it.

- Assumptions about Usability Based on the Developed World

    - The concept of a private, personal mobile device.

    - The WIMP (Windows, Icons, Menus, Pointer) user-interface concept.

What did Parikh and Lazowska develop in response to these limitations?

- The CAM architecture makes use of camera phone technology to provide a flexible platform for efficient processing, navigation and transmission of paper-based information.

What does this look like, in practice?

Header is for scanning one-time static data

Body is for data entry and review

Buttons are for various actions

Key Features of the CAM framework

- Automatic download of applications from scanning a bar code.

- Download and install done over MMS or WAP as needed.

- Applications and data are automatically cached on the phone for offline use.

- Seamless upload & download of data when the user returns to an area with network coverage.

- Leaves a paper record of transaction with the client.

- Use of audio prompts as well as image based text in the local dialect work to maximize comprehension on the part of both the client and the agent.

How might this be useful in our ongoing Nextlab Projects?

- One possible example from the *Nextmap Project*

  - CRS Disaster Management wants users to be able to enter answers to a survey on a mobile phone, for automatic transmission to the head office.

  - What would the advantages and disadvantages of a CAM style user interface be useful for such an application?

  - How does its usability compare to more traditional totally phone-based UIs?

  - Is this type of UI useful only for those unfamiliar with computer use, or does it have application with users who have experience with WIMP-based computer interfaces as well?

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