

Mobile Device use in Underserved Areas

Challenges, Considerations and Lessons Learned

3/20/2013



Agenda

- Use Case Overview
- Field Environment
- Challenges and Approaches
- Lessons Learned

Use Case Overview

- Experiences Based on Domestic and International Projects
- Data Collection in Developing/Disadvantaged Areas
- Interviewer Led, Typically Performed in Remote Villages and Towns
- Local/Cultural Considerations
 - Education/Literacy Levels
 - Language
 - Distrust



Field Environment

- Limited Infrastructure
 - Power Availability
 - Communications Infrastructure
 - Travel Difficulty
- Rough Conditions
 - Unpaved Roads
 - Dusty Environments
 - High Humidity
- Potential for Loss or Damage of Devices



Project Characteristics

- Short Startup and Fielding Period
Allows Limited Time for:
 - Device and Tool Evaluation and Selection
 - Piloting a Solution
 - Designing Operational Procedures
 - Training
 - Data Collection

Considerations: Device Types

- MS Windows Tablets
 - HP, Samsung, Fujitsu, MS Surface
- Android Tablets and Phones
 - HTC, Samsung, Asus, Motorola
- iOS Devices
 - iPad, iPad mini, iPhone, iPod Touch





Considerations: Device Characteristics

- Size
- Ease of Use
- Battery Life
- Ruggedize
- Communication Capabilities
- Security Capabilities
- Available Quantities

Approaches: Device Configuration and Management

- Baseline Definition for Ease of Use
 - Applications Should Be Easily Accessible

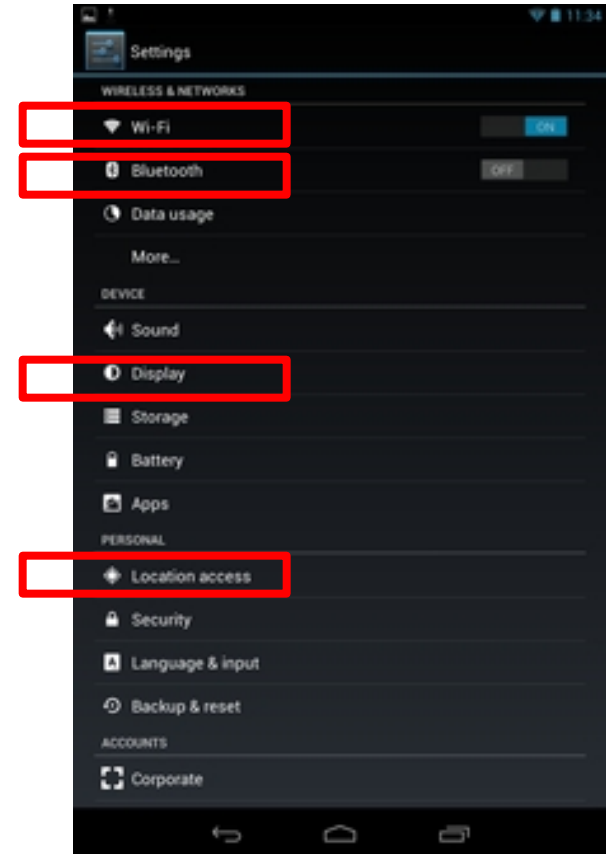


Approaches: Device Configuration and Management

Options For Conserving Device Battery Life



- Screen Brightness
- Sleep
- Wireless
- GPS
- Bluetooth
- Case
- etc..



Approaches: Device Configuration and Management

- Options for Power Replenishment
 - Universal AC Adapters
 - Inverters
 - External Batteries
 - Car Adapters
 - 12V Splitters
 - Solar Chargers



Approaches: Device Configuration and Management

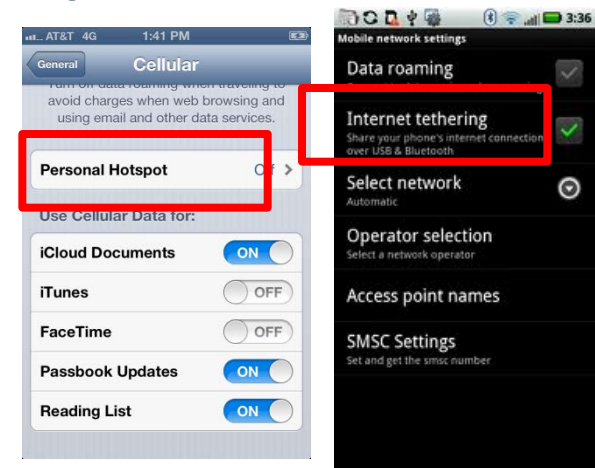
- Options for Device Protection & Handling
 - Ruggedize
 - Reduce Exposure to Dust & Dirt
 - Accessories for Safe Handling



Approaches: Mobile Communications

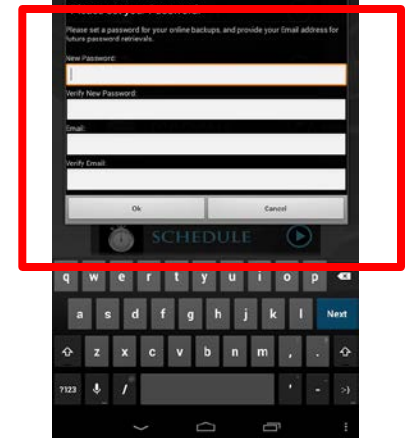
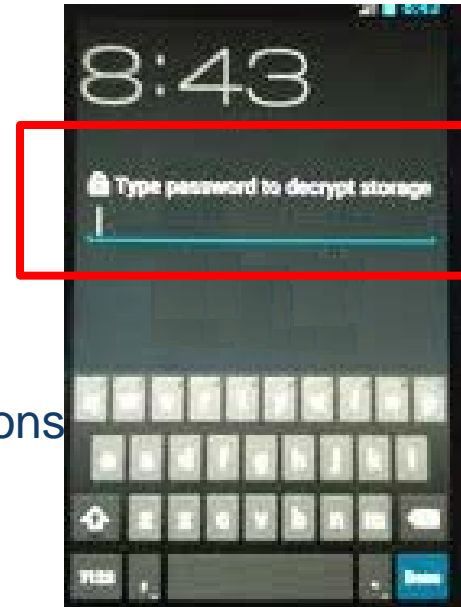
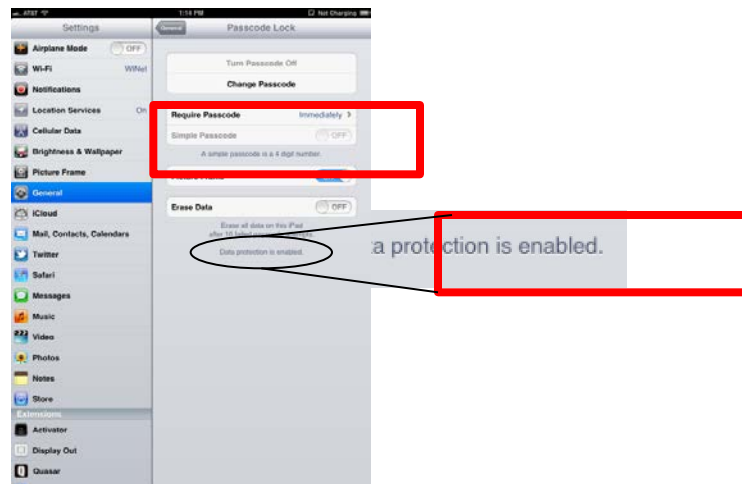
Options and Considerations for Device Mobile Communications

- Plan for Limited Internet Access
- Limited Wi-Fi Availability
 - Kiosks, Some Hotels in Cities
- MiFi Options
 - Local Carrier Network Technologies Differ
- Mobile Smartphone Tethering Options
- Check Carrier Charges
 - “Roaming Charges May Apply”



Approaches: Device Configuration for Data Security

- Device Password Protection
- Auto Lock
- Centralized Password Management
- Device Data Encryption
- Secure Data Transmission
- Remote Device Wipe Options - Consider MDM Solutions



Approaches: Large Scale Device Management

- Considerations For Large Scale Deployments:
 - Device Acquisition in Large Quantities
 - Procurement
 - Receipt
 - Inventory & Tracking
 - Secure Storage
 - Device Cloning
 - Automated & Manual



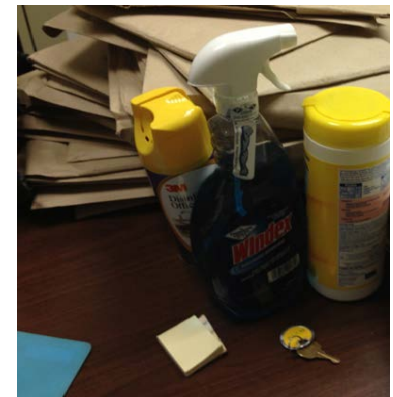
Approaches: Large Scale Device Management

- Considerations for Large Scale Deployments:
 - Shipping and In-Country Delivery Logistics
 - » Import/Export Restrictions
 - » Taxes/Customs
 - » Local Regulations
 - Remote Mobile Device Management and Configuration Management
 - » In-Field Application and Software Upgrades
 - » OS Upgrade Management



Approaches: Large Scale Device Management

- Devices and Accessories Upon Return
 - Prepare for Redeployment
 - Clean
 - Backup-> Wipe -> Reconfigure
 - Repair



Lessons Learned

- New devices and software continually and quickly emerging
 - As an Ongoing Activity – Need to Evaluate New Software Products and Devices for Consideration
- Device and OS – Continue to Evolve
- Ability to purchase uniform fleets of devices for use over extended periods of time can be a challenge
- Mobile Device technology and broadband availability vary from country to country
- Security and Device Management can be challenging
 - Ongoing Monitoring for Potential Security Vulnerabilities
 - Consider Tools for Device Policy Management

Questions?

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