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Utilizing iPads in the Field

Overview

- Recent innovations in mobile devices provide the field researcher with increased mobility and a more user friendly tool for collecting data.
- Study teams can also use mobile devices to store and access study-related materials such as training manuals, recruitment materials, and study-related multi-media.
- Although current devices provide much better service and greater capabilities than previous devices (laptops, palm pilots), challenges remain, such as connectivity and data security issues.
- Android and Windows-based platforms may be suitable for field work, but iPads have some advantages in usability, connectivity, and security that may justify the slightly higher cost per unit.
- New applications capture data directly onto mobile devices, but create additional security concerns.

iPAD Features

- The iPad provides the field interviewer with a light, versatile platform for web access, limited data storage, audio-visual media.
 - Integrated broadband connectivity for better web access
 - Survey application for local storage
 - Security provisions limiting hardware, website, and software application access
 - Camera/photo
 - Navigator application
 - Calendar
- Data security risk assessments should determine how these features will be used on a study
- The iPad 2 has a battery that lasts up to 10 hours

Study Design Requirements

- For a field study in Inglewood, CA, Battelle needed to provide field staff with flexible devices that could enter data directly into a secure central database through an encrypted firewall.
- Because of the location of the study was in an area with wide broadband coverage (Verizon and AT&T), and to minimize hardware security issues, the study team decided to make the data collection system entirely web-based.

Direct Web Data Entry Using Mobile Devices

- The field interviewer enters data directly into a secure, centralized data collection environment, instead of storing data on the iPad.
- Entering data directly into a centralized database reduces (*but does not eliminate*) data security concerns created by storing data directly on the mobile platform.
- Disadvantages include connectivity concerns, because slow or limited access would reduce productivity.

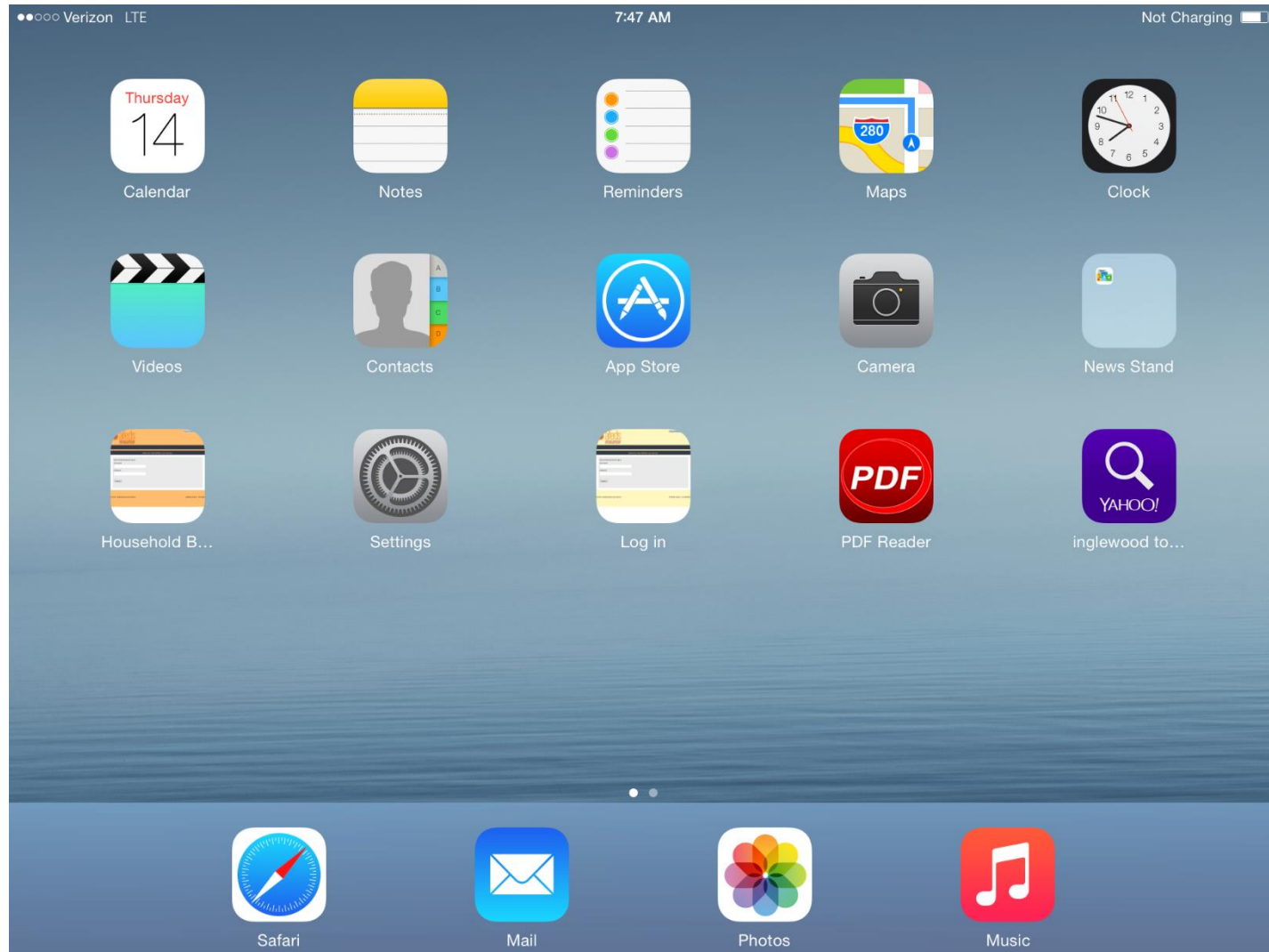
Determining Capability for Web-based Data Collection

- Does the area have coverage?
- Which data service provider(s) provide coverage in the area?
- Are there “dead zones”?
- Is maintaining provider service cost-prohibitive, vs. utilizing an application and storing data until the end of the day?
- Does your study require field assessments that can only be conducted using devices with more powerful operating/storage systems?

Advantages of Using iPads

- Testing within the study tract showed that iPads generally had superior connectivity over Android and Windows tablets, even when using the same wireless service provider.
- Field staff report high level of usability, both when training on the systems, and using the systems when in the field.
- “Locking down” an iPad is generally easier than a Windows-based mobile device. Non-IT supervisors can be trained more easily to function as administrators.
- Apple products have traditionally been less likely targets for security malware, although the number of iOS-based malware is increasing.
- Web-based survey applications now include iOS-compatible platforms to improve presentation and usability.

Study Desktop




iPad Survey Display

The screenshot shows an iPad interface for a survey. At the top, the status bar displays 'Verizon LTE', '8:41 AM', and 'Not Charging'. Below the status bar, the URL 'afeds-inglewood-qa.org' is visible. The main content area is titled 'HOUSEHOLD ROSTER' in bold black text. A green progress bar is partially filled. The question is 'R01. How many people age 40 and older live in this household?' with a blue pencil icon. Below the question are three radio button options: '#', 'REFUSED', and 'DON'T KNOW'. The '#' option has an empty text input field next to it. At the bottom, a yellow bar contains two buttons: '<< Previous' and 'Next >>'. The background is a light gray gradient.

Verizon LTE 8:41 AM Not Charging

afeds-inglewood-qa.org

HOUSEHOLD ROSTER

R01. How many people age 40 and older live in this household? 

#

REFUSED

DON'T KNOW

<< Previous Next >>

Applications for iPad and Android

- Recently, applications designed to collect survey data on iPads for temporary storage have greatly improved. Several vendors have developed user friendly applications that can be used on iPads, Android, and Windows-based tablets.
- With these applications, tablets can store data until the field interviewer is able to obtain wireless access to upload the data to a secure, central database. The upload process removes the data from the iPad.
- Mobile devices are normally used in locations outside of the organization's control (homes, coffee shops, etc.) Storage of data on iPads, even temporarily, requires additional data security measures, and may further limit the ability to utilize the iPad as a multi-media device.

Examples of Mobile Survey Applications

- Survey Monkey
- iSurvey
- QuestionPro
- SurveyPocket
- Voxco
- Caretotell

Addressing FISMA Compliance

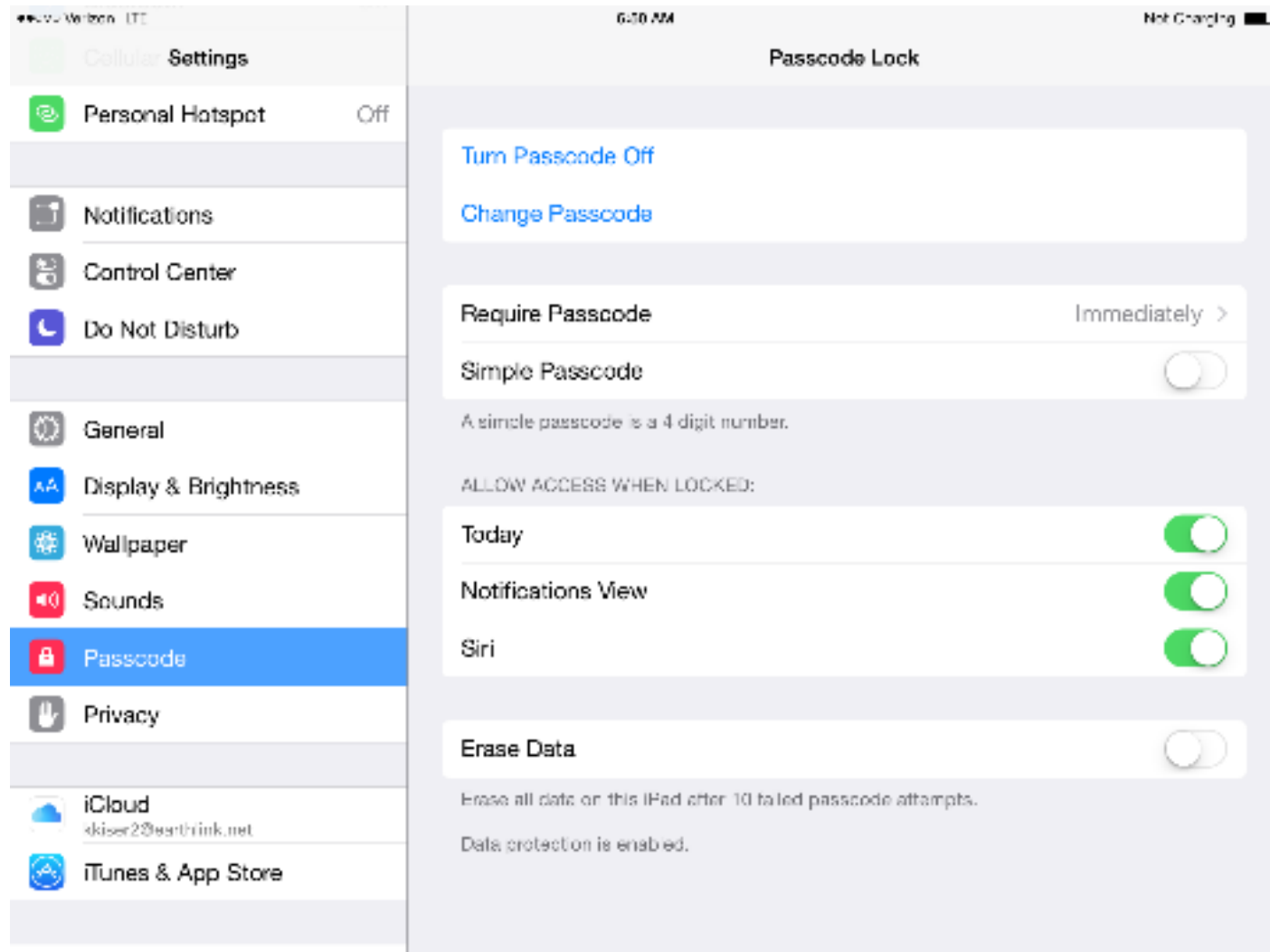
- The Federal Information Security Management Act (FISMA) requires federal agencies and contractors practice “continuous automated monitoring of information systems used or operated by an agency or by a contractor of an agency or other organization on behalf of an agency.”

Policies and Procedures for Ensuring Mobile Data Security

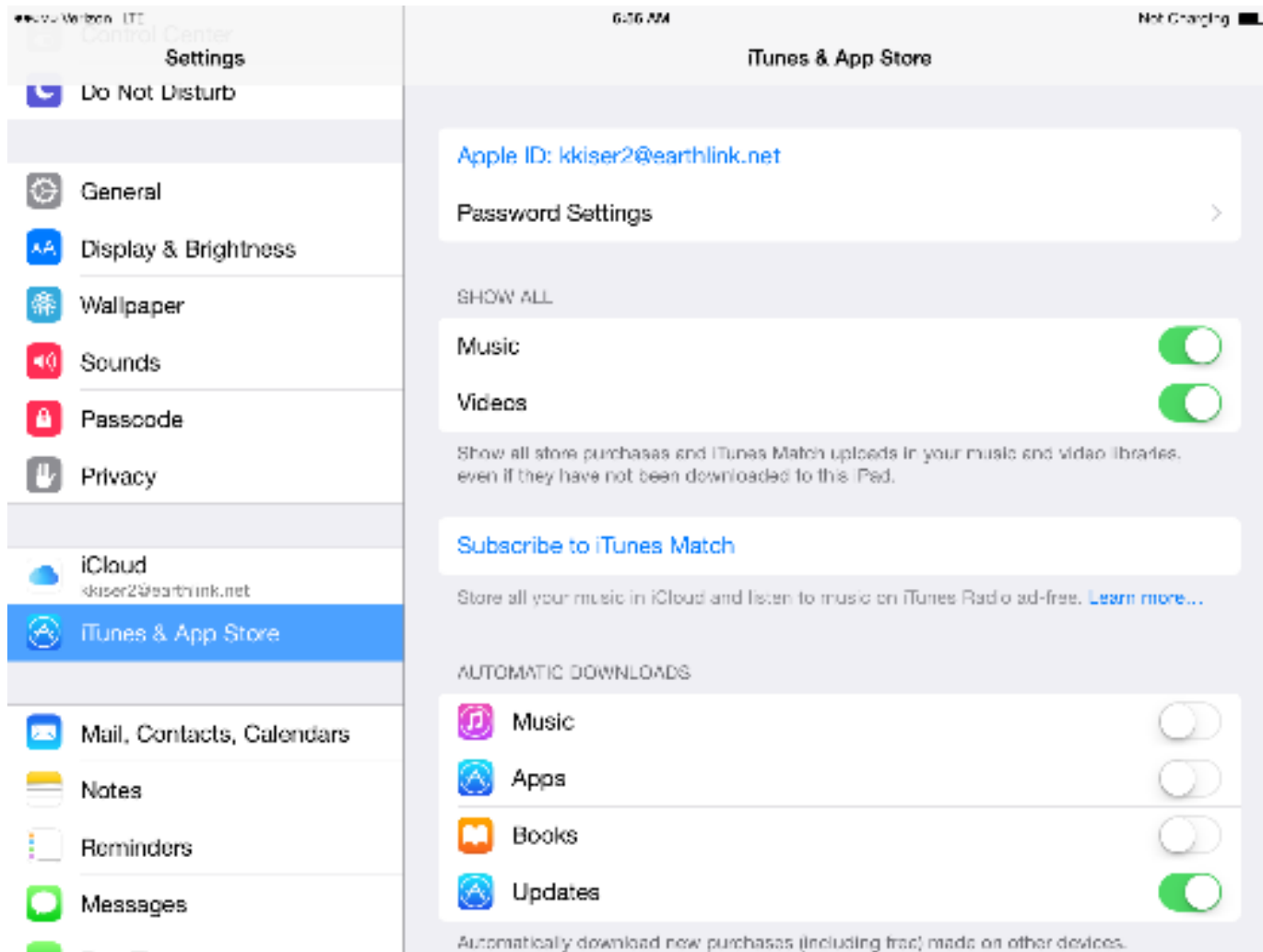
Organizations utilizing mobile device should implement the following:

- Policies for managing mobile devices (including smart phones) separately from those managing laptops
- Centralized management control
- Encrypted data communication and storage
- Established procedures for ensuring that only authorized staff have administrative privileges (generally, the field interviewer should not have this privilege)
- Procedures in place for executing required updates in a timely manner
- Limit user access to authorized sites and software.

Assigning Passwords for iPad Use



Setting Administrative Passwords



Questions?

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