Management Considerations for Transitioning from PAPI to CAPI: Procurement

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Overview

- Getting technical advisors
- Understanding technology
  - hardware
  - software development
  - infrastructure
- Deciding on a system
- Understanding procurement challenges

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Overview

- Writing the tender - contract requirements
  - Time to test and deliver
  - Ownership of data
  - Knowledge transfer
  - Replacement of faulty systems
- Risk register and Plan B

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Technical Advisors

- Core expert staff in statistical offices are statisticians, demographers, sociologists, geographers and economists.
- A CAPI census/survey makes it necessary to have expert knowledge on many technology and infrastructure issues.
- Thus, need technical experts **WITH** experience working on digital data collection, transfers, database management, etc. as advisors.

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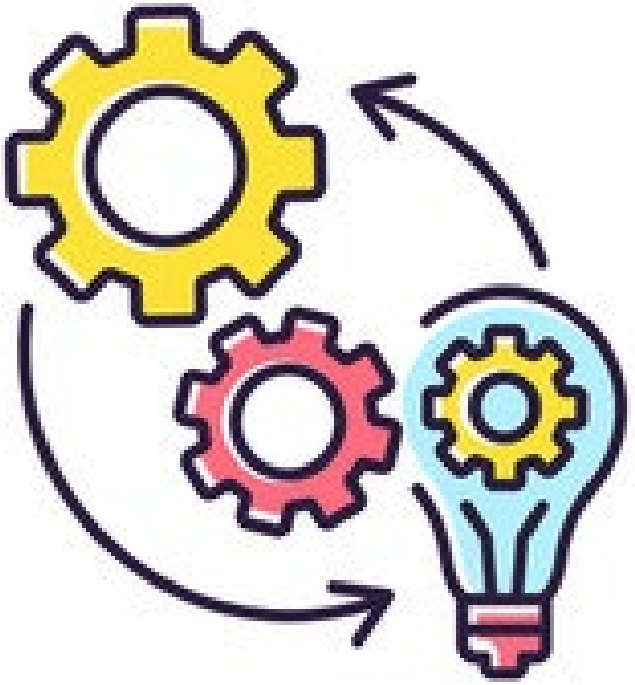
Understanding Technology

- E-census or survey does **NOT** yet have an out-of-the-box ready to plug-and-play solution
- E-censuses are complicated systems that need to be designed and integrated depending on the requirements and specifications of the country



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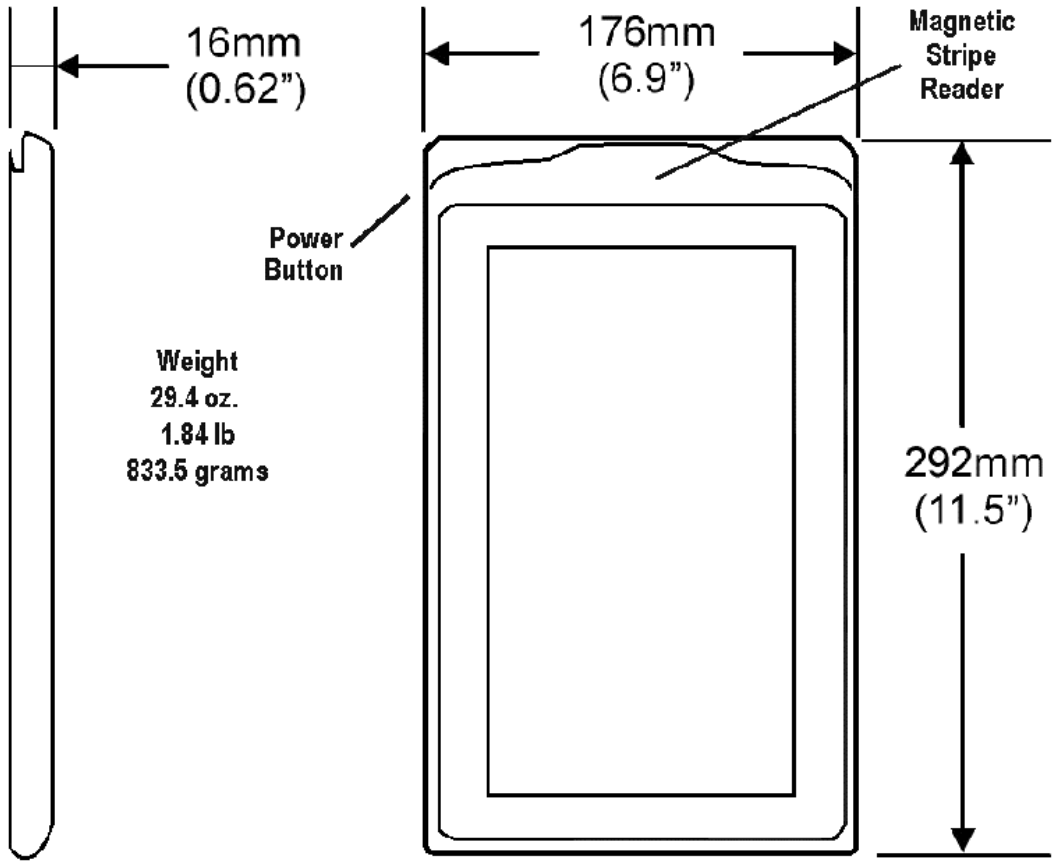
Understanding Technology - Hardware

- Deciding on a platform for your mobile data capture technology
  - Cost
  - Production and delivery schedules
- Do you need GPS capability?
  - Mapping
  - Enumeration area fencing
- Tablet specifications



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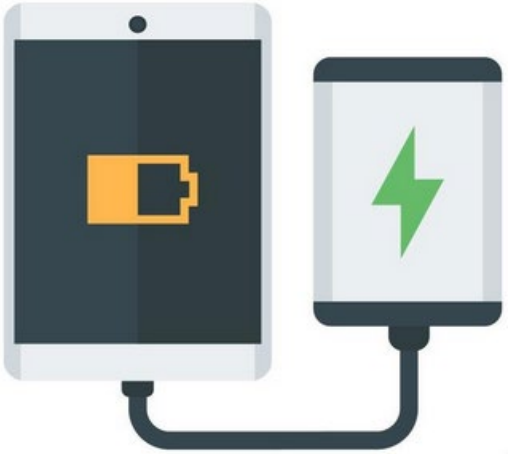
Understanding Technology- Hardware

- Server specifications
- Battery packs as back up
- Mobile phones
- Computers



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Understanding Technology- Software

- List of all the software needed
- Software development is an iterative process
- Schedule enough time in the contract to allow for multiple mini-pilots
- Try to build in some in-house training and capacity building into the contract
- Who owns the software afterwards?

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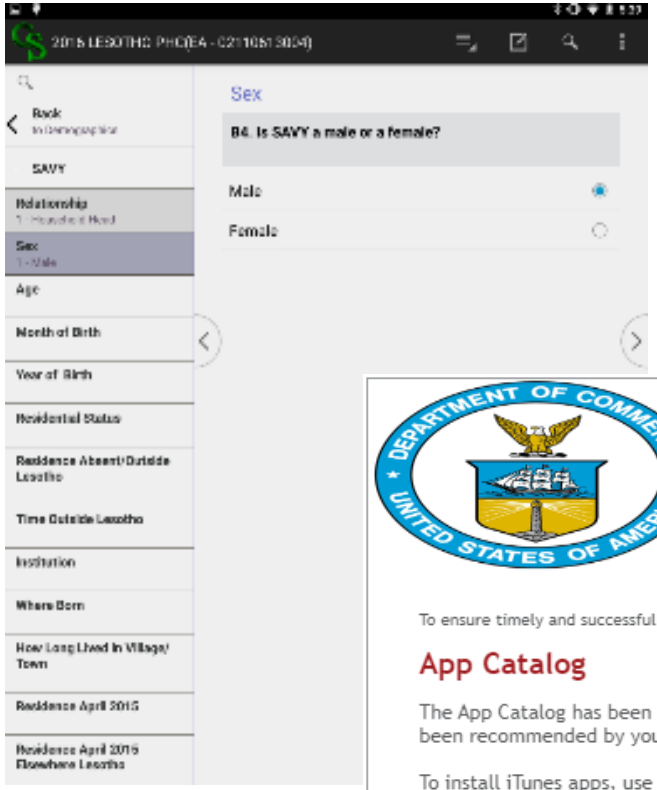
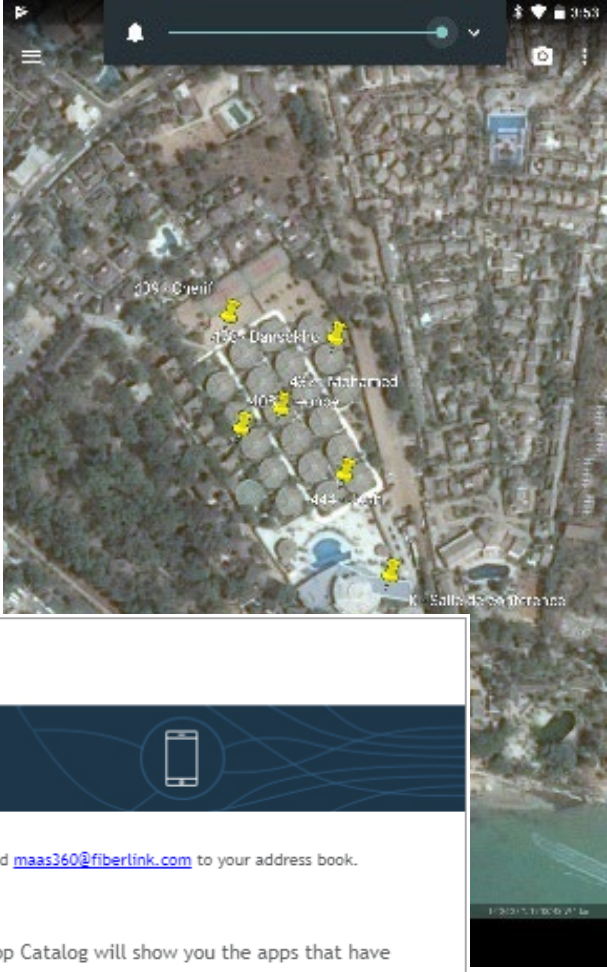
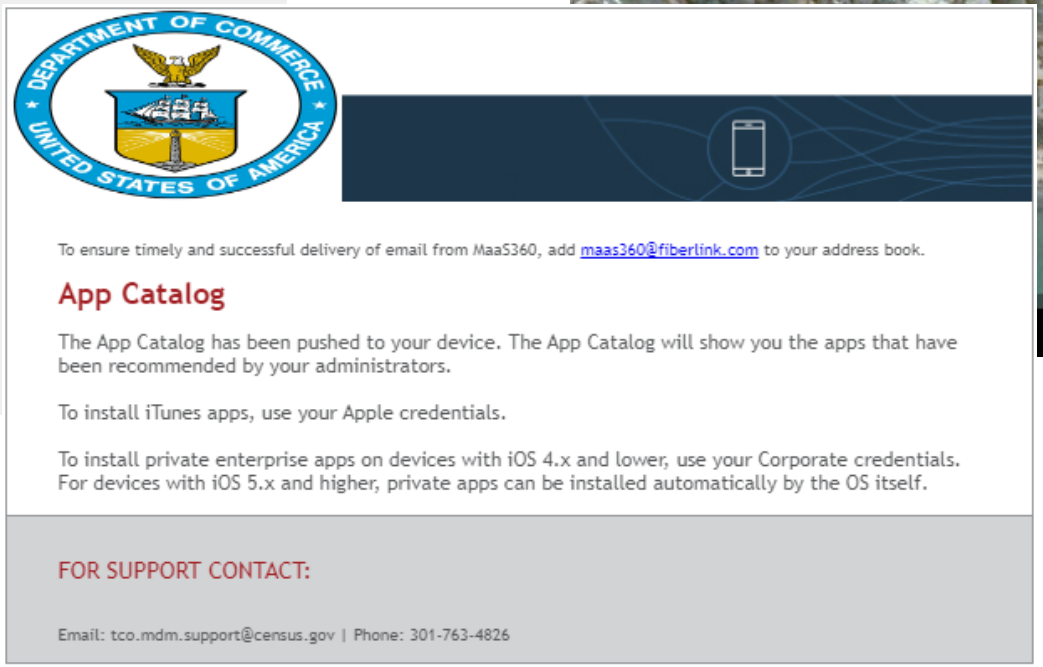
Own and Third-party Software

- Data collection
- Mapping/GIS
- Phone/texting
- Mobile Device Management or MDM
  (VMWare Workspace ONE, IBM MaaS360, Cisco Meraki, etc.)
- Document viewers







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Understanding Technology-Infrastructure

- Evaluate if the country has adequate infrastructure for a CAPI survey/census
  - Access to electricity
  - Telecommunication networks
  - LAN/WAN set up
  - Internet connectivity

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Deciding on a CAPI System

- Elements and complexity of a system can vary
- Elements may include some or all of these-
  - Mapping application
  - CAPI address canvassing
  - CAPI questionnaire
  - Data transfer
  - Management and monitoring progress
  - Database management
  - Tabulation and reports

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Deciding on a CAPI System

- Decision will depend on the following-
  - Infrastructure of the country
  - Budget
  - Training or capacity of staff
- But the system decision needs to be made much earlier than paper based censuses because of the need for multiple mini-pilots, setting up secure networks and procurement processes

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Understanding Procurement Challenges

- Government procurement takes time
- Multiple tenders will probably be required for the integrated CAPI system
- Getting the specifications for all the elements of the system is extremely important
- Procuring thousands of mobile data capture units means a company needs time to produce them

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Jordan had 50 Tenders for 2015 Census

Electronic Census Tender

- This tender included purchase of the tablet devices, programming systems for the Census (Electronic Questionnaire, Field Work Management, Call Center System, Data Processing System, Results Extraction & Dissemination System), GIS licenses in addition to systems and data transmission services

Data Centre Tenders

- Infrastructure maintenance: Purchase of adequate air conditioning systems, fire fighting systems, UPS, electric generator, Monitoring System, civil and electrical works
- Purchase of Hardware Components: Servers, Storage System, Network Components (switches, routers, firewalls, and load balancers)
- Software Licenses: Microsoft SharePoint, Microsoft SQL Server, Microsoft Data Center, ArcIMS, Arc SDE, ArcGIS Runtime

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Jordan had 50 Tenders for 2015 Census (continued)

Call Center Tenders

- Infrastructure maintenance: electrical and civil work, desks for Call Center Agents, headsets
- Call Center: Hardware (call center servers, network switch, screens, monitoring system) and software components (call center software).

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Jordan's Tenders (continued)

Regional Offices Preparation Tender

Procurement of required components for the Regional Offices were as follows:

- Personal computers and laptops.
- Laser printers
- Wireless access points for data connection and transmission
- Data show

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Jordan's Tenders (continued)

Operation Room Equipment Tender

- Personal computers
- Smart screens to view main dashboards

Oracle Database Tender

- Oracle database enterprise edition – processor licenses

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Jordan's Tenders (continued)

Multifunction & Photocopiers Tender

- Multifunction A3 black printer
- Production printer A3 black printer
- A3 color printer production printer

Jordan's Tenders (continued)

Media Awareness Campaign Tenders

- Awareness publications for the enumeration process
- Cartoon movie and a musical tune for the census
- School competitions to educate the students about the census and its importance

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Writing Tenders

- If you are outsourcing your system, it is important that your lawyers review the terms of the agreement
- Clauses should account for:
  - The iterative process of software development
  - What happens in case of failure or defect
  - Software and data ownership
  - Knowledge transfer, if any

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Risk Analysis

- Create a risk register that includes:
  - Risk for each element of the system
  - Risk of the system failing
- Plan risk response strategies:
  - Delayed procurement
  - Broken or stolen tablets
  - Network issues
  - Partial paper-based
  - Data entry plans for paper
  - Etcetera

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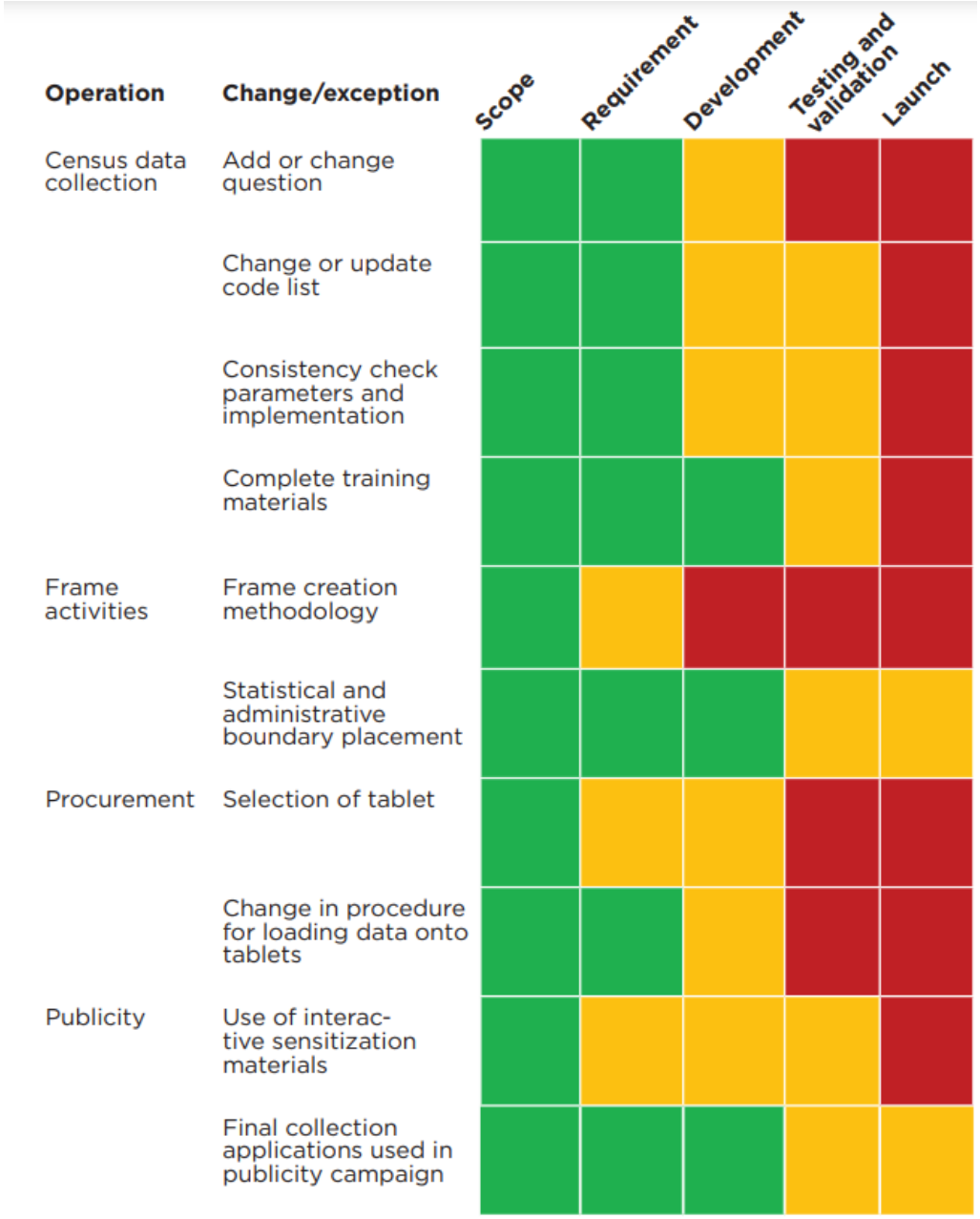
Risk Analysis Matrix



Note: An exception refers to a change that takes place after a linked milestone has passed.
Source: U.S. Census Bureau.

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Conclusion

- Procurement process is A LOT more complicated in CAPI than in PAPI
- Timelines are longer than paper-based operations
- Technical advisors needed for the procurement process
- Build in clauses into contracts that mitigate risk

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Content Caveat

- Much of the content of this presentation comes from the experience of the International Programs Center in other countries

Questions?