Census Scientific Advisory Committee

Cyberinfrastructure Working Group

April 10, 2014

Working Group Goals

- Review, assess , and provide input on a variety of factors related to the Census cyber infrastructure and the use of cyber technology for data collection and data dissemination
- The goal is to advice the Census Bureau on unique challenges (e.g. cyber security, social media, web-based data collection and cyber design).

Key Issues/Challenges

- Developing an efficient, cost-effective and secure solution to use smart phone and smart device technology to perform field data collection efforts.
- Design and implement a cost-effective, scalable cyber infrastructure to support data collection activities.
- Ensure that the design of both field components and the cyber infrastructure remain flexible in order to accommodate technology advancements as well as management decisions on how to employ field components.

Key Issues/Challenges

- The Census Bureau understands that we will need to rely on cloud providers to help us scale through the 2020 Census. Since using public cloud technology for this scale of growth for a relatively short time we are looking to understand 3 things:
  - Are there any private sector or other public sector organizations that have done similar efforts on a proportional scale?
  - What is the prevailing sense among public cloud providers on doing business with the government and the inherent regulations?
  - What is the sense of the public's perception of storing their data in the public cloud?

Key Issues/Challenges

- The Census Bureau is committed to the expansion of cellular/ Wi-Fi technology to support field data collection. We are looking for help in understanding the following.
  - Are there any private or state or local governments who are moving more towards cellular and/or Wi-Fi? If so, how do they deal with the areas with little or no coverage?
  - Does the working group have any information or can they begin to look for information on how cellular/Wi-Fi service will grow through the rest of the decade and where?
  - Is there any indication where costs for cellular/Wi-Fi services will fall over the next 6 years? This could impact data plan costs for field staff.

Key Issues/Challenges

- The Census Bureau is committed to virtualization wherever possible. It is faster, cheaper and more secure if planned and implemented properly.
  - Are there any similar organizations that have established or are working to establish virtual offices to manage remotely staff in different geographic areas.
  - Could the right virtualization strategy help in decreasing the number of LCOs needed through scalability of the services provided?
  - Have there been any constraints to virtualization of remote field activity in other areas? For example, distance, load, etc.

Recommendations (1)

- Keep in mind that cyberinfrastructure includes technology, organizations, and policy. It provides a platform for the more application-specific services required for this new approach to the census. It is the basis for dynamic, scalable, distributed, and adaptive approaches being undertaken, and thus **many of the activities described in this meeting need to be treated as part of an integrated system and well-coordinated**. All of this is the basis for a less labor intensive, higher fidelity, cost-effective approach to the 2020 Census and beyond.

Recommendations (2)

- The questions asked in this presentation are big and important ones and require effort to answer that goes beyond the capabilities of the CSAC CI Team. **Form targeted research project teams to tackle them and use a variety of methods involving external expertise** such as invitational workshops; graduate student interns; paid consultants. There are people who work for relevant industry that would help on a voluntary basis as individuals - not reps of their company. Academics would likely attend invitational F2F or distributed workshops for expenses only.

Recommendations (3)

- The topic of bring-your-own-device (BYOD) was discussed extensively at the last meeting and may remain controversial with the committee. Most of the cyberinfrastructure requirements/challenges (e.g. cyber security) are independent of whether we use a BYOD or government furnished equipment (GFE). **Experimentation with BYOD should continue but a decision on the which to use can be delayed until later.** We would like an estimate of the equipment costs for a GFE approach.

Recommendations (4)

- **Invest in and benefit from learning about relevant mistakes of the past**, including the recent failures of the initial Affordable Care Act Website. Build/ integrate within a framework of modern web architecture using agile, user-centered methodology.

Additional Comments by Members of the Cyberinfrastructure Team

Questions, Suggestions* & Discussion

* Especially about the questions asked in the presentation.