The assimilation of cloud computing in the public sector in Ghana

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Joint research design

• To build trust, inclusion and ensure relevant use of outcome
• Joint development of research problems and questions
• Enable cross sector dialogue – Academics, Policy Makers and Private Sector and Users
• Targeting specific policies around clouding computing to influence
Proposed research objective

• 1. Map out the cloud computing technologies deployed in the public sector.
• 2. Explore the mechanisms which directly or indirectly enable or inhibit the deployment and use of cloud computing technologies in the public sector.
• 3. Explore the extent of awareness and usage of cloud enabled services by micro-level stakeholders.
• 4. Explore the outcomes and impact of these cloud computing technologies as perceived by the different stakeholders.
Conceptualizing Cloud Computing

• Cloud Computing is a rapid way of allowing access to a convenient, ubiquitous and on-demand network of shared pool of computer resources [software, platforms and infrastructure] based on a service level agreement between the service provider and the consumer.

• This access is presumably provided with minimal management effort.
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Hybrid
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Multi-Stakeholder Perspective of Cloud Computing in Public Sector

Cloud computing Assimilation

- Macro-level Stakeholders
  - Technological
- Meta-level Stakeholders
  - Organisational
- Micro-level Stakeholders
  - Environmental
- Meso-level Stakeholders
  - Human
- Cloud Computing and ICT Vendors
14 Pillars
All sectors

2003
ICT4AD Adopted

2006
Preparatory Work for e-Government
- Legal framework and enabling environment
- Design of eGhana Project

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EVOLUTION OF E-GOVERNMENT
Infrastructure and Services, where we are

- Gov Enterprise Architecture
- Gov Interoperability framework
- Backbone Infrastructure
- Pilot Datacenter

2009 e-Gov Phase I

- Expansion of Backbone Infrastructure
- Automation of Government Business Processes - GRA/RGD
- Pilot e-Service
- Pilot e-Payment Gateway
- Open Government Initiative

2012 e-Gov Phase II

2013-2015

- Defining Citizens Digital Image
- Strengthening Open Data
- Improving e-Services
- Expanding Network access to schools
- Government E-Workspace
- E-Health
- GIFMIS
- E-Cabinet
Cloud Computing – where we are going

**2016**
- Gov. E-Workspace
- Backbone Infrastructure
- National Datacenter
- Additional e-Services
- HRMIS
- GIFMIS

**2017**
- Expansion of connectivity services to MMDAs
- Expansion of GIFMIS
- Scale up of Pilot e-Service and e-Payment Gateway
- Develop Cloud Policy
- Digital Addressing System
- NID system

**2018 - 2019 e-Transform**
- E-Immigration
- E-Parliament
- E-Justice
- E-Procurement
- E-Education
- Digital Government Services Portal – Gov. Cloud
- Open Data Policy and Portal
- E-Health
- Expanding Network access to schools, hospitals, MMDAs, MDAs, Postal Offices etc.
- E-MODJAD
- PKI
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<tr>
<th>ISSUE/CHALLENGES</th>
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| Privacy             | • Providers has some level of control on organization’s infrastructure  
                    • Providers can monitor at will, lawfully or unlawfully Communication/data stored between user and host |
| Legal               | • Provisions in existing laws such as the Electronic Transactions Act (Act 772), sections 57-59 may prevent some mission critical data to hosted and managed from elsewhere if cloud service provider cannot comply with the provisions  
                    • Data protection Act provisions and the appropriate data classification and control mechanisms |
| Security            | • Organization’s data is more secured when managed internally though cloud providers have a strong incentive to maintain trust as such employ a higher level of security  
                    • Inadequate cyber security infrastructure (Cyber Security Control Centers) though, Government is working hard to implement through the National Cyber Security Secretariat |
Challenges

• Internet access is still a challenge [one of the highest broadband and cheapest prices in the region]
• Parallel or duplicate systems
• Government sensitive on decommissioned projects
• Government concerned with third party clouding hosting of services
• Legal
  • Laws is the constraining framework – not allowing them to operating in the public cloud where some solutions only work there.
  • Local laws vs International Laws which Cloud vendors adhere to…For example Community Cloud as well as Private Cloud Privacy
  • Who is watching…. My data Security
• Who is funding cloud computing still raise concerns on state sovereignty
Preliminary Findings

• There is national drive to digitize public services with regards to the launch of various e-services (e-passport, e-immigration)

• Citizen and government agencies still prefer face to face transactions [underlying culture reasons]

• Diaspora citizens have been noted to active users of government e-services

• Pace of development of cloud computing is constrain based on system architecture – client server (private cloud)

• Government role in facilitating cloud computing is not clearly understood – accelerator, consumer and regulator

• The business model of ensuring returns-on-investment is not adequately understood through Public Private partnerships
References

• Web References

• https://thebftonline.com/business/technology/ug-engages-stakeholders-on-cloud-computing/

thank you