ITU Regional Workshop on Bridging the Standardization Gap and Interactive Training Session

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Cloudy, with a chance for development

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Overview

- (Another) cloud computing introduction
- Standardisation and the cloud
- Why is cloud important in emerging and developing regions?

Cloud Computing: Introduction

Cloud computing provides ICT resources, as a service, in a dynamic and scalable manner over a network.

Five essential characteristics:

- On-demand self-service
- Broad network access
- Resource pooling
- Rapid elasticity
- Measured service

"software as a service"

"infrastructure as a service"

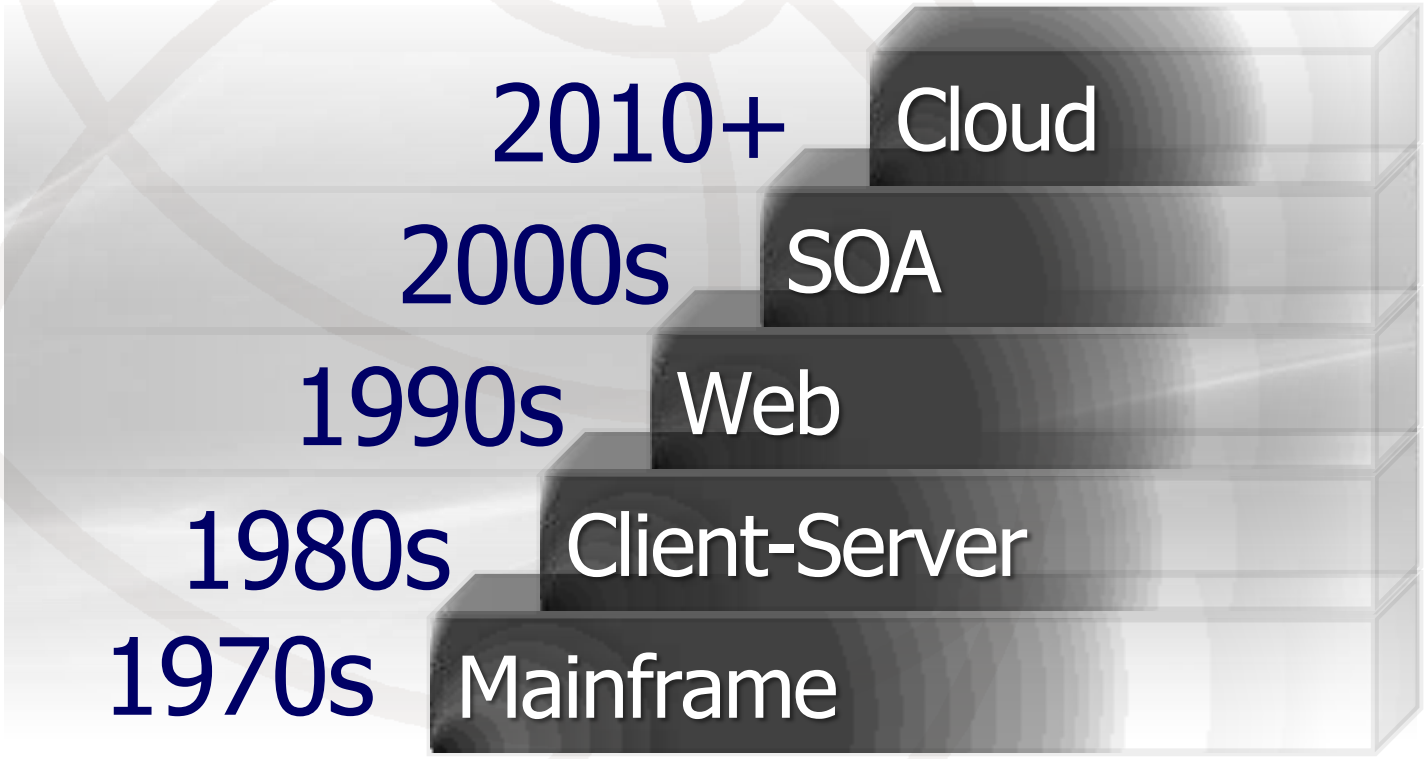
"platform as a service"

"data as a service"

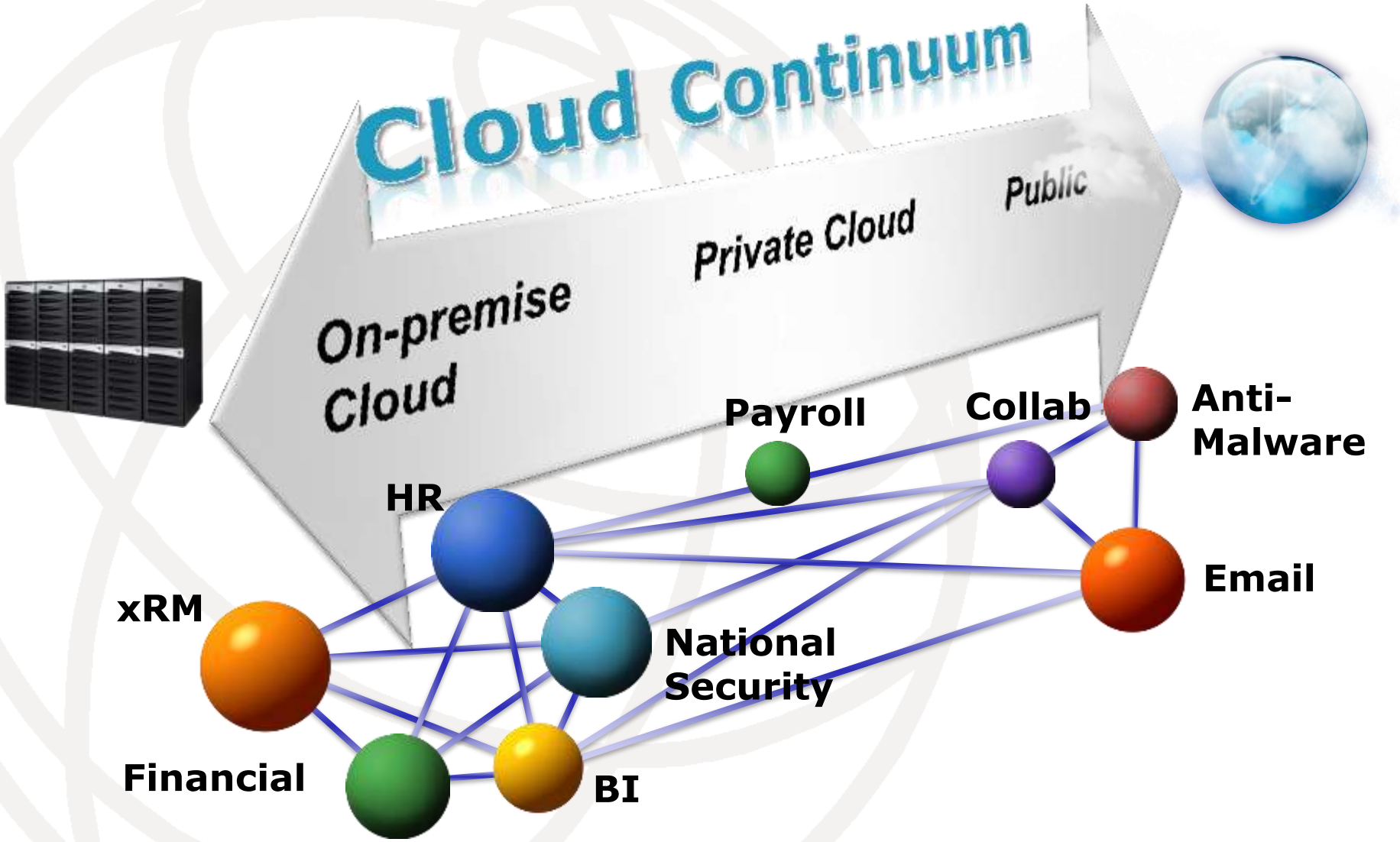
"everything as a service"

Why all the buzz about cloud computing?

Cloud computing is seen as the next major step in a series of transformational waves in computing architecture

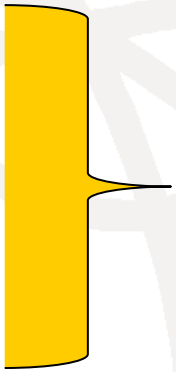


Public, Private? The cloud continuum



Summary view

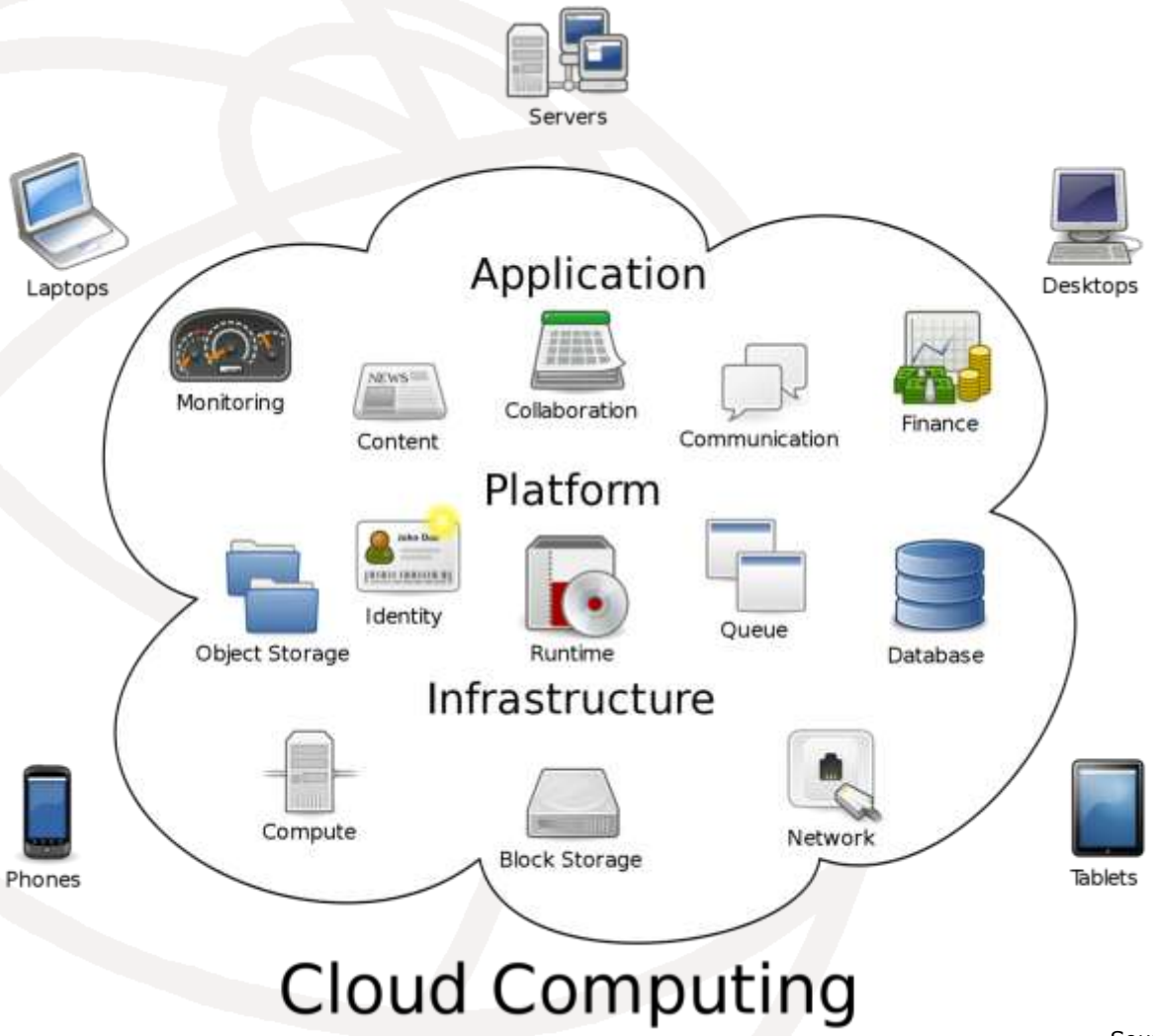
- Key characteristics
  - On-demand self-service
  - Broad network access
  - Resource pooling
  - Rapid elasticity
  - Measured service



Create the illusion of infinite, flexible computing, storage and communications resources and allows for OPEX/CAPEX balancing

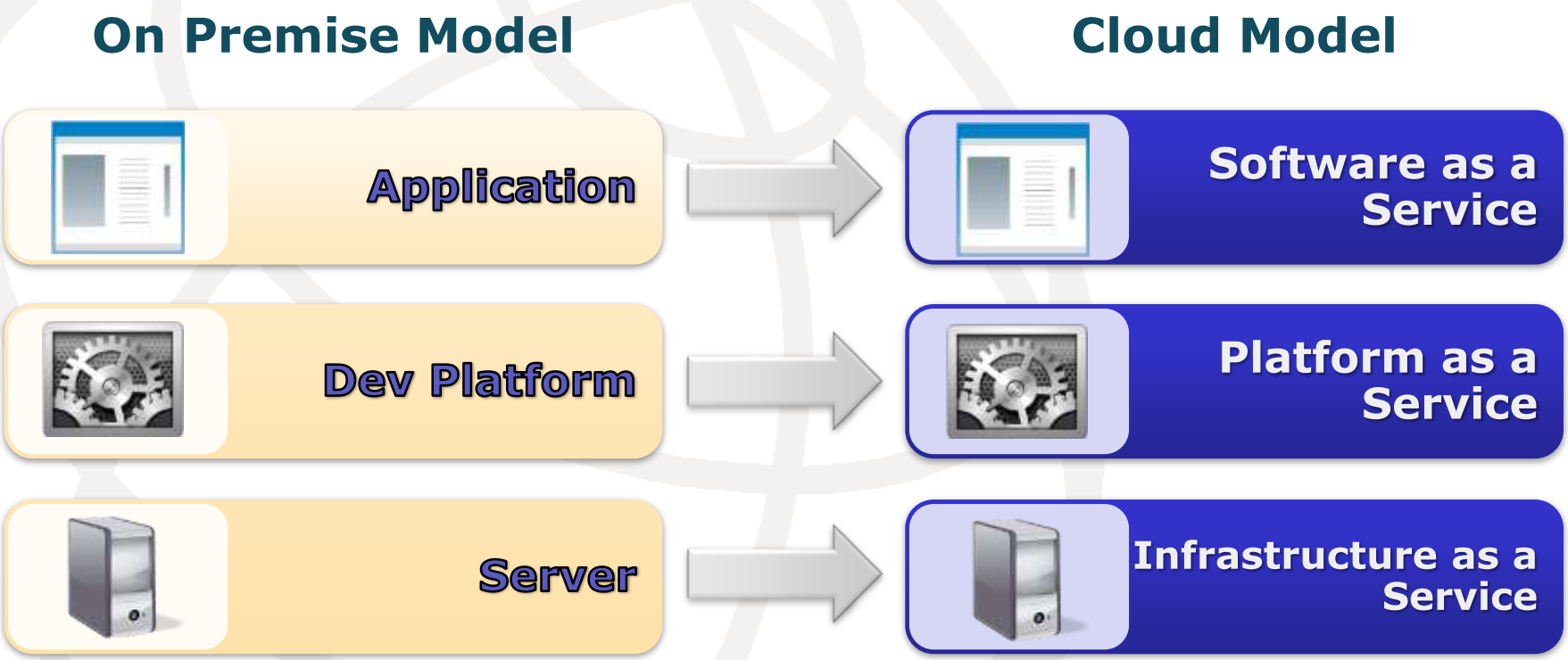
- Service Models
  - Cloud Software as a Service (SaaS).
  - Cloud Platform as a Service (PaaS).
  - Cloud Infrastructure as a Service (IaaS).
- Deployment models
  - On-premise
  - Private cloud
  - Public cloud
  - Hybrid cloud

Another view on cloud computing



Source:
www.wikipedia.org

The Mapping of existing compute models to the Cloud



A few issues to keep in mind

- Cloud computing is **computing model**, not a technology
- Cloud computing is enabled by wide set of technologies
  - Classic example of converged services and technologies

Standardisation and the cloud

Standardisation activity examples

Consortiums

- OGF – Open Grid Forum
- DMTF – Distributed Management Task Force

} APIs for managing cloud resources

- SNIA - Storage Networking Industry Association
- Simple Cloud API

} API for Cloud Storage

- GICTF - Global Inter-Cloud Technology Forum

} Inter-Cloud use cases & requirements

- OMG – Object Management Group

} Model driven for cloud services portability & interoperability

- TM Forum – Tele Management Forum

} Cloud Services management

- OASIS

} Identity in the Cloud

- Cloud Security Alliance

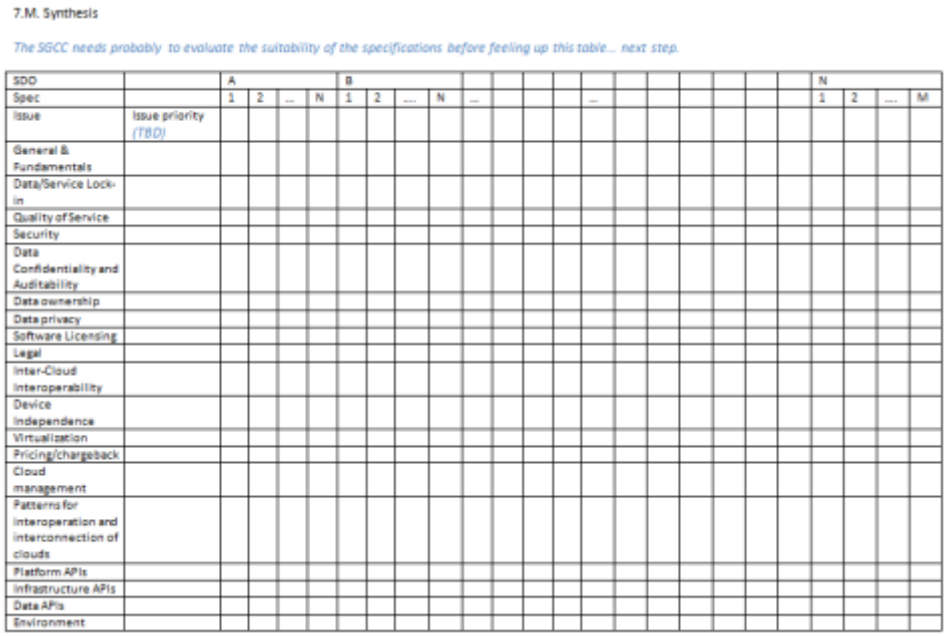
} Security aspects

Major Standards Organisations

- ISO IEC-JTC 1 SC 38: Distributed platforms and Services
- ISO IEC-JTC1 SC27: Information Security
- ITU-T - Cloud Computing Focus Group
- NIST - National Institute of Standards and Technology (US)

Cloud computing – Areas under standards consideration

- Data/Service Lock-in
- Quality of Service
- Security
- Data Confidentiality and
- Auditability
- Data ownership
- Data privacy
- Software Licensing (SLA)
- Legal
- Inter-Cloud Interoperability
- Device Independence
- Virtualization
- Pricing/chargeback
- Cloud management
- Patterns for interoperation and interconnection of clouds
- Platform APIs
- Infrastructure APIs
- Data APIs
- Environment
- Management
- Identity…

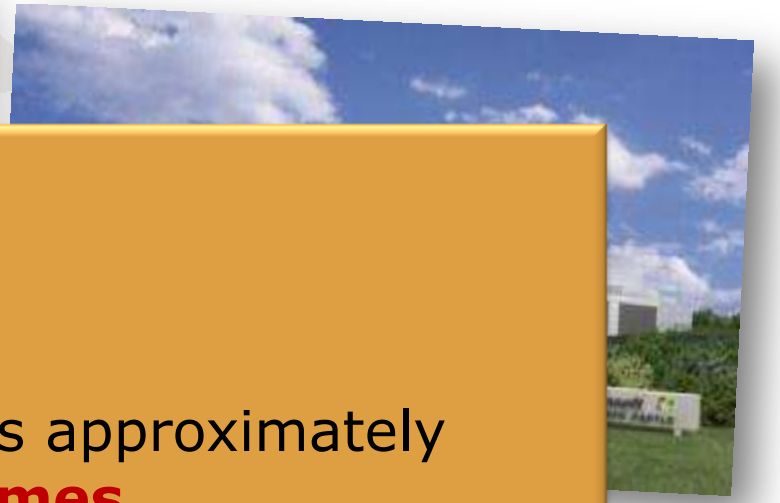


7.M. Synthesis

The SGCC needs probably to evaluate the suitability of the specifications before feeling up this table… next step.

SDO		A				B														N			
Spec		1	2	…	N	1	2	….	N	…				…						1	2	….	M
Issue	Issue priority (TBD)																						
General & Fundamentals																							
Data/Service Lock-in																							
Quality of Service																							
Security																							
Data Confidentiality and Auditability																							
Data ownership																							
Data privacy																							
Software Licensing																							
Legal																							
Inter-Cloud Interoperability																							
Device Independence																							
Virtualization																							
Pricing/chargeback																							
Cloud management																							
Patterns for interoperation and interconnection of clouds																							
Platform APIs																							
Infrastructure APIs																							
Data APIs																							
Environment																							

Generation 2/3 – Data Centers



Each data center is approximately
11.5 times
the size of a football field

Why is cloud critical to the region?

- New Paradigm
  - Similar effect as introduction of mobile
  - New business models
  - New policy issues – data protection
- Multiple devices- from "dumb" to smart – rapid roll-out
- Developer concentration e.g. HTML5
- Graduated deployment possibilities
- Cloud a mechanism to accelerate ICT4D? Apps such as translator

Thank you

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