'CASTLES IN THE CLOUD : GOVERNMENT IN THE PRIVATE CLOUD'

FUTUREGOV MALAYSIA

FEBRUARY 23 2010
SHERATON IMPERIAL HOTEL

Michael Mudd
Secretary - General
Asia Pacific
The Open Computing Alliance

Who is The OCA?

- UK based, industry technology policy think tank, founded June 2009
- Supported by companies from telecoms, IT services, hardware, software and consulting
- The Alliance's charter is to build a community of interested parties to address issues of mutual concern across the information and communications technologies (ICT) sector, including the impact of the emergence of *Cloud Computing and Software as a Service - SaaS*.

What the OCA does

- Creating *dialogue* on technology policy
- Advocates for technology adoption and use in;
  - Open Procurement
  - Open Competition
  - Open Access and Interoperability
- Works with *public and private* sector to create constructive dialogues
- Strong advocate for *industry inclusiveness* in policy making
- *Removing barriers* to tomorrows ICT

My focus today

- Software and connectivity
- An *enabler* of the creative economy
- Ubiquitous – 40-100 *software driven* IC chips in the modern car
- Banks/airlines rely on trusted computing
- Cloud Computing/SaaS *enables* IP
- Advocating *affordable* and *reliable high speed* connectivity
- An estimate in the EU is that Cloud/SaaS will enable the creation of *1 million jobs* over the next 5 years in this group*

* Frederic Etro, Univ. Of Milan, Italy

What is the Cloud and why is it relevant for Government?

- The cloud – what it is - and isn't
- The role of private, community, public and hybrid clouds
- A utility model for public services?

Petronas Towers, Kuala Lumpur

Just exactly what is the Cloud?

- Vendors will tend to give answers that will suit their offerings
- As we see it however this can be summarized as the convergence of four distinct factors*
  1. The true high – speed, always available Internet
  2. Multi point (or distributed) Applications
  3. Virtualization
  4. An elastic Infrastructure
- The Cloud is the past promise of grid or shared computing, plus virtualization, that can now be delivered as a efficient, reliable, scaleable utility
- The cloud therefore my be seen as a *service layer* over the Internet infrastructure made possible by GB speeds

*See FutureGov magazine vol 6.2 April 2009 page 30 -33

NIST provides a working definition*

- Cloud computing is a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.
  - Private cloud - enterprise owned or leased
  - Community cloud - shared infrastructure for specific community
  - Public cloud - sold to the public, mega-scale infrastructure
  - Hybrid cloud -composition of two or more clouds

- *Dr. Peter Mell and Dr. Tim Grance, NIST US, Information Technology Laboratory .10-7-2009
- http://www.nist.gov

‘Cloudenomics’

- The cost of a 3-minute phone call from New York to London in 1930 was US$300 in today's money, today? Nothing! So long as it is made via the internet.
- The Cloud together with Virtualization and SaaS, promises to Turn CapEx into OpEx – a service being rented and paid for on consumption. TCO is still the objective measure
- A positive advantage to companies, in particular SME’s, is they can outsource the majority of their IT infrastructure (or not own it at all) and pay on usage
- Estimate in the EU is the Cloud will enable the creation of 1 million jobs over the next 5 years in this group*
- See ‘Above the Clouds: A Berkeley View of Cloud Computing#

* Fretderic Etro, Univ. Of Milan, Italy
http://www.intertic.org/Media%20Briefings/Clouds2.html
School of Electrical Engineering and Computer Sciences, UC at Berkeley,
(see http://www.eecs.berkeley.edu/Pubs/TechRpts/2009/EECS-2009-28.pdf

What the Cloud is – or not

- There is no single cloud, rather like real ones; Stratus, Nimbus, Cumulous - they all exist in the sky - in this case the system we collectively call the internet
- Vendors Clouds can be any or a combination;
  - Amazon/Rackspace provides a raw infrastructure where you can rent servers on demand and pay on usage (S3/EC2)
  - Salesforce.com lets you rent the application on a per seat basis and pay on usage (SaaS)
  - Microsoft's Azure lets you rent applications, storage and computing and pay on usage (SaaS plus SOA)
  - There are many others coming to market
- This indicates a positive shift to a Service Oriented Architecture that will foster innovation through interoperability

What the Cloud is not/2

- It is not ‘The Internet’ or ‘Internet 2’
- It is not a direct replacement for existing IT infrastructure, but rather with virtualization, far more efficient use may be made of resources
- It is not less secure than distributed enterprise level IT systems – it reduces physical loss at customers premises and provides rapid DR
- It’s not about short term savings for large existing enterprise deployments

‘Fathers of the Cloud’

- Vint Cerf* has compared the present Cloud to the 1960’s separate proprietary networks – without interoperability.
- Sir Tim Berners - Lee has said that this problem needs to be addressed by creating the ‘Semantic Cloud’ which needs a separate language to link the data together
- This may form the overlay – ‘The Interoperable Cloud’

* See http://searchmarketingexpo.com/

The Current IT Generation

- *In many parts of Asia, half the citizens alive today have never known a world without;*
  - *A mobile phone*
  - *A computer or the Internet*
  - *Email*
  - *Online games*
- *The above are <u>already</u> cloud delivered consumer services*
- *This is the 'NextGen' that will embrace new services – if the price is right*

The Semantic Web is the Cloud - *plus* the Apps

- *IT Frameworks*
- *Technical Standards*
- *Organizational Standards (?)*
- *Citizens want to interact on their terms*
- *Or they won't interact at all!*
- *What citizens use at home will drive their interactions with government*

The Technology Neutral *Semantic* Platform

- *The Network – the Platform – enables e-Gov to utilise the Cloud*
- *The platforms are built on specifications that are widely adopted by users – the Internet is based on TCP/IP for example*
- *With Apps layered on top for utility- HTTP, PC, XML and mobile phone O/S are examples*

Opening up the Cloud

- *Opening up closed systems; e.g. Apples Iphone makes innovation flourish – 100,000 apps and growing*
- *The Cloud allows seamless access to the apps no matter where they physically reside - If the telecoms infrastructure is up to standard and the underlying architecture allows interoperability*
- *Now recognized by the ISO with a separate Working Group under JTC-1 as WG38**

*Announced October 2009 as 'Distributed Application Platforms and Services

How will this be achieved?

- *Industry specifications may become standards - depending on the uptake by users – driven by utility as well as value*
- *So perhaps it should be that technical standard frameworks that are created should be more relevant, fair and continue to evolve with the changing technology in the marketplace?*
- *Maybe the technology - particularly the proven and mature platforms - is the easy part, its the adoption and the legal issues that are difficult?*

Technical standards

- *The informal standard setting process - the creation of **standards driven by industry** and/or consortia outside of formal standards-bodies, including non-formal standards with global reach (IETF, W3C, OASIS, WS-I, etc.) - is becoming more and more important and should be given the necessary policy attention*

- *EU standardization as a policy has to better integrate these **informal standards** with formal ones from the ISO/ITU, NIST and ANSI* to ensure that standards can be developed by the most appropriate party, under the condition it meets the relevant quality criteria (effectiveness, relevance, impartially, independence, etc.)*

- *A structured inclusion of **multiple non-formal standards** into European Norms need to bridge the **parallel universe** of formal and non-formal standards through **multi-stakeholder partnerships***

*See ANSI http://www.ansi.org/about_ansi/introduction/introduction.aspx?menuid=1
*See ITU http://www.itu.int/ITU-T/othergroups/ipr-adhoc/openstandards.html
See NIST http://csrc.nist.gov/groups/SNS/cloud-computing/index.html

Legal Issues in the Cloud/1

- *Unlike real clouds, there are questions of ownership*
  - *Where is the data stored? (who's laws?)*
  - *Who has liability for security and safe storage?*
  - *What happens if I cannot access my data?*
  - *Real and consequential liability?*
  - *Privacy – Personal and Data laws*
- *Some of the answers may lie in a Hybrid Model*
  - *Sensitive data may be stored as today, locally by the 'owner' and made available for use via Cloud services (such as under SaaS) then 'returned' to safe storage*
  - *Not all data will be available or used in the Cloud – the most sensitive data will be accessed and used within closed systems*
  - *This will preserve critical legacy files – land titles, medical records, court proceedings, for example*

Legal Issues in the Cloud/2

- *The EU and US (DoJ) are looking at mainframes from an antitrust view*
  - *Issue is legacy mainframes*
  - *Technical lock in as systems typically not fully open to TPS*
  - *Like Gen 1 of the Iphone which was Closed as the interfaces were not published*
  - *Govt and other users locked in to hardware and software, stifling innovation and driving up costs.*
- *Some of the answers may lie in an open model*
  - *Open API's and SDK's will allow the market to flourish – enabling domestic growth in App development as well as best of breed globally to be considered irrespective of hardware used*
  - *Leading software companies are publishing the API's to enable this to happen*
  - *Third parties can therefore innovate knowing they can get access to the market*

Govt. feedback on the Cloud

- *A recent survey* of 300 IT managers in Government in the US revealed the following;*
  - *44% already using some form of Cloud based apps*
  - *Email the most likely application to be moved to the cloud*
  - *50% said cost saving from hardware*
  - *45% said they expected reduced costs from pay as you use utility model*
  - *41% said that they had privacy concerns*
  - *but 80% said they had security concerns*

*Merlin Federal Cloud Initiative total sample 605

What the Analysts Say

- SaaS a $1 bn market in Japan now –mainly due to Japan Post
- IDC for SaaS in Asia $300m ex Japan for 2009
- IDC Has recently updated their predictions to an *$800 BN* spend worldwide on cloud and IT services by 2013
- Goldman Sach Feb 2010 indicates It Services (Cloud/SaaS) being rapidly adopted

A Policy Guideline

- An effective policy for growth must not only allow but *embrace technological change.* With respect to IT there is a need to recognize that *we cannot predict* the future with any reasonable accuracy
- Policies therefore need to be *open to innovation* no matter from where it comes from or the business model of the creator
- This is a dynamic and ongoing process that will be increasingly important to foster *interactivity* with the next generation of connected citizens

A Policy Guideline

- 'NextGen' Citizens want to use different kinds of devices that will use software delivered by Cloud based services in many formats, because they all have *different needs and interests*, and they benefit from *ongoing innovation (Example; the Apple Iphone; Thai software companies are creating business in the app store in the top 10 of their segment)*
- *Diversity and competition are good for all Citizens and Government* - because they allow them *to choose* between different offerings that will 'reside' in the Cloud and delivered by SaaS that will contain features and at prices meeting their own specific devices and needs

A Policy Guideline

- Increasingly, citizens (and businesses) will be able to choose products and services that may reside in the Cloud and delivered as SaaS and work on their devices in *all* the formats they need – governments needs to encourage and accommodate this innovation
- Technological innovation will allow *multiple ways* to manage data in the Cloud with effective competition as the price of entry is lower more SME's may benefit.

In Conclusion

- To create a sustainable software industry embracing technical advances such as Cloud/SaaS services are vital to *protect IP*
- *Standards* drive *Interoperability* - key in driving adoption in the digital age
- Cloud Computing/SaaS is today where the Internet was perhaps 15 years ago
- The process above, like evolution, is always changing – only faster

Malaysia's Most Valuable Asset

"The most valuable assets of a 20th century company was its *production equipment*. The most valuable asset of a 21st century institution, whether business or non-business, will be its *knowledge workers* and their *productivity*."

- Prof. Peter Drucker
the late management guru

A parting thought…

" When going from the existing (rather messy) technology deployments, how will backwards and forwards compatibility be ensured?"

Michael Mudd
Secretary – General
Asia Pacific
The Open Computing Alliance
Mmudd@opencomputingalliance.org
+852 9401 1481
www.opencomputingalliance.org

Please send me your feedback on today's talk from the link below

http://www.surveymonkey.com/s/RYFBWTR