

The background of the slide shows two men in dark suits standing in a hallway. They are positioned in front of a large, multi-paned window that looks out onto a brick building. The man on the left is facing the man on the right, and they appear to be in conversation. The lighting is somewhat dim, with a blue tint across the entire image. The title text is overlaid in the center in a bold, yellow font.

# 'Risk and Security Management; Myths and Realities'

Michael Mudd  
The Open Computing  
Alliance

# Who is the OCA?

- Industry technology policy think tank, plus advocacy
- Founded June 2009
- Members from Telecoms, IT Services, Hardware and Software, majority from APEC economies
- 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 new technology

# What do we do?

- Creating Dialogue on Technology Policy...
  - Innovation
  - Competition
  - *Cloud Computing*
  - Intellectual Property Protection
    - Green IT
    - Secure & Trusted IT
    - IT for SME's
- ...to drive positive outcomes for all stakeholders

# My focus today

- Using advances in IT for Economic Growth for APEC
- The Cloud, software and connectivity as 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 respect





# What is the Cloud and why is it relevant for Hong Kong?

- The cloud – what it is - and isn't
- The role of private, community public, and hybrid clouds
- A utility model for public services?
- Technology neutrality and standards
- Opening up the cloud
- Legal issues
- What the analysts say
- Conclusions





# Myth Number one – The Cloud is the Internet Web 2.0 right?

- 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 and the Internet, that can now be delivered as a efficient, reliable, scaleable utility
- The cloud therefore may be seen as a *service layer* over the Internet infrastructure made possible by gb speed internet connectivity



# 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, Dr. Tim Grance, NIST Information Technology Laboratory  
10-7-2009 <http://www.nist.gov>





# What the Cloud is not

- It is not 'The Internet/Internet 2, or Web 2.0 (or 3.0)'
- It is not a direct replacement for existing IT or telecom 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





# What the Cloud is not /contd

- 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





# Myth number two; It will cost me more ?

- Cloud computing means my legacy systems and investment in hardware/software would be wasted?
- Not at all; for cloud providers to get business they have to use existing installations
- The use of virtualization in private clouds allows you to do much more with much less
- It is the interaction between existing hardware and the cloud that by using virtualization will increase server utilization from > 10% to 40+%





# 'Cloudenomics'


- The cost of a 3-minute phone call from New York to London in 1930 was US\$300 in today's money, today? Virtually nothing! So long as it is made via the internet using a cloud based service.
- 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#

\* Frederic Eto, 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>)





# Myth Number 3 ; there are no common technical standards ?

- *The standard setting process involves both - 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.) – as well as the ISO/IEC is 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.)*
- *The key to making sure standards work is to ensure interoperability by design and that multi-stakeholder partnerships exist that work to ensure this, backed by the ISO for formal standards*

\*See ANSI [http://www.ansi.org/about\\_ansi/introduction/introduction.aspx?menuid=1](http://www.ansi.org/about_ansi/introduction/introduction.aspx?menuid=1)

<sup>i</sup>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>





# Technology neutrality based on Open Standards will drive innovation

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





# Opening up the Cloud


- *Opening up closed systems; e.g. Apples Iphone makes innovation flourish – 130,000 + '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*






# Myth number 4; The Cloud is less secure than existing IT systems?

- *Current systems have weak internal security controls*
    - *Lost notebooks, USB sticks, CD's*
    - *Out of date or out of sync security/firewall updates*
    - *Incompatibility of systems due to merger /acquisitions*
  - *Cloud systems enforce security by removing responsibility from the individual*
    - *Virtualization allows multiple use of different computers in multiple locations.*
    - *This means that at any one time data exists in the cloud and individual users do not know where it is – only the software does*
    - *As such security is enhanced as no single user can have access to all the data at any one time*
- 



# Privacy and control

- **Security and privacy;** Many Global 2000 companies are not yet ready to trust public cloud providers. They worry about the providers giving up their data to the authorities or competitors, or just losing it all together.
  - **Control.** While most CIOs will talk about the advantages of using public cloud computing, and perhaps point to a particular subscription as proof that cloud computing is part of their portfolio, the thought of using servers that they can't 'touch and feel' is still a bit disconcerting to many.
  - **Risk.** Understanding Risk is part of any IT strategy, which leads to formulating a risk mitigation plan
  - The OCA is working on a comprehensive Risk Register, suitable for both public and private sector
- 




# Myth number 5 ; my customers may sue me?

- *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 (City of Los Angeles)*
  - *Not all data will be available or used in the Cloud – the most sensitive data will be accessed and used within closed data centre systems (often called 'private clouds')*
  - *This will preserve critical Government files – land titles, medical records, court proceedings, for example that need t be stored indefinitely*






# Legal Issues in the Cloud – Competition concerns

- *The EU and US (DoJ) are looking at mainframes from an antitrust view*
    - *Issue is legacy mainframes and their O/S*
    - *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*
- 



# 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 current generation of connected citizens
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# A Policy Guideline

- 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.
- Risk can be measured and mitigated, as with current data centre models





## In Conclusion

- To create sustainable growth in Hong Kong, embracing technology advances such as Cloud/SaaS services it is vital to *reward Innovation by respecting IPR's*
- *Standards* drive *Interoperability* - key in driving adoption in the digital age
- Cloud Computing/SaaS is today where the Internet was perhaps 15 years ago
- This process above is like evolution; always changing – only faster

# Your Most Valuable Asset

“The most valuable assets of a 20<sup>th</sup> century company was its *production equipment*. The most valuable asset of a 21<sup>st</sup> 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?"*



# Thanks!

Michael Mudd

[mmudd@opencomputingalliance.org](mailto:mmudd@opencomputingalliance.org)