

**'CLOUDS ON THE
HORIZON: NEXT
GENERATION COMPUTING
FOR YOU'**

VIETNAM AND THE NEXT GENERATION IT

*AMCHAM HANOI ITTI
NON - TECHNICAL BRIEFING
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Secretary - General
Asia Pacific
The Open Computing Alliance**



Who is The OCA?

- British based, IT 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





Who are the OCA's Members?

- CSC
- Colt Communications
- Logica
- Fujitsu
- Microsoft
- Supporters; BT, Cisco, Quinetiq,,
Airwave, Cap Gemini and Hitachi Data
Systems

Since June 2009



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 Vietnam?

- 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





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 may be seen as a *service layer* over the Internet infrastructure made possible by GB 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>





'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 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 Vietnamese 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 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





'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 already cloud delivered consumer services*
 - *This is the 'NextGen' that will embrace new services – if the price is right*
- 



What Does this all mean?

- *NextGen are connected – always communicating*
- *Mobility, (Mobility!!) 4bn+ mobile phones globally*
- *Interoperability and available apps will be key to adoption and use*
- *This is the generation that is already embracing cloud computing*





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 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*
- *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 here 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/jpr-adhoc/openstandards.html>

See NIST <http://csrs.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 Government 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 – the creation of*
 - *new innovative SME's here in Vietnam*
- 



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





The private sector view of the Cloud

- **Security, privacy and trust.** 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.
 - **Efficiency.** Most non-virtualized servers run at less than 10% of capacity most of the time. The use of virtualization in private clouds allows you to do much more with much less.
 - **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.
- 



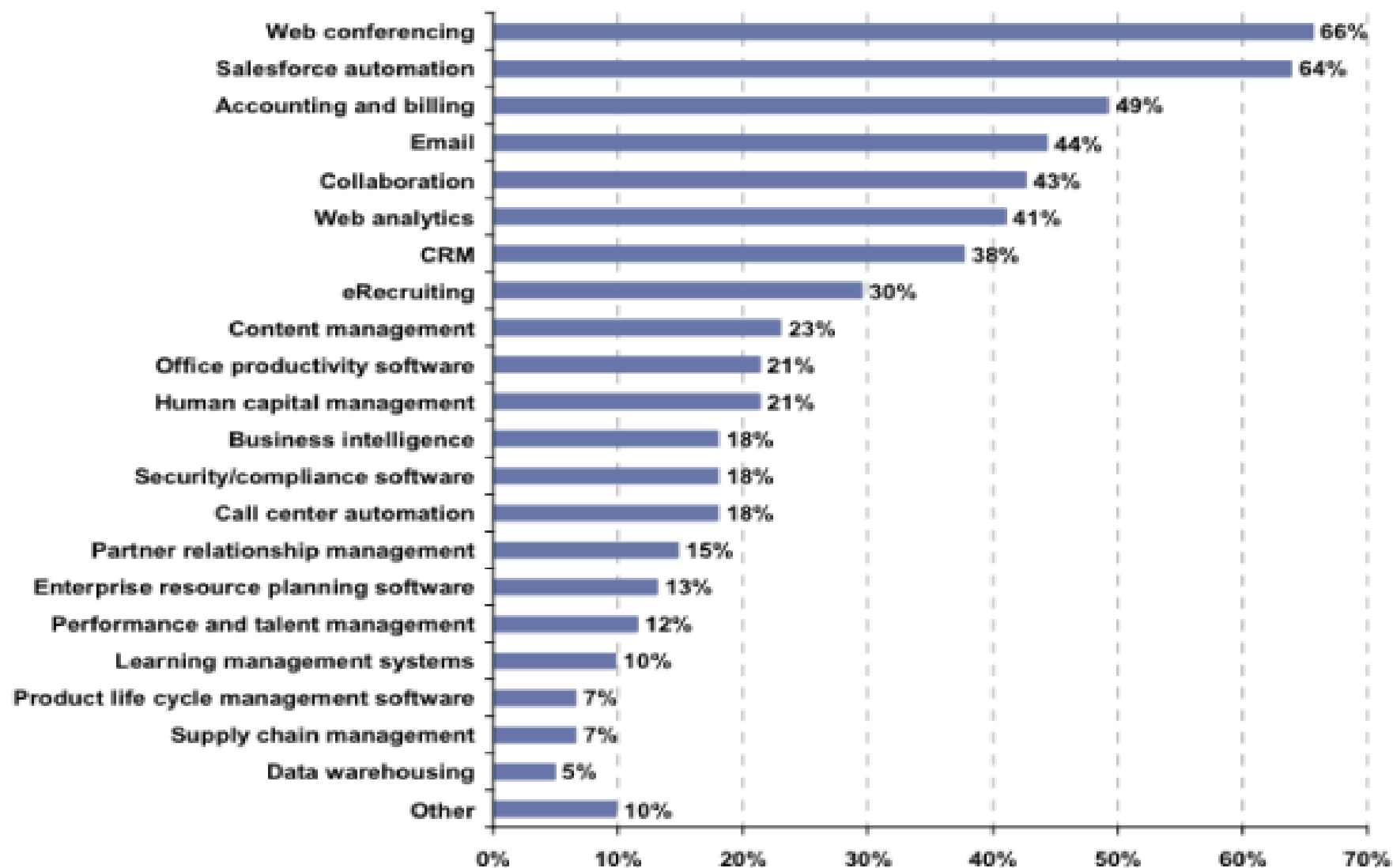
What the Analysts Say

- 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 Sachs Feb 2010 indicates IT Services (Cloud/SaaS) being rapidly adopted with Web services for conferencing and sales force automation leading applications



Exhibit 6: Web conferencing and salesforce automation remained top candidates for SaaS utilization

In what areas do you currently implement SaaS?



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

Vietnam'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?"





*“ICT: Intellectual Capital
Transforming our lives”*

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

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