APrIGF Panel Session

Cloud Computing Industry Forum
-Global Cloud Computing and Its Challenges-

- Dr. Takaaki Tomizawa, Technology Policy, Microsoft

Panelists

- Mr. Craig Baty, Executive GM, Chief Technology & Innovation Officer, Fujitsu Australia and New Zealand
- Dr. Eric K. Clemons, Professor of Operations and Information Management, The Wharton School of the University of Pennsylvania
- Ms. Kyoko Matsuba, Manager, Product Sales, Healthcare IT, GE Healthcare Japan
- Mr. Yuji Nakamura, Director for Convergence Strategy, Ministry of Internal Affairs and Communications
- Mr. Mikimasa Nakayama, Director, Cloud Services Division, NTT Communications
Examples of Cloud Services

- End-Users
- Solution Provider
- Cloud Service Provider
- Data Center Operator
- Data in Cloud

Location:
- Japan
- Singapore
- US Company
- Japanese Company
Outcome of the Dialog


(2) Development of a U.S.-Japan Cloud Computing Working Group

Participants concurred that they will develop a U.S.-Japan Cloud Computing Working Group at the Director level, which will convene around fall 2012 after identifying key policy issues based on views expressed by U.S. and Japanese industry.

Obama – Noda Meeting on April 30


Cooperation on Innovation, Entrepreneurship and the Internet Economy: …The Council is to identify best practices, policy recommendations and cooperative bilateral initiatives to encourage the creation of new businesses that generate growth and jobs in both economies. **The leaders also endorsed the launching of a new Cloud Computing Working Group, in cooperation with the private sector, under the Internet Economy Dialogue, aimed at expanding online business opportunities and shaping global regulatory practices on emerging Internet technologies and cross-border data flows.** The Internet Economy Dialogue focuses on the openness of the Internet and freedom to communicate, commercial network security, expanding e-Government, protection of children’s safety online and the reduction of unwanted and unsolicited “spam” email messages.
Appendix: Example of Issues of Cloud Services

Promoting New Services
- Media related services (Music & book etc.)
- E-Commerce
- Protecting consumer right
- Intellectual Property
  
Cloud Utilization in Public Sector
- E-Government
- Education
- Healthcare
- Disaster Recovery
- Cloud usage in Government
- Security
  
Promoting International Harmonization
- Int’l standardization of Interface
- Big-data
- ICT investment environment
  
Issue related Data Sovereignty
- Guidelines
- EU Privacy Directive
- Export Control
- Local regulation
- Privacy related issues
Key Issues in Protecting and Serving Users of the Cloud

Eric K. Clemons

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Information Strategy & Economics

The Wharton School

July 2012

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Introduction

Eric K. Clemons

- Professor of Operations and Information Management at the Wharton School
- Specialize in strategic and competitive implications of information technology
- And a professional worrier … have worried for everyone from small start-ups and global corporations to senior military officers

Today we will discuss my concerns for the cloud and appropriate roles for regulation to serve and protect users
Cloud-Sourcing

The cloud is merely an **extreme** form of **outsourcing**

Like all sourcing decisions it is subject to **risk reward tradeoffs**

**Rewards** are clear

- **Economies of scale** in systems administration — Even the smallest user has the benefits of economies of scale
- And **scalability** — immediately can grow or shrink computing as needs change

**Risks** are less clear but just as real; focus on two

- **Vendor hold-up** — principally enabled by the **data hostage problem**
- And **privacy** — abuses by vendors and by companies with targeted advertising / **contextual snooping** business models
Risk Management

- **Vendor hold-up** — principally enabled by the *data hostage problem*
  - Data-escrow accounts
  - These are redundant data sets, in a data-banking country (Switzerland? Singapore?) with technologically secure “write only devices” with vaults for secure storage of removable media

- And **privacy** — abuses by vendors and by companies with targeted advertising / *contextual snooping* business models
  - International agreements respecting preferences of users who specify *do not track*, or less restrictive *do not integrate*
  - Plus *any* domestic laws any country wishes, to restrict corporate spy-ware, like any analytics program that transports individuals’ data, including IP address, across national borders without explicit permission
  - Plus enforced financial penalties for each violation
Role of Government

I know this is not an entirely comfortable subject for IGF, which seems more concerned with keeping governments from destroying the internet as we know it.

- Like NTU, there are too many agreements to negotiate bilaterally.
- No we don’t want a second NTU, but we do want the net to remain a multi-stakeholder service.
- And there are worse things that can happen than governments creating standards for performance, interoperability, and the protection of the rights of clients or of individual users.

And no, the net is not a free service that we all own and serves us all equally.
- Privacy enforcement will only work if there are penalties that are enforced.
- Data escrow accounts will only work if there are trusted laws about security and about performance of the necessary backups.
Introducing Ichi-no-Kura Medical Cloud Archive service
Today’s Challenges – and Solution

- Volume of medical Images/Information – increasing by day
- Lack of experts/resource
- Cost constraint on IT systems
- Disaster recovery and data security
- Medical Cloud Archive Service
Datacenter service “Ichi-no-kura”

Radiology IT system in a hospital – connected to Datacenter via secure connection

Primary / Secondary Datacenters under tight security & monitoring

*2012年1月現在
Voices of our Customers –
@Japan Red Cross Technologist Conference

Source: 83 respondents, June 2010

What do you expect from Datacenter?
(select top 2)

- Disaster Recovery: 27%
- Data security: 22%
- Cost containment: 19%
- Scalability: 10%
- Reducing burden on data administration: 9%
- Reducing burden on data migration: 7%
- Investment optimization: 3%
- Other: 3%

Criteria for Vendor selection?
(select top 2)

- Vendor Credibility: 28%
- Price: 25%
- Data Security Policy: 18%
- Business track record: 12%
- Sales /Support: 9%
- Future Expansion: 7%
- Other: 2%
Nakayama Mikimasa

NTT Communications Corporation
Director of Cloud Services Department

WORK EXPERIENCE

NTT Communications Corporation (1999-Present)
- Supported with consultants to establish a sales organization and developed sales channel.
- Supported corporate marketing and established a partnering relationship in the Enterprise Cloud field.
- Belongs to the associations such as ASPIC(ASP・SaaS・Cloud Consortium, as director), iSRF(IT Skill Research Forum), and MIJS(Made in Japan Software consortium) (MIJS) etc, to encourage the activities of Cloud Businesses as an external activity,

Nippon Telegraph and Telephone Corporation (1990-1999)
- Supported with consultants to establish NTT Communications Corporation with the reorganization of NTT.
- Supported corporate sales and marketing.
With NTT Com’s global and seamless cloud services, customers are able to utilize their ICT assets strategically and expand their business globally.

- Outstanding network coverage encompassing 159 countries
- Expansive footprint of over 120 data centers around the world
- Global Tier 1 IP network and industry leading quality
- Highly recognized service quality and customer satisfaction
Enterprise Cloud

NTT Com’s new Enterprise Cloud provides global cloud resources that enterprise customers can easily control and manage to optimize its’ ICT costs and support the global expansion of corporate operations.

The world's first corporate Cloud Service used the Network Virtualization Technology「OpenFlow」
Global Coverage Plan of “Enterprise Cloud”

To connect each data center resource by use of the Network Virtualization Technology
Cloud service offered at datacenters in U.S. and Japan
- Global standard service architecture with variety of APIs available (Automated Operation with 150 APIs)

Flexible charging
- Pay as you go (hourly) × Monthly max
- Pay as you go
- Max. cap
- JPY 945

Free
- Data transfer (in/out)
- Firewall
- Load Balancer

* In case of Plan vQ

There is no extra charge ever if you use more!
Cloud Computing Policy of Japan

19th July 2012

Yuji NAKAMURA

Global ICT Strategy Bureau,
Ministry of Internal Affairs and Communications(MIC), JAPAN
The Smart Cloud Strategy that was arranged in May 2010 by the Smart Cloud Study Group, presided by the State Secretary, is the Cloud Strategy for MIC as a whole.

The Smart Cloud Strategy aims to maximize use of cloud services (services that use cloud computing technology) to promote the wide-spread use of ICT and thus amass and share a wealth of information and knowledge beyond the boundaries of companies and industries across the entire social system, and thus achieve a “knowledge and information society,” create new economic growth, and bolster Japan’s international competitiveness.

The following three separate strategies are being implemented for the spread of cloud services:
1) Utilization Strategy (promoting the use and application of cloud services)
2) Technical strategy (promoting strategic R&D of next generation cloud technologies and such)
3) International strategy (promoting international consensus and global cooperation)

### Smart Cloud Strategy

#### Utilization Strategy
- Promotion of thorough ICT utilization
- Environment development toward dissemination of cloud services
- Support toward creation of new cloud services
- Global development of cloud services

#### Technological Strategy
- Promotion of research and development of next generation cloud technologies
- Promotion of standardization

#### International Strategy
- Compose a consensus to formulate international rules using international vehicles such as APEC, OECD, and ITU
- Hold dialogue on policies under the cooperation of industries, universities, and the government
International Policy Dialogues on Cloud Computing

United States
(Department of State etc.)

JAPAN
(MIC etc.)

Europe
(European Commission etc.)

(March 2012)
US-Japan Policy Cooperation Dialogue on the Internet Economy
→ Establishment of a Cloud Computing Working Group
(Fall 2012 - )

(April 2012)
Japan-EU Cloud Computing Technical Seminar

(October 2011)
→ Agreement on Establishing a Cloud Computing Working Group
The private organization of a “Japan Cloud Consortium” will be established to promote the dissemination/development of cloud services in Japan in an industry-academia-government collaboration of various industries, organizations, and businesses.

The purpose of this Consortium is to carry out the activities of making suggestions, etc. on the cross-sectional sharing of information on and identifying/resolving any new issues with various measures for use in the dissemination/development of cloud services by the relevant enterprises/organizations, etc. The Ministry of Internal Affairs and Communications, and the Minister of Economy, Trade and Industry will also support the activities of the Consortium as observers.
Craig Baty
Exec. GM, Chief Innovation & Technology Officer
Fujitsu Australia & NZ
Cloud is The Enabler of Our Vision

People

Activities

Information
(abstraction from the data)

Platform
(abstraction from the technology)

Human Centric Intelligent Society

Smart Cities

Intelligent Transport

Sustainable Agriculture

‘Blue collar tech’

Augmented reality

Social working

Virtual clients

Mobile apps

Customer Insight

Contactless transactions

Measured health

Everything tagged

Real time Insight

Geo Insight

People Insight

Analytics aaS

Data aaS

SaaS

Cell Phones

Slates and PC’s

HPC

IaaS

Network

Business Insight

Environment Insight

Traffic Insight

Social Insight

Intelligent Transport

Sustainable Agriculture

‘Blue collar tech’

Augmented reality

Mobile apps

Virtual clients

Customer Insight

Contactless transactions

Smart objects

Augmented reality

Social working

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Mobile apps

Customer Insight

IaaS

Network

Business Insight

SaaS

Cell Phones

Data aaS

Analytics aaS

People Insight

HPC

Smart Cities

Intelligent Transport

Sustainable Agriculture

‘Blue collar tech’

Augmented reality

Social working

Virtual clients

Mobile apps

Customer Insight

IaaS

Network

Business Insight

SaaS

Cell Phones

Data aaS

Analytics aaS

SLEIGHT
### Why and What of Cloud (ANZ)

**How Do CIO’s Select a Cloud Provider?**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Not at all important</th>
<th>Minor importance</th>
<th>Somewhat important</th>
<th>Very important</th>
<th>Most important factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support from supplier</td>
<td>6.9</td>
<td>53.5</td>
<td>37.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Security of data</td>
<td>5.9</td>
<td>41.6</td>
<td>48.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Privacy</td>
<td>6.9</td>
<td>51.5</td>
<td>37.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reputation of supplier</td>
<td>9.9</td>
<td>50.5</td>
<td>35.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ease of use</td>
<td>17.0</td>
<td>59.0</td>
<td>19.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relationship with supplier</td>
<td>13.9</td>
<td>53.5</td>
<td>22.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scalability</td>
<td>21.8</td>
<td>50.5</td>
<td>15.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data is held onshore</td>
<td>23.8</td>
<td>32.7</td>
<td>26.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low price</td>
<td>41.2</td>
<td>36.3</td>
<td>19.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pay per use</td>
<td>38.2</td>
<td>18.6</td>
<td>7.8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**What Do CIO’s Put In The Cloud?**

<table>
<thead>
<tr>
<th>Application</th>
<th>Yes, made first steps</th>
<th>Yes, well underway</th>
<th>Yes, totally on the cloud</th>
</tr>
</thead>
<tbody>
<tr>
<td>Email and messaging</td>
<td>7.1</td>
<td>9.7</td>
<td>5.8</td>
</tr>
<tr>
<td>CRM and Sales Force Automation</td>
<td>9.0</td>
<td>6.5</td>
<td>5.8</td>
</tr>
<tr>
<td>Disaster Recovery / Business Recovery</td>
<td>7.8</td>
<td>8.4</td>
<td>2.6</td>
</tr>
<tr>
<td>End user collaboration / Workflow</td>
<td>9.7</td>
<td>6.5</td>
<td>1.9</td>
</tr>
<tr>
<td>Order processing / Customer service</td>
<td>7.1</td>
<td>5.2</td>
<td>3.2</td>
</tr>
<tr>
<td>End user productivity applications</td>
<td>5.2</td>
<td>4.5</td>
<td>3.2</td>
</tr>
<tr>
<td>Other financial systems</td>
<td>4.6</td>
<td>5.2</td>
<td>2.6</td>
</tr>
<tr>
<td>Archiving</td>
<td>4.5</td>
<td>6.5</td>
<td>1.3</td>
</tr>
<tr>
<td>ERP / core business systems</td>
<td>4.5</td>
<td>5.2</td>
<td>2.6</td>
</tr>
<tr>
<td>BI (Business Intelligence)</td>
<td>5.2</td>
<td>5.2</td>
<td>0.6</td>
</tr>
</tbody>
</table>

Source: Insights Quarterly, March 2012  n=250
Challenge
- Reduce administrative burden
- Support expansion plans
- Improve cost efficiency

Solution
- A centralised operational data store (CODS)
- Member portal

Business Benefits
- Cost efficiencies
- Reduced administrative overhead
- Single point SLSA system access
- Improved data collection and analysis

“The new Fujitsu cloud solution helps us overcome the severe limitations on the dollars we have to spend on IT.”

Gary Daly, National IT Manager, Surf Life Saving Australia
Variety of resources – simple configuration system with stand-alone VMs, to multiple network subnets separated using firewall and load balancing rules.

Admin – Users have admin privilege for VM operating systems to install and deploy SW and apps.