Cloud Services has been promoted as the major driver of productivity for Government and smaller industry.

The relatively slow take-up of Cloud Services however shows that the business case is still not sufficiently compelling.
What are the biggest challenges to be addressed to drive productivity in Government Services?

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reducing the Cost and Increasing the Effectiveness of online Service Delivery</td>
<td>35%</td>
</tr>
<tr>
<td>Understanding and Measuring Customer and Provider Outcomes</td>
<td>22%</td>
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<tr>
<td>Increasing the Effectiveness and Efficiency of Complex Procurement</td>
<td>4%</td>
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<tr>
<td>Governments making Data Open and Available</td>
<td>13%</td>
</tr>
<tr>
<td>Something else</td>
<td>26%</td>
</tr>
</tbody>
</table>

Source: Australia 3.0 Government Services Stream Roundtable “instant poll”
"The National Cloud Computing Strategy identifies that the Australian Government, with an annual procurement of over $5 billion in ICT and associated services.."
Why Cloud

- **Scalability**
  Users can scale up or down cloud services quickly and cheaply

- **Resource pooling**
  Shared computing resources can provide significant economies of scale which help reduce costs and accelerate innovation

- **Device agnostic**
  Users can access cloud services over a network through a broad range of devices

- **Metering**
  Users can measure their consumption of cloud services quickly and easily, and adjust accordingly

- **Capacity on demand**
  The service already exists and can be provisioned when needed, usually through self-service interfaces. This in turn allows organisations to rationalise their legacy ICT
The 3 Biggest Issues Facing your Organizations IT Activities

Source: “2012 Global Cloud Computing Survey Results”, Connecting Up

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Total Responses</th>
<th>3%</th>
<th>14%</th>
<th>31%</th>
<th>27%</th>
<th>12%</th>
<th>28%</th>
<th>57%</th>
<th>14%</th>
<th>31%</th>
<th>28%</th>
<th>38%</th>
<th>29%</th>
<th>31%</th>
<th>14%</th>
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<tbody>
<tr>
<td>Unstable electric supply</td>
<td>252</td>
<td>7</td>
<td>143</td>
<td>69</td>
<td>31</td>
<td>39</td>
<td>70</td>
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<td>74</td>
<td>54</td>
<td>79</td>
<td>79</td>
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<td>The total cost of IT activities</td>
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<td>Insufficient training for end-users</td>
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<td>Insufficient training for IT staff</td>
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<td>Integrating data from different locations</td>
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<td>Integrating data from different systems</td>
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<td>Inadequate IT systems</td>
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<td>Inadequate end-user skills</td>
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<td>Inadequate IT staffing levels</td>
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<td>Data privacy</td>
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<td>Concerns about data security or reporting</td>
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</tbody>
</table>

Challenges retrieving data for
Does your organization use cloud computing?

<table>
<thead>
<tr>
<th>Service Type</th>
<th>Yes (%)</th>
<th>No (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Email (e.g., Hotmail, Gmail, Microsoft Office 365)</td>
<td>38%</td>
<td>94%</td>
</tr>
<tr>
<td>Email marketing (e.g., ConstantContact, StrongMail, Vertical Response)</td>
<td>8%</td>
<td>21%</td>
</tr>
<tr>
<td>File storage/sharing (e.g., Microsoft Sharepoint online, Dropbox, Box.net, Microsoft Office 365)</td>
<td>22%</td>
<td>56%</td>
</tr>
<tr>
<td>Social networking/Web 2.0 (e.g., Facebook, Twitter)</td>
<td>33%</td>
<td>82%</td>
</tr>
<tr>
<td>Web conferencing (e.g., Skype, WebEx, ReadyTalk, Citrix Go to Meeting)</td>
<td>20%</td>
<td>51%</td>
</tr>
</tbody>
</table>

Source: “2012 Global Cloud Computing Survey Results”, Connecting Up (compiled)
Why Not Cloud?

- Cloud security and trust
- Legacy applications in the cloud
- Policy compliance
- Cloud Quality of Experience
Mutual attestation protocol between TED, PCA and App server:

Before each transaction, each entity proves to each other that their apps, OS, drivers and hardware are

- unaltered and
- operating as specified
Legacy applications in the cloud
Privacy by Design
The 7 Foundational Principles

Ann Cavoukian, Ph.D.
Information & Privacy Commissioner
Ontario, Canada

Privacy by Design is a concept developed back in the 90s, to address the ever-growing and systemic effects of Information and Communication Technologies, and of large-scale networked data systems. Privacy by Design advances the view that the future of privacy cannot be assured solely by compliance with regulatory frameworks, rather, privacy assurance must ideally become an organization's default mode of operation.

Initially, using Privacy-Enhancing Technologies (PETs) was seen as the solution. Today, we realize that a more substantial approach is required—extending the use of PETs to PETs Plus—taking a positive-sum (full functionality) approach, not zero-sum. That’s the “Plus” in PETs Plus: policies-Plus, not the elimination of zero-sum (a false dichotomy).

Privacy by Design extends to a “Triology” of encompassing applications: 1) IT systems, 2) accountable business practices and 3) physical design and networked infrastructures.

Principles of Privacy by Design may be applied to all types of personal information, but should be applied with special vigor to sensitive data such as medical information and financial data. The strength of privacy measures tends to be commensurate with the sensitivity of the data.

The objectives of Privacy by Design—ensuring privacy and gaining personal control over one’s information and, for organizations, gaining a sustainable competitive advantage—may be accomplished by practicing the following 7 Foundational Principles (see over page).

Privacy Amendment (Enhancing Privacy Protection) Act 2012

No. 197, 2012

An Act to amend the law relating to privacy, and for other purposes
The Digital Elephant in the Room
What can we do?

Source: Australia 3.0 Government Services Stream Roundtable “instant poll”
Standards Australia Distributed Application Platforms and Services (DAPS) Committee, known as the JTC1 SC 38 Mirror Committee (IT-038)
CSIRO’s IM&T Storage and Compute Cloud (STACC) Program has been endorsed to develop internal research cloud services and supporting frameworks, to enable researchers to create, manage, scale and retire virtual research IT platforms, supported by self-help user interfaces and tools.
The opportunity
The “Game Changers”

Open Data

Locally relevant
Globally aggregated
data sets

Linked Data

Crowd Sourcing

Cloud

Data sets

Linked Data
Satellite and the “Last 3%”
One window on the Opportunity

- Evidence based policy and decision support
  - Analytics
  - Optimisation

- Service delivery transformation
  - Services innovation
  - Business process and business rules
  - Optimisation

- Customer centric services
  - Wrapping the service provider
  - around the customer
  - Services personalisation
Information from data supports disaster management..
Engaging through social media

- Closing the gap between the “1” and the “many”
Case Study
Human Services Delivery
Customer Situational Awareness

- Social Media
- Usage
- Complaints
- Account Closures
- Media
- E-mails
- Overdue payments
- Call Centre Transcripts
- New Accounts
What to do with It

Population

- Analysis
- Trends
- Characterise
- Outliers

Customer Situation

- Resource allocation
- Strategic/tactical planning
- Marketing
- Customer service

26 | CSIRO – QuestNet Cloud Conference
What to do with It

Customer Situation

Happy
- Up sell
- Cross sell
- Special Offer
- Case manage

Not so Happy

Unhappy

Personal
- Static Data
- History
- Characteristics
- Personal Sentiment

Happy

Not so Happy

Unhappy
Conclusions
Conclusions

• Focus on Digital Maturity

• Develop guidelines and use cases for Government agencies and for SME’s where it is appropriate to use “private cloud”, “public cloud” or hybrid

• Develop means to allow Australian companies to be part of the realisation of the national digital economy strategy

Analyse the benefits over time
Productivity isn’t everything, but in the long run it is almost everything.

Paul Krugman, 1991
Professor Princeton University,
Nobel Prize in Economics 2008

Digital Productivity and Services Flagship

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Email: Enquiries@csiro.au  Web: www.csiro.au

Thanks to CSIRO Colleagues
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Alan Dormer
Jay Guo