Cloud Services Common Assessment and Considerations

Date: 12/05/2016
Version: 3
Department: TDED

Unclassified
Document Control Information

01. Document reference
   TDED-REP-Cloud-Common-Assessment-and-Considerations-v3 0.doc

02. Document type
   Report

03. Security classification
   Public

04. Synopsis
   This report identifies key considerations that need to be taken into account before considering any cloud computing offerings including Software as a Service solutions.

05. Document control

<table>
<thead>
<tr>
<th>Author</th>
<th>Change controller</th>
<th>Distribution controller</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology Direction and e-Government Department</td>
<td>Technology Direction and e-Government Department</td>
<td>Technology Direction and e-Government Department</td>
</tr>
</tbody>
</table>

06. Authorisation

<table>
<thead>
<tr>
<th>Issuing authority</th>
<th>Approval authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology Direction and e-Government Department</td>
<td>Technology Direction and e-Government Department</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Signature / Date</th>
<th>Signature / Date</th>
</tr>
</thead>
</table>

07. Modification history

<table>
<thead>
<tr>
<th>Version</th>
<th>Date</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final Draft</td>
<td>17/09/2010</td>
<td>Draft Version for internal review</td>
</tr>
<tr>
<td>Final</td>
<td>18/11/2010</td>
<td>Final Version following internal review</td>
</tr>
<tr>
<td>Final Draft Ver 2</td>
<td>10/06/2011</td>
<td>Draft version for internal review</td>
</tr>
<tr>
<td>Final Ver 2</td>
<td>13/06/2011</td>
<td>Final Version</td>
</tr>
<tr>
<td>Version 3</td>
<td>12/05/2016</td>
<td>Updated document template</td>
</tr>
</tbody>
</table>

08. Acknowledgements
   Technology and Systems Governance

09. References
   1. Software as a Service (SaaS) paper
   2. Cloud Computing – Key Considerations for Adoption (Infosys)
Executive Summary

MITA will be procuring a number of services which can be categorized as potential candidates to be rolled out as Cloud Based Services (or have strong Cloud Services attributes) – more prominently Software as a Service (SaaS).

There are a number of shortcomings and challenges that need to be addressed from an enterprise perspective prior to embarking on such type of implementation paradigms including but not limited to legal, procurement processes, business continuity, governance, etc.

The scope of this paper is to identify and highlight key considerations that one (from an organisation perspective) needs to carefully assess prior to considering the procurement of cloud computing services.
Table of Contents

DOCUMENT CONTROL INFORMATION ...............................................................I
EXECUTIVE SUMMARY ................................................................................II
TABLE OF CONTENTS ....................................................................................III
01. INTRODUCTION ..........................................................................................4
02. CONSIDERATIONS ...................................................................................5
03. CONCLUSIONS .........................................................................................8
The introduction of cloud computing technologies and services within an organisation will bring along a number of challenges together with the associated benefits. In this respect, it is pertinent that decision makers evaluate effectively the suitability and applicability of such technologies/services in the context of the business needs, organisation boundaries and ultimately the intended projected benefits.

The aim of this document is to highlight a number of considerations that should be carefully assessed prior to the procurement of cloud based services. It is important to highlight that the considerations listed in this document are not exhaustive, but do provide a good baseline for determining whether the desired solution fits the cloud based approach given the considerations presented herein.
02. Considerations

While cloud based services promise to deliver many benefits and innovative ways of working, these might not be applicable or may be difficult to adopt in certain cases. The applicability of such services is dependent on a number of factors including but not limited to:

- nature of the organization,
- size of the organization,
- maturity of the organisation,
- intended audience of the service,
- criticality and security of the service, etc.

For example, certain services may be applicable to a small organisation that may require little usage of a service, whilst the same service might not be applicable to a larger organisation that would require heavy usage of a service due to cost, service level agreements, performance, etc. Factors such as economies of scale play a major role in determining the viability of particular cloud services.

Following are some key considerations that one needs to carefully assess prior to considering the procurement of cloud computing services. It is important to highlight that this list is not an exhaustive list of considerations, but does capture in our opinion the more prominent considerations.

1. **What are the business continuity considerations in view of the scale and magnitude of the solution? What are the Exit Strategy considerations?**
   Business continuity is of prime importance to Government, especially when considering that with such cloud services, Government will be bound to the terms and conditions of the service, with limited degree of flexibility and control. Therefore one needs to see that the necessary contractual / procedural obligations are in place in the event that the supplier goes out of business, breaches the service contract, does not meet SLAs or Government decides to move away from the service provider. Furthermore, Government would require an exit strategy which leads to the establishment of an exit plan which guarantees business continuity at the least cost and impact possible.

2. **How do Government’s high level technology and architecture building blocks impact the cloud service?**
   For example Corporate identity needs to be serviced through the Corporate Directory, based on a claims based architecture; can such integration be offered by the cloud service?

3. **What is MITA’s experience in consuming (and eventually delivering) cloud based solutions? Does MITA have the capacity and knowledge (operational, legal, procurement, etc.) to manage such services on behalf of Government?**
   Cloud services require new skill sets and procedures therefore training to build up such skill sets are mandatory.

4. **How is demand for using the cloud services provided by the vendor? Is it mostly constant or widely varying?**
   Cloud based services are more appropriate for varying demands than for constant demand as one of the benefits is a cost model based on usage.

5. **What is the frequency of usage? How frequent is the usage of the service?**
   In most cases very frequent usage makes less economic sense to go for Cloud based pay-per-use type of models. Similarly, cloud based models usually target varying demands whereby an enterprise may take advantage of variable costing models based on usage fluctuations.

6. **Are customized services or interfaces to be exposed by the vendor required?**
   Cloud vendors may not find it economically attractive to provide highly customized services and hence price for end users might also not be very attractive.

7. **How mission critical is the application or service?**
A mission critical application would need very stringent Service Level Agreements (SLAs), which most probably cloud vendors will not be able to satisfy as yet.

8. **What are the compliance requirements?**
The cloud vendor might not have support for the specific compliance needs enforced by Government.

9. **What are the preferred technologies and development platforms? What are the long term plans in this regard?**
Vendor lock-in is one of the major issues in cloud based services. Migration from one cloud environment to another would be much more challenging than migrating within on-premise software up till now, as interoperability standards in this regard are still immature.

10. **What are the integration requirements of the SaaS based solutions with other applications/processes within Government?**
The integration between SaaS offerings from different vendors is a challenge unless provided by the vendor out of the box through open standards such as web services.

11. **What are the internal IT and industry regulations for sharing data outside of the enterprise and Government? Are there any legal jurisdictions in this regard? What is the security classification of the data in question and how does this impact the location of the data?**
Some industry segments have very stringent data privacy and security needs, whilst there are legal jurisdictions of where data resides based on data classification. What is the tolerance level of risk in this regard?

12. **How are expenses preferred to appear in the balance sheet? As capital expenditure (CAPEX) or operating expenditure (OPEX)? From a procurement perspective is Government mature enough to support such a model?**
If Government’s strategy is to prefer OPEX type of models, a cloud computing model would be more suitable. Having said this, is MITA’s and Government’s procurement process mature enough to handle such type of procurements?

13. **What are the performance requirements and SLAs of applications and services that are required from the Cloud by Government?**
The reality is that performance levels of services will be impacted if cloud services are chosen as compared to on-premise implementations - even if they have distributed data centers. In spite of certain high performance SLAs, vendors may still not be able to satisfy the performance levels at all times due to inherent network latency of the Internet. Are the tolerance levels of the business processes far below-par performance levels? Does Government’s infrastructure support the requirements to service such services such as bandwidth, latency, etc.?

14. **What are Government’s network and international bandwidth roadmaps and usage? In most cases cloud services mandate reliable levels of latency as well as reliability and capacity on the network and international bandwidth so as to provide a seamless user experience?**
Does Government have the appropriate mechanisms in place to cater for such needs?

15. **Should a solution/service be implemented through an off-premise cloud service or should it be serviced through a Government on-premise cloud?**
Assuming Government has the necessary resources to service the solution within its on-premise cloud, the decision to host a solution on-premise or off-premise will depend on a number of risk factors which will be tackled on a case by case bases. These risk factors include but are not limited to proximity requirements, revenue generation, mission criticality, security classification, technology, European Union obligations, legal obligations and political sensitivity.

16. **In the case a solution is to be migrated to a cloud platform, do the existing solution licensing models facilitate such a transition?**
17. What are Government’s security requirements? Do the cloud service providers and their service offerings meet Government’s security requirements? When using off-premise cloud services, Government and its entities may have limited ability to define their security requirements, having said this Government still remains responsible for the information that is stored and processed in the cloud. Therefore one needs to make sure that the security provided by the cloud provider is in line with the security requirements of Government.
03. Conclusions

Whilst there are a number of advantages and challenges in the adoption of cloud based services, the key considerations provided in this paper can be used as a starting point by MITA to assess the viability of such cloud services and the respective paradigm. There are surely other considerations which are specific and should be catered for on a case by case basis when analysing the viability of cloud based services.