NextGen Cloud Capabilities Team:

Recommendations on Organizational Capabilities Related to Vendor-Based Cloud Services at U-M

October 2012
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Executive Summary

In August 2011, the NextGen Cloud Strategy group, aligning with the 2010 Accenture assessment (see Appendix), recommended that the University’s IT investment be focused on providing externally provided services that meet constituents’ high-level needs. The group identified three steps to achieve this goal: first, build effective on-premise cloud solutions to help units transition to the cloud; second, implement several targeted cloud solutions; third, improve the university’s organizational capabilities to make it easier for units and individuals to leverage cloud services.

Since then, the NextGen Michigan Program has been busy addressing these recommendations, from piloting MiServer and MiDatabase, the new set of on-premise cloud services, to implementing several targeted cloud initiatives, including the release of M+Google and M+Box to campus. To address the third recommendation, the NextGen Cloud Capabilities Team convened between July and August 2012 to identify and document the target organizational capabilities that could accelerate the adoption of vendor-provided cloud services at U-M.

Organizational capabilities at the university include templated forms, documentation, and policies as well as more robust capabilities such as dedicated staff, contract management, and technical integrations.
The group adopted a common campus scenario around which to organize its initial analysis:

*When a department is trying to address an IT need or problem (decision making and implementation), what barriers exist to keep them from moving to the cloud or that make it harder or slower to move the cloud?*

The group first identified barriers in the following categories:

1. Knowledge
2. Scale
3. Contracts
4. Vendor Offerings
5. Technological Compatibility
6. University Culture
7. Payment

Based on the experiences of the group and on input from campus IT professionals and IT governance committees, the group then identified possible policies, technologies, and other organizational capabilities that could remove or mitigate these barriers. The NextGen Cloud Capabilities team thus recommends the development of new strategies or modifications in the following areas and in the following order, based on weight of Difficulty, Expense, and Impact:

1. Internal Consulting Services
2. Communications Strategy & Outreach
3. Financial Analysis & Business Process Refinement
4. Technological Enhancements
5. Develop a Cloud-Focused Development Culture

The team is currently establishing a project plan and timeline, and retaining subject matter experts in each area to begin implementing the group’s recommendations.

**Approach**

*State of Cloud Computing at U-M*

Since 2009, several strategy and working groups have convened at U-M to address various aspects of the university’s engagement with cloud-based services and to establish a comprehensive strategy for cloud computing at the University of Michigan. In August 2011, the NextGen Cloud Strategy group,
aligning with the 2010 Accenture assessment (see Appendix), recommended that the University’s IT investment be focused on providing externally provided services that meet constituents’ high-level needs.

Traditionally, IT has provided raw infrastructure to its constituents, but university consumers desire more complete services higher up the stack. “Moving Up” -- from hardware to operating system to complete services -- and “Moving Right” -- toward off-premise to on-premise cloud solutions -- will provide the best cost, feature, and flexibility for many university needs.

The first questions the NG Cloud Capabilities Group sought to answer were 1) what will help the university move up and to the right? And 2) what organizational capabilities will make a difference and what is practical at U-M? The goal of the NextGen Cloud Capabilities team was to identify and document the target organizational capabilities that would accelerate implementation of vendor-based cloud services at U-M.

The group focused on recommendations that would address the three main types of Cloud Engagements at the university: Individual (e.g. Dropbox), Team (e.g. Salesforce), Enterprise (e.g. M+Google).

Methodology

Based on the experiences of the group and knowledge of existing scenarios at the university, the group first identified barriers in the following categories (examples at right):

### Barriers to Cloud Adoption on U-M Campus

| **Knowledge** | ○ Customers don’t know what other services are adopted at U-M.  
|              | ○ Don’t have expertise to make decision. |
| **Scale**    | ○ Unit scale is sometimes too small to gain benefits of cloud scale.  
|              | ○ People don’t want to be totally on their own (they like to be part of bigger U-M offering). |
| **Contracts**| ○ Free or click-thru contracts may not go through RFP or contracting process but have more risk for U-M.  
|              | ○ Standard contracts don’t exist for cloud services at U-M. |
| **Vendor Offerings** | ○ Products don’t always meet the diverse needs of the university community or specific units.  
|                  | ○ Vendors sometimes lack focus on U-M requirements for accessibility (both technical and for use by people who have  

Based on the experiences of the group and on additional input from campus IT professionals and IT governance committees (e.g. Unit IT Steering Committee and IT Commons), the group then worked to define solutions and opportunities to reduce barriers within the specific categories. The group identified and prioritized the organizational capability solutions that would most likely help achieve the ultimate goal of accelerating the adoption of vendor-based cloud solutions at U-M.

**Recommendations**

The NG Cloud Capabilities team first developed a list of recommended actions the university could take to reduce the barriers to Cloud adoption. Each action was then ranked based on potential impact; level of difficulty to implement; cost to implement and time to implement. Based on the rankings, the team recommends the following actions for near-term implementation:

<table>
<thead>
<tr>
<th></th>
<th>Internal Consulting Services</th>
<th>To assist with cloud selection and implementation.</th>
<th>High Priority</th>
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<tbody>
<tr>
<td>1.</td>
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<td>2.</td>
<td>Communication Plan</td>
<td>To educate people about the cloud, available cloud services, how to apply it to their work, how others have been successful, and how to be effective.</td>
<td>High Priority</td>
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<td>3.</td>
<td>RFP Boilerplate</td>
<td>To support new cloud vendor engagements.</td>
<td>High Priority</td>
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<td>4.</td>
<td>Cloud Kit (Cookbook)</td>
<td>Contract templates; checklist of “contract dealbreakers,” procurement tips, decision tree/checklist of “Questions to Ask,” and list of preferred vendors for specific solutions so no one feels like they are starting from scratch.</td>
<td>High Priority</td>
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<td>6.</td>
<td>Cloud Inventory</td>
<td>6A) Develop an inventory (asset library) of “unit” and central cloud solutions/vendors. 6B) Identify some as university-wide solutions and negotiate contracts accordingly.</td>
<td>High Priority</td>
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<td>9.</td>
<td>Analyze Spend</td>
<td>Proactively search/report on MPathways data to track cloud usage and identify opportunities for enterprise wide services.</td>
<td>Medium Priority</td>
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<td>10.</td>
<td>MPathways Coding</td>
<td>Rethink how cloud services are coded in MPathways (and Concur, etc.) to allow better reporting and analysis.</td>
<td>Medium Priority</td>
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In addition, there are other actions the team believes could prove helpful in alleviating barriers to Cloud usage. These actions represent less opportunity to enable Cloud usage and/or they represent implementation challenges and cost that render near-term execution unrealistic.

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<td>5.</td>
<td>Business Process SLEs</td>
<td>Establish service level expectation standards for the units that directly support the cloud selection and implementation processes (e.g. Procurement, General Counsel, ITS) including publishing flowchart of process that needs to be followed.</td>
<td>High Priority</td>
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<td>7.</td>
<td>Enhance Network</td>
<td>Enhance the University’s network to better enable cloud services. (bigger data pipe)</td>
<td>Medium Priority</td>
</tr>
<tr>
<td></td>
<td>Task Description</td>
<td>Details</td>
<td>Priority</td>
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<td>8.</td>
<td>Standard Interfaces</td>
<td>Develop standard interfaces (including APIs, documentation and necessary support) to core University infrastructure such as authentication, directory services, ERP, etc.</td>
<td>Medium</td>
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<td>11.</td>
<td>Deep Support for Selected Vendors</td>
<td>Select a cloud ecosystem and build good integration. Provide a rich set of functions and services to support the provided environment. Related to (6B).</td>
<td>Medium</td>
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<td>12.</td>
<td>Community of Excellence</td>
<td>Establish a “cloud community of excellence” consisting of evangelists/leaders across who will share knowledge and experience as well as help influence decision makers to consider cloud solutions as appropriate.</td>
<td>Medium</td>
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<td>13.</td>
<td>Contract Scorecard</td>
<td>Establish a standard scorecard for cloud contract conditions. Related to (17)</td>
<td>Low</td>
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<td>14.</td>
<td>Security Reviews</td>
<td>Have IIA perform a “third party” review of security during selection process. This would be an extension of what they do for enterprise scale projects today. Related to (1).</td>
<td>Low</td>
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<td>15.</td>
<td>Software Developer Education</td>
<td>Develop education program for software developers to better understand what it means to use and build applications in the cloud. Related to (8).</td>
<td>Low</td>
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<td>16.</td>
<td>Early Project Involvement</td>
<td>Encourage (perhaps through establishing standard processes) project teams to include contract conditions/negotiation as an early part of the service selection process. Related to (4), (13), (1) and (2).</td>
<td>Low</td>
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<td>17.</td>
<td>Click Through Checker</td>
<td>Build a simple tool to check click-through agreements to let people know if they will face unusual risk.</td>
<td>Low</td>
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The NG Cloud Capabilities team further consolidated its near term recommendations into 3 major categories:

1. **Cloud Internal Consulting Services**
2. **Communications Strategy & Outreach**
3. **Financial Analysis & Business Processes Refinement**

### Cloud Internal Consulting Services

A set of services that will accelerate the adoption of public cloud services to benefit UMich Community research, education or business activities. The initial implementation of these services will include the following recommendations: (1) create a Cloud Internal Consulting Service; (3) develop a Cloud RFP Boilerplate; (4) build a Cloud Kit; (6A) create a Library of Cloud Solutions/Vendors; (6B) establish University-wide Cloud Vendor Contracts; (9) and (10) Position/Leverage MPathways to Monitor Cloud Usage for Opportunity Identification.

Some examples that could be part of this service offering:

- **Get Started Checklist** - Pre-qualifies cloud services requirements to help guide the requestor to the appropriate cloud services environment.
- **Cloud Tool Kit** - Provides information and/or live support to provide quick and easy access to cloud services.
- **Services Log** - To capture, analyze and share cloud services use and requests.
- **“Social” Networking** - To highlight, discuss and promote the use of cloud services through UMich community. This could tie in with current ITS communications strategies.
- **Advocates or Experienced Drivers** - People knowledgeable of UMich processes and guidelines to shepherd cloud service requests through UMich processes in the most expedient manner.

### Communications Strategy & Outreach

In general, the communication program goal would be to create a more informed and confident campus community, as well as to connect campus business needs with appropriate solutions.

This program is a constant requirement to support implementation and support of all other recommendations both near and long term. The initial focus will be support for the following recommendation areas: (1) create a Cloud Internal Consulting Service; (3) develop a Cloud RFP Boilerplate; (4) build a Cloud Kit; (6A) create a Library of Cloud Solutions/Vendors; (6B) establish University-wide Cloud Vendor Contracts; (9) and (10) Position/Leverage MPathways to Monitor Cloud Usage for Opportunity Identification.
Some examples of communications strategy and outreach activities:

- Cloud Program Branding
- Cloud Consulting Service Content and Templates
- Cloud Kit Content and Templates
- Cloud Vendor Communications
- New Service Announcements
- Cloud Social Network Format, Channels, and Content

Financial Analysis & Business Processes Refinement

The NG Cloud Capabilities Team believes that implementation of its near term recommendations will streamline the financial analysis and business process required to introduce new Cloud services and vendors into the UMich Community portfolio (library).

For example:

- (1) Creating a Cloud Internal Consulting Service will provide the education, information and support required to effectively shepherd a Cloud services request through UMich Legal, Procurement and Security Review processes;
- (3) Developing a Cloud RFP Boilerplate leverages past experience to shorten the time required to build and issue an effective Cloud services RFP;
- (4) A Cloud Kit could provide the get started tools, tips and contacts to accelerate productive use of cloud services.
- (6A) Creating a Library of Cloud Solutions/Vendors and (6B) establishing University-wide Cloud Vendor Contracts provides pre-arranged service options to fit the majority of UMich use cases.
- Finally, (9) and (10) Positioning/Leveraging MPathways to Monitor Cloud Usage for Opportunity Identification provides a means to identify cloud services that represent community-wide value for communication, enterprise agreement and discounted pricing purposes.
Timeline
The goal is to begin implementing initial recommendations in October 2012 continuing through 2013.

Appendix