Panelists

Robert Carozzoni, Cornell University
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Lynn Johnson, University of Michigan
Heiko Spallek, University of Pittsburgh
Alan Wolf, University of Wisconsin- Madison
Khalil Yazdi, Internet2
Topics

1. How to prepare for the move to the cloud
2. Paradigm shift: How the IT makeup is changing as campuses are moving from on-premise to cloud
3. Does it cost more to move to the cloud?
4. Technical architecture implications
5. Risks associated with having SaaS in the cloud
6. Compliance issues, HIPAA implications
7. Data governance, ownership of data
8. Meeting federal funding requirements
9. Impact on the users
10. Exit strategies: code escrow, etc

... add your own
Paradigm shift

How the IT makeup is changing as campuses are moving from on-premise to cloud

- Commoditization of IT
- Focus on vulnerabilities, not opportunities
- Deploy IT staff to help users
Preparation is about Managing Risk

- Legal Risks
- Compliance Risks
- Financial Risks
- Operational Risks
- Security Risks
- Other….
Technical Architecture Implications

• How do we share data when we don't control the software?
• Real-time integrations?
• Identity and Access Management
Risks Associated with SAAS

- Usage - Is it a critical functionality?
- Data - How is data being handled and protected.
- Availability and Reliability
- Application Risk
  - Changes in functionality
  - Addressing vulnerabilities
Data governance

• Who owns the data, and who controls access
  o Do they communicate?
  o Campus policies that reflective different kinds of data?
  o How are issues of ownership and stewardship resolved?
Federal requirements

- For research data, we're in a changing landscape
  - Recent policies requiring designated data management plans
  - Emerging requirements to share publications and data
  - Tools, like ELNs, may make meeting these requirements easier

- Other federal requirements
  - Standards for management of electronic records – 21 CFR 11 (FDA)
  - HIPAA
  - FERPA
  - FISMA
  - Work that involves select agents
Does it cost more to move to the cloud?

<table>
<thead>
<tr>
<th>Cost Element</th>
<th>Custom</th>
<th>Purchased</th>
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</thead>
<tbody>
<tr>
<td><strong>Initial acquisition</strong></td>
<td></td>
<td></td>
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<tr>
<td>Core clinic system</td>
<td>$2,503,971</td>
<td>$524,523</td>
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<tr>
<td>Add-on components</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ongoing operations</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Software: ongoing maintenance and support</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Core clinic system</td>
<td>159,059</td>
<td>72,617</td>
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<tr>
<td>Add-on components</td>
<td>15,000</td>
<td>48,434</td>
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<tr>
<td>Subtotal software</td>
<td>174,059</td>
<td>121,051</td>
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<tr>
<td>Hardware</td>
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<td></td>
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<tr>
<td>Server infrastructure</td>
<td>88,850</td>
<td>88,047</td>
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<tr>
<td>Point of care</td>
<td>153,770</td>
<td>174,750</td>
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<tr>
<td>Subtotal hardware</td>
<td>242,620</td>
<td>262,797</td>
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<tr>
<td>Support staff</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Backend operations (server, network, etc.)</td>
<td>29,608</td>
<td>139,071</td>
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<tr>
<td>Point of care/customers</td>
<td>145,529</td>
<td>232,400</td>
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<td>Training</td>
<td>0</td>
<td>22,143</td>
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<tr>
<td>Reporting/analysis</td>
<td>40,000</td>
<td>20,643</td>
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<td>Records management</td>
<td>0</td>
<td>50,000</td>
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<tr>
<td>Subtotal support staff</td>
<td>215,137</td>
<td>464,257</td>
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<tr>
<td><strong>Total ongoing operations</strong></td>
<td>$631,816</td>
<td>$848,105</td>
</tr>
</tbody>
</table>

*Ongoing operations costs are as of 2012.

Note: Some costs are rounded to nearest thousand dollars.
Cloud Risk Mitigation

Today – Indirect/Passive
• Use contracts to shift responsibility and risk to vendors
• Educate campus users
• Insurance

Tomorrow – Direct/Active
• Data Loss Prevention
• Encryption technologies
• Smarter Firewalls
IT as a **business** (not just technical) asset

1. Expert advisor for disruptive change
2. Navigator of procedural barriers
3. Innovation hunter
4. Time-to-market experts
5. Bridger of gaps
   - integration, architecture, security, migrations, etc
6. Value added reseller of cloud, staff aug, etc
7. IT Vendor Management
8. Returning resources to core mission
Exit strategy

- How do you leave with useful data?
  - Individuals
  - Institution

- Can you keep running by other mechanisms
  - Code escrow
  - Knowledge to operate the system
Questions?

Cornell University

Internet2NET+

ICE redefining Health Care

University of Pittsburgh

The University of Wisconsin Madison

SCHOOL OF DENTISTRY UNIVERSITY OF MICHIGAN