MULTI-TENANT CLOUD-BASED APPLICATIONS

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“We all look like idiots. I’ll say it again: We all — not the governor, not the other side, not our side — we all look like idiots.”
What was he talking about?

The inability of the Illinois legislature to pass meaningful pension reform, resulting in out-of-control pension costs…

![Annual state contributions to Illinois' five pension systems](image)

*Certified as of 11/15/2011
Source: Commission on Government Forecasting and Accountability and Civic Federation*
...leading to less funding available for other state needs.

**Projected suburban and downstate retirement spending vs. aid to schools**

<table>
<thead>
<tr>
<th>Year</th>
<th>Retirement Spending</th>
<th>Aid to Schools</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>$3.432 billion</td>
<td>$5.639 billion</td>
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<tr>
<td>2029</td>
<td>$6.796 billion</td>
<td>$6.555 billion</td>
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<tr>
<td>2045</td>
<td>$5.129 billion</td>
<td>$14.081 billion</td>
</tr>
</tbody>
</table>

Source: Commission on Government Forecasting and Accountability, Illinois State Board of Education, Chicago Public Schools and Illinois Policy Institute calculations. Assumes that total education funding (operating and retirement spending) will grow at 2.3 percent, which is the rate the Commission on Government Forecasting and Accountability estimates revenue will grow at in coming years.
FIVE WORST-FUNDED PENSION SYSTEMS

- New Hampshire: 58.3% funded
- Illinois: 50.6% funded
- Oklahoma: 57.4% funded
- West Virginia: 55.9% funded
- Kentucky: 58.2% funded

SOURCE: PEW CENTER ON THE STATES
WHAT DOES THIS HAVE TO DO WITH MULTI-TENANT CLOUD-BASED APPLICATIONS?
A larger problem:

The failure of government to:

- Collaborate (work together)
- Innovate (work smarter)
The question(s) of the hour

• Just what is a multi-tenant cloud-based app?
• And more broadly, how do we bring collaboration and innovation into government?
1. The CIO as change agent
2. Sources of innovation
3. What we did at the County
4. What we’re doing at the State
5. Varieties of cloud computing
6. Effects of cloud on finances…
7. …and on behavior
8. Opportunities for multi-tenant cloud
1) CIO as change agent

- My background
- Private sector (small & large firms)
- 2007 State of Illinois CIO
- 2010 Cook County CIO
- 2012 Government Technology “doer, dreamer & driver”
- 2012 State of Illinois Governor’s Office – lead role in management improvement and performance budgeting initiatives

- **Collaboration** (multi-tenant)
- **Innovation** (cloud-based service-oriented architecture)
2) Sources of innovation in government

Source: Innovation State: The Public Innovator’s Handbook, by Bill Eggers and Shalabh Kumar Singh
2) What we did at the County

• Collaboration
  • City-County collaboration on over 50 specific coordinated, collective or merged activities
  • Joint purchasing w/City: commodity software, managed services
  • State/County/14 munis joint broadband deployment project
  • CCHHS/CTA/State sharing agreement for fiber in right-of-way

• Innovation
  • Reverse auction for commodity hardware and break-fix
  • Mainframe-as-a-service
  • Enterprise IT governance
  • Cloud GIS (collaboration and innovation)
  • Open data site / open government plan
3) What we’re doing at the State

- **Collaboration**
  - Integrated eligibility system (Medicaid + 4) (req’d/funded by ACA)
  - Framework project – integrated health and human services apps including intake, case management, provider management
  - Illinois Century Network – statewide network, 8000 customers, $100m BTOP build-out underway
  - `data.illinois.gov` to host municipal open data

- **Innovation**
  - Private/community cloud health information exchange, MPI
  - Centralized repository vault for HHS provider data reporting
  - Integrated state/municipal tax collection platform
4) Varieties of Cloud Computing

- Private
- Community
- Hybrid
- Public
Public and community cloud apps

- Google Docs
- Office 365
- Salesforce
- Workday
Socrata open data (community cloud)
Socrata open data (community cloud)
5) The effects of cloud on finances…
6) ...and on behavior

- Example: end of lease, buy a new mainframe or migrate to IaaS?

- *In-house capital investment* = incentivized to increase usage to near capacity to maximize ROI on large capital investment

- *SaaS, PaaS, IaaS* = “pay-as-you-go” approach tends to lead to decreased usage by incentivizing more efficient usage—only pay for what you use
7) Opportunities for multi-tenant cloud

A. GIS
B. Health information exchange
C. Health insurance exchange / federal data services hub
D. Open data / open government
   i. data.illinois.gov
   ii. metrochicagodata.org
   iii. cities.data.gov
E. Integrated tax? ERP?
F. Others?