Cloud vs On-Premise Software: And the Winner is...

Presenters:

• Moderator, Micah Myers, Information Technology Director, City of St. Cloud, MN
• Speakers:
  • Greg Jonsen, SaaS Leader, State of Minnesota
  • David Dukes, Asst. Finance Director, Williamson County, TX
  • Wayne Hayden-Moreland, Director Data Center, State of South Dakota

Date: May 21, 2014
State of Minnesota
Cloud Experiences

Greg Jonsen
Software as a Service Leader
5/21/14
Agenda

- Quick Bio
- Overview State of Minnesota IT
- What is “SaaS”? 
- What is “The Cloud”? 
- SMN Enterprise Cloud Portfolio 
- Benefits of the Cloud
- Myth of On Prem versus Cloud Security
- Where is this all going?
Quick Bio on Greg Jonsen

- 7 Years at Dish Network (formerly Echosphere Corporation) in a variety of roles (mostly IT)
- 17 Years at HealthPartners in a variety of IT roles including CISO, with deep dives into HIPAA, Sarbanes Oxley, COBIT, SAS70, etc.
- Currently the Software as a Service Leader at the State of Minnesota – MN.IT Services
Overview of State of Minnesota

- 76 different Agencies, Boards, and commissions
- Have embarked on Consolidation
- About 2,000 IT Workers
- Consolidation involves Exec Branch Only
- About 2 years into Consolidation
- Hybrid Model, Slow Process
- Approx 5,000 servers “on-prem”, In cloud?
What is “SaaS”?

- SaaS = Software as a Service
- Not IaaS (Infrastructure as a Service)
- Not PaaS (Platform as a Service)
- Generally (but not always) it is “end user” software provided at an enterprise level and/or in a multi-tenant delivery model
- In bigger IT shops, it could be delivered “on-prem”, but generally, it is cloud based
- Multi-tenant is becoming more and more prevalent, partly because it lowers the operational costs (economies of scale)
What is “The Cloud”?  

- Private and Public Clouds  
- Public Clouds are generally delivered by private sector companies, serving a wide variety of customers or tenants  
- Private Clouds are generally limited to one company or entity  
- Private Clouds can be delivered either on-prem or in a “hosted solution”  
- Clouds are just combinations of hardware and software, providing IaaS, PaaS, SaaS, XaaS...
SMN Enterprise Cloud Portfolio

- Cisco ScanSafe (Web Filtering)
- Microsoft Office 365 Dedicated (E-mail, SharePoint, Instant Messaging, looking at ITAR)
- Microsoft FOPE/EOP (e-mail virus protection)
- AirWatch (Mobile Device Management)
- AWS (Amazon Web Services, SaaS)
Benefits of “The Cloud”

- Less Expensive (Economies of Scale, Economies of Scale, Economies of Scale)
- No capital outlay for upgrades, less “bumpy” expenditures
- More Secure (not universally accepted ... yet)
- Less painful upgrades
- Faster access to new features
- Faster to “stand up”
Myth of On-prem vs Cloud Security

- Just because you own your own data center does not mean it is more secure. In fact, generally it is not.
- For instance, SMN has a very secure data center, but the Microsoft Data Centers for O365 are much more physically secure.
- My experience with cloud providers is that their policies and procedures are, in general, more mature than what I’ve seen in IT shops that I know about, or have worked at.
- Just because I know where my data center is, and I know who my employees are, doesn’t mean I think we can do a better job fighting the bad guys or preventing accidental or insider breaches.
Where is this all going?

1. Kids do everything in the cloud (they are your future employees)
2. Some IT Functions (E-mail for example) are already disappearing from on-prem (Microsoft has announced that SharePoint will only be available in the cloud in the future)
3. All “commoditized” functions will disappear from on-prem in the next 5-10 years (ERP? CRM? Collaboration?)
4. Non-commoditized functions will be candidates for IaaS and PaaS
5. Lots of new functions will never have on-prem equivalents, only delivered in the cloud (things like Google Apps, Yammer, YouTube, etc.)
THANKS!

GO CLOUD!
Cloud vs On-Premise
Case Study: Williamson County, Texas

David M. Dukes
Assistant Financial Director
Williamson County, Texas
Williamson County, Texas
Tremendous Growth

- Development of Economic Base
- High Tech Industry
- Manufacturing Companies
- Healthcare Industry
- Higher Education
Evolution of County Government

- Need for meaningful data to empower County government planning and decisions
- Internal reporting needs to provide Business Intelligence and Internal Transparency
- Data Growing by 50% annually
- Increased demand from taxpayers for external reporting
  - 24/7 instant reporting
  - Banking, investing, credit rating incentives
- Improved accountability at all levels
County Government in need of Respect

- Cities and states develop a brand name and market themselves
- Counties serve as a foundation to grow other programs
- Accurate and timely internal and external reporting will improve respect
Our 2012-2014 Goals

Goals
- Upgrade older Oracle ERP version to current release
- Improve Timeliness of Reporting
- Provide Information through Technology
- Improve County-wide Communication
- Provide Understanding of County Operations to all Audiences- Executives to Constituents for better collaboration and unification of goals
- Leverage Mobile and Cloud Technologies
Obstacles

- Growing population demands information and technical advancements
- Infrastructure of supporting data growth
- "Old Guard" was resistant to change
- Idea that if people don’t know how much money they have, they won’t spend it
- County was transforming from rural to urban
- County business very fragmented
- Build vs Buy and try to Configure a Reporting Solution for Government.
Leveraging Innovative Technologies

- Cloud
  - Is it secure?
  - What is the cost?
  - Will it work with an on-premise ERP?
  - Are there set-up / hardware costs?
  - What about on-going costs?
  - What is the Benefit vs. On-Premise?
Cloud Considerations

- Low Up-Front Costs
  - Quicker implementation
  - Provider Hosts and Maintains
- Upgrades / Updates Made Simple
- Minimal Disruption and Increased Value
  - IT can focus on innovation rather than Maintenance
  - Pay as You Go-Predictable Subscription Costs
  - Mobile
On-Premise Considerations

- Internal IT team to maintain
- Greater control and flexibility for accessing the application database
- Extensive hardware needed
- More control about when and if to upgrade
- Own the ERP Software
Our Specific Issues (ERP):

- Current ERP system was recently upgraded
- Recent purchase of new virtual servers
- Wanted to Maintain ERP customization
- Wanted to Maintain control of databases
- IT personnel and hardware already in place
- Already owned the ERP software
Our Decision:

- Hybrid Approach
- On-Premise ERP
- Cloud-Based Business Intelligence and Reporting with the Performance Center Suite of Services
Public / Private Partnership

Williamson County and Mo’mix Solutions joined forces in a collaboration to deploy a Cloud based SaaS Solution that will serve others.

Long-time technology partner

- Helped Wilco to implement Oracle
- Supported Wilco’s Vision of Internal and External Transparency
- Collaborated on a Solution by and for Government.
Improving Government Performance and Transparency

- Performance Center Suite
  - Cloud-based Business Intelligence
  - Cloud-based Transparency
  - Cloud-based Budget Reporting and Analytics
- Self-Service Reporting & Analysis as well as Pre-built reporting
Moving to the Cloud

Step 1: Performance Center Business Intelligence
- Dashboards
- Self Service Analysis
- Ad Hoc Reporting
- Standard Reports

Step 2: MyGovCenter External Transparency Platform
- Adheres to State Requirements
- Supports Content Publishing
- Dynamic and Drillable Dashboards to Transactions
- Encourages Citizen Engagement-One Site for all information.
Software as a Service (SaaS):

This Software as a Service solution has allowed us to upgrade our reporting and analytical products while decreasing costs for the County. This hybrid approach enables us to provide quality, low-cost, state-of-the-art products to our employees, taxpayers and citizens.
Improving Government Performance and Transparency

Results

- Reduced reporting costs by 75%
- Eliminated the need for double-entry and shadow systems
- Provides Detailed and Accurate Data for Publication and Transparency.
- Provides Pre-Built Government Intelligence for all Audiences.
## Budget to Actual - Expenses by Organization

### Table: Expenses by Organization - 2013

<table>
<thead>
<tr>
<th>GL Fund</th>
<th>GL Department</th>
<th>GL Department Name</th>
<th>Budget Modified</th>
<th>Actual</th>
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<td>$251,641.77</td>
<td>$232,032.26</td>
<td>$20,337.38</td>
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Meaningful External Transparency
MyGovCenter:

• Problem: Data Dumps are hard to understand
• Problem: Searching pdf files is cumbersome and inefficient
• Problem: Typically, transparency is not funded
• Solution: Williamson County continued its award winning collaboration with Mo’mix Solutions to develop a Transparency Software as a Service application.
• Solution: Performance Center data storage allows for easier publication of dynamic data sets.
• Solution: Design of system will be geared to government reporting requirements as a minimum requirement.
Welcome to MyGovCenter!

Williamson County is committed to financial transparency. As one of the fastest growing Counties in the nation we believe that open government is accountable government. In this spirit, the county partnered with Mo'mix Solutions to provide a platform in which our citizens have centralized access to meaningful financial information.

Within MyGovCenter, you can find information about the County’s budget, financial status, spending, debt, contracts, tax rates, elected officials and much more.

The Dashboards page provides interactive visualizations, analytics and reports related to Williamson County’s spending. You can filter by calendar or fiscal year and search for specific types of spending across the county, or all spending for a public service, such as Community Services. We invite you to spend some time exploring your county’s data and providing feedback on how we can continue to serve our community.

Where the Money Comes From

(as of fiscal year ended 9/30/13)

- Property Taxes: 62.74%
- Operating Grants and Contributions: 15.57%
- Charges for Services: 14.71%
- Investment Earnings: 0.43%
- Miscellaneous: 0.27%
- Other Taxes: 0.26%
- Capital Grants and Contributions: 6.01%
Debt Information

**Pass-Through Debt:**

- Williamson County has two such pass-through agreements with the Texas Department of Transportation (TxDOT) which have a combined total of $145,556,122 of the County's outstanding debt.

- In 2006, TxDOT and Williamson County signed an agreement for the County to build US 183A, US 79 (3 Sections), IH-35 Turnarounds Bridges (Georgetown), RM 2338 and FM 1660. TxDOT will reimburse a maximum of $151,942,000.00.

- In 2011, Williamson County signed a second Pass Through Agreement with TxDOT for the construction of northbound frontage roads and Ramps on IH-35 in Georgetown. TxDOT will reimburse a maximum of $12,056,700.00.

- As of September 30, 2013, total outstanding bonds payable debt is $773,914,915 of which $145,556,122 is reimbursable by TxDOT. As of September 30, 2013, $14,429,552.00 has been reimbursed to date.

**Refunding Bonds:**

- Refunding Bonds were recently issued to reduce the County’s overall debt and save the taxpayers $12.3 million over the life of the bonds.

**Bond Election:**

- On Tuesday, November 5, 2013, Williamson County voters approved $275 million in road bonds and $40 million in park bonds.

Debt principal and interest payments are the largest governmental expenditures. Those payments are made twice a year in February and August. When pulling government-wide spending, you will see a large spike in those months.
CAFR
CAFR stands for Comprehensive Annual Financial Report. A CAFR is a set of financial statements for a state, municipality or other governmental entity that comply with the accounting requirements established by the Governmental Accounting Standards Board (GASB). Even when they’re available online, deciphering county financial reports can be a challenge. The Texas State Comptroller’s website has developed a Guide to Understanding Comprehensive Annual Financial Reports (CAFRs) and accompanying videos.

CAFR 2013

Archive of Historical Reports
(dated information for historical reference only)
CAFR 2012
CAFR 2011
CAFR 2010
CAFR 2009

PAFR
PAFR stands for Popular annual Financial Report. A PAFR is intended to convey the financial results of the government’s operations to those stakeholders of the government that do not necessarily have a background in public finance.

PAFR 2013

Archive of Historical Reports
(dated information for historical reference only)
PAFR 2012
PAFR 2011
PAFR 2010
PAFR 2009

Other Financial Reports
Mid-Term Financial Reports are periodic, unaudited reports on County revenues and expenditures by fund for the 3 major funds (General Fund, Road & Bridge Fund, and the Debt Service Fund).
Rating Agency Reports are credit reports issued on County Finances. The reports from Fitch Ratings and Standard & Poor’s can be found here.
The Financial Policy is a report of accounting policies approved by the Williamson County Commissioners Court.

Treasurer's Reports
The Treasurer reports monthly to Commissioners’ Court on the county’s cash position, as well as the county’s investment position and performance. These reports can be found by clicking the link below.

Treasurer’s Reports
<table>
<thead>
<tr>
<th>Vendor Name</th>
<th>Vendor Note</th>
<th>AP Invoice Num</th>
<th>AP Invoice Desc</th>
<th>Part Num</th>
<th>Part Item</th>
<th>GL Dept Desc</th>
<th>GL Dept</th>
<th>Date</th>
<th>Amount</th>
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<td>101 Park Division</td>
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<td>04900000 DRUGS TEST KITS, JUV</td>
<td>3963268</td>
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<td>Juvenile Services</td>
<td>Non-Residential Services</td>
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<td>706065</td>
<td>OVERPAYMENT, C/CLK</td>
<td>3963268</td>
<td>02-11-13</td>
<td>Deficit</td>
<td>New Of Office, Co. Clerk</td>
<td>$10,000</td>
<td>169038</td>
<td></td>
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<tr>
<td>818 Technology Inc</td>
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<td>706065</td>
<td>OVERPAYMENT, C/CLK</td>
<td>3963268</td>
<td>02-11-13</td>
<td>Deficit</td>
<td>New Of Office, Co. Clerk</td>
<td>$10,000</td>
<td>169038</td>
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<tr>
<td>11900</td>
<td>706065</td>
<td>OVERPAYMENT, C/CLK</td>
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<td>02-11-13</td>
<td>Deficit</td>
<td>New Of Office, Co. Clerk</td>
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<td>$10,000</td>
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**Payment Register Williamson County TX**
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<tr>
<th>Transaction ID</th>
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<th>Category</th>
<th>Department</th>
<th>Expense Category</th>
<th>Date</th>
<th>Amount</th>
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<td>General Government</td>
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<td>HUMAN RESOURCES</td>
<td>COMPUTER EQUIPMENT &lt; $5,000</td>
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</table>
We’re very proud that our Public / Private Partnership with Mo’mix Solutions to build a Cloud Based Business Intelligence tool for enhanced Reporting, Analytics and Transparency has been awarded the Louisville Award for Innovation in Government Finance as part of the GFOA’s 2014 Award for Excellence in Government Finance program. Thank you for allowing me to share our story with you.
GFOA 2014

Considerations for On-Premises Services

Wayne Hayden-Moreland

State of South Dakota

Bureau of Information & Telecommunications (BIT)
Tech Projects Need Techs

Tech Projects Require Technologists
• You have three here today

Support our Clients
• Good investments in technology

Location is a part of the investment
• Perspectives on hosting location...
Our Preference

SDBIT is pro on-premises

- However, off-premises is not off limits
  - Sometimes there’s no alternative
  - And sometimes it’s the **best** option

- Our decision processes consistently demonstrate the value of on-premises hosting for our state
Who We Are

- Medium sized organization – 370 staff
- Common standards
- Deep skills
- Stable work force
- Stable client base
I/T Centralized and Consolidated since 1996

- Legislative
- Executive
- Judicial
- Elected Offices / Boards / Commissions
- K-12 / Higher Education
# BIT Services and Reach

<table>
<thead>
<tr>
<th>Governance</th>
<th>Clientele</th>
<th>Services &amp; Support</th>
<th>Systems</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>9,800 PC’s, 2,500 Databases, 1,000 Applications, 700 Websites, 190 Projects, 300 Locations, 18 Agencies &amp; Bureaus, 8 Elected Offices, Boards &amp; Commissions</td>
<td>Email &amp; Calendars, System Design, Data Center Facilities, Performance &amp; Monitoring, Cyber Security</td>
<td>Servers &amp; Mainframe, Networks, PC’s, Software &amp; Databases</td>
</tr>
<tr>
<td>Legislative</td>
<td>105 Legislators, 65 Legislative Staff</td>
<td>System Development &amp; Implementation, Telephone, Voicemail, Cabling, Conferencing &amp; Collaboration</td>
<td>Printing, Software Protection, Routers &amp; Switches, Security Infrastructure</td>
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<tr>
<td>Judicial</td>
<td>535 Judicial Staff, 63 Courthouses</td>
<td>Help Desk, Client Management, Maintenance, Online Media</td>
<td>GIS, Search, Document Imaging, Wireless</td>
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<tr>
<td>Public Safety</td>
<td>54 Radio Towers, 98% Mobile Coverage, 20,000 Radios</td>
<td>Social Media, Business Analysis, Technology Integration, Mobility, Strategic Planning</td>
<td>Radio System, Data Storage, Web Hosting, Identity Management</td>
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<tr>
<td></td>
<td>126,800 Students, 9,500 Teachers / Administrators, 151 Public Districts, 50,000 User Accounts, 5,300 Dist. Learning Conf., 6,100 E-Learning Conf.</td>
<td>Email &amp; Calendars, Maintenance, Telephone, Cyber Security, Online Courses, Conferencing, Collaboration &amp; Distance Learning, Online Media</td>
<td>Wireless, Networks, Routers &amp; Switches, Software &amp; Databases</td>
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<td>Secondary</td>
<td>36,400 Students, 5,000 Faculty / Staff, 3,100 Dist. Learning Conf.</td>
<td>Help Desk, Data Center Facilities, Performance &amp; Monitoring, Conferencing, Collaboration &amp; Distance Learning</td>
<td>Identity Management, Software Protection, Web Hosting, Security Infrastructure</td>
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<td>Post K-12</td>
<td>66 County Governments, 63 Courthouses, 14 City Governments</td>
<td>Telephone, Cyber Security, Content Delivery, E-Government, Online Forms, GIS</td>
<td>Networks, Routers &amp; Switches, Software &amp; Databases</td>
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<tr>
<td></td>
<td>820,000 Citizens, 1,500 Forms / Processes</td>
<td>Online Licensing, Online Media, Public Broadcasting, E-Government, Online Forms</td>
<td>Radio System, Alerting, Web Hosting, Software</td>
</tr>
</tbody>
</table>
Funding Technology
(How we compete on cost)

Standards
• Provide buying leverage
• Reduce staffing needs
• Support deeper skill development

Lease vs Buy
• Strategic leasing for core systems
• Purchase where it makes $ or licensing sense

Aggressive Negotiation
• Price
• Terms
Assumptions

Assumptions our processes and standards make:

- The system will store and exchange confidential / sensitive information
- The data is valuable and a target for criminals and hostile governments
- The system will be an important part of the process of doing business
- The costs of a security breach are large
- The business functions being supported are the same regardless of hosting location
Assessment Team

- Business case
- Financial
- Technical (business and technical)
- Legal (licensing experience)
- Depending on size and risk: add a professional project manager
Our Decision Model

- Hosting Decision
- Who
- When
- How
Our Decision Model

Hosting Decision

Who

On-Premises Project team decides

Off-Premises Senior Mgmt. decides
Our Decision Model

Hosting Decision

When

- After establishing Requirements
- Integration needs
- After researching Options available and costs
- After determining risk (Legal; Licensing; $$$; Security. . .)
Our Decision Model

Hosting Decision

How

- Team reviews each option
  Pros & Cons using established process
- Acceptable terms are negotiated
- Service is tested for security level
- Executive team makes decision
On-Premises Goals

On-Premises Focus is Driven by the Need to Control

Cost
- Hardware Licensing
- Software Licensing
- Interdependencies
- Standards

Risk
- Security / Services
- Legal
- Backup / Recovery
- Support
### Centralization and Standards Control Cost

<table>
<thead>
<tr>
<th>Over 5-20+ Year Timeframes costs are competitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Pricing model</td>
</tr>
<tr>
<td>- Shared infrastructure uses all resources to capacity</td>
</tr>
<tr>
<td>- Leveraged pricing and terms benefits everyone</td>
</tr>
<tr>
<td>- Leasing maintains modern systems at consistent cost</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Staff Develop Deep skills shared across the state</th>
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<tbody>
<tr>
<td>- Organizational knowledge</td>
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<tr>
<td>- System history</td>
</tr>
<tr>
<td>- Regulatory knowledge</td>
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</tbody>
</table>

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<tr>
<th>Interdependencies are centrally managed</th>
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<tbody>
<tr>
<td>- Defined and well understood</td>
</tr>
<tr>
<td>- Support staff for all sides of the interdependencies work together</td>
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</tbody>
</table>

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<tr>
<th>Security focus built in at all levels and integrated</th>
</tr>
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<tbody>
<tr>
<td>- All systems benefit from the same audit processes</td>
</tr>
<tr>
<td>- All systems benefit from the same security investment</td>
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</tbody>
</table>
Centralization and Standards Control Risk

Standard Discovery Process Identifies Risk

- Bank of 280 vendor questions
- Meetings with Tech + Management to review
  - Company
  - Tools
  - Infrastructure
  - Processes
  - Licensing
- Security scans required
Centralization and Standards Control

Risk

Standard Discovery Process (cont.)

- All contract and licensing terms reviewed for risk by:
  - Legal staff
  - Technologists experienced in working with lawyers regarding technology issues
- Interviews with other clients
- Final approval includes BIT management team
What we Consistently Find

**Focusing standardized processes on cost and risk**
- Maximizes value add
- Makes on-premises the best choice in most cases

**In all cases standardized processes (regardless of hosting location)**
- Reduce long-term costs
- Reduce risk/weed out problem vendors
Thank You & Questions