Not “Cloud First” But Don’t Want to be “Cloud Last”?  

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Session Handout: [https://goo.gl/h74hwP](https://goo.gl/h74hwP)  

UNCOMMON THINKING FOR THE COMMON GOOD
Agenda

• Cloud Terminology
• Cloud Strategies
• Cloud Stakeholders
• Cloud Conundra
• Preparing for a Cloudy Forecast
Agenda

Don't even think about trying to escape.
Cloud Terminology

YOU KEEP USING THAT WORD
I DON'T THINK YOU KNOW WHAT IT MEANS
Cloud Terminology

- **SaaS** – Software as a Service (e.g., Box, Canvas, Qualtrics, Duo, LastPass)
- **PaaS** – Platform as a Service: analytics, media streaming, storage, queuing services, database
- **IaaS** – Infrastructure as a Service: virtual machines, virtual data centers, auto-scaling sites, extreme computing, etc.
- **Public Cloud** – Shared tenant environment typically provided by a vendor (e.g. AWS, MS Azure, Google Cloud Platform)
- **Private Cloud** – a single-tenant environment where the hardware, storage and network are dedicated to a single client or company
Cloud Strategies
“Cloud First”

Progressive **shift away from on-premises infrastructure** for all services, including enterprise services. When seeking a new solution or it is time to upgrade or replace an old service you will **look for a cloud-based answer first**.

If there is a SaaS solution, that is typically the first choice. If no appropriate SaaS can be found and you decide to build rather than buy, PaaS would be the first choice. IaaS is fallback if there are fundamental requirements to build from the server up. **Last choice would be to build it on premises.**
“Opportunistic Cloud”

Rather than an overarching direction this is more selective. You target specific projects for the cloud. Your criteria might be cost, lesser concern about data, opportunity for innovation, etc.

This usually results in a ready acceptance of SaaS, tepid forays into PaaS and IaaS projects that can only be achieved in the cloud.
“Experimental Cloud”

A conservative, “toe-in-the-water” approach targeting uncontroversial, low-risk projects which can provide lessons but have minimal impact, positive or negative.

Institutions with this strategy may join/adopt SaaS agreements that have very broad buy-in from other universities. Likely no production work in PaaS and IaaS due to security concerns and lack of sufficient local knowledge of cloud.
“Cloud Skeptic”

Not an absolute “no-cloud, no-way” stance, but very close.

You might sign on for some SaaS solutions but with aggressive security, limited functionality and likely less than full potential ROI. PaaS and IaaS are likely non-starters.
Cloud Stakeholders
Stakeholders

- Security
- Data Stewards
- Developer Lead
- Support Team
- Procurement
- Legal
- Infrastructure Architect
- Network Engineers
- Departmental IT
- Teaching and Research Faculty
- CIO
- University Leadership
- Adaptive Technologists
- Students
- And others
Cloud Conundra
Cloud Conundra

**co•nun•drum** (kə-nūnˈdrəm)
A paradoxical, insoluble, or difficult problem; a dilemma

- Discuss stakeholder pros/cons
- Choose your institution’s cloud strategy
- Apply strategy to given conundrum
- Capture deliverables
- *Wildcards*
The Big Wave - Scenario

• Flood takes data center, including email, offline for a couple of weeks.
• You can have email back at DR site in a week.
• You can move it to O365 and be receiving new email by tomorrow if you commit to 3-year contract.
The Big Wave - Deliverables

• Which stakeholders vote to move to the cloud?
• Which stakeholders vote to rebuild, keeping the email system completely within university control?
• What does your school ultimately decided to do?
• How will your decision impact the trust relationship with the campus?
The Big Wave - Wildcard

- Recent bad press over change in (other) cloud provider’s T’s & C’s calls into question IP protections.
- High profile DDoS attack shakes confidence in the cloud solutions.
The Big Grant- Scenario

- Your research tech group finds out about a massive compute need only when receipt of large grant is announced.
- Short timeline to complete research and deliver report.
- Your data center is already at capacity.
- Your RT team has little cloud experience.
The Big Grant- Deliverables

• Which stakeholders vote to try to build out a server room for the research?
• Which stakeholders vote to move other systems to the cloud to make room for the research on-prem?
• Which stakeholders believe all of the research should just be done in the cloud?
• What does your school ultimately decided to do?
• How does your decision impact the ability of central IT to continue to deliver and support the broader needs of the university?
The Big Grant- Wildcard

- The research involves PHI.
- University counsel has concerns about moving any non-public data to the cloud.
- Central IT is worried that the lack of skills and short timeframe could result in unrecoverable mistakes and data loss.
The Best Laid Plans - Scenario

• Most of your administrative computing is in on-prem data center and private cloud.
• Your DR site covers the on-prem systems but there is no 2nd private cloud for DR.
• You are faced with a large expense for hardware for private cloud DR or for time in rearchitecting and rebuilding critical applications for public cloud.
The Best Laid Plans - Deliverables

• Which stakeholders support you beginning the work on an accelerated move to the public cloud?
• Which stakeholders support sticking with the current on-prem/private cloud strategy and want to recommend buying more hardware?
• What does your school ultimately decide to do?
• How does your decision impact the ability of central IT to continue to deliver and support the broader needs of the university?
The Best Laid Plans - Wildcard

• “Cloud is just a fad.” Skepticism from longtime IT professionals.
• Cooperation from those skeptics, particularly Networks, is critical for successful implementation. Without a mandate from CIO, they will resist.
• Competing camps of stakeholders pull in opposite directions.
To Buy or to Build, with a Twist of FERPA - Scenario

- Registrar wants to add student success data analysis module to your SaaS course/class scheduling system.
- Module is pricy and would require giving vendor a lot of sensitive student data.
- Local analytics team thinks they can come up with the same information if given a year and additional resources.
To Buy or to Build, with a Twist of FERPA - Deliverables

• Which stakeholders support going with the SaaS provider?
• Which stakeholders support having the local developers do it?
• What does your school ultimately decided to do?
To Buy or to Build, with a Twist of FERPA - Wildcard

- President’s task force working on improving retention and graduation rates.
- Task force needs meaningful student success data from Registrar for report.
- Task force deadline is one year away.
- Data Steward and University Counsel believe vendor’s T’s & C’s allow them to do too much with your student data.
Wilting under the Spotlight - Scenario

- Recent media attention has resulted in a significant uptick in interest in your institution.
- Aging web infrastructure has proven unequal to the challenge and reports of the frequent downtimes is eclipsing the positive attention.
- Scaling up to address the problem on-prem will be significantly more expensive than budgeted. Rearchitecting for the cloud will be cheaper.
- A cloud web hosting platform is another option.
Wilting under the Spotlight - Deliverables

- Which stakeholders vote to invest in expanding the existing infrastructure?
- Which stakeholders vote to move the web infrastructure to the cloud?
- Do any stakeholders advocate for a hybrid on-prem/cloud solution?
- Do any stakeholders vote to move it to a cloud hosting solution?
- What does your school ultimately decided to do?
Wilting under the Spotlight - Wildcard

• $$ is tight. Academic programs are being cut. Very public criticism of the school’s spending on athletics has begun. As a state-funded institution it can’t be ignored.

• Your main web server admin has a 'move-over-my-dead-body' attitude. Needless to say his team has no cloud experience.
Preparing for a Cloudy Forecast

GET USED TO DISAPPOINTMENT
Session Takeaways

- “Cloud” is a very broad term that is (over)used to oversimply a complex set of technology tools, development approaches and hosting locations.
- Having said that, you can’t ignore it. It’s not going away.
- Cookie-cutter cloud strategies are of limited use to real-life decision-making.
- When you think you’ve talked to all stakeholders, find one more.
- Prepare for wildcards or prepare to be disappointed.
99.3%

Participants in this activity whose Cloud IQ improves, making them more valuable contributors to their institution’s technology decision-making.
Thank you for your time

WE'VE JUST SUCKED ONE HOUR OF YOUR LIFE AWAY

HOW DO YOU FEEL

UNCOMMON THINKING FOR THE COMMON GOOD
Thanks for taking part! We’d love to have your feedback on how we can improve the game.

Bob, Oren and Matt
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