



HARVARD UNIVERSITY  
Information Technology

# Connecting the IT Dots

December 7, 2016  
Gutman Conference Center

# Agenda

- **Introductions**
- **Jason Snyder and Erica Bradshaw: Moving Harvard to the Cloud**
- **Ann Lurie: Enterprise Architecture**
- **Ellen Gulachenski: ITCRB Update**



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Harvard Cloud

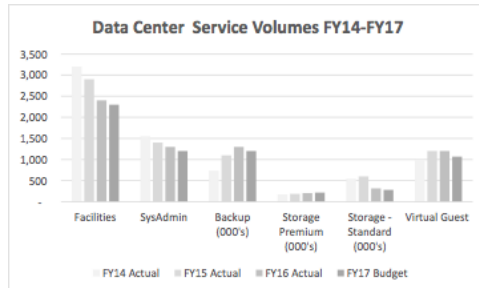
**Jason Snyder and Erica Bradshaw**

# Agenda

- Why cloud?
- A new vision
- New services and offerings
- How we'll get there
- Timeline
- Next steps

# Current State

## Expensive



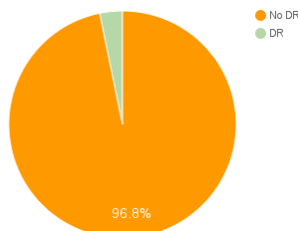
- High fixed costs, decreasing datacenter revenue, and non competitive rates create financial pressure.

## Non-standardized



- Too many IT solutions, tools and vendors, make it hard to integrate, secure, and operate our applications

## Vulnerable



- Lack of disaster recovery for critical applications and the close proximity of our network core create operating risk.

# Why Cloud?

## Cost Effective



- High fixed costs, decreasing datacenter revenue, and non competitive rates create financial pressure. ✓

- Close the data center
- Migrate to the Cloud

## Standardized



- Too many IT solutions, tools and vendors, making it hard to integrate, secure, and operate our applications. ✓

- Create application patterns & standards
- Offer new services

## Resilient



- Lack of disaster recovery for critical applications and the close proximity of network core create operating risk. ✓

- Implement Cloud DR capabilities
- Relocate the network core



# Cloud is Already Happening

## HUIT Cloud Program



~200  
Applications  
Migrated



Implemented  
Cloud Shield



PeopleSoft and  
Oracle Financials in  
the cloud application  
by end of FY17

## University



canvas

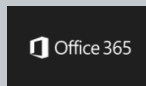


servicenow

SaaS is  
everywhere:  
SalesForce,  
ServiceNow,  
Canvas



HARVARD



Office365 and  
my.harvard are  
in the Cloud



Departments and  
schools are  
expressing interest in  
migrating their data  
centers (UHS, HMS)

# A New Vision

## Enterprise Cloud Program

To make it easy for the Harvard Community to realize the **transformative benefits of the Cloud** through **enabling adoption** and **providing common services** that are secure, cost-effective, and reliable

### Strategic Objectives

- **Create a coherent University cloud presence** by using standard architectures, common contracts, and providing expert direction
- **Improve IT service delivery** by providing new cloud based services that deliver security and value to the University
- **Reduce costs** by closing expensive on premise data center and lowering the cost per unit of compute

### Guiding Principles

- We prefer to buy or broker cloud solutions over building our own.
- We will provide the opportunity to adopt innovative cloud solutions supported by the best positioned School
- We will assess University-wide viability and ascertain clear value for any centralized service prior to implementation efforts
- We will actively seek out cost reduction and optimization solutions
- We will manage vendor lock-in and ensure safeguards are in place to prevent unnecessary risk

### Key Performance Indicators

- Reduction in number of disparate IT cloud solutions
- % reduction in the number of security findings in annual IT audits
- % increase in the uptime of critical IT services during upgrades, crisis, or maintenance
- Reduction in service costs over on premise deployed solutions



# New Services and Offerings

## CURRENT

<b>End User Computing</b>
Collaboration Services
Email and Calendars
Field Support Services
Network Services
Phone Services
<b>IT Provider Services</b>
Cloud Services
HUIT Supporting Tools and Systems
Identity and Access Services
Network Services
Phone Services
<del>Server Administration</del> (REMOVE)
Web Hosting
<b>IT Security</b>
Information Security Education and Consulting
Information Security Operations and Engineering



## FUTURE SERVICES

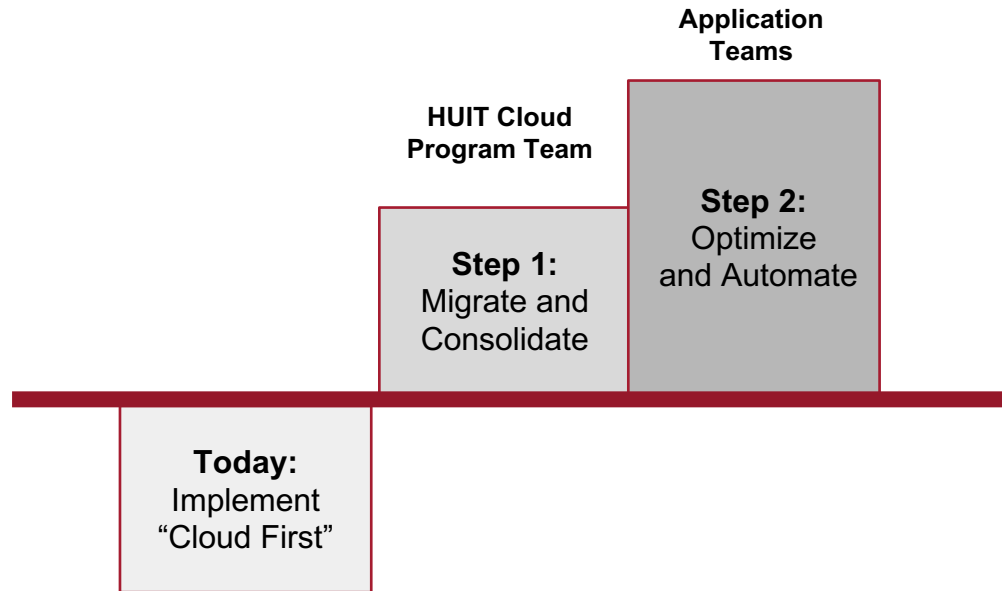
<b>End User Computing</b>
Collaboration Services
Email and Calendars
Field Support Services
Network Services
Phone Services
<b>IT Provider Services</b>
Cloud Services
HUIT Supporting Tools and Systems
Identity and Access Services
Network Services
Phone Services
Storage (new)
Platform and Tools (new)
Web Hosting
<b>IT Security</b>
Information Security Education and Consulting
Information Security Operations and Engineering

## FUTURE SERVICE OFFERINGS

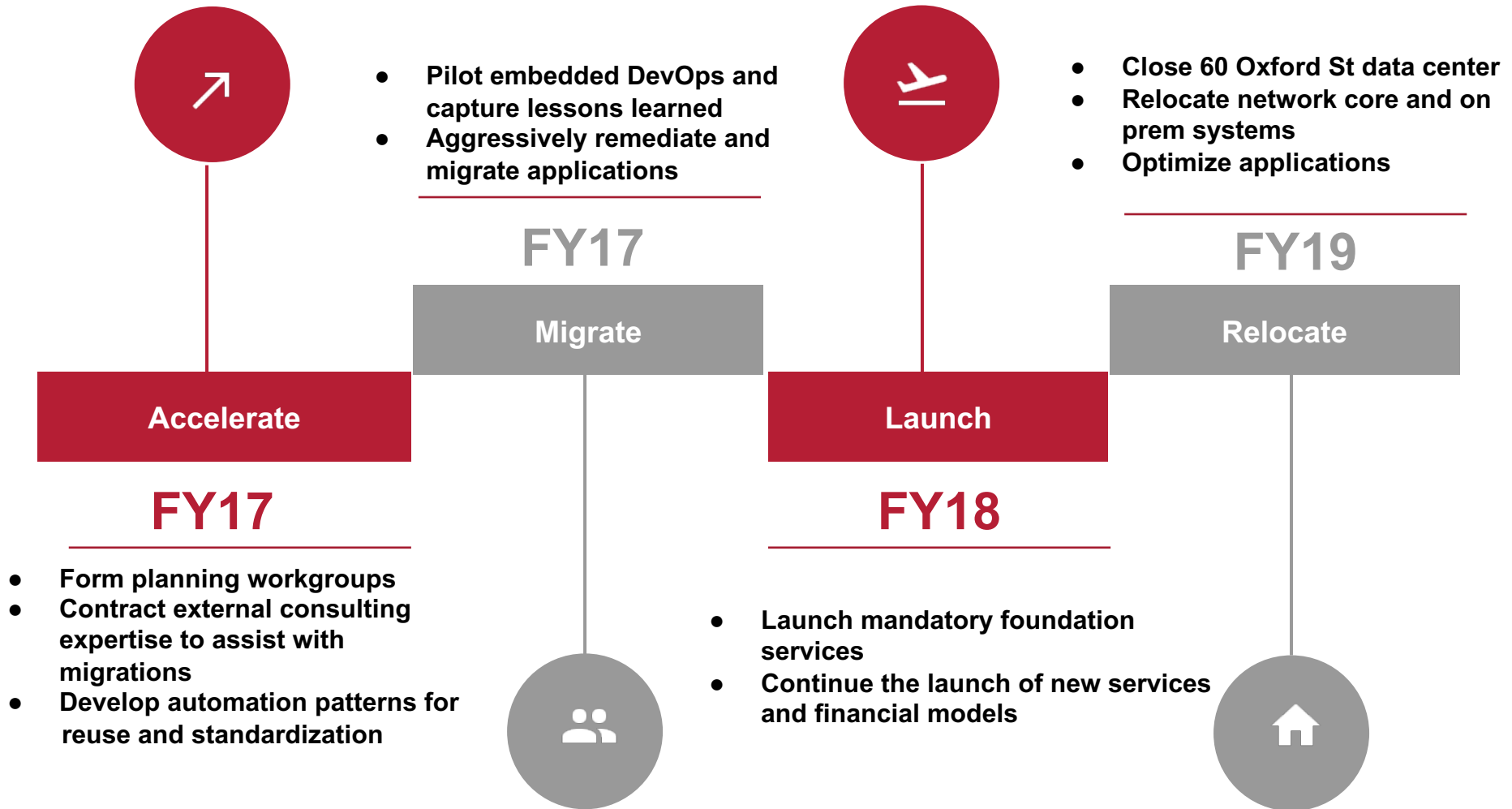
### Cloud Services

- **Cloud Foundations Bundle**  
*(HarvardKey, Cloud Shield, IP, Direct Connect, Integration)*
- **Cost Engineering and Monitoring**
- **Hosting**  
*(Embedded DevOps)*
- **Consulting**

# Two-step Migration Strategy



# Timeline



# Next Steps

## Executive Committee

**Co-Chair: Anne Margulies**

**Co-Chair: Jason Snyder**

**Members: Workgroup Chairs, Jason Shaffner, Mike Milligan, Mitch Rogers, Ellen Gulanchenski**

## Project Coordination Team

**Erica Bradshaw, Hellen Zziwa, Xenia Parker, Melissa Lucius, Juliana DiLuca, Matt Mazer**

**Agile Coach: Tamara Larsen**

## Workgroups

### Cloud Services

**Co-Chair:** Erica Bradshaw (Cloud Program Director)

**Co-Chair:** Jefferson Burson (ITS)

**Scrum Master:** Matt Mazer

### Technology and Security

**Co-Chair:** Jason Snyder (CTO)

**Co-Chair:** Christian Hamer (Security)

**Scrum Master:** Xenia Parker

### Finance

**Chair:** Penny Kaligian (Finance)

**Scrum Master:** Hellen Zziwa

### Human Resources

**Co-Chair:** Karen Pemstein (HR)

**Co-Chair:** Nicole Breen (HR)

**Scrum Master:** Melissa Lucius

### Communications

**Co-Chair:** Acacia Matheson (HPAC)

**Co-Chair:** Stephanie Gumble (Administration)

**Scrum Master:** Juliana DiLuca

# Next Steps

- **Making our work visible to the IT community**
  - Monthly communication and sprint readouts starting in January
  - Common Collaboration space for news and updates
- **Building our services**
  - Publishing a Service Roadmap
  - Prioritizing Cost Engineering and Monitoring, Cloud Backups and the Cloud Foundations Bundle as the first offerings to be defined
- **Continue accelerated migrations**
  - Continue with application remediation and migration to AWS to meet FY18 objective for HUIT managed applications
  - Plan Sungard decommissioning in FY17

**Questions or Comments?**



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# Enterprise Architecture Overview

**Ann Lurie**

# Agenda

- Why Enterprise Architecture
- Vision
- Approach



# Why Enterprise Architecture

- **Problem Statement:**

- Too many people doing similar things in different ways creates unsustainable complexity that increases cost and risk over time

- **Goals:**

- Reduce complexity
- Lower costs
- Create standard patterns
- Define a common artifact to align on

# Enterprise Architecture Vision - Revised

## Our Vision for Harvard's Enterprise Architecture

**Articulate and drive to common solutions, standards, and opportunities for alignment in order to reduce IT complexity and cost across the University and enable local innovation.**

### Strategic Objectives

- Articulate a set of Principles and Standards aligned to each architecture layer
- Organize existing and future reference artifacts and patterns in a library that aligns with the Principles and Standards
- Engage with University teams strategically to advance and support elements of the Enterprise Architecture
- Cultivate a Community of Practice for architecture

### Guiding Principles

- Allow real needs of working teams to drive EA focus
- Work across organizational units to find opportunities for alignment
- Evolve architecture with advances in technology
- Seek feedback broadly from University colleagues and peer institutions

### Key Performance Indicators

- Decrease in project delivery timeframes
- Increased use of common solutions
- Increase the number of projects that align to EA Principles
- Use of common data sources and ways of working with data

# Meeting with University of Washington EA

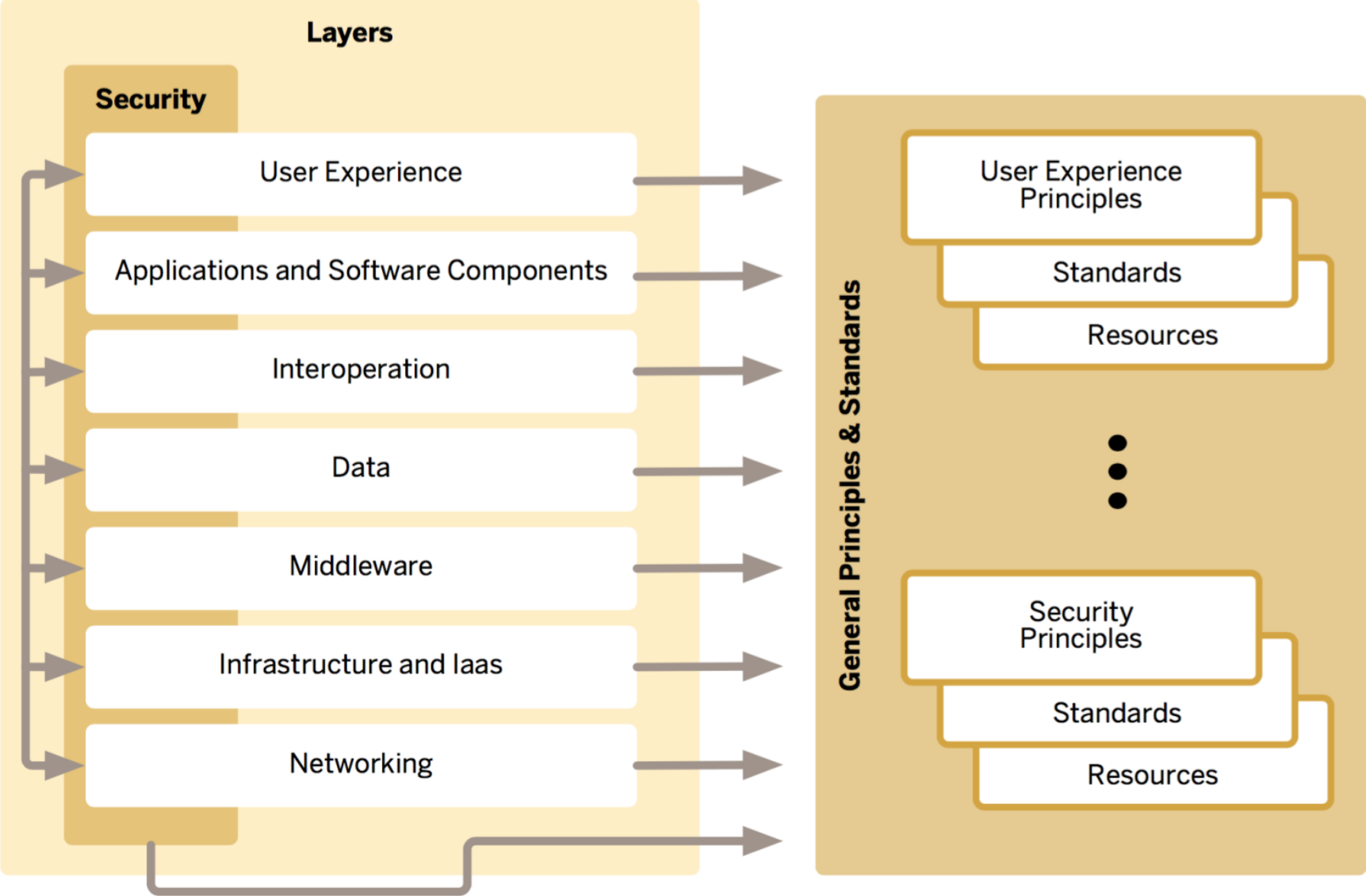
- Jason, Ann and EA team met with Jim Phelps, who leads UW's EA effort and the ITANA group
- “If you only do one thing...”

Advice	Action
“Meet with your senior leaders to understand what they need, and what their vision for the future is.”	Meet individually with CIOs to discuss two topics: <ul style="list-style-type: none"><li>• “What can EA do for you?” (Pain points)</li><li>• “What do you want the future to look like?” (Vision)</li></ul>

# Approach to Enterprise Architecture

- The vision says what we are hoping to achieve
  - We will be telling people how to implement technology more often, more deliberately
- Translating the vision into concrete action requires answering the question
  - “*What* should we tell people to do?”
- We will answer this question in two ways
  - Through a framework of Principles and Standards that define the most important architectural considerations for each layer
  - By engaging with teams who have real problems that Enterprise Architecture can solve

# Framework Elements



# Sample Framework Content

**Layer:**  
Interoperation

**Principle:**  
Reduce one-off  
integrations and use  
common interfa

**Standard:**  
Write and share  
MuleSoft-friendly  
APIs for data  
exchange

**Library of Resources, Patterns, and  
Reference Artifacts:**

- ETAB Publication: Guidelines for API Development
- DMS program service: MuleSoft
- Code for existing APIs shared in common repo
- Checklist for vendor-managed APIs for COTS and SaaS solutions
- ...

# How We Engage and Partner with Teams

## **Problem Statement:**

Lack of architectural standards make things harder for delivery teams



## **Assessment:**

Would addressing the problem statement accelerate development and adoption of EA standards?



## **Outcome for Teams:**

A solution that addresses the need articulated in the problem statement

## **Outcome for IT Community:**

- Specific solutions generalized into standards and reference architecture
- Case study describes relationship of new standard to EA goals

# How to Get Involved

- Website
  - Currently under construction
  - The eventual home for the Principles, Standards and Resources
- ETAB
  - A group for decision-making and policy-setting
  - Anyone can add to the ETAB backlog
  - Join the group. Contact Ann at: **[ann\\_lurie@harvard.edu](mailto:ann_lurie@harvard.edu)**
- Partner with EA
  - Contact Ann at: **[ann\\_lurie@harvard.edu](mailto:ann_lurie@harvard.edu)**



**Questions or Comments?**



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# ITCRB Update

## **Ellen Gulachenski**

# ITCRB Timeline

ITCRB/PRC Activity	FY17						
	2016 October	2016 November	2016 December	2017 January	2017 February	2017 March	2017 April
1. PMs submit "Intent to Submit"	◆ 9/30						
2. List of potential proposals distributed to Fin Deans, CIO Council, ITCRB, Central Finance	◆ 10/12						
3. Strategic IT Goals and Roadmaps due		◆ 11/1					
4. Organizational Impact reviews		◆ Fin Deans (11/3) ◆ HR Deans (11/8) ◆ CIO Council (11/14)					
5. Tech reviews are completed: Architecture   Security   Data Management   Support Services			◆ 12/1				
6. Proposals due to HUIT PMO			★ 12/1				
7. PRC Review Meetings				◆ 1/10-1/12			
11. ITCRB Review Meetings					◆ 2/21-2/22		
12. Memo with funding recommendations sent to EVP						◆ 3/10	
13. EVP allocates funding					27		◆ 4/15

# Proposals Submitted for FY18

Title	Org	Proposed Spend (in 000s)				
		FY18	FY19	FY20	FY21	FY22
Active Directory Security Improvements	HUIT	\$2,000	\$2,000			
Broadcast Communications	CS	\$1,000				
Buy to Pay	FAD	\$525				
Centralized Video Storage Service Planning and Start-Up	HUIT	\$1,500				
Class Reports Production Platform	AA&D	\$310	\$165			
Collaboration – Administrative File Sharing	HUIT	\$1,500				
Data Management Program	HUIT	\$4,996	\$6,134	\$6,078	\$4,487	\$3,436
Financial Invoicing and Reporting Strategic Transition (FIRST) (fka FRAP)	FAD	\$1,322				
Integration of Campus Service Time Tracking Systems with PeopleSoft	HHR	\$600				
New CRM for University-Wide AAD	AA&D	\$750	\$450			
Position Management with Retroactive Salary Distribution	HHR	\$500				
Title IX Awareness and Engagement Platform	OPP	\$600				
<b>TOTAL:</b>		<b>\$15,603</b>	<b>\$8,748</b>	<b>\$6,078</b>	<b>\$4,487</b>	<b>\$3,436</b>

**Questions or Comments?**

## Key Dates

- **December 16:** Last day to nominate for Dean's Distinction Award
- **December 20:** HUIT Holiday Celebration

Thank you!