BENTLEY UNIVERSITY

# CIO ORGANIZATION

## TOWN HALL

## JUNE 12, 2018

# AGENDA

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- Welcome – Bob Wittstein, CIO
- Goals Wrap Up and CIO Organization Placemat – Bob Wittstein, CIO
- Disaster Recovery – David Routsis, Data Center Operations Manager and David Norman, Cloud Program Director
- Information Security – Erika Powell-Burson, CISO
- Status of Workday Student – Ron Ardizzone, Director Student Systems
- Guest Speaker – Gloria Larson, President
- Value Awards – Gloria Larson, President and Bob Wittstein, CIO

# NEW HIRES

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**Viral Amin**
Reference Librarian for Electronic Resources
Library

# NEW HIRES

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**Landon Gaines**
Helpdesk Coordinator II
Client Services

# NEW HIRES

**Molly Gilroy**
Instructional Support Specialist-
Online Programs
ATC

# NEW HIRES

**Staci Kirschner**
Operations and Records Assistant I
Registrar

# NEW HIRES

**Erika Powell-Burson**
Chief Information Security Officer

# NEW HIRES

**Khalid Saddiqui**
Database & Applications Administrator
DMAS

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# Status Update
# Fiscal Year 18
# Top 10
# CIO Organization Goals

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# 1. Deliver High-Quality Online Education

Online Learning - Support the PMBA Blended program, including designing synchronous and asynchronous courses and delivery.

**Completed**

On Track

At Risk/Delayed

Postponed/ Undelivered

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# 2. Modernize ERP and Student Information System

Workday Finance and Workday Student

(Includes Financial Aid and Housing solutions)

| |
|---|
| Completed |
| **On Track** |
| At Risk/Delayed |
| Postponed/ Undelivered |

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# 3. Enterprise Applications

Enrollment Management - Implement admissions tools to improve the Graduate Admissions process (Slate).

**Completed**

On Track

At Risk/Delayed

Postponed/ Undelivered

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# 4. Cloud – IaaS, PaaS, SaaS

Create Cloud Strategy Roadmap and Financial Plan. Identify cloud-based Disaster Recovery solution and complete proof-of-concept

| |
|---|
| Completed |
| **On Track** |
| At Risk/Delayed |
| Postponed/ Undelivered |

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# 5. IT Governance, Project and Vendor Management

Develop the Project Management and IT Governance processes.

| |
|---|
| **Completed** |
| On Track |
| At Risk/Delayed |
| Postponed/ Undelivered |

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# 6. Collaboration

Enhance collaboration by introducing an integrated productivity platform (Office 365)

Completed

On Track

**At Risk/Delayed**

Postponed/ Undelivered

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# 7. Provide Research Support & Computational Resources; Support Data Science Initiatives

Provide scalable support for faculty research projects involving high performance computing including data science and a data lake.

- Completed
- **On Track**
- At Risk/Delayed
- Postponed/ Undelivered

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# 8. Access to Institutional Data and Systems Integration

Improve data usability, quality, availability, and security in order to better support data driven decision making at the university.

Completed

On Track

At Risk/Delayed

**Postponed/ Undelivered**

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# 9. Information Security

Develop and deploy a security strategy and roadmap that encompasses both near-term and longer-term methods for protecting our digital assets.

Completed

**On Track**

At Risk/Delayed

Postponed/ Undelivered

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# 10. IT Culture/Skills Development

Improve engagement across IT organization based on engagement survey, roll out the training, continue emphasizing values of the organization.

**Completed**

On Track

At Risk/Delayed

Postponed/ Undelivered

# THEN AND NOW

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## Opportunities

### Leadership, Vision, Strategy
- Tactical activity in absence of strategic vision
- Years without leadership
- Reactive, siloed
- Not strategically aligned

### Outdated Systems and Capabilities
- Years of technical debt
- 25 year old ERP
- High costs / technology tax to maintain old systems

### Strategic Planning and Governance
- No process for selection, prioritization, capacity planning, scheduling
- Limited visibility into IT funding
- Lack of transparency into University priorities

### Information Security
- Very immature security model / program
- No strategic plan
- Lack of awareness by community

### Staffing and Skills
- Focus on maintaining legacy systems leads to limited opportunity for staff skills development
- Underprepared for changing tech landscape
- Some areas understaffed
- Not leveraging partners in the marketplace
- No shared values and goals

## 90 DAY ASSESSMENT

BENTLEY IT

January, 2016

## Strengths

Academic Technology Center

Successfully integrating technology into teaching and learning

Library

Effectively supporting research and scholarship

## STRATEGIC FRAMEWORK / PRIORITIES

**Technologies - Initiatives in support of teaching, learning, research and administration**

| 1. Teaching and Learning | 2. Research & Scholarship | 3. Student Services & Administration |
|---|---|---|
| 1-1 Enrich Scholarly Activities & Student Learning<br>1-2 Deliver High-Quality Online Education<br>1-3 Support for Classrooms, Specialty Labs, Learning Spaces<br>1-4 Learning Analytics | 2-1 Provide Research Support & Computational Resources<br>2-2 Support Data Science Initiatives<br>2-3 Provide Access to Information Resources | 3-1 Workday Banner Replacement<br>3-2 Access to Institutional Data and Systems Integration<br>3-3 Support Enrollment Management Capabilities<br>3-4 Support Student Systems and Student Needs |

**4. Common Platforms**

4-1 IAM / Provisioning | 4-2 IT Service Management | 4-3 Cloud - IaaS, Paas, Saas | 4-4 Wireless / Cellular | 4-5 Collaboration Tools | 4-6 Workflow / Imaging | 4-7 Video

**5. Foundational Strategies**

5-1 Enterprise Architecture | 5-2 Information Security | 5-3 Governance and PMO/VMO | 5-4 Business Continuity / Disaster Recovery | 5-5 IT Org / Culture / Skills

# ACCOMPLISHMENTS

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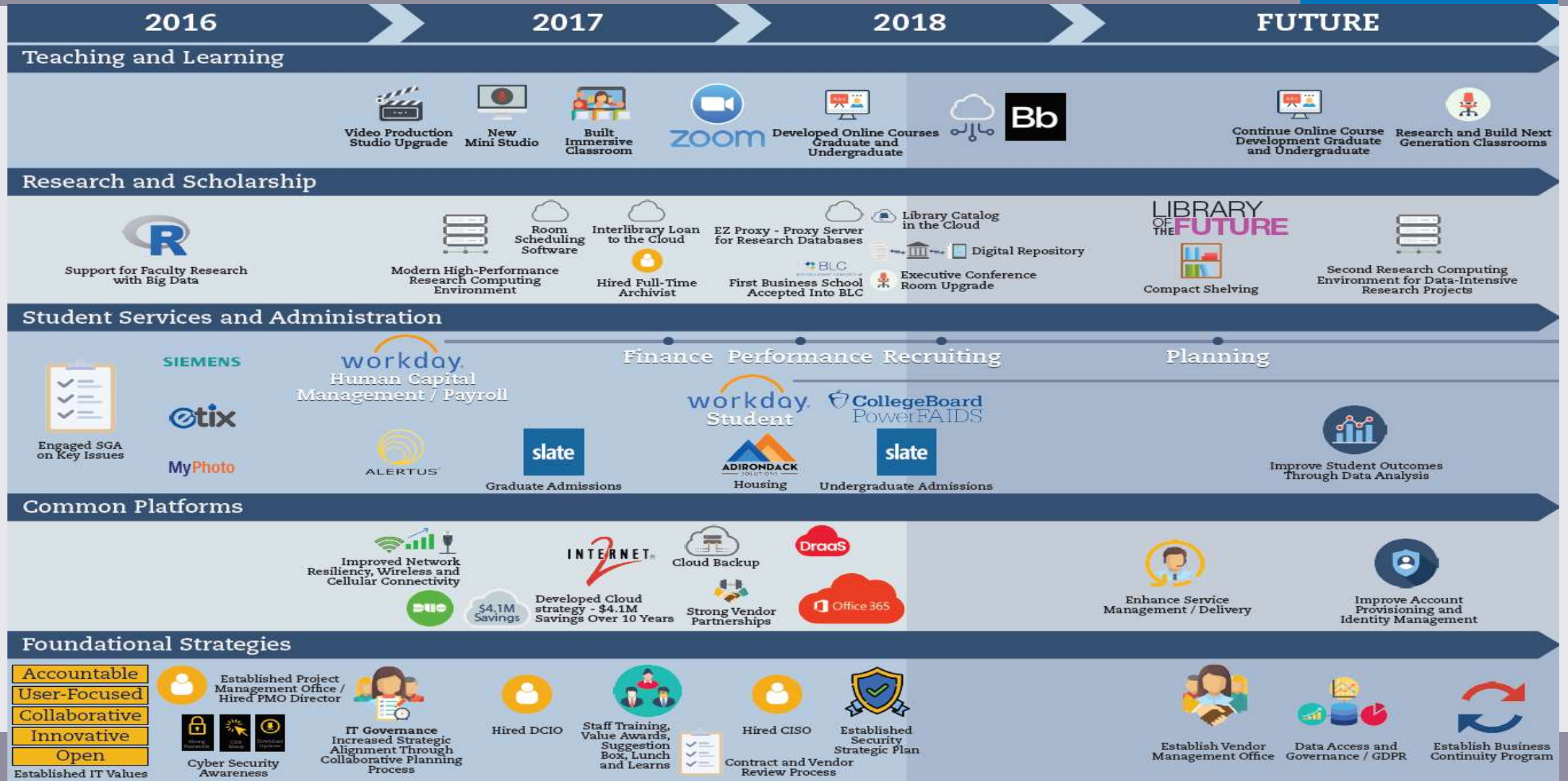

# Questions?

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# DISASTER RECOVERY AS A SERVICE

David Routsis and David Norman

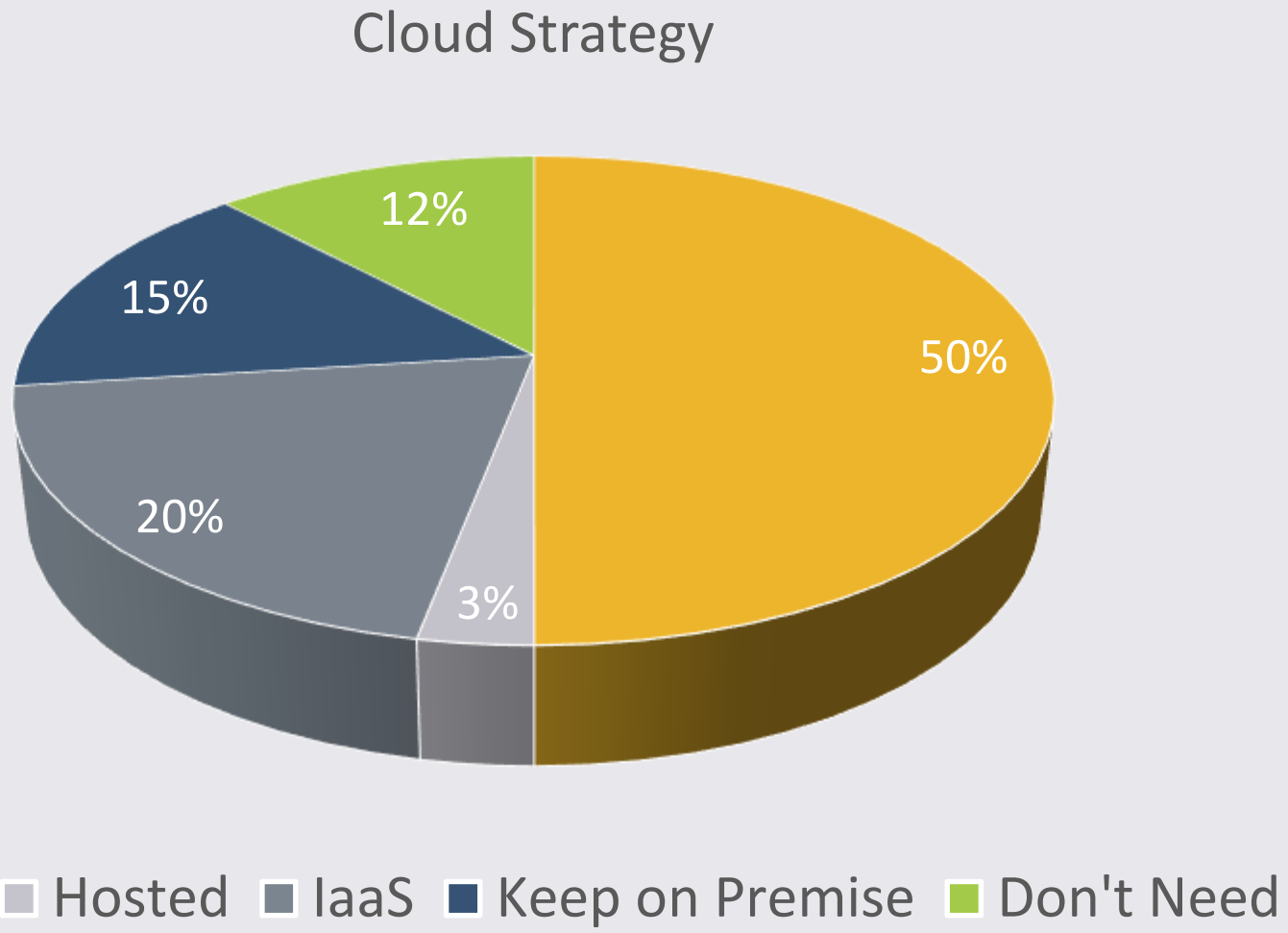
# AGENDA

- Bentley Cloud Strategy
- Disaster Recovery Goals
- Implementation Timeline
- How it Works
- Benefits

# BENTLEY CLOUD VISION

Leverage rapidly developing, lower cost cloud services to support Bentley's application, compute and storage requirements. Develop an IT infrastructure that is secure, flexible, robust and responsive to university needs

# BENTLEY CLOUD STRATEGY



# BENTLEY CLOUD STRATEGY: PRINCIPLES

- **Software as a Service (SaaS) First -** we purchase SaaS solutions for new applications, and opportunistically convert existing applications to SaaS


- **Develop Cloud Alternatives -** Identify cloud solutions to support high availability Disaster Recovery solutions and secure production applications which do not have a SaaS option


- **Cost Reduction** - we will actively take advantage of ongoing reductions in cloud service costs

- **Security** – leverage security built into SaaS applications and public cloud data centers

# DISASTER RECOVERY GOALS

Provide a robust IT solution to help university departments recover operations and business processes quickly in the event of a major disaster:

- Mitigate proximity risk of Lindsay and Smith located 50 yards apart.  Ideally locate DR site in separate region of the US.

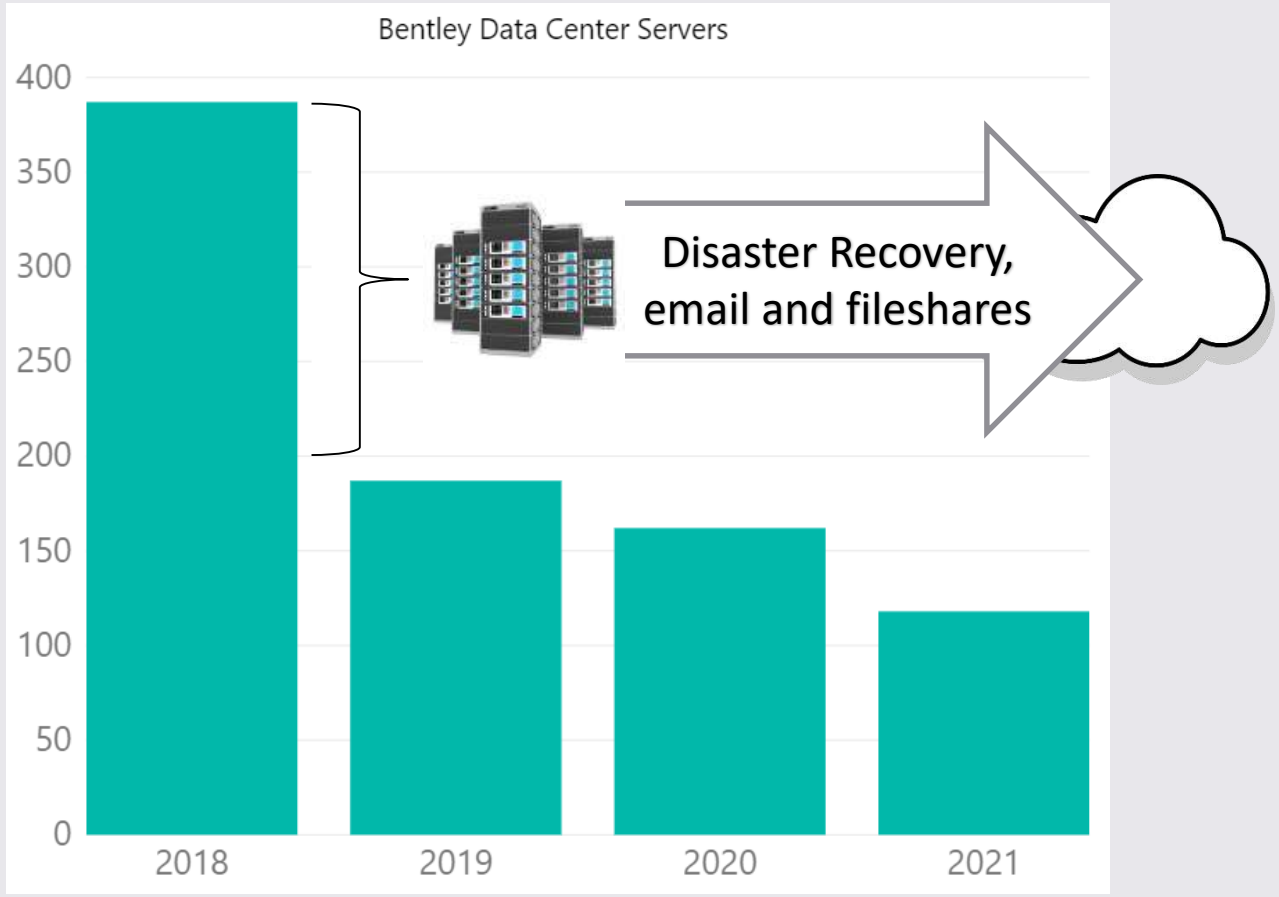
- Reliable DR solution managed by vendor in a DR dedicated environment.

- Reduce the ongoing $500K annual capital and operational support costs for maintaining Smith, by removing compute and storage from Smith and consolidating in Lindsay

# DISASTER RECOVERY GOALS

Shrinking the Bentley data centers, reducing capital costs, and migrating to cloud services:

- 117 DR servers eliminated in Smith Data Center
- Remove all compute and storage from Smith by June 30th and…

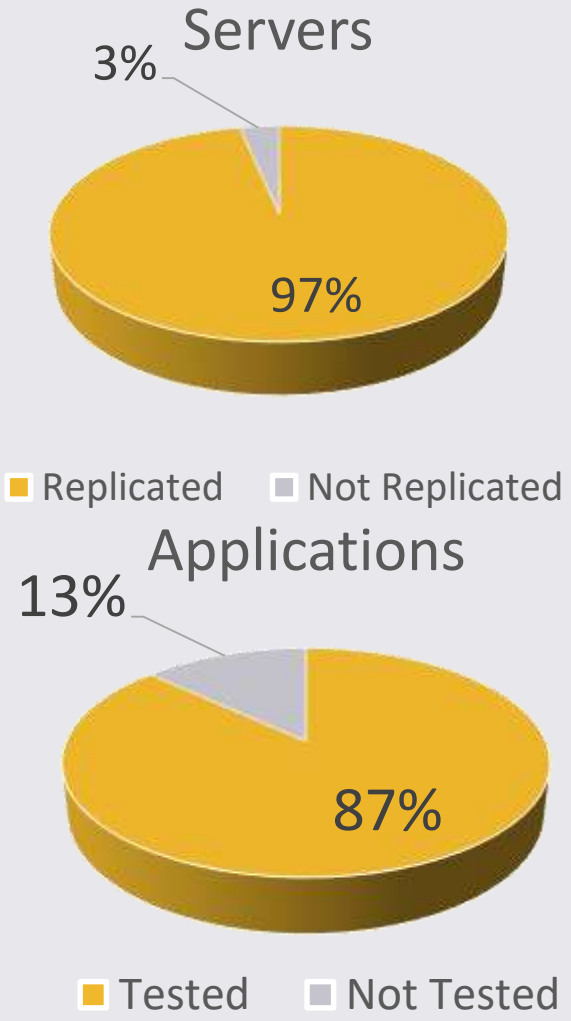


# PROJECT TIMELINE

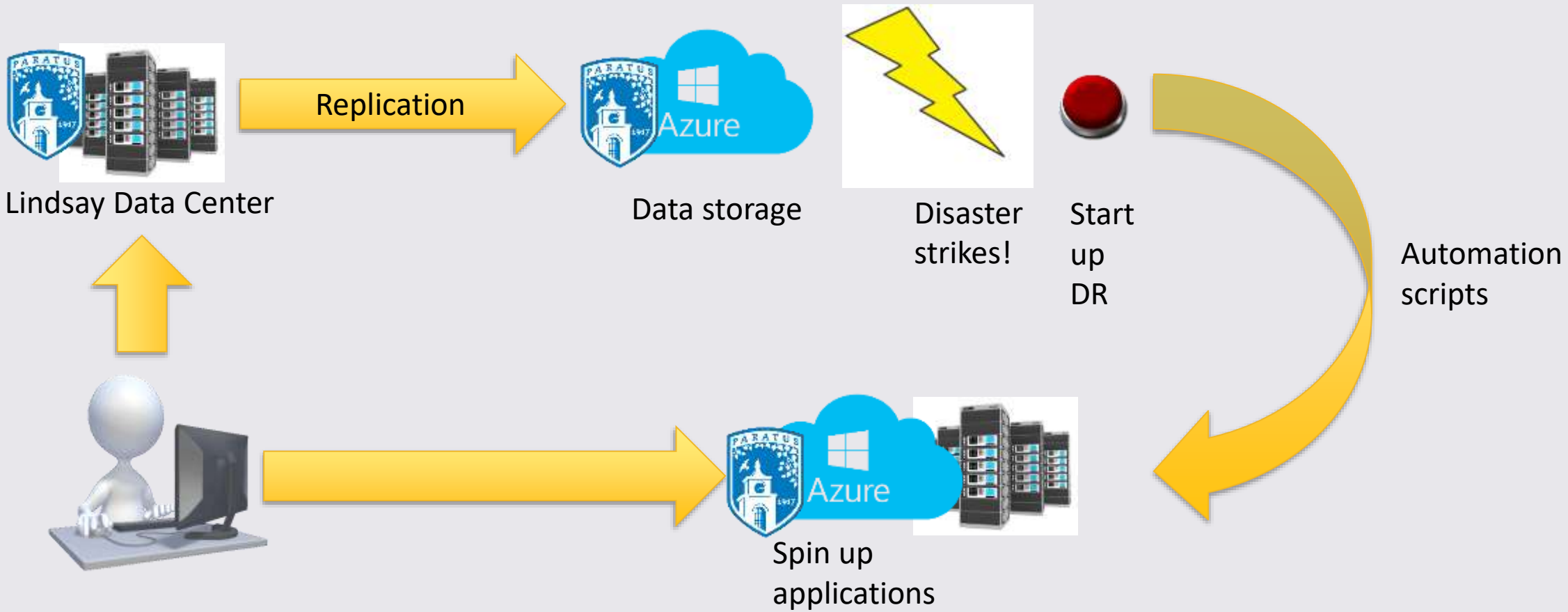
- **October 2017:** identified Microsoft Azure public cloud as DR service provider
- **November 2017:** staff training on Microsoft Azure
- **December 2017:** started DR architecture design and replication of applications to Azure
- **June 30th, 2018:** complete implementation of DR service, and migration of storage and compute from Smith data center

# DR IMPLEMENTATION PROCESS

- Replicated 87 servers to Azure and tested 40 applications in Azure DR Test
- Architected and built virtual data center in Azure for DR, authentication, production and research workloads
- Migrated applications and servers out of Smith data center to SaaS, Azure or other campus data centers



# HOW IT WORKS

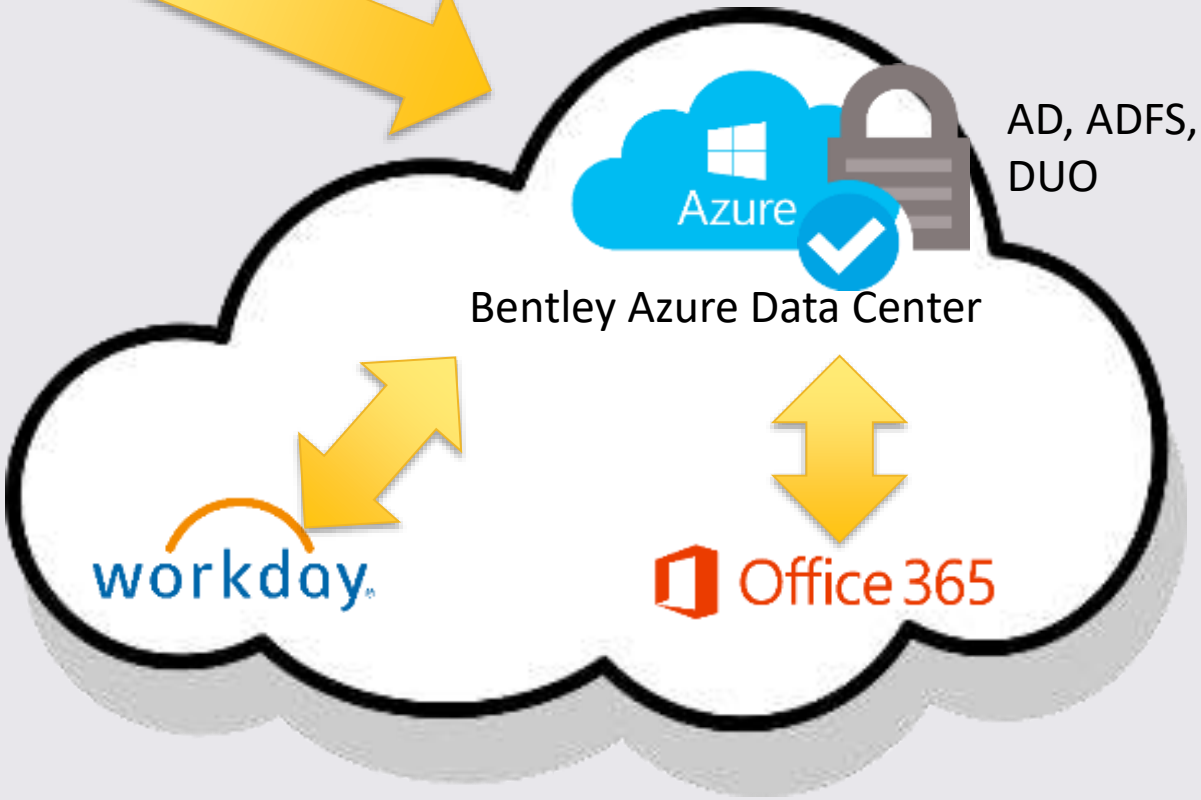

Replication
Azure
Lindsay Data Center
Data storage
Disaster strikes!
Start up DR
Automation scripts
Azure
Spin up applications

# BENEFITS

- **Testing:** we tested all the 48 replicated applications in the Azure “test” environment and documented application dependencies, license restrictions and client requirements in a DR Runbook.
- **Automation:** of DR process through scripting in Azure to minimize manual intervention and setup if a disaster is declared.
- **No change:** for end users to access their applications if there is a disaster.
- **Costs:** reduces future capital budget required to support data centers
- **Prepares Bentley for next steps to the cloud:** we architected an Azure environment that will support production, research and other services as well as DR.
- **Synergy with Microsoft:** by selecting Azure as our DR environment we take advantage of the support and assistance from Microsoft for O365 and Azure.

# BENEFITS: ALWAYS ON AZURE AUTHENTICATION

Lindsay Data Center



# QUESTIONS

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# CYBERSECURITY: STRATEGY & PROGRAM

Erika Powell-Burson, CISO

# TOP 10 CYBERSECURITY THREATS


Ref: Verizon DBIR

**Most Likely Threats to Bentley:**

- Phishing Attacks
- Known Vulnerabilities
- Negligent Insiders
- Vendor Risks
- Distributed Denial of Service (DDOS) Attacks

# BENTLEY'S LAYERED SECURITY


**01 Data** — Data Classification; Identity and Access Management; Encryption; Data Loss Prevention (DLP)

**02 Application** — Infrastructure Patch Management; Database Monitoring & Scanning; Vendor Risk Management

**03 Endpoint** — Anti-Virus (AV) & Anti-Malware; Patch Management; DLP; Policy Enforcement; Vulnerability Management

**04 Network** — Data Center Firewall; Enterprise Intrusion Prevention (IPS); Web Content Filtering; Enterprise Wireless Security; Enterprise Remote Access; DLP

**05 Perimeter** — Perimeter Firewall; Perimeter IPS; Secure Demilitarized Zone (DMZ); Message Security (AV)

# BENTLEY UNIVERSITY'S CYBERSECURITY STRATEGIC FRAMEWORK

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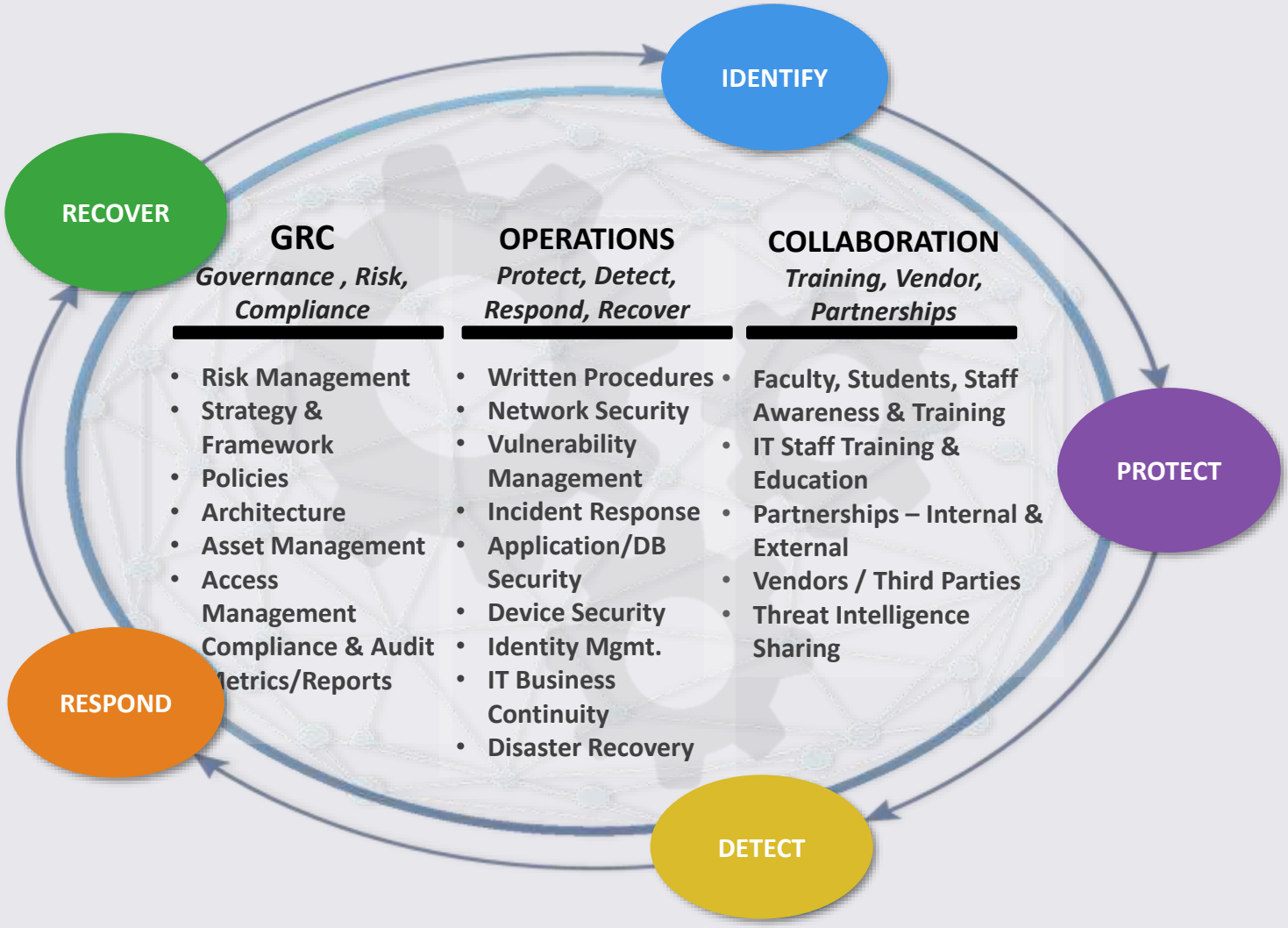

# THREAT RISKS & BENTLEY'S APPROACH


## Actions to Mitigate Threats

1. Next-generation Firewall and DDoS Protection Deployed
2. Utilization of Microsoft's Security Controls
3. Deploying Cloud Security Strategy
4. Deploying Vendor Risk Management Program
5. Community Phishing Awareness, Including Mobile Devices
6. Assessing Internet of Things (IoT)
7. Assessing General Data Protection Requirements (GDPR)
8. Implementing Tools for Cyber Threats; Participate in External Consortiums

# Questions?

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# WORKDAY STUDENT OVERVIEW & UPDATE

Ron Ardizzone

# AGENDA

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- Project Goals & Objectives
- Guiding Principles
- Timeline
- Recent Milestones
- Integrations
- Complexity
- Workday Everyday (what’s next)
- Questions

# PROJECT GOALS & OBJECTIVES

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- WHAT we are doing:
  - Replacing our 25 year old Banner Student Information System with Workday Student

- WHY:
  - New and improved features and processes
  - Substantially reduced paper processes
  - Enable more effective collaboration
  - Improved information access and reporting
  - One source of data for decision making enterprise-wide
  - Leverage modern technology incorporating best practices, with easy to use mobile tools on any device
  - An enabling system that supports teaching, learning, and administration

# GUIDING PRINCIPLES FOR SUCCESS

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We will communicate, communicate, communicate!

We will make decisions swiftly and through established governance

We will do the most important things first and table others

When in doubt, follow Workday; change Bentley

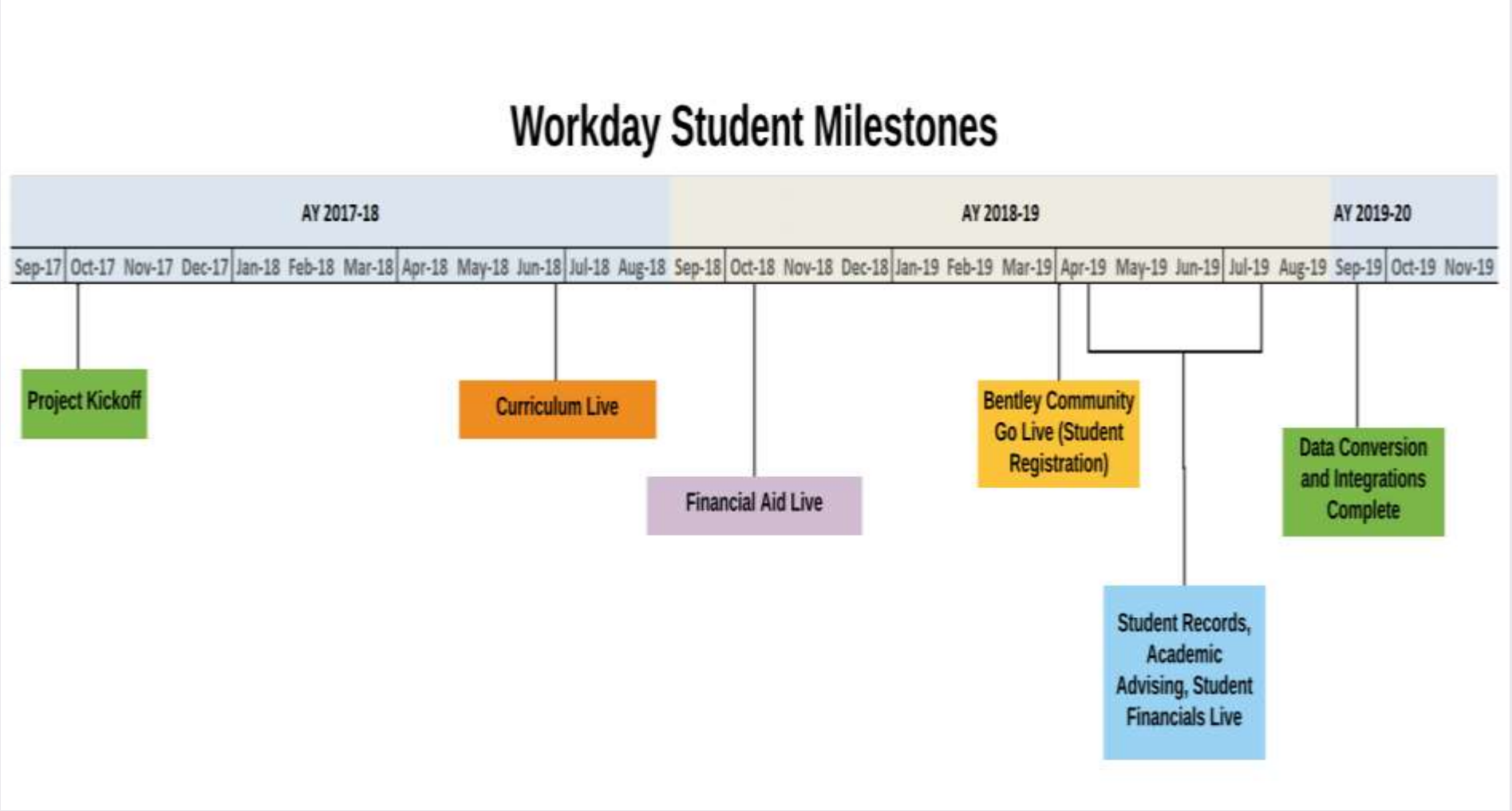
We will establish data governance including common data definitions and owners

We will use Workday as-is whenever possible

Changes are coming and we will adapt and learn together

We will simplify our processes

# TIMELINE & MILESTONES



# RECENT MILESTONES

- Common (Alchemy) Tenant complete (37% commonality; goal was 30%)
- Bentley Foundation Tenant complete
- Catalog/courses/curriculum  specifications completed; data conversion completed
- Integrations Team working meetings initiated
- Student lifecycle mapping
- Evaluating options for custom apps (i.e. Parking)
- “Hack-a-thon”, hands-on – loading students, registering, grading

# INTEGRATIONS+

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*MyBentley/Banner Self-Service Custom Apps*

- Change/Declare major
- Cloning Athletes
- Commencement Week
- Computer License Agreement
- Enter/update Contact and Emerg Info
- Events
- Missing Persons (Clery)
- New Student Onboarding
- Parent/Guest/Proxy Access
- Parking Decals
- Petition to Graduate
- Progress Reports
- Regalia Requests
- Semester Check-In
- Service Learning
- Student Elections
- Student Employment
- Targeted Msg
- Waivers/Agreement

# WORKDAY STUDENT COMPLEXITY, CRITICALITY, AND TIMING

# WORKDAY EVERYDAY

**Recruiting (Summer 2018)**

**Planning (Fall 2018)**

**Learning (2019/2020?)**

**PRISM (Under Review)**

# Questions?

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# A FEW WORDS FROM GLORIA

# VALUE AWARDS

# CIO ORGANIZATION VALUES

**John Falletti -** Senior Data Warehouse Developer/Administrator | DMAS

Accountable

**Carson Gibson -** Network and Telecomm Technician II | SNT

**Fred Monshi -** Senior Manager, Instructional and Research Infrastructure | ATC

User Focused

**Jackie Ringland -** Senior Business Systems Analyst | ATC

**David Routsis -** Data Center Operations Manager | SNT

Collaborative

**Team Award for Blackboard**

**Steve Morrow** - Senior Systems Engineer | SNT

**Prema Nethala** - Enterprise Application Support Mgr | DMAS

Innovative

**Usmanou Nsangou** - Sr Database Administrator | DMAS

**Jason Wells** - Sr Research Computing Consultant | ATC

Open


# Thank you!