University Technology Office Accomplishments

Fiscal Year 2018 Accomplishments to Date

Development

UTO's Development team has been engaged in several large scale projects. Provided is a snapshot in their work so far this year.

CUSTOMER EXPERIENCE TOUCHPOINTS OF ENGAGEMENT

Our 'Customer Experience - Touchpoints of Engagement' infographic illustrates a few of the key ASU digital touch points our team implements, influences or is otherwise minorly engaged with. Maggie Rome produced the final illustration and did a stellar job visually representing the products, tech services and enablers, and technical foundations that builds this ecosystem. This was not meant to be a comprehensive mapping, nor does it cover staff or faculty in regards to their experience as stakeholders. It does, however, do a good job illustrating our customer journey and we hope it generates plenty of healthy discussion and awareness for the initiatives represented.
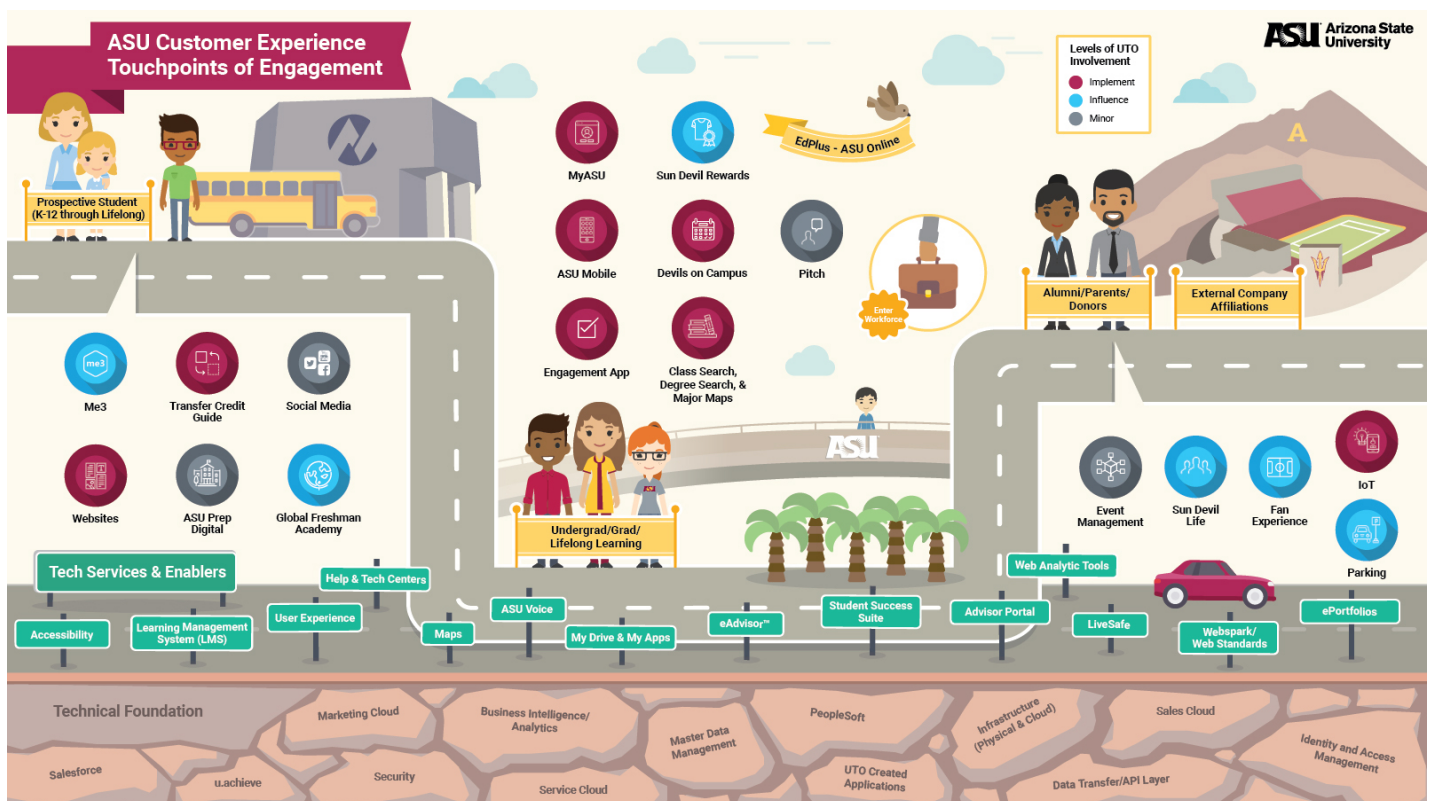
DIGITAL TRANSFORMATION

IoT Stadium Spotlight 2017

We continued to build upon the existing IoT technologies in Sun Devil Stadium. This season we introduced:

- Enhanced Sound Game
- Facial Recognition
- Population Heat Maps
- Targeting Push Notifications
- Parking Notifications
- Electrical Power Consumption Monitoring in the Vendor Stations

These continued to build upon the strong foundation we already had in place (To view more information, please visit Bell Media's website).

IN SEPTEMBER 2017 ASU WON BEST GAME DAY TECHNOLOGY EXPERIENCE AWARD FROM THE NATIONAL ASSOCIATION OF COLLEGIATE DIRECTORS OF ATHLETICS (NACDA) AND CDW-G.
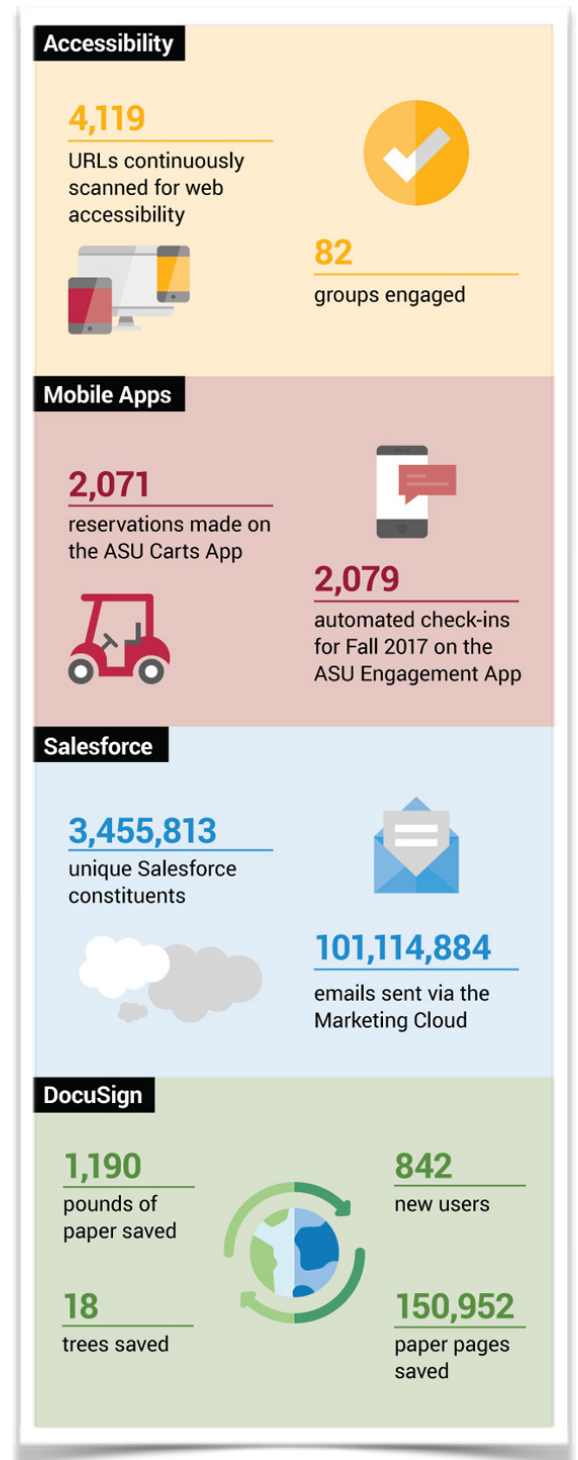
Class Search and AWS

We launched a new version of Class Search this quarter which is enhanced by AWS' ElasticSearch. This is the first major production application to use an AWS service, and the UTO team worked across many different groups to make it happen. The service not only provides a much quicker experience, but it will also allow us to continue to improve the search quality going forward.

Carts App for USB

The new cart reservation mobile app has been launched for all the USB carts. This has allowed the front desk to get rid of paper binders for the process. The success of the rollout has drawn interest, and it will be looked at if it could be expanded over the coming year.

- **Class Search** - Applied redesign UI (desktop and mobile) to catalog (Class Search)

- **Degree Search** ADA issues. Completed most of the Tabbing issues and make Tab accessible and Voiceover accessible. Redesigned some of the popups and replaced Cluetip with Bootstrap popup and waiting for client approval

- Successful load and regression testing of the **Critical Tracking** daemon refactoring carried over from last month

- Re-launch of **Internet of Things (IoT) initiatives** in Sun Devil Stadium to include enhanced sound game, location heat maps, real-time sentiment analysis, and facial recognition

Accessibility

4,119
URLs continuously scanned for web accessibility

82
groups engaged

Mobile Apps

2,071
reservations made on the ASU Carts App

2,079
automated check-ins for Fall 2017 on the ASU Engagement App

Salesforce

3,455,813
unique Salesforce constituents

101,114,884
emails sent via the Marketing Cloud

DocuSign

1,190
pounds of paper saved

842
new users

18
trees saved

150,952
paper pages saved

1

CD/CI PIPELINE

Our Dev-Sec-Ops teams successfully delivered a CI/CD Pipeline, a powerful tool in streamlining our software development process. This will allow for ASU to build the manual change management phases and security controls directly into code, effectively automating these steps/processes while giving an audit trail for what happened

2

ASU SMART STADIUM ON DISCOVERY CHANNEL CANADA

UTO's Internet of Things (IoT) work in Sun Devil Stadium was featured on Discovery Channel Canada in their DailyPlanet show. It's a stellar representation of ASU's #SmartCampus #SmartStadium IoT work. Make sure to watch far enough to see our resident celebrity – Zohair!

3

THE FUTURE OF THE MARKETING CLOUD

Matt Bintzler, with support from the UTO Dev Salesforce Team, hosted a cross-functional agenda for laying out the future of the Salesforce Marketing Cloud. If you haven't already, make sure you have an understanding of what that is. We want our entire community to have a voice.

4

PHXMOBIFESTIVAL

The Phoenix Mobile Festival is the largest Mobile and Emerging Tech conference in Phoenix for Mobile Enthusiasts, Developers, Designers, and Entrepreneurs. The goal is to bring professionals together to share the current state and their visions for the future direction of mobility.

Chris Richardson spoke about how ASU is enabling change in the classroom (student experience), the stadium (fan experience), and the staff support model (operational experience) for an ~100,000 student population.

PRODUCTS AND BUSINESS ANALYSIS

- Built a culture of accessibility and user experience into the team with BA's and Product Owners taking the lead to collect and incorporate application relevant user input into every project.
- Created a Steering Committee for the BACoE.
- Focused on Customer-Driven Alignment with team members working closely with customer groups to produce or iterate on high-value products like Class Search.
- Consistently worked on improving the Release Management process of creating Deployment Checklists and documenting product support and planning for incorporating into CI/CD.
- Started development work and testing with the ServiceNow team to create a more automated process for RM for documenting and tracking releases.
- Release team now creating Incidents on customer's' behalf for misaligned Requests, Tasks, and emailed issues; and training them for future process
- A ServiceNow automation implementation has been mocked up and approved by ServiceNow Process Owners. This will automate the creation of Change Tickets, Release Knowledge articles, and Configuration Items
- Working with the cStor engagement (plus UTO Development, Security, and Operations stakeholders) to ensure that CI/CD pipeline engagement captures and ensures best testing and Release practices

SYSTEMS AND CONSULTING

- My ASU mobile responsive layout released
- SILC Language Placement Test released with My ASU and Peoplesoft Class Registration integration using hybrid cloud architecture
- Docusign "Send On Behalf Of" released
- GFA Compass enhanced progress analysis and 2nd-generation intelligent intervention framework released

APPLICATIONS AND DESIGN

- We launched the Web Accessibility Clinic to provide assistance, consulting and answer questions about web accessibility. Currently meeting every first and third Wednesday of the month from 1-5pm in USB 1114.
- Presented on web accessibility before the EdPlus Instructional Designers.
- The UX team lent its graphic design expertise to enhance the Amazon HQ2 proposal.
- The ASU Directory skill for Alexa was ported to the "Show." It's currently in beta and undergoing testing for certification, look for its release later this year.
- Managed web hosting contract with Pantheon was renewed for an additional year.
- The https://affordability.asu.edu/ website was launched for the Office of the President. The website "provides students and the general public with timely information about the cost of attending ASU, the efficiency of the institution and its affordability."
- Webspark 1.48 (Nevada) was released with multiple improvements.

User Experience (UX) Design:

- Beta version of ASU Directory skill for Alexa was completed and submitted for certification

Web Accessibility:

- Kathy Marks co-presented on web accessibility at WebCamp event that was held in July at the Poly campus
- Feedback intake pilot program was launched
- Self-evaluation tool for web accessibility assessments was launched

Web Development:

- Emergency drill to test deployment of the ASU emergency pages on www.asu.edu was successfully carried out
- Bryan Roseberry co-presented on Drupal 8 and Webspark 8 roadmap at the WebCamp event that was held in July at the Poly campus
- Webspark 1.46 (Nebraska) and 1.46.1 (Omaha) were released with multiple improvements

PEOPLESOFT / ENTERPRISE INTEGRATIONS

- **Application for Graduation - Update user interface** (PST-11783): Create new look for Application for Graduation process by streamlining the steps, providing relevant information, and an improved student experience

- **Student Emergency Contact:** Provide simple interface to easily allow students/faculty/staff to update their emergency contact information

- **Veteran Student Certification:** Streamline and automate the certification process for Veterans Benefits

SALESFORCE DEVELOPMENT

- **Civitas Persistence Indicators now available through the advisor Portal:** These enhancements allow advisors a to research a student's situation in preparation for outreach, and respond to student questions. Advisors are able to prioritize and tailor there communication approach and outreach based on persistence indicators. Advisors can tailor there communication and make informed recommendations to increase student retention.

- **Case Category Enhancements:** Due to our wide adoption of Case Management at the University, we ran into some governance limits that prevented ASU from further adoption. To resolve, we performed a retrofit of Case Category design to allow us to continue to roll out Case to fit the Universities growing needs without concerns of future governance limits.

Retention Indicators

Working with the Provost Office and UTO's Analytics and Data Services team, Civitas Retention indicators are integrated into both the Salesforce delivered Student Profile and Advisor Portal. This is another set of retention indicators available in Salesforce that enable advisors and coaches to identify students with academic risk and give them guidance to get back on track.
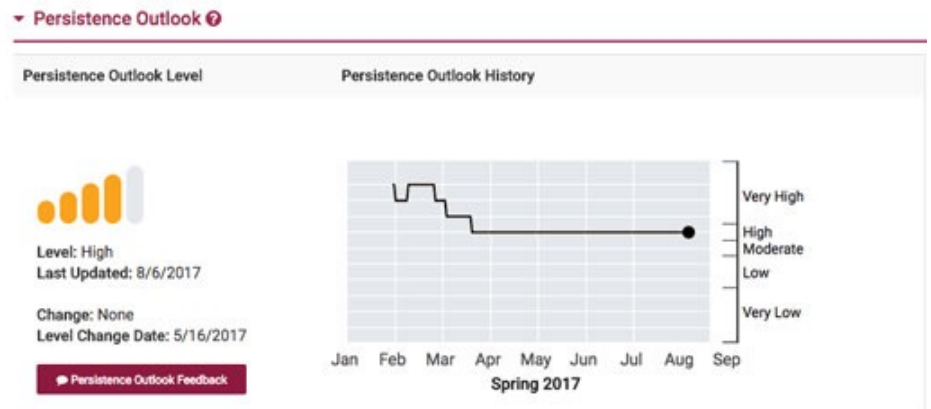
Org Center of Excellence

Salesforce has established a Center of Excellence which is a cross functional team of ASU Salesforce Orgs that meet quarterly to implement best practices and help with risk mitigation associated with Salesforce data being stored in the cloud.

Salesforce/Tableau POC

The Salesforce team implemented a Proof of Concept to demonstrate capabilities to embed an interactive Tableau report into Salesforce. The success demonstrated in this POC will pave the way for future cross functional collaboration between stakeholders to develop custom reports and deliver them through Salesforce.

Information Security Office

Arizona State University's Information Security Office is committed to preserving the availability, confidentiality, and integrity of its information resources while preserving and nurturing the open information-sharing requirements of its academic culture.

PROTECT CONFIDENTIAL INFORMATION

- **Secure Email and Data Loss Prevention:** Implemented email encryption features and achieved HIPAA compliance for email.

- **Incident Response Drills:** Several drills were completed in 2017 to test the Incident Response plans with the ASU Incident Response Team.

- **PCI Compliance:** ASU achieved PCI compliance again for 2017 with Bank of America, acquirer bank, following the completion of PCI DSS SAQ with all ASU Merchant departments.

ENHANCED NETWORK ACCESS & VISIBILITY

- **Two Factor Authentication:** Implemented two-factor authentication for faculty and staff for AZURITE & VPN.

- **User Segmentation of ASU Network:** Further Segmented the ASU network separating students from faculty and staff.

- **Security Operations Center:** 24/7 information security oversight, adding threat hunting and response.

DEPLOY APPROVED EQUIPMENT, SOFTWARE & IT SERVICES

- **Streamlined Technical Review and Software Purchase:** To meet University risk reduction requirements as well as increased demand a streamlined process for technical reviews and software purchasing was developed and implemented in partnership with the Procurement Office, Risk Management and the Planning and Program Management Office.

RESTRICT EXTERNAL WEBSITES:

- **Vulnerability Management:** Implemented self-service for university assets including department-managed web applications.

IN OCTOBER 2017 INFORMATION SECURITY AND DATA ANALYTICS DEPARTMENTS RECEIVED AN AWARD FROM THE CSO50 AWARDS FOR THEIR INFORMATION SECURITY EXCELLENCE IN USING SPLUNK IN INNOVATIVE WAYS TO DETECT MITIGATE, AND CONTAIN CYBERSECURITY THREATS.

DEPLOY ENDPOINT ENCRYPTION AND SECURITY:

- **Manage Laptops/Desktops:** Created and managed dashboard to increase visibility of device posture.

Academic Technologies

DIGITAL PORTFOLIO (EPORTFOLIO)

In efforts to make learning visible, the development of digital portfolios (ePortfolios) allows easy access and portability of an evidence collection that showcases skills and competencies of the student. There are a variety of formats and portfolio types:

- Reflective: reflections on growth and mastery

- Core Competencies: providing proof of core competencies in richer portrait of achievements

- Rich Media: showcasing visual examples of skills and mastery of photos, music and videos integrated into student work

- Program Assessment: visible portfolios to administrators and accrediting bodies

- Professional: visible portfolios to potential employers to help students prepare to seek employment post-graduation

Adoption of the Digitation platform increased with the following highlights:

- 121,000 portfolios
- 80,000 users
- 45,000 active users in 2017
- 27,000 new accounts in 2017
- Portfolios used by 49 Schools and Programs
- 80,000 users

DIGITAL ASSET MANAGEMENT SERVICE

The MediaAMP Media Manager provides a central repository of audio and video content to deploy in Blackboard. Upload files once to MediaAMP and reuse those files in all courses. MediaAmp is useful if faculty or students want to share videos with their class, and do not want the video uploaded on a sharing website (like YouTube or Vimeo).

- The team has expanded the University's central digital asset management service:
- 100,000+ digital assets stored in MediaAMP (85 TB)
- 2,105,906 plays in 2017 (325% increase over 2016)

Digital Portfolio
- **121,000** portfolios
- **80,000** users
- **45,000** active users in 2017
- **27,000** new accounts in 2017
- Portfolios used by **49** Schools and Programs
- **80,000** users

Digital Asset Management
- **100,000+** digital assets stored in MediaAMP
- 2,**105,906** plays in 2017- **327%** increase

LEARNING MANAGEMENT SYSTEM (LMS)

While maintaining the current Blackboard LMS with a December Upgrade the team has also conducted a LMS review and analysis. Our research into the LMS market and user base, along with a deeper analysis of existing LMS products during the 2016 Fall and 2017 Spring semesters indicated there were enough changes in the market to prepare an RFP. Surveys conducted with faculty and instructional technologists showed there was no clear LMS favorite. There was a majority agreement that it was time to look at our options and choose the LMS that will enable and support the mission and goals of Arizona State University.

Academic Technologies Objectives

- Begin LMS transition from either Blackboard hosted environment to a SaaS environment, or transitioning into the Canvas learning management system.

- Evaluation and adoption of affordable auto-caption solutions to increase accessibility of University media assets. This is critical for ADA compliance and in particular in the online course space.

- Evaluation and adoption of new technologies to make course materials more accessible and affordable (OER, etexts, etc.). Efforts focused on solutions that will provide measurable student activity data that can be used in our Student Success Suite.

- Exploration and implementation of scalable transformative course tools and technologies (Yellowdig, PlayPosit, VoiceThread, etc.) at an enterprise level.

- ASU Verify, student verification tool for online exams using biometric markers (keyboard, facial, voice). This is part of the continuing work in the area of academic integrity.

LMS Market Share For US & Canadian Higher Ed Institutions — SPRING 2017 VERSION
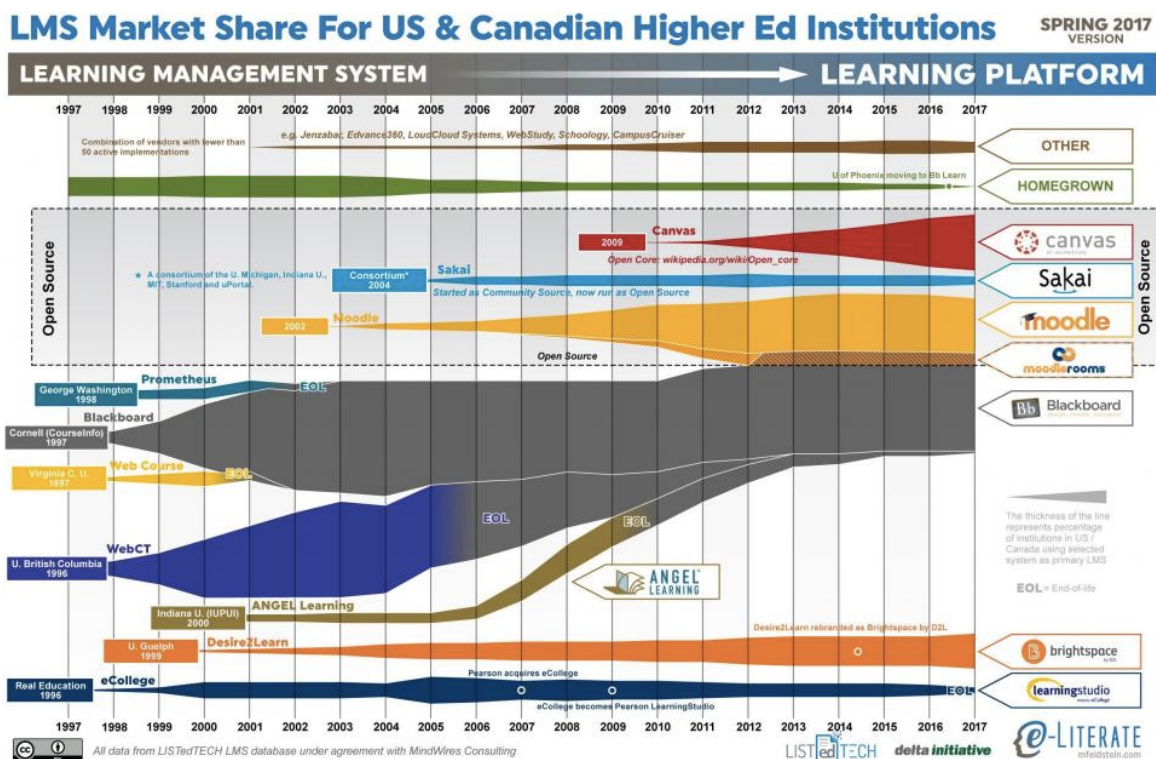
Operations

BUSINESS SERVICES

Improving access to and convenience of IT and business services

Outcome: Improved customer experiences with UTO services, service requests, commensurately increased affinity.

Upgrade ServiceNow to Kingston Release

- Deploy the last two years of vendor-developed product improvements
- Required for ongoing vend**or support**

Renew ServiceNow Agreement

- Reach new mutually agreeable contract to ensure continued service
- Secure academic pricing with Internet2 product bundle

Customer Satisfaction Surveys

- Provide a simple, elegant user experience for submitting feedback on work orders and service requests
- Improve data collection, visibility, and enable greater responsiveness of teams and managers to feedback

System Health

- Replace existing System Health page with a more intuitive experience
- Implement findings of ongoing study of student preferences for outage communication

Improving Service with Machine Learning

- Experiment with machine learning technologies provide in Kingston product release
- If analysis shows that service request routing can be improved with ML, develop implementation plan

Deploy Simphony Point-of-Sale system

- To replace the standalone Micros POS with a Highly Available POS system across all campuses

On-Board WPC to our managed environment

- Move WPC virtual machines to our hosted equipment.

Enable cloud application services

- Turn on new features in Google Gsuite for Education.

Continue On-Board servers from College/Department to Data Center managed environment.

Office 365 Initiatives

- SharePoint to Office 365
    - Migrate existing SharePoint 2007 and 2010 sites to SharePoint Online
  - Reduce the use of student AFS and migrating them to OneDrive.
    - Decommission existing environments in production and QA
  - Enable cloud application services
    - Implement Microsoft Team

Document Management

- RFP for Ax – maintain current support for next 3-5 years
- RFP for cloud service doc mgmt. system

Develop framework and deploy IPTV services for on-campus residential students

Apply Six Sigma tools and methodology to second and third party network services and support effort

Outcome: Keep current; speed up time to service and bill; reduce support time

Develop efficient processes for updating/upkeep of second and third party network usage agreements, including automation of service counts and billing.

CLOUD READINESS

Prepare for cloud migrations

Outcome: prepared infrastructure and support needs for transition to cloud

New Enterprise Web Application & CI/CD Platform

- Replacement for webapp4.asu.edu web farm (hosting applications such as MyASU, Course Catalog, DARS, and more).
- Incorporating application containerization (Docker).
- Includes new CI/CD platform (Jenkins) for rapid, reliable application and infrastructure deployments.

Windows Enterprise Environment to AZURE

- Complete Windows Dev/QA environments move from on-prem to Azure with a HyperV/Nutanix DR environment on-prem.
- Continue work for the same environment for Windows Production servers.

Linux Enterprise Environment to AWS

- Older RHEL5 and RHEL6 Linux servers will be rebuilt on RHEL7 and deployed into AWS.

Citrix XenDesktop/XenApp Environments moving StudentApps loads to Azure

- Have the ability to move StudentApps loads between On Prem and Azure locations
- Transition all loads to Azure as primary

Illumio Adaptive Security Platform - Will transform the firewall from an appliance to a server based firewall, and flatten the data center network as well as moving server between different public clouds without jeopardizing network security.   It will also:

- Continue Illumio roll out into on-prem and cloud data center environments.

Nutanix- Nutanix is a bridge between enterprise datacenters and public clouds. Its hyperconverged infrastructure system with a software-centric architecture, tightly integrates compute, storage, networking, virtualization resources and other technologies in a commodity hardware box to reduce complexity, reduce on premise storage and overall operational costs.

- Build out of HyperV/Nutanix production cluster in on-prem data center in preparation for move and DR for windows production servers to the cloud (Azure).

Cloud Management Pilot (via ServiceNow)

- Build portal enabling departmental users to request and maintain Azure cloud resources
- Iterate on portal development with departmental focus group(s)

Database

- Operational Data Store (ODS) on Aurora (AWS) as part of DW trans to redshift
- Configure onsite database w/network encryption for cloud apps to securely connect

PeopleSoft

- Cloud hosting evaluations – cloud: Evaluate and Prepare PeopleSoft for cloud hosting

DATA CENTER

Reduce footprint

Outcome: Reduce on premise costs

- Reduce I/O Data Center Footprint
    - Migrate servers from the IO Data Center to public cloud (AWS, AZURE, etc.).
    - Transition to SaaS model – Tara Dotta (Study Aboard applications) and TimeClock (student time reporting system).
- Completed Move out of Thunderbird Data Center
- All non backup/DR systems have been moved out of West CLCC data Center
- Completed move out of Downtown Data center.

Improve Centers

Outcome: Up-to-date equipment; additional security; preparations for future changes

- Working with UTO and Co-Lo to remove any equipment that is no longer needed. This includes ISTB1 and IO.
- Identifying ways to retrofit ISTB1 to accommodate Research Computing and its greater energy draw and heat load.
- Build out new HIPAA physical security controlled infrastructure.
- Continue physical security implementation.
- Refresh all major UPS components throughout the campuses - power back up and redundancy

DESIGN

Provide infrastructure design, budget and construction oversight related to IT, AV, Cellular and FM sub-systems throughout the ASU campuses and leased facilities.

Outcome: Fully functional facility supporting the technological needs of ASU staff, faculty and 3rd parties. UTP Design works in concert with many ASU departments and outside entities ensuring customers receive a working model as requested during project programming.

2018 list includes:

- **1800 I St. NW Washington D.C.:** Administrative and Academic space
- **Biodesign Building C:** Academic, Research and Administrative space
- **ASU Papago Park Clubhouse:** Administrative and Academic space
- **Sun Devil Stadium Phase III:** Administrative and Academic space
- **Hayden Library Reinvention:** Administrative and Academic space
- **Arizona Center Tower ASU Thunderbird Relocation:** Administrative and Academic space
- **Greek Life Village:** American Campus Communities - ASU Housing project
- **Greek Life Village Community Center:** American Campus Communities - ASU Housing project
- **ASU Preparatory Academy High School:** Administrative and Academic space
- **DAS (outdoor Distributed Antenna System)**
- **Cellular 4G – LTE system, 5G capable**
- **Armstrong Hall renovation:** Administrative and Academic space
- **Cellular Macro Site upgrades, on-going**
- **Cellular 4G – LTE system**
- **Blue Stake of communication cable plant, on-going**

- **Outdoor utility pathway identification**
- **ASU Permit Review, on-going:** Major Greenfield and renovation design review and comments

NETWORK

Upgrade ASU Network Infrastructure

Outcome: Enhance Network Performance and Increase Capacity

- Obtain FY19-FY21 Network Infrastructure bond funding
    - Fiber installation enabling 10/40/100GE for buildings without single mode fiber.
    - Building Router upgrades to extend 10GE to buildings and expand Network Security Segmentation into buildings.
    - Increase wireless capacity in Departmental Learning spaces.
    - Refresh Blue Light emergency call box system with stainless steel stanchions and cabling to accommodate security camera installations.
    - ISTB1 UPS upgrade to 1000KV
- Continue migration form WiSM2 wireless controllers to 8540s
- Create a Buildings Controls VRF and migrate all BAC network to it

Request For Proposal for Network Managed Services 2020-2025

Outcome: Position ASU Network to Enable Deployment of Emerging Technologies to Support the University's Mission

- Conduct whiteboard sessions with industry thought leaders to discover the art of the possible
- Acquire consultant to assist with discovery and RFP development
- Develop appropriate RFPs for network support beyond June 2019.

SECURITY

Improve Operations Security

Outcome: Reduce risk

Critical Application Inventory (via ServiceNow)

- Implement inventory of critical applications using CMDB
- Replace endless cycle of emailed spreadsheets with a single source of truth

Camera Initiatives

- Extend Genetec Video offering to PD
    - Setup network and devices to allow ASU PD Dispatch the ability to view SunDevil Athletics' cameras.

- New Campus Security Video infrastructure - Genetec Video
  - Build out a new primary site in ISTB1 and redundant site at ASU West campus
  - Migrating the ISAAC servers(Door Access) to the Video infrastructure. As part of migration, we are also upgrading the OS and application.

Implement Network Security Projects

- Wired Network Access Control
  - Implement NAC in Student Housing managed facilities first.
  - Pilot NAC in Research and Academic buildings.
- Expand Cisco CMX location analytics from POC to Production in specifically identified locations.
- Evaluate and procure resilient streaming video caching system to improve customer experience and reduce Internet traffic.
- Scope work to install ISAAC Door access on all building Network head end closets (MDF's).
- Create a DMZ VRF and migrate all devices with public IPs or one-one NAT addresses to it

Improvement on Data Center Security

- SOC2 Compliant Readiness
  - Enhance security posture of HIPAA environment to be ready for SOC2 compliant.
- Upgrade Hardware/Software for HIPAA environment
  - Move to new hardware/software and storage.
  - Implement data encryption at rest in HIPAA environment.
- Continue mitigation work on RiskSense reports to improve overall security in Data Center.
- Secure Active Directory (ESAE)
  - Deploy a secured environment to better secure Domain Admin Accounts.
- Improve ASU Email security
  - Implement DMARC and DKIM for ASU email domains
  - Transition non-user email to send as alternate domains
- Clean up Active Directory
  - Continue removing stale objects, replace user oriented service account with Managed Service Accounts. This allows AD to cycle service account passwords to dedicated computer objects
  - Set Account login thresholds to prevent brute force attacks
- PKI wired NAC deployment
  - Implementing PKI enrollment in support of wired NAC controls to endpoint devices.

PeopleSoft

- Compression & Encryption at rest (HR)
- Compression & Encryption at rest (CS)
- Oracle key vault to safeguard database encryption keys

Operations Security

- Implement version control software (Phire) for PeopleSoft

WORKDAY

Support Workday Implementation

- Assume operational ownership for Workday system
- Workday User Provisioning (via ServiceNow)
    - Provide user portal for requesting access to upcoming financial management system
    - Implement approval controls as defined by financial management
    - Automate request fulfillment
- Warehouse environment in AWS –
    - Complete build of the production Data Warehouse infrastructure in AWS which includes AWS infrastructure and networking along with connectivity back to ASU and SCI data centers.
    - Continue build out production environment at AWS for ODA, ETL, etc..
- Workspaces in AWS for Workday and BI support -
- Workspaces is a Windows Desktop Environment in AWS.
    - Continue build out of these desktop workspaces that will be used for Workday and BI support
    - Build out support mechanism for desktop workspaces into our existing Enterprise SCCM environment for patching and app deployment.
- Sunset Advantage system

Business Intelligence

ALEXA INNOVATIONS

- Built Official ASU Alexa "skill"

- Helped distribute and support **1500** amazon donated Echo Dots to engineering student in Tooker Hall.

- Built Choose Arizona Alexa skill for the Amazon HQ2 RFP (for Echo show platform)

- Helped with some of the technology showcased in the ASU Football stadium suite

By the Numbers

- **23** Open Office hour Sessions

- Created **28** new Analytics Sites (Sharepoint)

- **6,889** Users came to analytics.asu.edu, 38,384 sessions

- **14,790** Users came to facts.asu.edu 17,808 Sessions

- **5,145** Users came to My Reports

- **23,453** Users came to Dashboards

- Support Cases Closed (ServiceNow)

Analytics: **305**

Dashboards: **17**

My Reports: **170**

Data Warehouse: **74**

Splunk: **61**

DATA CONFERENCE

Hosted and held successful ASU data conference for **300** ASU staff (sold out with 120 on waiting list)

CLOUD

- Built Amazon AWS cloud environments to house the new generation analytics

- Built prototype of new "BI Desktop" for the cloud

WORKDAY ANALYTICS

- Converted three BI analysts into Workday report developers in support of the implementation project

- Created suite of Workday data extracts in support of the financial data warehouse

Planning & Program Management Office

Since the beginning of FY18 the Planning & Program Management Office has closed 29 projects representing 64% of total completed projects but more than 75% of the total project effort. This means we focus on the most complex, risk laden and challenging project work.

PROGRAM MANAGEMENT

Stakeholders have focused a majority of activities and decisions at the project level.

A program is not just a large project, but rather a collection of projects that allows ASU to align investments with business priorities and allocate resources to increase value delivery.

An effort in the adoption of approaches in shifting the altitude of planning and program delivery from project-centric to the introduction of programs to deliver business benefits achieved the following:

- **Interdependencies:** created visibility into the critical interdependencies between projects in a program

- **Business Capabilities Mapping:** Aligned programs and projects to new business capabilities

- **New Visualizations:** Ability to Report on the progress of projects within a program and the forward movement toward actualization of business capabilities

- **Defined Goals:** Clearly defined program goals to improve communication and decision making

PROJECT MANAGEMENT

In support of the overall objective of completing projects within scope, schedule and resources the project managers also focused on building their skillets as entrepreneurial project managers:

- **Tool Assessment & Selection:** Completed an assessment of tools for project plan repositories and collaboration spaces resulting in the implementation of an Enterprise Project Management (EPM) tool

- **Methodology Agility:** Supported the entrepreneurial project management mindset in identifying new ways to work that are best suited for specific projects.

- **Stakeholder Engagement:** Greater stakeholder engagement with new toolsets that increased users from 500 to 2,000. Developed and executed executive level communications for project health, status, risks and issues.

- **Project Start:** Streamlined Project Intake forms.

- **Nimble Response to Priority:** Managed priority projects with high levels of customer satisfaction.

- **Sponsored and Grew the ASU PM Network by 25%:** The ASU Project Management Network (ASU PM Network) is a group created in October 2014 for the purpose of facilitating networking, communication, information exchange and sharing, and

training among interdisciplinary ASU staff and faculty who are project managers (officially or unofficially), lead projects, or who are interested in learning more about project management as a discipline. In FY18 we have grown from 356 to 446.

PROJECT MANAGEMENT WORKSHOPS & TRAININGS

While managing enterprise IT programs and projects the PPMO also engages in providing ASU staff, faculty and students project management skill development. Accomplishments for FY18:

- Maintained a **100% rating** with the PMI Registered Education Provider program (average rating for all providers is 87.5%)

- Issued **225 PDUs**

- Held 3 workshops for a total of **105 staff & faculty** representing **15 schools and departments**

- Provided project management workshop for **43 students** within the Higley Unified School District

- A self-reported **58% increase** in level of skill/knowledge after attendees completion of workshops

"I'm already approaching my job as project-based and how I speak with my supervisor about direction, communication, and results has changed."

IMPROVED PORTFOLIO, PROGRAM & PROJECT MANAGEMENT TOOLSETS: IMPLEMENTATION OF JIRA & TEMPO

- Provided standardization, governance, and architectural cleanup for JIRA.

- Enhanced analytics and dashboards for UTO community transparency.

- Developed portfolio information to display strength and growth of Project/ Program Managers.

- Improved work/team flexibility using Tempo/ JIRA to improve tool adoption/compliance.

- Increase strategic partnerships with groups that are part of programs to improve program and project health by aligning to ASU's Charter.

QUALITY ASSURANCE

In support of the overall objective of completing projects within scope, schedule and resources the project managers also focused on building their skillets as entrepreneurial project managers:

- **QA Test Reports:** Enhanced visibility and traceability of the quality of a software/ product by implementing the QA Test Reports for completed projects

- **QA Web Accessibility Standards:** Introduced QA standards for web accessibility by working cross functionally in UTO and ASU

IT Customer Service & Support

University Classroom Support is committed to fostering the higher educational experience through the intelligent design, sustainability, and evolution of classrooms and computing sites. This commitment stretches beyond technology to help bridge the gap between educators and students by bringing together the elements of exceptional customer service, carefully orchestrated partnerships, and strategic initiatives.

HELP CENTER

- Reorganized management team

- ASU Help Center provides Fulton School of Engineering (FSE) service and support for BITLocker. Additionally, the Help Center staff administer their MBAM Recovery tool.

- Assisted with the ASU Amazon Echo Dot project for Tooker Hall residents.

- ASU Help Center assist university staff with any technology purchases that need to complete a security review. This service is to assist UTO-ISO support staff who handle ~100/mo. request with expectation of increase to 1200/mo. due to mandatory security review purchasing policy.

- Assumed tier-1 support for DocuSign request

- ASU Help Center is providing Plus Alliances Support for UNSW international online students needing support on ASU (Blackboard) courses.

- ASU Help Center is providing tier-1 support for Apogee TV for Residential Life after business hours.

- ASU Help Center, is the front-line support for Tier 1 support of Herberger Online (HOL) students.

- ASU Help Center answers all calls for tier-1 support for Mary Lou Fulton Teaching

College (TK20, PLL, and iTeachAZ Mobile App, iTeachAZ Dashboard).

- ASU Help Center is supporting the Engineering Technical Support (ETS) classrooms/labs during non-business hours.

Help Desk Numbers

Calls: **505,763** *(11% increase over 2016)*

Chats: **86,861** *(26% increase over 2016)*

Customer Satisfaction overall **4.8** out of 5 with **8%** response *(2016 was 4.6 with 2.5% response)*

- Found a location to establish a Help Center disaster recovery site on the Poly campus

- Hired and trained a new workforce manager utilizing the inContact V2 WFM tool.

- Changed the post call Echo survey system functionality that increased response rate from an average of 2.5% to 9.6%

- Migrated to a new workforce management tool

- Customer Service training for UTO, Financial Aid/Scholarship Service and International Student Services.

- Moved classroom support tier-1 services and support staff to the Help Center

CLASSROOM SUPPORT

Help Desk Numbers

Desk side Total Tasks: **17,937**

Desk side Total Incidents: **519**

CLAS/Havasu 2017 Totals:

Incidents: **152**

Tasks: **5233**

- Service Catalog Standardization
- Windows 10 Rollout
- Mac OS Sierra Rollout
- Classroom Directory Project
- Turning Point upgraded to version 8

Tempe

- Graduated 1 member of staff to '17 Emerging Leaders - Rocco Pagano

DPC

- Graduated 1 member of staff to '17 Emerging Leaders
- Brought 6 new AZCNTR Classrooms online
- AZCNTR 270 Active Learning refresh
  - Installation of 48 student computers
- Computer upgrades to UCENT 214 - 24 new Macbooks
- HLHTN 110 and 222 refresh
- UCENT 279, 282, 286 refresh
- POST L1-35 computer upgrades - 50 Dell AIOs
- Downtown Tech Studio

- Closed 499 Tickets a 45% difference from 2016 (342 tickets closed)
- Took on full support of student TurningPoint issues
- Coordinated and completed Tempe and Downtown Tech Studio 10 year anniversary celebration.
- Preformed 10+ faculty focus groups in April throughout all 4 campuses
  - Closed out Classroom Experience Project
  - Began on-going customer feedback process for Classrooms
- Initiated TimeClock for Downtown student workers
- Classroom ISAAC responsibility expanded as segment managers
- Upgraded and distributed HelpCenter signage in University Classrooms

West

- Moved out of Computing Commons into first floor library space on short notice
  - Removed 65 PCs and MACs
  - Moved Canon printer

- - Moved Two scanning stations
  - Removed large screen TV
  - Moved Tech Studio and related equipment
  - Moved George Holland's office and related equipment
- Audited all unused wired ports on library's first, second, and third floor
  - Submitted ticket to CenturyLink to have ports activated and set to right VLAN
- Replaced 65 of the library's old PCs with 65 of our newer PCs and Macs
  - Secured said PCs and Macs
  - Cable maintenance of said PCs and Macs
- Assisted with Dean's Council Meeting in SDF 311
  - Completed a walk-through / audit of space to make sure it would meet the dean's needs
  - Provide on-site assistance through entirety of meeting
- Imaged 563 stations in over 66 rooms
- Refreshed 3 rooms (CLCC 146, 158, and 199)
- Assisted with Las Casas (dorm public room) PC and printer relocation

Events
- Supported University Council Meeting hosted at West
- Assisted with West Campus Science Bowl preparations (software install)
- Assisted with WP Carey VITA tax event in CLCC 238
- Participated in West Campus Info Fair
- Assisted Global Launch with setting up 80 Peruvian students

- Assisted with Night of the Open Door event by helping coordinate CenturyLink's work on the Cyber Security Challenge
- Assisted with Spring '17 Academic Senate
- Provided set-up and live event support for two student forums
- Provided set-up and live event support for ABOR tuition meeting
- Hosted the September Classroom Support quarterly meeting

Poly:

- 2:1 Wirelesss completed in UCL's
- ACIC/OKED service agreement put into place
- Classroom Support Manual
- New Classrooms: Tech194
- Classrooms Refreshed:
  - AGBC135 - AV
  - AGBC154 - AV

VIDEO CONFERENCING

Task	Total	% Change
Peak Vidyo Line Usage	130	42%
Total VC Meetings/ Events	455	24%
Total Hours of VC we supported/managed	929	34%
CPCOM Rooms VC Events	228	55%
CPCOM Rooms VC Hours	480	66%

TRAINING

- Presented 275 workshops to 1,575 staff and faculty

- Consulted with 900 groups and individuals about learning and office technology at ASU

- Maintained 47 online, self paced courses about office and learning techology and compliance courses.

- Lynda.com had 376 UTO users who viewed 19,000 videos.

- Website: 33,000 views, Youtube Channel: 67,000 views; Instructor volume: 115,000 views

- Learning community about Adobe products meets quarterly.

- Stop by CPCOM 202 on the Tempe campus from 9-10 any week day for help with Blackboard and office software used at ASU

- Come join the fun at http://links.asu.edu/ utotraining

DESKSIDE SUPPORT

CLAS Projects:

- Security Review implementation

- Duo 2 Factor Authentication

- Exchange mailbox migration

- English move to Ross Blakely Hall

- SILC Language Placement Intake to PeopleSoft project

- Psychology LMN server project - 30 TB storage solution moved to data center

DSO

- AD Standardization

  - Created OU structure and documentation of the standards developed.

  - Produced baseline security GPOs that are applied to all systems.

  - Trained UTO Deskside staff to use the new structure.

  - Migrated 250 UTO systems into the new OU structure.

- Developed DSCTRL, a script for Deskside staff to automate common tasks.

UTO Deskside

- Provided 400+ refresh systems out to UTO Staff (Dell/Apple)

- Standardized UTO on 10 64-bit and Office 2016 64-bit

- Brought in a new Staff member to assist with Barrett Honors College.

- Closed 437 Tasks (this figure should be closer to 600+ Tasks, counting "drive-bys") and 28 Incidents.

- Purchased, assembled and currently using a three wheeled bike for remote deliveries and support.

UTO Barrett Honors College
- Standardization & Management
- Brought in to SCCM and JAMF environments
- Cleaned up AD and Group Policies

Deskside DPC
- 20 faculty and staff office moves
- 50 HS new systems
- Centralized deployment and ordered and imaged systems before sending out
- Got more hands on with the departments and involved

Deskside West
- Teachers College- Working to standardize systems

Polytechnic IT
- Purchased, assembled and currently using a three wheeled bike for remote deliveries and support.
- Total number of ServiceNow requests and incidents for all Deskside

Email Support
- Exchange Migration
- OneDrive/SharePoint
- ListServ Cleanup

Documentation
- Create/Maintain KB Articles in ServiceNow & SalesForce
  - ServiceNow: 165 KB Articles
  - SalesForce: 40 KB Articles

Software & Systems
Centralized 3 license titles used by multiple departments (CrystalMaker, Girobi, and CAMTE)

ServiceNow Reports
- Answered 3,100 software requests
- Answered 143 software incidents

Converted 970 users to Adobe Creative Cloud Named user accounts (out of 11,000 licenses)

Started audit processes for checking license usage

UTO and Slack
- Continuing to work on an enterprise license for Slack for ASU
- Oversee the UTO Slack configuration for department.
- Avg 31,000 messages each week within department with about 300+ active users each week.
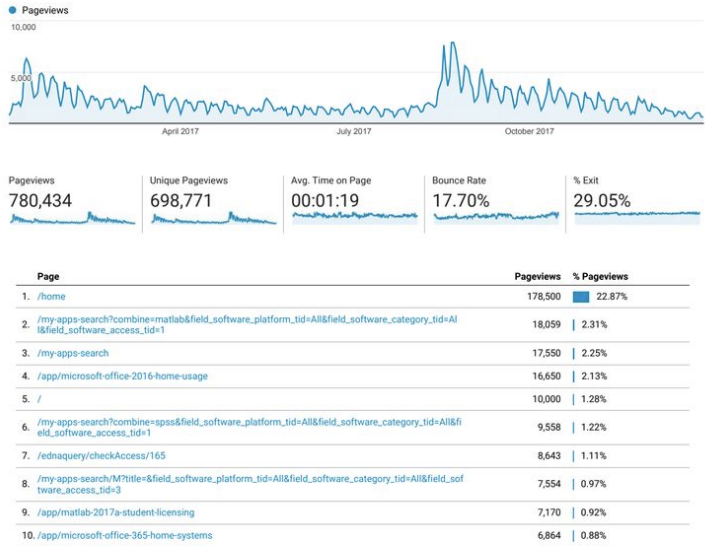
Dropbox
- 10,400+ users in 2017
- 450tb of storage in use
- Device counts
  - 4,331 Windows
  - 2,147 MacOS
  - 81 Linux
  - 422 iOS
  - 180 Android
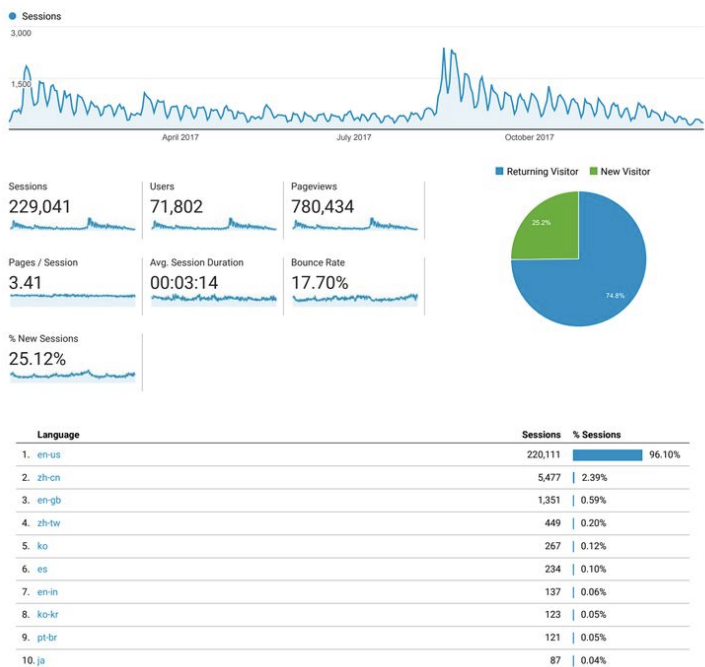- Team Folder
  - 100+ team folders made

Qualtrics
- Merged some departments into main setup
- Over 1,881 users in 2017 created 4,100 surveys that generated 192,857 responses

My Apps

Page	Pageviews	% Pageviews
1. /home	178,500	22.87%
2. /my-apps-search?combine=matlab&field_software_platform_tid=All&field_software_category_tid=All&field_software_access_tid=1	18,059	2.31%
3. /my-apps-search	17,550	2.25%
4. /app/microsoft-office-2016-home-usage	16,650	2.13%
5. /	10,000	1.28%
6. /my-apps-search?combine=spss&field_software_platform_tid=All&field_software_category_tid=All&field_software_access_tid=1	9,558	1.22%
7. /ednaquery/checkAccess/165	8,643	1.11%
8. /my-apps-search/M?title=&field_software_platform_tid=All&field_software_category_tid=All&field_software_access_tid=3	7,554	0.97%
9. /app/matlab-2017a-student-licensing	7,170	0.92%
10. /app/microsoft-office-365-home-systems	6,864	0.88%

- Endpoint Management 2017
  - macOS 10.12 for Classrooms and Sites
- Windows 10 1703 for Classrooms and Sites
  - Switched ALL scripting to utilize PowerShell

Language	Sessions	% Sessions
1. en-us	220,111	96.10%
2. zh-cn	5,477	2.39%
3. en-gb	1,351	0.59%
4. zh-tw	449	0.20%
5. ko	267	0.12%
6. es	234	0.10%
7. en-in	137	0.06%
8. ko-kr	123	0.05%
9. pt-br	121	0.05%
10. ja	87	0.04%

- Significant improvements in BootCamp imaging (WinPE prestaging)

- JAMF
  - Apple DEP implemented
  - AutoPkg deployed to improve frequency and timeliness of 3rd party software deployments
  - Splunk integration being evaluated
  - Classrooms and Sites managed by JAMF for the first time since implementation
- SCCM
  - BIOS upgrades implemented during imaging for Dell hardware
  - BIOS settings implemented during imaging for Dell hardware
    - Classrooms, Digital Signage — All settings are set during imaging time without user intervention (Dell)
    - Deskside — Settings are selectable from GUI (Dell)
  - Automated driver updates for Dell hardware with support for manual additions
  - Automated changes/updates for "FixMe" note (gathers all changes and prepares an email to be sent)
  - Automated logging over the network in the event of an imaging failure
  - SCCM Endpoint data is currently feeding into Splunk for reporting
- General
  - Multiple departments added into JAMF and SCCM environments
  - Windows 10 builds are evaluated and tested for twice a year deployments

CLASSROOM TECHNOLOGY INTEGRATIONS

Sun Devil Stadium

- West side suite level, Legends Club, Founder's Club, Coaches Club
- Stadium Video Control Room upgrade-updating video controls, replay, new north endzone video board controls, ribbon board control system

- Student Athletic Facility (SAF) mediated classrooms, conference rooms, locker room, weight room, players lounge, offices and more.
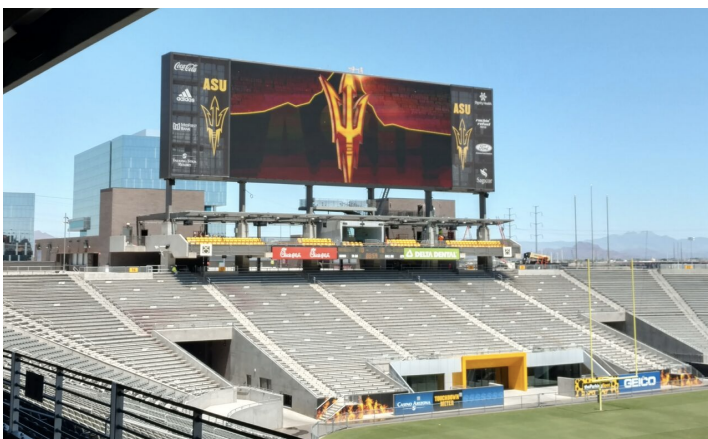
- North end zone Videoboard, stadium sound system, Coaches terrace suite level, Coach's Closing Room.
- https://www.youtube.com/embed/0CS8NV0GHus
- Aided UTO VIP Deskside in bi-directional satellite TV production to Washington DC to Sundevil Stadium and Dr. Crow for ASU Football head coaching press conference and subsequent national TV broadcast and streaming

- Ross Blakely Renovation- Huddle Spaces, Conference Rooms, Classrooms, and Labs.
- CSAC 3rd Floor (Football Backfill) - Created new Watts Center for Academic Excellence and Championship Life consisting of Huddle Spaces, Conference Rooms, Classrooms, 1:1 Computing Spaces and Computer Labs.
- ASU PD at DPC - Consulting and AV PM for ASU PD Offices as UCENT. Integrations include huddle space, digital signage, conference room, and classroom.
- ASU Memorial Union Renovation- Created conference rooms, and public spaces replacing older bowling alley space. 3x3 Panasonic video wall running network video processors and encoders over ASU Network.

Objectives

ACADEMIC INTEGRITY

- **Online Proctoring** – this is an area that has a growing demand. It is also an industry that is in need of some disruption and innovation. We are currently working with Software Secure to improve the student and faculty experience, maintain academic integrity of exams, while also keeping costs affordable.

- **Plagiarism Checking** – currently there are only two major plagiarism tools in the market (Safeassign and TurnitIn). During our LMS review it has become painfully clear that this is a limiting component when selecting LMS tools. Safeassign is only available to Blackboard clients and TurnitIn has been a poor performer from a company standpoint, both in customer service and security. Other tools will need to be investigated as we progress with our LMS review.

- **Identity Verification (Virtual Sun Card)** - This tool would be introduced when students are admitted to ASU. It would capture and validate the student photo as well as several other biometric identity tools (keyboard, voice) that would be used to verify a student's identification.

BUSINESS INTELLIGENCE

Workday Reporting Solution

- Convert historical data for the Workday system and the data warehouse. Helping with general reporting within the Workday environment. For any reporting not built in Workday, build-out the Workday data warehouse in AWS and the ecosystem around that. This will include both financial and sponsored research admin data.

Migrating to "Advanced Analytics" Platform in Cloud

- Start preparing move of the data warehouse platform to a cloud environment. This will include the Workday data warehouse initially, and then enterprise data warehouse and other tools that are necessary. In addition, a big data solution will be built to prepare us for the Internet of Things and other potential big data.

Voice Enabled Campus

- Working with UTO's DEV group to release the official Amazon Alexa "Skill(s)" for the university. The skill(s) will include general information and frequently asked questions, assisting ASU students and directional questions. Plan includes Echos in the new engineering residence halls (800 rooms) and possibly setting up Echos around campus (Kiosks, digital signage locations (~175), and new historical markers going in (~80)). Working with the CFO, Marketing Hub, and Engineering College.

CUSTOMER SERVICE & SUPPORT

Each unit within ITCSS has its own defined mission, goals and initiatives that support the overall goals.

- Service partnerships and costs of UTO services

- Learning spaces design and refresh

- Job family promotion/progression

- Endpoint security management

- UTO Emerging Leaders

- A/V technologies in construction

- Staff training and continued support for University training

- **Ensure our classroom work every time for our faculty and students**

- **Provide world-class service to the ASU Community**

DEVELOPMENT

Connect Devices and Enable New Insights: Smart Stadium, Smart Classroom, Smart Campus

- **SmartCampus (IoT):** Utilize beacons, network data, and mobile application functionality to determine simplistic attendance tracking with the likely ability to influence optimal (nudging) and minimize adverse behaviors (will align to student success initiatives).

  Connect devices, enhance network data, share relevant information, influence new interactions with the ASU environment, visualize workflow, initiate proactive triggers, leverage voice commands, and expand mobile application capabilities for redesigning experiences at ASU physical locations like the stadium and dorms.

INFORMATION SECURITY

- **Identity and Access Management**

  - Further expansion of two-factor authentication (DUO).

    - ADFS Multi-Factor for email and file shares.

    - Student Security & Academic Integrity (includes onboarding students to DUO and helping with the Business Intelligence (BI) dashboard).

- **Improving Endpoint Encryption and Security**

  - Information Security Analytics BI Dashboard (includes endpoint posture requested by the Chief Financial Officer).

  - Advanced Endpoint Protection.

- **Enhance Network Access & Visibility**

  - Deploy Wired Network Access Control to provide visibility and security into activity on our wired network (Cisco ISE).

  - Enhance Network Visibility and Data Aggregation (Gigamon).

OPERATIONS

PeopleSoft Migration to Cloud

Seeking cloud solution for our PeopleSoft systems that offers resiliency for the business - elasticity to expand and contract according to need, automation to quickly spin up environment clones for testing and discard when done, pay according to actual usage versus capabilities – better spend, resilient business continuity solutions – multiple regions, adapting continuously enriched service offerings.

- Researching – taking a look at AWS and Oracle solutions.

- Started discussion with Oracle to kick off POC evaluation of their cloud service for PeopleSoft.   Following University of Arizona and their deployment to AWS.

PLANNING & PROGRAM MANAGEMENT

- **Improve Governance/Prioritization and Stakeholder Engagement through enhanced visualizations of program & project data**