

Annual Highlights

2019

University Technology Office

YEAR-IN-REVIEW

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ASU Arizona State
University



Introduction

It takes just two words to sum up this year-in-the-life of UTO: intentional design.

Everything from the culture we've created from the ground up, to the new enterprise products we've made accessible to all, to the agile approach we've adopted to meet community needs — is with strategic brush strokes. UTO has always been brimming with builders, makers, architects, designers, and tinkerers, and in 2019 we've been leveraging the unique talents across the organization to foster more collaboration and cross-functional (**read: interdisciplinary!**) work.

True, human-centered technological innovation comes alive in the design. This notion is shared by the whole of ASU; we see it in the **eight design aspirations** that guide our overarching purpose. We see it in the pages ahead that reveal stories of community impact that have been blossoming at the hands of UTO staff.

It has been a momentous year in service of advancing **community delight, innovation, and operational excellence** at ASU, with student success at the heart of it all. Every day, we look forward to co-designing the most inclusive future possible for ASU.

Culture:

The Core of Innovation

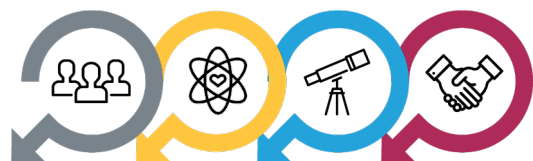
Culture affects how people interact with each other, with colleagues and with the community.

Last year UTO's first ever Chief Culture Officer Christine Whitney Sanchez began her work. The first culture initiative was to assemble a group from across UTO to help cultivate a culture of meaningful relationships, authenticity, vision, and empowerment within the organization. Known as Culture Weavers, this group began meeting to weave the cultural fabric of UTO. Once a blueprint was established, the team extended an invitation to all of UTO.

“Culture is listed first on our (Fiscal Year) 2020 goals and that is no mistake.”

LEV GONICK, CHIEF INFORMATION OFFICER

Culture as we have defined it in UTO begins at the core of what we strive to be, **a values driven organization**. Our commitments are reflected in the work we do in pursuit of operational excellence, community delight, and strategic innovations. Since Whitney Sanchez came aboard and the Culture Weavers began their work, positive culture shifts have been at the forefront of all those involved.



At the heart of our culture is UTO's Core Values defined by four keywords.

Each of our positive core values were handpicked by the organization as a whole with purposeful intentionality behind each word.

**Relational
Authentic
Visionary
Empowered**



Leadership Principles

Another cultural guiding light behind 2019 was UTO's Leadership Principles. These principles were created with the goal that every single one of us has leadership qualities and abilities.

Whitney Sanchez notes, “Leadership Principles were developed, grounded in the Positive Core, at two Leadership Core offsites, with activating behaviors added at Leadership Core and Culture Weavers Meetings.”

With so much of UTO involved in the creation of these living and evolving principles, it makes the most sense to live these principles with the utmost care. We have seven leadership principles:

Agile first: ongoing commitment to being nimble, willing to fail, and being adaptive.

Resourceful + Transformative: transparent, thoughtful, thrifty with fiscal resources.

Talent Alignment: aligning expert technical talent properly

Trust in our teams: shared ownership, risk and success, who design opportunities that afford calculated risk-taking and shared responsibility.

Authentic partnerships: zealous about authentic partnerships through the ASU community and beyond.

Curiosity + Creativity: tenaciously dedicated to encouraging exploration, discovery, innovation and creation

Culture of Collaboration: greater success is realized when an intentional work culture is fulfilled through multi-directional collaboration.



Engage

The culmination of **culture-meets-innovation** is at our annual department-wide retreat, Engage. Engage 2019 was an exciting opportunity for the UTO family to lend its voice, share its passions, and participate in a short hackathon that helped plan pieces of future strategic efforts.

We had over **76% of UTO participate** in the idea hackathon. Hundreds of sentiments from the day focused on fun, teamwork, collaboration.

The Culture team at UTO is approaching its sophomore year, and we have even better things to look forward to this year as we get to work on the challenges and opportunities ahead.

Evolving the Digital Campus: The Transformation

As universities across the world enhance online offerings to support learners everywhere, architecting a thriving digital campus is vital.

With ASU now providing high-quality learning experiences to more than **50,000 digital immersion students**, we set out to ensure every community member feels supported and has a dedicated space for real human interaction. This year, UTO made Slack, a real-time communication tool and collaboration hub, available to everyone, University-wide.

Slack joins other recently acquired enterprise tools like video/audio conferencing platform Zoom, new learning management system (LMS) Canvas, and Yellowdig in a growing trove of building blocks that comprise a vibrant digital campus at ASU. UTO anticipates Slack usage to reach **15,000 ASU community members** at the start of 2020. This increasingly popular tool is enabling Sun Devils to launch instant meetings, access instructor support, share and collaborate on files, organize projects, assemble cross-functional teams, and more.

“Slack is the ultimate reduction tool.”

NATHAN CORWIN, EXECUTIVE DIRECTOR OF
SERVICE TRANSFORMATION

“Thanks to Slack integration, our collaboration tools like Zoom, Dropbox, Office 365 and Google Suite and over 200 more applications are available in one place. We’ve been blown away by the stories of success coming from faculty and learning designers in particular in terms of teaching and learning potential.”

“[Slack] made my online students feel like they were in an in-person class environment.”

MATTHEW SOPHA, ASSISTANT PROFESSOR AT
ASU’S W. P. CAREY SCHOOL OF BUSINESS

Indeed, Sopha is among a growing cohort of faculty and instructors across ASU colleges and schools now leveraging Slack to deepen student interaction, make themselves available for office hours and questions, share real-time updates, and open up channels of collaboration on assignments.

At the heart of ASU’s digital campus is Canvas, ASU’s newly chosen LMS. **All 26,000 of ASU’s courses** are now in Canvas, which, like the conductor of an orchestra, is playing a key role in organizing all the moving parts of learning experiences.

“The move to Canvas marks a milestone. We’re able to better support student success, for both campus and digital immersion.”

CHUCK KAZILEK, CHIEF TECHNOLOGY INNOVATION OFFICER

When it comes to bringing together the whole ASU experience for community members, the official ASU Mobile App has become the go-to for community members.

The ASU Mobile App now touts more than **100,000 device downloads**, **2.4 million push notifications**, **~25% of authenticated users** visit the app daily, and they are spending **more >7 minutes/visit** engaging with schedules, events, and news.

The days of “the quad,” (or similar) being the single hub of campus life are long in the rearview mirror. **The way UTO sees it, the hub is wherever you are.**





Smart Cities + Region: Transforming Society

Although many devices we use every day connect us to each other and the world around us, there are still limitless possibilities to further this connectedness in our public infrastructure.

ASU and UTO's Smart Campus/City/Region (CCR) Initiative is aiming to implement smart outcomes with the goal of improving the lives of the individuals in our society.

UTO is instrumenting environments to digitize analog spaces and leverage the Internet of Things (IoT), via smart devices that encompass sensors and cameras to make the data actionable through efforts with cloud computing, artificial intelligence, machine learning, and edge computing. These capabilities will provide information that is more detailed than ever before to ease a campus or city experience with sustainable building, transportation practices and interactive services.

Some of the exciting highlights of the CCR Initiative, represented by 12 workstreams, include:

- Advanced Geographic Information System (GIS) that creates increasingly sophisticated digital representations of our physical world

- IoT efforts applied to Sun Devil Stadium
- Building, services, and transportation optimization
- Data analytics and governance

This past year, UTO and ASU have been forming strategic partnerships to make these ideas realities. ASU and AWS are both industry-recognized thought leaders that are bringing their resources to solve challenges that municipalities are facing, such as leveraging technology to aid underserved communities or ethically gathering data about residents and visitors to inform new projects.

The ASU-AWS partnership is best encapsulated by the Smart City Cloud Innovation Center (CIC).

The Center is a crucial part of the greater ASU CCR Initiative, implementing technology alternatives to public infrastructure to stimulate economic growth at a minimal cost. One of the key advantages of the Center is its place as a hub to share these ideas, strategies, and technology with the public sector throughout the entire region.

Speaking at the launch of the CIC in March 2019, CIO Lev Gonick said: "The CIC enables us to bring every-

thing that we have as part of our mission and around our research, combining student engagement and community visions, powered by AWS and its resident staff, to advance the vision of a connected place."

John Rome, Deputy CIO for Data Stewardship, Augmented Analytics, and BI sees the CIC as a key advancement of the ASU mission. "The Smart City Cloud Innovation Center at Skysong is a perfect representation of how ASU and UTO is embracing the ASU design aspiration of being socially embedded by connecting with our local municipalities and stakeholders to take on their challenges with technology and ASU's amazing talent."

The connected place is not just in one location, though: it's going mobile.

The ASU Mobile App is a portal for the entire University community, and students especially, to interact with their work and surroundings.

"The ASU Mobile App is quickly becoming an indispensable tool as well as a mobile productivity engine, primarily for students, although we see potential for other user

types to benefit in the near future," said Chris Richardson, UTO's Deputy CIO for Development, Mobility & Smart Cities. "With such broad adoption (**more than 100,000 downloads**), the app is also proving to be a key interface for ASU's Smart CCR efforts. When you can layer in location services with newly digitized inputs like we've enabled for parking, transit, and new features every two weeks, we can build an engaged university environment that digitally interacts with the elements of their education, work and surrounding communities."

The campus-wide movement is impressive, but UTO is also looking to move beyond and impact underserved communities that ASU touches; for example, to aid people experiencing homelessness that are affected by the incredible summer heat of Arizona. The potential of a smart campus, city, region — and even world — is limitless. And this year, we took one, or 12, more steps to realizing that potential, identifying these specific use cases and how to make them a reality.

UTO's exploration of the possibilities is just another exciting indication of its dedication to connecting people, places, and objects everywhere.

UTO by the Numbers

An investment in innovation is an investment in our community. Through the work of our agile teams — in partnership with colleges, schools, and units across the University — we’ve been able to keep the ASU community more connected, secure, and tech-savvy with cutting-edge services, products, and events. The numbers tell a transformative story for 2019 and add up to an exciting vision for the future.

ASU Mobile App

100,000+
Unique device downloads of the ASU Mobile App

~2.4 million
Push notifications sent through the ASU Mobile App CMS

“The ASU Mobile App is quickly becoming an indispensable tool as well as a mobile productivity engine, primarily for students.”

CHRIS RICHARDSON,
DEPUTY CIO FOR DEVELOPMENT,
MOBILITY & SMART CITIES



Blackboard to Canvas Migration

26,404
Expanded ASU courses live and in dev in Canvas, including training courses and organizations

2,469
Faculty trained by the UTO team for the Canvas migration

Experience Center

4.72 / 5
Call satisfaction rate, with a 10.2% customer response rate to the survey

“The Experience Center was established on a strong internal foundation of deep commitment and understanding, which enables us to cultivate partnerships across the entire University.”

GIGI SPEAKS, DIRECTOR OF INFORMATION TECHNOLOGY SERVICES

~30,000
Deskside ticket volume

Service Transformation: Slack

15,000+
Active Slack users

200+
Course Workspaces



“Slack is the ultimate reduction tool...We’ve been blown away by the stories of success coming from faculty and learning designers in particular in terms of teaching and learning potential.”

NATHAN CORWIN, EXECUTIVE DIRECTOR OF SERVICE TRANSFORMATION



Workday

26,367
Active Workday Accounts

Cloud Acceleration

376
Infrastructure and application pipelines executing on the central orchestration platform

30 Terabytes
Data backups diverted from on-prem storage infrastructure into the public cloud

Information Security

751
RiskSense Network Vulnerability Score (out of 850)

18 / 31
ASU departments above 90% security training compliance

22,809
CrowdStrike Endpoints Monitored

“We’ve deployed next generation endpoint protection to ASU-owned endpoints. This advanced endpoint protection is necessary to help ensure that ASU continues to stay ahead of advanced threats.”

TINA THORSTENSON, DEPUTY CIO &
CHIEF INFORMATION SECURITY OFFICER



Experience Center: Meeting Student Needs

When the ASU community needs help with technical problems, financial questions, and any other concerns, it turns in-house to the Experience Center, the University's support solution.

The Experience Center is more than a tech support hotline; it's the face of ASU as the first point of contact for students, and an important system for faculty and staff to serve the students they impact.

Whether a student calls with a question about their scholarship disbursement or a staff member chats to figure out why they can't log into My ASU, Experience Center staff are dedicated not only to solving the problem, but also providing a pleasant experience. Support was moved back in-house at ASU in order to achieve the goals of operational excellence and customer delight, and this in and of itself was a novel and innovative move for a university as large as ASU. Since then, initial

support services have evolved to the variety of interconnected services and support embodied within the ASU Experience Center.

"The Experience Center was established on a strong internal foundation of deep commitment and understanding, which enables us to cultivate partnerships across the entire University."

GIGI SPEAKS, DIRECTOR OF INFORMATION TECHNOLOGY SERVICES.

"This broadens the knowledge and capability of the Experience Center to deliver care and service, which contributes to the success of students, staff and faculty and in turn provides a far reaching impact to our communities and economy."

And this year's figures indicate that this move is still the right call. The call volume increased 6% from 2018 to 2019, reaching an astounding 591,115 calls. Even with this incredible number of interactions, the call satisfaction rate for the Experience Center is a 4.72 out of 5, as pulled from a post-call survey.

The Experience Center's impact even goes beyond ASU. An important development for the unit this year is its partnership with the City of Phoenix, Maricopa County, and the State of Arizona to test the collaboration's emergency management. It's an incredible example of the entire university's mission to make a positive impact on every community ASU touches.

But it gets personal. When one parent called the Experience Center about a fee placed on their student's account after the full tuition amount was paid, an agent ex-

plained how to appeal fees and avoid future issues with tuition due dates. "I came into the call frustrated and confused and lacking confidence in the finance experiences with ASU," the parent wrote after. "I spoke with Terri [the Experience Center agent] and she was super helpful."

"...She was so helpful that it went from a negative call to a very positive experience and restored my confidence in ASU."

This situation illustrates the importance of the Experience Center as an institution that strives for excellence: many see their time spent interacting with the Experience Center as indicative of the state of the greater institution of ASU. And in a way, it is. The Experience Center is another very important facet of the University's mission to connect to its community and beyond.



Security + Vulnerability: Get Protected

ASU has fostered an open sharing ecosystem that spurs research and innovation. This continuous sharing makes security a joint responsibility of all students, faculty, and staff.

ASU's Information Security Office (ISO), led by Deputy CIO & Chief Information Security Officer Tina Thorstenson, is committed to preserving the confidentiality, availability, and integrity of ASU's information resources all while nurturing the collaborative information-sharing requirements of its academic culture.

“That **open information environment is one of the many things we love about a university atmosphere but it is also one of the things that makes **securing it** even more complicated.”**

TINA THORSTENSON, DEPUTY CIO &
CHIEF INFORMATION SECURITY OFFICER

ISO's strong strategic partnerships enable UTO to be as innovative and agile as possible — sentiments that ring true throughout our departmental culture. “We've

established a strategic partnership with CrowdStrike and deployed next generation endpoint protection to ASU-owned endpoints,” Thorstenson noted. “This advanced endpoint protection is necessary to help ensure that ASU continues to stay ahead of advanced threats.”

With the infrastructure of ASU systems and the services of CrowdStrike, we have been able to minimize the chance of disruption to our teaching, learning, and research initiatives. Since mid-2019, CrowdStrike has deployed to over **22,800 endpoints** and has made over **53,985 detections**. These numbers will only continue to grow as protection levels continue to be increased.

Think about it this way, most people don't drive a car without stepping into drivers education training, so why venture into the world without our information security training? The ISO teams annual goals are to increase security awareness and adoption across the university. We are off to a great start, because over the last year, more than **90%** of employees across **ASU's 34 departments** have taken and passed the information security training.

The impact of this training is seen in everything we do. Employees learn about phishing, data handling, secure wireless connections and so much more. This knowledge is helping to keep those attackers out of the ASU network. The training is available year round and can be accessed at asu.edu/infosec.

We are also committed to protecting students from fraud and scams that attempt to infiltrate ASU systems. Two-factor authentication is being implemented for students to help keep our university even more safe. ASU-RITE account compromises have dropped considerably with the implementation of two-factor authentication. While the external threats have remained relatively constant at **172 billion per year**, our instances of potentially compromised accounts dropped by roughly **40%** since this approach was implemented for faculty/staff.

Over the last year, our collective work has grown in scope, maturity and complexity to keep existing threats outside our networks and to implement new tools to stay ahead of those future threats.

The Network: Our Destiny

Connecting ASU community members to each other and a host of products and services is a key mission of UTO. To further deliver on that goal, UTO is always thinking about ways to improve research and data capabilities at the university and elsewhere. That's why it's incredibly exciting that the development of the NextGen Network (NGN) is well underway at ASU.

The NGN will do more — and do it more quickly. It is designed to disrupt business-as-usual technical design to focus on greater speed and accelerated capacity. A huge benefit of this advancement is, of course, easier and more satisfying day-to-day use, but the capabilities of such a network go beyond normal web surfing.

A normal commercial network cannot make a global footprint quite like the NGN. The last frontier, CIO Lev Gonick says, is virtualizing the network via software, rather than wholly relying on hardware. And that's one of the technical goals for the network.

"Network is our destiny," Gonick says. While network designs at universities are largely the same as they were in the late 1990s, the rest of the world has evolved relatively quickly into new network architectures, he adds. The potential and future reality of the NGN will allow for incredible advancements of ASU's mission.

"An integral part of the NextGen Network is its empowerment of research."

JESS EVANS, CHIEF OPERATING & DIGITAL
TRANSFORMATION OFFICER

The NextGen Network will connect major research institutions, build out the Internet of Things concept, and allow machines to talk to each other, using devices and instrumentation to better develop services and capabilities for "learners;" that includes students, obviously, but also faculty, staff, and researchers. With this network, both people and machines will be able to ingest information at a higher level.

Immersive learning environments for these groups are enabled by the NGN. Gonick envisions ASU's new network as a living laboratory for researchers and students to study the future of networks and more. Virtual and augmented reality capabilities are heightened on a low-latency network, and the NextGen Network will aim for the lowest possible latency...and beyond.

Furthermore, staff and even machines will be able to carry out day-to-day functions more effectively. For example, the cameras that populate campus for security and parking purposes will be able to give software and employees more information and insights.

If the NextGen Network is ASU's destiny, then our destiny will increase the effectiveness of functions and ideas we have already implemented or want to implement, and give rise to functions and ideas we have not yet truly dreamed of. It is part of the mission to connect ASU communities to each other and many outside the university, democratizing information and the distribution of key findings that will improve our cities, region, and world.



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INNOVATION LEADER

For the fifth consecutive year, U.S. News & World Report ranked ASU as **#1 in the U.S. for innovation**, ahead of schools like MIT and Stanford. That's because we work hard to create ways for students to get the most out of their time at the university, whether it's using technology creatively or providing unique research and funding opportunities.