

Writing the living playbook

Strategic IT planning to empower community success

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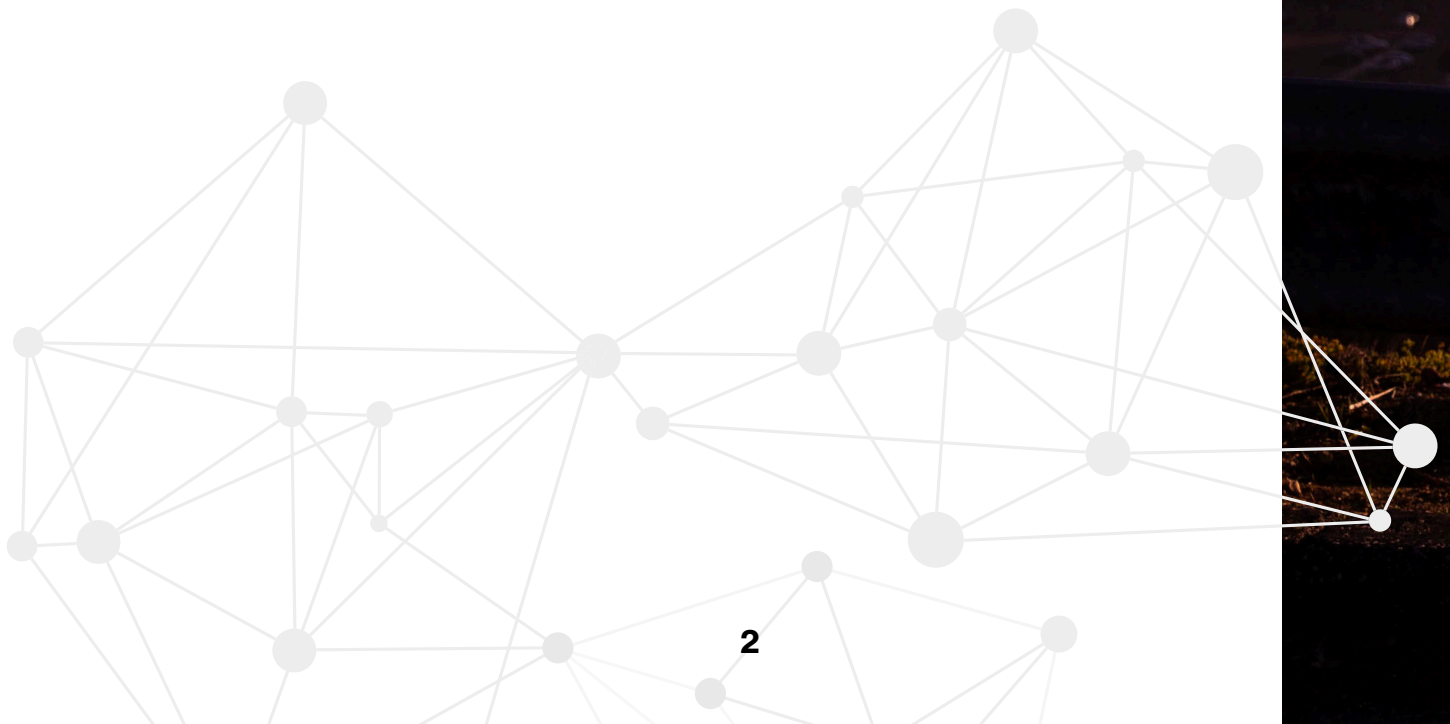
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Introduction

In the beginning, as technology leaders, we cast ourselves as high priests. We had others build us grand temples as modern mausoleums in the center of which resided the mainframe computer. Some may recall the special wizard-like roles of those who tended to the machine. Those who led the wizards, plastic pen protectors in place, were viewed with reverence.

The gatekeepers' reign was built on protecting and controlling – not altogether conducive to accessibility and inclusivity – and it began to crumble when challenged by progress in those directions. Then the advent of the personal computer smashed efforts to preserve the hereditary line of the high priesthood.

As an era of possibility and plenty emerged, we recast our role into those of the chosen people. Unabashed idealism combined with charismatic leadership and a healthy dose of rhetoric gave rise to the audacious idea of transforming the enterprise of higher education. Chosen people, themselves led

by charismatic technology visionaries, would lead the academy – apparently lost and aimless for centuries in the wilderness of pre-personal computers – into a new promised land.

Compelling indeed were those who invented a leadership role to advance this emergent information technology ecosystem and convinced the powers-that-be that every president needed a new commander-in-chief for technology.

The advent – and powerful appeal – of networks connecting computers and people from around the campus and around the world represented prophetic leadership. A world was envisioned with as many blinking lights around network routers and switches as there were stars in the skies or grains of sand in the desert. Twin torches of scientific discovery and historical evolution naturally culminated in the digitally networked campus.

And then a funny thing happened. Prophets' intuitions became manifest. Suddenly, human connections were made digital, accelerating the pace of communications.



A modernized campus emerged, its empowerment magnified by the power of community. Learning, once grounded in the classroom, transformed into a continual and seamless experience. The promise of productivity and efficiency of information technology, combined with the centrifugal logic of the networks, came to pass.

Globalization – with all of its disruptive impulses in the economic, cultural, and education domains – would not have materialized in the accelerated fashion we are witnessing without the compounding impact of our computing and networking power. Successful networks have yielded increased economies of scale for computing and storage capacity; in turn, these advancements have fostered innovations in nomadic and mobile experiences. A paradigm of specialized access to specific rooms has shattered, leaving decentralized, democratized, and ubiquitous availability in its wake.

The current generational shift to cloud and cognitive computing and networks, like previous technological evolutions, calls for critical reflection. As the architecture and

business logics of the campus evolve in the current era, what range of contributions will technology leadership make to both align to the overall enterprise of higher education, and to the broad range of business and customer experiences in our portfolios.

Agility and growth mindsets have become the core of the adaptive enterprise. Disruption may well be the only constant. That said, as massive, hyper-scale computational and network capacity become encrusted as the next tectonic plate, the shift in the culture, organizational and leadership principles of the new enterprise IT organization can be intentional. We all operate in broader organizational contexts.

The art of IT leadership is to understand the predisposition and internal metabolism of the enterprise organization to be planful, adaptive and agile in fulfilling the goals of the university.





Looking backward to look forward

Now five years into my role as enterprise chief information officer at Arizona State University (ASU), I aim to explore and unearth the shifting terrain where we can detect cracks and other changes in the broader environment of our remarkable institutional journey to become the working prototype of a New American University led by

President Michael Crow. This is also evident in the formulation of the ASU Public Enterprise in the past year, solidifying the university's presence and impact as a force for public progress through operational support of three enterprises – we call the Academic, Knowledge and Learning Enterprise.

8 **benefits** for inclusive strategic workstreams



Horizon view thinking



Helps see big picture



Conscious effort for where we are headed



Ability to innovate at a large scale



Unifier for Enterprise efforts (including spend)



More effective use of resources



Advances antifragility



Proactive vs. reactive responses

The collaborative art of strategic planning while doing

I've always preferred to travel on foot. I want to work, live and breathe among the communities I serve. Five years ago as I first traversed the Orange Mall on the Tempe campus – buzzing with life and dotted with those iconic sprawling palm trees – I was thinking deeply about a multi-year strategic technology approach to amplify the voices and needs of the people walking by. And everyone represented across our distributed campus and The Valley we call home. One university, many places.

What's next for ASU is what's next for Phoenix is what's next for Arizona and the world. It's an ecosystem where change is possible yet its direction and velocity is anything but a sure thing. The bedrock of ASU is our Charter – educational access, research guided by public and planetary need and a commitment to be socially embedded. As our region evolves, ASU remains committed to be engaged and helping shape the future.

Strategic design work must reflect the communities they serve and a deep appreciation of the aspirations and priorities of those diverse interests. They also require a sweeping panoramic vision – looking behind, forward and blind spots next to you. No single person has that vision.

Exemplifying the power of collective intelligence meant inviting stakeholders across ASU and beyond to the table. A series of coordinated conversations, leadership and design workshops and other activities with staff, faculty, students and partners led to the formulation of a “living playbook,” plotting out a vision for the next five years.

Delivering our first five-year playbook to President Crow for 2018-2022 as part of my initial 100-day onboarding afforded our team an opportunity to develop an editable plan. We started with explorations of vocabulary, personal and group values, organizational

cultures and priorities, approaches to leadership and approaching consensus building for an initial, minimally viable release of a new organization.

Given our assessment of generational technological shifts underway and the perceived and sometimes real gap between our ability to deliver on the ambition, velocity and scale of the emergent ASU Public Enterprise, our foundational work of organizational culture and talent development included a new articulation of our IT leadership principles to advance the ASU Public Enterprise in the age of cloud and cognitive computing (see: Culture Weavers).

Over the past five years, we have iterated numerous times on our design and engaged not only members of our team but hundreds of others across ASU in our journey.



The anatomy for implementing strategy

At ASU's Enterprise Technology, our strategic design has led to our current model of two core stewarding Working Groups (WG): 1) WG-X represents the eXperience of technology at ASU; and 2) WG-A focuses on Alignment for operations, finance, culture and organizational management. Both groups intersect and convene regularly, with dedicated communications channels to ensure synchronicity of purpose and implementation.

With a distributed workforce of over 900 contributors, we collaborate across the university to design and deliver an exceptional human-centered technology experience for the communities we serve at ASU – including students, faculty, researchers, staff and the residents in Arizona.

To deliver on our promise, we support and transform services like high-performance wired and wireless networks and next-generation cloud infrastructure. These efforts and the software engineering and data analytics that accompany them inform the possibilities of on-demand support for faculty and students while developing new innovative learning environments.

Faced with constant disruption, we are vigilant in monitoring the ever-changing digital landscape. Most recently, higher education leaders have been immersed in conversation about generative artificial intelligence (AI). The question now is how these kinds of advancements can be leveraged to assist learners, as well as, faculty and staff to accelerate progress without sacrificing the undeniable need for human-driven critical thinking.

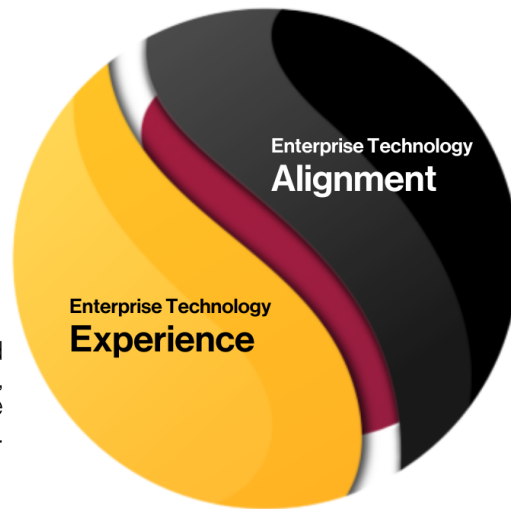
Ensuring the highest levels of security for the digital ecosystem is at the core of our work. We accomplish this through remarkable advancements in identity and access management for millions of identities associated with ASU offerings, as well as establishing safe and secure relationships with trusted third parties.



We engage the community – both at ASU and beyond – in a series of thoughtful discussions grounded in digital trust. Our priority at the center of this body of work is to ensure transparency, security, privacy and empowerment to foster relationships of trust: trust between our institutions, learners and staff; trust between learners and employers; trust between our institutions and the workforce.

Each year, some combination of our adaptive WG leads the development of an annual goal setting that aligns to goal setting efforts across the ASU Public Enterprise by other departments. We begin the planning cycle with the fruit that has already come to bear, and by identifying where more care and attention is needed.

Provide exceptional digitally-enhanced experiences for students, faculty, researchers and staff, as well as the communities we live in and serve.



Align enterprise-wide technology transformation strategies including organizational development and culture, information security and trust, IT partnerships, projects and programs.



Taking the long view for well-rounded gains

With 2023 marking the beginning of my sixth year at ASU, it's timely to revisit the original five-year design effort. As we look forward, we must understand where we're coming from. My hope is that by providing public insight into the ASU Enterprise Technology playbook from 2018, we model values of

openness and curiosity. I crack open the living playbook and offer you an exploration of where we stand now in relation to the original blueprint. Continual reflection on impact has been an important part of our journey – which we have frequently documented in the form of stories.



Cracking open the **living playbook**

Enterprise Technology 2018-2022



Multi-year 'big boulder' Enterprise Technology efforts

Universal learning experiences and credentials

Mobile experience

Digital equity and inclusion

Extended Reality

Chatbots



Significant progress with emergent technologies

Distributed technologies

Smart region



Area for greater focus and impact

Large-scale entrepreneurship



Multi-year 'big boulder' Enterprise Technology programs

Universal learning experiences and credentials

One of the many attractions to ASU was President Crow's expansive vision for the scope of responsibility that American universities must own. For nearly 25 years, I have argued that the last vestiges of a division between different educational segments was going to be challenged to its core by new, at the time, technologies which largely ignored hierarchy, authority, boundaries and the scarcity model of education.

ASU's early experimentation and commitment to both physical and digital K-12 schools through ASU Prep Academies is one way of building scaffolding to overcome the artificial boundaries between education segments. Equally important is the commitment to create additional, university-sanctioned recognition and certifications that extend beyond the degree and the course credit. ASU ambitions through initiatives like the Starbucks College Achievement Plan, 100 Million Learners and Study Hall exemplify the commitment to educational access, at scale, and the evolving relationships of students and learners with ASU as a public enterprise.

Enterprise Technology, along with our partners across ASU, have re-architected the

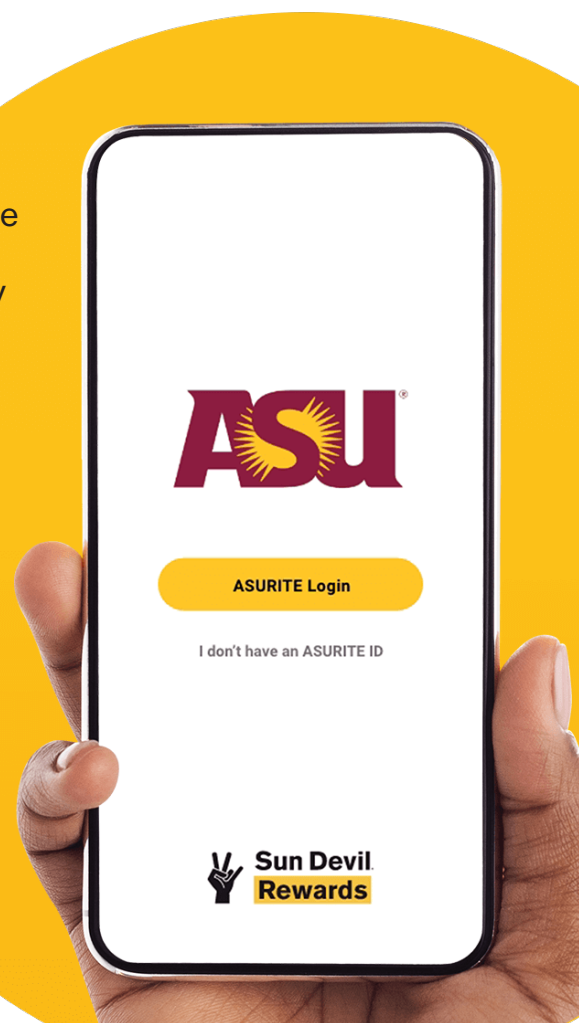
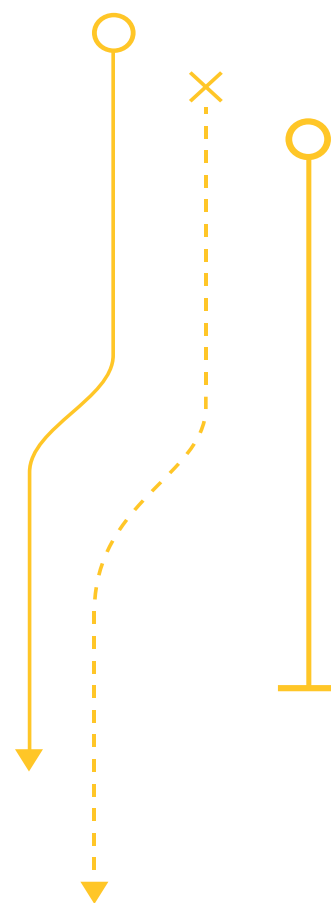
identity management systems that support the ecosystem of relationships that students and learners have throughout their lifetimes. Today, we support 10 million identities. In the next three to five years, that number will likely increase exponentially.

Likewise, the enterprise tools associated with adaptive learning, learning readiness, learning management, and machine learning AI systems for learning are significantly more robust and architected for hyper-scale to accelerate ASU's ambitious designs.

Mobile experience

Relatively few universities have chosen to 'own' their mobile app futures. Most universities' mobile presence is characterized by a bevy of disconnected, third-party apps that are rarely used by the institution to advance student engagement and success. As large and diverse as ASU has become, we remain committed to a highly personalized and regular series of engagements with students and learners throughout their relationship with the university.

Leveraging technology to achieve informed and just-in-time engagement is one of the central value propositions these past five years. From the admissions process through on-campus and online learning; to recreational and collegiate



fan experience to alumni and public access, the prospects of retention, persistence and lifelong relationship development is all tied back to the ability to engage.

Enterprise Technology, in partnership with ASU's Academic Enterprise led by the Office of the Provost, have spent more than five years blueprinting an engagement strategy focused on student success. One central element of this effort has been our process; we designed, built, and continue to iterate the ASU Mobile App. All the while, we've leveraged contemporary enterprise web services that afford unprecedented scale and differentiation and segmentation of the engagement strategy for learners in both messaging, prompting, nudging and hundreds of service options.

The same ASU Mobile App platform technology was used throughout the pandemic affording the university to continue to leverage the familiar ASU mobile app for daily health check attestations and just-in-time sharing of health care protocols. ASU continues to harness the app platform for students, alumni, prospective students and learners leveraging ASU's considerable portfolio of learning and public education content.

Extended reality

For over a century, dating back to Piaget and Vygotsky, if not earlier, educators and psychologists have pointed to the importance of cognitive development through discovery and experiential-based learning. The large industrial models of education characterizing much of the K-20 world for the past 100 years achieve scale, but are flawed in their design to advance adaptive and personalized discovery and problem-based learning.

Through the decades, visionary technologists pioneered the use of immersive environments, from Heilig and his sensorama project (1956); to Sutherland's mounted VR glasses efforts in Salt Lake City (1965); to NASA's virtual interface and simulator work (1980s). Such technological experimentation forged a path for a holy grail advancement in learning through contextual, discovery-

based systems. Aspirationally, by leveraging immersive technologies, the cognitive value of experiential learning could be achieved at scale.

Twenty years ago, forays into virtual reality for education, like projects in Second Life offered more robust and creative use of evolving technology. At ASU, we established a Learning Futures lab in 2018 to begin experimenting with a variety of mid- and long-range emerging technology trends with the potential to impact education. One of those areas was a next-generation investigation of immersive technologies. Dozens of experiments and small proof of concepts were incubated at Learning Futures.

One such seeded effort now known as Dreamscape Learn was the brainchild of President Crow. In ASU parlance, President Crow has long envisioned a "realm four" – a scalable and creative technology that would afford all learners to become science literate through a discovery-based pedagogy. Together with his partner Walter Parkes, faculty leaders, students and investors, President Crow has advanced the vision of a narrative-based approach to XR as the basis of discovery of science.

Powerful learning outcomes and delight are already evident in our biology offering engaging thousands of learners with half a dozen other science disciplines in development. ASU has nearly 20 other XR (Realm 4) projects underway from Architecture to Zoology.



Digital equity

More than a decade ago, a coalition of policy and technology leaders in universities, cities and federal organizations launched three major national initiatives all premised on the proposition that our mission universities were inextricably tied to the health and well being of our cities. US Ignite, Gig.U, and MetroLab Network were committed to city-campus partnership models to support thriving and resilient cities through the deployment of next generation digital infrastructure and the development of new applications of public value that could take advantage of those investments in digital infrastructure.

Important foundational work was achieved over the decade and more importantly a coalition of the willing and network of technology leaders and community activists remained engaged on the criticality of digital equity and inclusion. And yet, calls for improving the literacy, adoption and use of technology among the unconnected segments of our cities and rural communities were largely dismissed as unattainable and inappropriate policy creep for those advocating for forms of public investment to close the gaps.

Our experience during the height of the COVID pandemic made it abundantly clear that broadband is a must-have rather than a nice-to-have piece of public infrastructure. ASU and many other universities and colleges partnered with their communities to provide computing devices, mobile hotspot connectivity, extending 'to and through' models to connect community anchor institutions to households needing to get online for schools, health, housing, groceries, banking, and a wide range of public services.

In the largest investment to a higher education institution, Maricopa County has invested nearly \$35M in ASU and our network of private and public sector partners to provide connectivity, devices, support, and authentic community engagement to bring the underserved parts of the greater Phoenix region into the digital age.

Chatbots

Self-service tools and cost containment imperatives have long been one of the important tasks assigned to university CIOs and partners across the campus. At ASU, our work on Chatbot technologies is also informed by the challenge of significant scale and the aspiration of supporting the whole learner as an individual. As discrete and point solution chatbots were introduced by one of a dozen offices at the University, our Enterprise Technology dev/ops teams began working on the development of enterprise chatbot platforms.

Our parallel work in enterprise-scale engagement technologies including push notification and nudging technologies for the ASU mobile app made the addition of chatbot engines a natural. In relatively quick order we have introduced both text-based and voice-based chatbot technologies available to all of ASU.

While "human in the middle" is very much an option, we have found that tens of thousands of students prefer the bot interaction as a mode of dealing with the university. One example is our deployment of both text-based and voice-based chatbot technologies for financial aid support. A high-anxiety complex campus ritual, the tsunami of financial aid inquiries at the beginning of each semester easily overwhelms the capacity of our Experience Center to handle more than 5000 calls a day to support our 170,000 students.

Through collaboration, continuous process improvement, and the introduction of chatbot technologies and daily review of machine ingestion of cumulative data from multiple inputs through natural language processing, we have supported a much improved experience, peeling off as much as 50 percent of tier one calls with little to no marketing of the self-service offering. The enterprise chatbot technology is now utilized both within Enterprise Technology and across ASU for dozens of workflows.



Significant progress in emergent technologies

Distributed technologies

Beyond the hype and commercial implosion of financial instruments using blockchain, the maturation of distributed ledger technology offers a prime opportunity to support the needs of student mobility and transfer of learning evidence. Nearly 40 million Americans start but have not finished college. A third of all students currently enrolled at college will transfer at some point in their academic careers.

Evidence of learning across one's entire learning journey has been reduced to credit hours and a college transcript. There are dozens of other learner journeys that support leveraging a more robust technology and user experience to enable learners to share their digital learning wallets and a portfolio of the evidence of their learning both to other educational institutions as well as to prospective employers, friends, families, investors, leaders, and many others. Resigning ourselves to the anemic transcript is part lack of imagination, part deeply encrusted institutional inertia.

ASU has led the development of Pocket, a prototype of a learner digital wallet and portfolio. One of a handful of such products in this emergent space, Pocket has inspired leaders to understand that the use of distributed ledger technologies provides for immutable evidence and auditable trail of issuance of a wide range of learning outcomes.

Moreover, given its digital nature, machine learning makes it possible to begin to develop algorithms to support workforce development

needs that combine evidence of learning, skills and competency frameworks with not only onramps to the workplace but also, over time, recursive feedback from the workplace back to the institutions offering education and training content.

In addition, ASU has orchestrated efforts at both governance and technology to support an emergent set of standards and an engine to support interoperability in the space of trusted learner technologies that include distributed ledger technologies. The Trusted Learner Network is a broad coalition of schools, associations, technology providers, and federal and state agencies working together to advance an accelerated go-to-market set of options as these technologies move from minimally viable to early commercial releases.

Smart region

Most challenges facing humanity do not have convenient geographic boundaries. Smart transportation, environmental sensing technologies, and housing development, for example, are all part of complex geographic-spanning ecosystems. For nearly two decades, efforts to map and advance these and other areas of social policy have led to relatively small-scale pilot projects in the form of a smart intersection, smart blocks, a smart corridor, a smart demonstration rural farm project or a school or library on a reservation getting connected.

In a wide ranging partnership with public and private stakeholders and solution providers, ASU Enterprise Technology team has advanced the value of regional-scale engagement and design work. At the same

time, as we grow capacity for regional scale innovation, we have also continued to provide intentional and pragmatic programmatic offerings to Cities throughout the region through the work of the ASU Cloud Innovation Center. ASU is also leading broad approaches to mega-scale regional scale efforts including the Ten Across initiative being led by the University-City Exchange and the Global Futures Lab, including a series of scientific and policy efforts focused on the Colorado Basin.

Area for greater impact and focus

Large-scale entrepreneurship

University faculty are autonomous and constrained; powerful and vulnerable; innovative at the margins yet conservative at the core; dedicated to education while demeaning teaching devoted to liberal arts; and powerfully vocational and non-profit in their sensibilities while being opportunistically commercial.

Since 1980 and the enactment of Bayh-Dole, universities inclined to leverage that commercial prowess have engaged in enterprise-scale entrepreneurship. Through licensing, royalties and other means, technology transfer and commercialization operations have been, to varying degrees, able to support go-to-market approaches to IP created on campus by faculty and their labs.

Today, an ecosystem has developed around tech transfer and commercialization operations. The templates for distributing financial gain that the university might enjoy through a liquidity event are now reasonably consistent. Some of the distribution remains at the university, some to the inventors and their labs and oftentimes some funds get distributed to their department or academic homes.

Like their faculty colleagues, IT professionals at our universities are a source of potential commercial value-creation through their



discovery, code development and product design. Like faculty, the university owns all the IP generated by all salaried staff. Universities are generally not well versed in commercializing IP created by their IT salaried staff, with some notable exceptions.

There is significant untapped opportunity to attract world-class technology personnel to help universities with developing solutions that meet both local campus needs as well as potentially broader market adoption. While competing with the market on salary and other traditional compensation is not easy for most universities, leaders must consider how universities could reward professional IT staff who generate or contribute to product creation if and when the university realizes a liquidity event.

Whether among the faculty ranks or the engineering and IT professionals who lead technical efforts on campus, the competition for talent is real. Large-scale and sustainable entrepreneurial opportunities are entirely possible and indeed necessary if universities want to own their destinies when it comes to



Considerations for social impact at scale: What's next

It's not constructive to devise a strategy confined to the walls of a single institution and certainly not a single department or unit within a single institution. What were the catalyzing events with a large impact across communities during the time frame?

The 2018-2022 timestamp is one that will go down in the annals history for a number of reasons, characterized largely by the largest global health pandemic in a century and growing inequity and social strife within our nations and between States that have many fearing millennialism and doom. Antifragile organizations committed to not only surviving but coming out stronger in advancing their education mission are, arguably, more important now than ever before.

The world is not the same as when we met it in 2018, when I first walked across our campuses in Metro Phoenix. And, it's our responsibility to plan for yet another different world that will emerge in the next five years. Better yet, an opportunity for us to shape it and accelerate and advance our vision of a more inclusive and educated society.

When the sea is always changing, a North Star becomes more important than ever. At ASU, that constant is our Charter of inclusion. Traditional university models have emphasized the wellbeing of the institution; we've charged ourselves with caring for our communities and expanding pathways of access and excellence.

Values lead effective technology strategy is at the core of what has become a deeply personal and human moment in many personal lives and in the broader society. What we value during times of crisis and celebration is genuine connection – and new pathways to solve our next challenges.

At a recent retreat inspired by a call to action from President Crow, leaders across ET had an opportunity to define and present the future they wanted to mold, with the notion that we could reverse engineer the vision into reality, starting today. As we consider the next five-year cycle at ASU and ET, we must take into consideration a set of values-based outcomes that reflects the rich tapestry of voices of our communities.

1. Providing on-demand support across working, learning and living.

As ASU scales to hundreds of thousands of students and millions of learners in our ecosystems, through substantial investment in AI technologies, ASU can equip every student and every learner with their own virtual creative partner. More than a chatbot, the virtual creative partner is personalized for and by students to meet their own needs.

2. Empowering flexible and dynamic identities.

To fully realize the promise of a universal and lifelong learner, we need to design and execute on identity and access management solutions that evolve with a learner's identity over time – growing as they grow within ASU and beyond. An advanced authentication approach offers seamless access to the resources and services.

3. Championing the most vulnerable populations in their learning journeys.

ASU must leverage real-time data analytics to increase graduation rates for the most at-risk, vulnerable student populations. By tracking micro-engagements - including course changes, website visits, and more – we can apply predictive analytics to increase student success, specifically for our most at-risk and vulnerable student populations.

4. Anticipating the needs of incoming generations.

It's our responsibility to understand the behaviors of Gen Z and incoming generations, with a lens toward the technology implications. The apps they frequent, like Discord for example, collect far less user data than ad-based alternatives and support the shift towards managing personal security, privacy and trust. Genz is also a social-first generation, popularizing platforms like TikTok and Whats app; they are constant participants in game-based environments (see: Roblox and Minecraft) with exciting initial forays into broader ecosystems like the Metaverse. To meet their needs head on and include their voices in the process, ASU must enable treasury management, contribution and reputation, governance and voting, knowledge management, access and identity, and content/products.

These broad arcs of our collective leadership vision now call for ambitious and actionable goals that will chart our contribution to the ASU Enterprise over the next five years.

Top social impact considerations for IT strategy



Providing on-demand support across working, learning and living



Empowering flexible and dynamic identities



Championing the most vulnerable populations in their learning journeys



Anticipating the needs of incoming generations

Call to action to envision the next five years

Charting the future of ASU's Enterprise Technology means both recommitting to our values and taking a comprehensive view of our communities and their evolving needs. As we set out to shape the next five years – one sixth of the span of a generation – these are the conditions we hope to co-create and reflect in our strategy:

1. Eradicate hierarchical enterprise IT models.

Top-down, hardened and bureaucratic models of organizing enterprise IT are destined for obsolescence. This does not mean legacy culture and ways of organizing will willingly cede to flatter and more cross-matrixed orchestration of IT work. Enterprise Technology at ASU has been moving towards a more fluid, inclusive state as an organization – one that can easily change shape to meet the pressing needs of our community. Many IT professionals are attracted to the opportunity to advance their contributions with greater autonomy and distributed authority. Regular, reliable and repeatable interactions with customer sets can also lead to greater customer satisfaction, productivity, efficiency and the deeper appreciation of humans working together. How do we prepare organizations to make quick pivots and solve pressing challenges that arise?

2. Nurture a culture of belonging.

This is the heart of strategy and it's strategy with heart. Belonging is an outcome that's hard to measure, but we know when people stay engaged it's because they feel they're somewhere worthwhile – and that they're someone worthwhile. From our Positive Core to our leadership principles and active giving back communities, iterating and building on our foundation is key. We have resisted a chief caring officer for our organization in favor of a community of practice that we call our Cultural Weavers. Nearly 25% of Enterprise Technology at ASU has participated in our community of practice. How do we take our community to the next level, together?

3. Bolster learning at scale via generative artificial intelligence.

Whether it's using a generative chatbot to rewrite the ending to Moby Dick or deploying bots to address commonly asked questions, the potential use cases for AI are limitless. Most exciting are the opportunities to reach learners with the resources they need, when they need them. The potential of evolving our learning journeys into guided experiences with as little or as much engagement with augmented intelligence is an unbelievable opportunity and responsibility. The field has work to do in terms of ethics and eliminating bias over the next five years and beyond. How can we responsibly apply the best of AI to support more learners?

10 calls to action for IT strategic planning

- 1 Eradicate hierarchical enterprise IT models.
- 2 Nurture a culture of belonging.
- 3 Bolster learning at scale via generative artificial intelligence.
- 4 Support graduation rates, at scale, for the most vulnerable populations with real-time analytics.
- 5 Hyper-scale identity management for students and learners.
- 6 Improve STEM learning with extended reality and advanced adaptive technologies.
- 7 Establish technical scaffolding for digital trust, at scale, for ASU and beyond.
- 8 Advance our commitments to social embeddedness with principled innovation and leadership.
- 9 Support technical training and leadership development for ASU and our partners.
- 10 Engage new strategic technology collaborations while sustaining existing efforts.

4. Support graduation rates, at scale, for the most vulnerable populations with real-time analytics.

One of two students in the U.S. start but do not finish their college degree. Forty million working adults have begun but have yet to finish their university degrees. Data helps us understand how to provide better help to students and learners; being able to provide the just the right interventions at the just the right moments can be the difference between someone dropping out and feeling they have the support to continue and thrive. Moreover, a values-led university will embrace principled innovation that affords learners, wherever they are in their life journey, the opportunity to interact with and realize value in their interactions with universities that genuinely believe in service at scale. What smart data solutions can we provide?

5. Hyper-scale identity management for students and learners.

As the treasure trove of university digital resources continues to expand, there is a need to simplify and safeguard the ways individuals access those resources. Enterprise technology organizations have struggled for decades to unlock value while maintaining trust relationships through the rigid ways we require learners to share their personal information with us. Federated models of identity management that meet learners where they are and grow in nuance as trust is built hold great potential to help institutions realize more flexible models that improve access for all. How are we ensuring a seamless learning journey for all?

6. Improve STEM learning with extended reality and advanced adaptive technologies.

ASU has already made great strides with Dreamscape Learn, enabling an immersive biology curriculum – among many other subjects. The adaptive biospine also shows how personalizing feedback and making it instantaneous improves learning outcomes. What we have learned is that narrative-based learning is very different from the industrial models that have guided instruction at scale for nearly a century. We will need to get better at understanding how to construct compelling



narratives that invite learners to chart their own learning journeys with greater rigor for scalable personalized and flexibility to meet students and learners where they are as they navigate hybrid environments and work and school. What new opportunities will build upon the early promises of XR and adaptive tech?

7. Establish technical scaffolding for digital trust, at scale, for ASU and beyond.

The term digital trust has entered the mainstream of cybersecurity and technology operations strategy. In 2020, we welcomed ASU's first ever Chief Information Security and Digital Trust Officer – Donna Kidwell. Over time, our enterprise strategies need to be guided both by a deep understanding of the pernicious nature of the information security landscape as well as designing and practicing stronger human skills and systems to support those human skills that are embedded in earned trust relationships. With values of transparency and privacy by design embedded in our strategy, how are we reflecting these principles comprehensively across our technical trust infrastructure?

8. Advance our commitments to social embeddedness with principled innovation and leadership.

It's our social responsibility – and ingrained in our charter – that the knowledge we create at ASU must be accessible and used to help the most underserved communities. This is exemplified by ASU's Learning Enterprise. Within our enterprise technology organizations we have an opportunity to leverage our technology competencies to also advance the digital destinies of the communities around us. ASU's leadership in partnering with our communities in a portfolio of digital equity and inclusion efforts is a replicable and scalable effort that universities can advance to insure our relevance to the education, health, and socio-economic needs of our cities and communities. Whether we're strategically partnering with colleges and schools, businesses or community organizations, how can we reach more people and with greater precision, together?

9. Support technical training and leadership development for ASU and our partners.

We know there are more technology jobs that need to be filled than there is talent to fill them. Plus, the skills needed for the future are changing – in real-time. This is vital to address in IT strategy. Over the past few years, ET has engaged in executive education, capacity building and certifications with the Learning Enterprise. We also launched the Technical Upskilling Program in addition to the T4 Leadership Academy to foster a culture-forward social impact mindset for technology leaders. How can we proactively build the IT workforce of the future?

10. Engage new strategic technology collaborations while sustaining existing efforts.

Cross-sector collaboration is key to creating impactful scalable solutions and opportunities. Designing partnerships with industry leaders that are strategic, advancing multiple enterprise goals involves building trust relationships. Understanding various competing goals including short term needs for industry as we construct partnerships are as much art as they are science. ASU has a strong track record. At ET, in partnership with the rest of the ASU Enterprise we're building intentional relationships with AWS, Cox, Verizon, Zoom, Arista, Google, Apple and others. Where are our blind spots and untapped opportunities with existing collaborations, and what new ones can advance access, equity and engagement – at scale?



Fall 2022

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Fall 2022 semester starts on Thursday, August 18

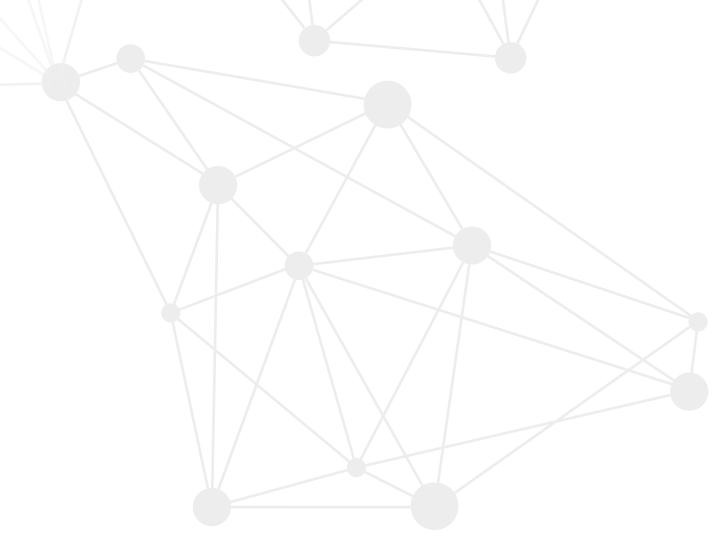
Fall 2022 semester



A final word about the future of enterprise technology leadership

More so than most executives, in order to be successful enterprise technology leadership must be able to align in very consistent ways with the broader culture of the organization within which we operate and advance our portfolio of efforts. There is no more important a role for leadership than the privilege of working in education.

The ambition of technology leadership is not only getting a seat at the table but also earning the right to remain at the table through balancing operations and opportunity that are guiding the most strategic initiatives and designs of your university or college going forward.



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