

Flexibility, Agility, and the Three Dx Shifts: Culture, Workforce, and Technology

by Sean Burns



EDUCAUSE

Spectrum
ENTERPRISE



Table of Contents

1 Introduction

2 Culture, Workforce, and Technology

3 Conclusion

4 Methodology and Acknowledgments

5 Appendix — Case Studies

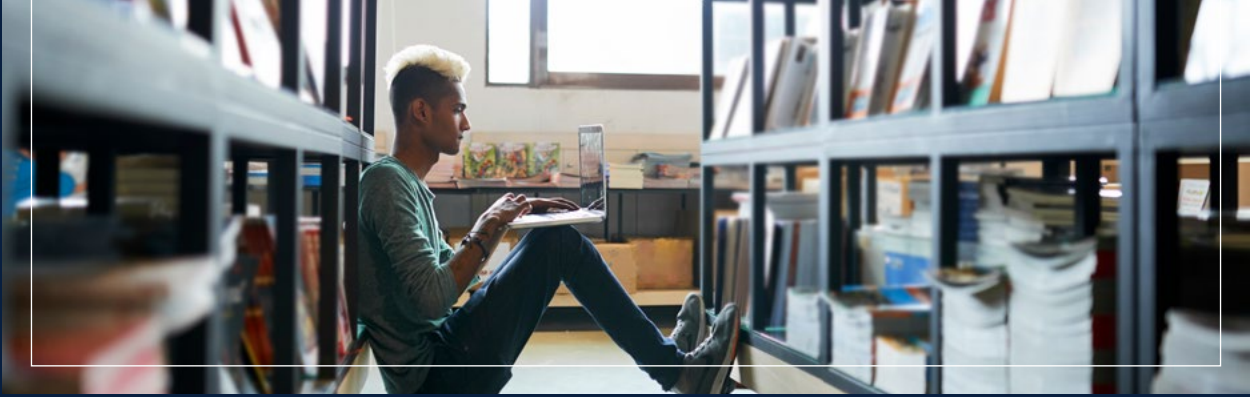
1 Introduction

Institutional nimbleness and adaptivity are crucial for success in today's higher education landscape, especially as institutions make the many cultural, workforce, and technology shifts needed to digitally transform their institutional operations, value propositions, and strategic directions. In the past two years, **digital transformation has accelerated** in higher education as institutions have had to manage the effects of the COVID-19 pandemic. Even as they engage more and more in digital transformation (Dx), many institutions still face major barriers to those efforts, the most notable being issues of insufficient cross-institution planning and coordination. Many of these barriers can be managed or overcome by making IT processes more versatile, allowing for rapid adaptation to changing needs.

Even before the pandemic, many institutions were working to reevaluate their IT culture and the way IT interfaces with other functions across campus. If an organization can make this type of change, it can improve its workforce skills and capacity, as well as shorten turnaround times for new projects and added features. Developing a more adaptable approach can also help win over stakeholders across the institution and ultimately change institutional culture outside IT.

EDUCAUSE and **Spectrum Enterprise** partnered to highlight institutions that have been engaging in digital transformation, specifically institutions adept at change management that have built flexibility and agility into their IT processes. This summary report of the case studies highlights the ways that three institutions—Arizona State University, Universitat Oberta de Catalunya (Spain), and Southern Methodist University—have built versatility into their IT systems and the ways that can contribute—and have contributed—to Dx shifts in culture, workforce, and technology.





Key Findings

- **Creating clear organizational goals sets your transformation up for success.** Once goals and objectives are well defined, the organization has a clear direction forward toward building digital environments that are agile, flexible, and aligned with institutional strategy.
- **Making a big organizational change can be scary, but it's easier when you create a positive and proactive culture.** When communities and values are in place for staff, they will feel more comfortable engaging in collaboration and communication.
- **Putting resources into shifting IT culture, workforce, and technology can improve process across the institution.** The resources and processes developed during digital transformation naturally bleed into other institutional departments because IT collaborates with so many units and stakeholder groups.
- **Cross-institution collaboration and planning can be difficult but are vital to transformation.** The creation and maintenance of cross-unit partnerships can be more difficult with a remote workforce, but efforts to ensure that partnerships survive and thrive are essential to meaningful and lasting Dx.

Digital transformation involves coordinated shifts across all three components of culture, workforce, and technology at the institution. The case studies in this report highlight ways in which institutions might excel at each of these three Dx shifts: Arizona State University has made an impressive culture shift; Universitat Oberta de Catalunya in Spain has democratized its IT governance and the workforce involved in IT; and Southern Methodist University has been reimagining data and technology access for its staff.

Learn More



Access additional materials, including an infographic and case studies, on the Spectrum Enterprise Dx [Research Hub](#).



To discover more about Spectrum Enterprise solutions for Higher Education, visit enterprise.spectrum.com/HigherEd.

2 Culture, Workforce, and Technology



CULTURE

How Flexibility and Agility Contribute to Dx Culture Shift

A Dx-ready culture is a focused one. It is zeroed in on the institution's goals, adept at change management, and able to rapidly adapt to changing needs. And while creating an institutionwide culture that embraces proactive change is possibly the most difficult shift to achieve, it is crucial to Dx. Leaders need to encourage an openness to new ways of thinking and working and an aptitude for more efficient, data-informed decision-making.

Overall, as institutions embrace cultural transformation, they are better able to meet the needs of students, faculty, and staff with accelerated innovation. Leadership is changing perspectives on remote-work policies, and new teaching and learning models are emerging. As leadership embraces and promotes culture change, it improves institutional operations by breaking down some of the barriers to collaboration between different units and stakeholder groups across campus.

Case Study



Highlights of Arizona State University's Culture Shift

[READ THE ASU CASE STUDY](#)



Prior to its cultural transformation, the IT organization at Arizona State University (ASU) was mostly hidden in the “back office,” seen only as a service-oriented staff sitting behind the help desk or equipment rental counters. Users were working with old technology systems to create tickets to get specific, one-off data sets or functionality. IT innovation and value to organizational goals were very difficult to showcase. Staff and users were in a comfortable position but were not ready to deal with the rapidly advancing technology needs that had been arising in recent years. The University Technology Office wanted to become a more **collaborative organization**, creating a culture that embraces proactive change to help respond to the rapidly evolving needs facing IT, with new technologies coming down the line such as AI, digital interfaces, augmented/virtual reality and more.

The leaders behind the transformation plan believed they needed to help ASU become tech relevant by morphing the IT project management processes into a modern business model capable of dealing with rapid changes as they occur in the tech world. They hired a new chief culture officer to help the rest of the institution trust the IT teams as they began to try new things and to help nurture those relationships through inevitable mistakes or missteps. They built **Positive Core Values** and **Leadership Principles** and shared them throughout the ASU enterprise. For end users working in the new system, they focused on positive messaging. This messaging followed the core leadership principles, letting users know that testing and working with the new system would not lead to heads rolling if mistakes were made, but rather that they would learn from those mistakes and continue to highlight successes as they came in.



WORKFORCE

How Flexibility and Agility Contribute to Dx Workforce Shift

Institutional versatility comes partly from a restructuring of the workforce to adapt to the rapid, ongoing challenges that IT units face today. Leaders must continue to prepare for changes to existing jobs and the emergence of new roles and necessary skill sets across the entire higher education workforce.

As institutions embrace workforce transformation, the changes are resulting in a blending of roles and blurring of boundaries between IT and academic/administrative/research areas. Leaders are supporting expanded hiring searches and hiring for new types of positions that support digital transformation efforts. As workforces are restructured, institutions can more easily explore and implement collaborative leadership and organizational models that better support institutional missions and strategic plans

Case Study



Highlights of Universitat Oberta de Catalunya's Workforce Shift

[READ THE UOC CASE STUDY](#)

At the Universitat Oberta de Catalunya (UOC), officials started implementing and improving on a new IT strategic plan in 2014 because their IT leaders and staff wanted to improve operational governance and the workforce involved in IT project management. Through this planning process, though, they learned that the academic and administrative top and middle management could not easily participate in decisions about which IT projects should be prioritized, given their limited knowledge of the IT unit's portfolio and work. Academic and administrative management could also not easily give feedback and updates on strategic plans before results were reported. Communication and connection between IT business areas and academic staff was lacking, and IT leaders saw a chance to build stronger relationships between IT and other staff, as well as develop better processes for portfolio management.



UOC used this opportunity to design and execute three phases of transformation, with a selective process for the investment of IT time and effort based on the input of academic and administrative committees. Decision-making has become more decentralized with the creation of these diverse committees, involving staff from departments across the institution who bring local knowledge to the committee discussions. The committees integrate the local knowledge with the strategic goals of the institution to provide recommendations for IT resources and investment in projects. Additionally, to address some of the communication and execution issues that arose from the waterfall approach in IT, UOC adopted and adapted the basic **Scaled Agile Framework** to help ensure more responsive and collaborative program management. Altogether, the shift in IT governance and workforce, through improved program and project management, has led to better, more agile development and growth at UOC.

TECHNOLOGY

How Flexibility and Agility Contribute to a Dx Technology Shift

A technology environment that enables Dx is characterized by enterprise architecture that is adaptable and aligned with institutional strategy. IT leaders must adopt innovative practices and create digital environments that are responsive enough to address the rapidly changing needs of staff and students.

The creation of digital environments leads to better access and use of data by administrators and researchers at higher education institutions. Additionally, digital and cloud environments can help foster a more agile development process, allowing for quicker deployment and more regular feedback from users. Leaders need to focus on enabling digital versatility to support and grow the various emerging opportunities that provide a better value proposition for the institution.



Case Study



Highlights of Southern Methodist University's Technology Shift

[READ THE SMU CASE STUDY](#)

IT leaders at Southern Methodist University (SMU) saw an opportunity to combine centralized IT with the school-based IT organizations across campus into a single IT organization, which improves normal operations and business processes. In addition—and most important to the institution's strategic plans—the newly consolidated Office of Information Technology (OIT) could position IT tools, networks, infrastructure, and people to more rapidly and professionally support the burgeoning and ever-changing demands of computational researchers across such disciplines as data science, the Internet of Things, and high-performance computing.



As OIT continues to develop to help the institution's varied departments achieve objectives through processes, people, and technology, IT leaders have focused on standardization and consistency—characteristics important in preparing for larger Dx efforts. One of the main methods employed is the development of a data warehouse with a cloud-first approach for small departmental applications while deploying on-premises large enterprise applications. This has made the consistent integration and updating of technologies easier for both the IT and user side, especially because IT has also concentrated on creating and maintaining documentation for tech services. The entire workflow process is now becoming more standardized, which has been helping both IT staff and users.

Other Technologies That Meet Students Where They Are: Networks and TV

As part of this research, two other institutional members were interviewed about technology changes on their campus: Derek Lustig, Director of Infrastructure & System Services at Hobart and William Smith Colleges (HWS), and Curtis White, Vice President of Information Services at St. Mary's University (TX).

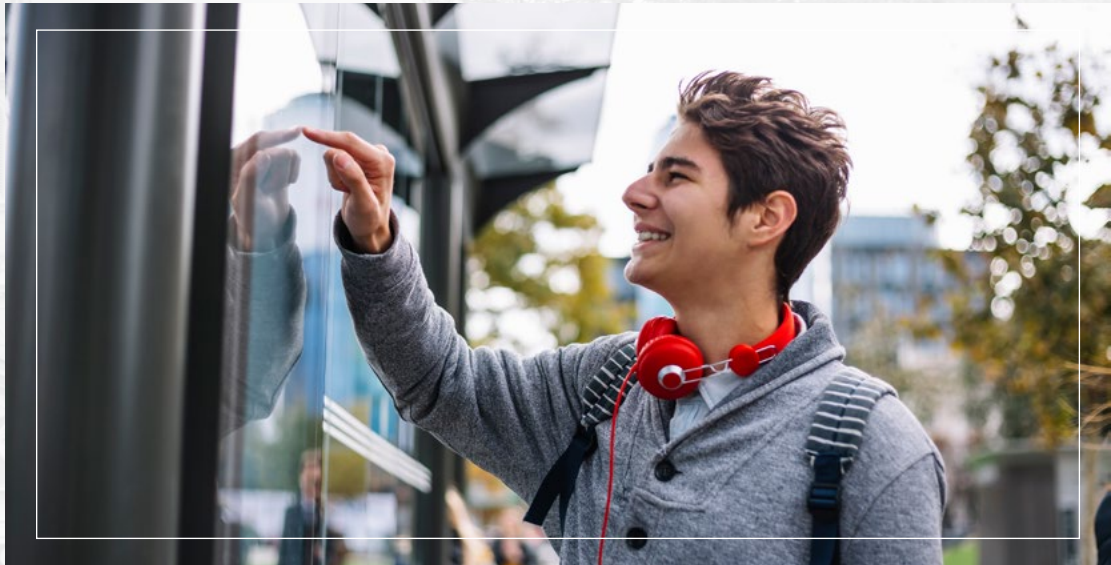
At HWS, Lustig has been managing infrastructure and system services for an institution that, he reported, two years ago “would have never planned to have remote instruction.” Their system struggled with old technology and minimal network infrastructure across campus. And as at many institutions, the pandemic changed expectations for HWS, with students wanting and requiring network and TV access anywhere on and off campus, and with many on-campus sites having no hardwired connections. HWS needed flexible hardware and software to provide content to its students.

Meanwhile, at St. Mary's, White was dealing with researchers interested in cryptocurrency, health care data, and other big data sets. The student body includes large numbers of Hispanic and first-generation college students, and the institution is working to incorporate access to Spanish-language television programming, in addition to other cable network options, as part of its services for students.

Both institutions worked with Spectrum Enterprise to provide various ways of accessing television programming to their students. White reported that this partnership was instrumental in connecting St. Mary's with TX.Learn.net, a high-speed research network that allows agile, high-bandwidth peer links with other Texas institutions. HWS and St. Mary's are working hard to provide options for access to their students, meeting them where they are, whether that's on or off campus.



3 Conclusion



Student, faculty, and staff needs continue to change and evolve, and if we follow the lead of institutions like ASU, UOC, and SMU, those needs will be met more effectively as institutions engage in digital transformation, making these shifts a priority. A restructured and decentralized workforce is more capable of cross-institutional collaboration and communication. Digital environments and cloud-based technology can provide faster access to data and tools for more users. And creating a positive and open culture can lead to new types of thinking and innovation.

The inclusion of flexibility and agility in digital transformation shifts has been instrumental to the success of the exemplary institutions in this report. The pandemic has had an effect on digital transformation, both creating more opportunities for Dx and necessitating more Dx shifts. As IT leaders continue to engage in digital transformation in higher education, they need to look at ways to incorporate versatility into new policies and processes to ensure their institution can take advantage of new opportunities, as well as meet the changing needs of students, faculty, and staff.

4

Methodology and Acknowledgments

Interviews were conducted with eight participants including faculty, IT leaders, and a chief culture officer from each of three institutions that submitted Dx proposals for the 2020 **EDUCAUSE** Annual Conference: Arizona State University, Universitat de Oberta Catalunya, and Southern Methodist University. Interview questions focused on the challenges and opportunities institutions had as they engaged in digital transformation, as well as the process, outcomes, and lessons learned. Interviews were conducted virtually and lasted between 30 minutes and an hour, with two rounds of interviews conducted between April and June 2021.

Acknowledgments

I would first like to offer special thanks to Spectrum Enterprise, especially Mark Buchholz, for making this research possible and for providing helpful insight and assistance throughout the project. I would also like to thank all the interviewees who spent their very valuable time in interviews providing insights based on their hard work and experience. I would also like to thank the **EDUCAUSE** staff members—Jim Burnett, Carolyn Colman, Kate Roesch, Mark McCormack, Christopher Brooks, and Jamie Reeves—who all continue to play an important role in the creation and publication of my research projects. As always, Gregory Dobbin and the publication team provided their amazingly eloquent and timely copy edits and other editorial suggestions, while Connie Ferger was instrumental with her very impressive content management and marketing skills to support the release of the research materials.



5 Appendix – Case Studies

Learn More



Highlights of Arizona State University's Culture Shift

[READ THE ASU CASE STUDY](#)



Highlights of Universitat Oberta de Catalunya's Workforce Shift

[READ THE UOC CASE STUDY](#)



Highlights of Southern Methodist University's Technology Shift

[READ THE SMU CASE STUDY](#)

Dx through Culture Change at Arizona State University:

An EDUCAUSE Research Case Study

by Sean Burns, Chris Richardson, and Christine Whitney Sanchez

Institutional Profile

Founded in 1885, Arizona State University (ASU) enrolled 125,000 degree-seeking students for the fall 2021 semester. With six locations across its large, distributed campus, ASU offers more than 350 academic undergraduate programs and majors, with more than 450 graduate programs and certificates. The educational experience at ASU is an immersion in a living-learning academic enterprise—a mindset focused on innovation and entrepreneurship, and a deep commitment to serving the public interest during a time of rapid and complex societal change. Nationally and internationally acclaimed, ASU consistently ranks among the very best in nearly every critical measurement of student success, outcomes of groundbreaking research, and impact in the communities it serves. *U.S. News & World Report* ranks 79 ASU degree programs in the top 25 in the country, including 30 programs ranked in the nation's top 10. ASU has also garnered the ranking of #1 most innovative university in the country, six years consecutively. Learn more at the [New American University](#).

The Challenge/Opportunity

Being nimble and adaptive is crucial for success in today's higher education landscape. Several years ago, the University Technology Office (UTO) at ASU saw an opportunity to organize differently to build agility into the IT culture and the ways IT interfaces with other ASU functions across the university. If an organization can make this change, it can improve its skills capacity as well as turnaround times for new projects and added features. ASU leaders felt this approach could win over stakeholders and ultimately change culture outside IT as well.





Prior to its cultural transformation, ASU's old IT organization was mostly hidden in the "back office," only being seen as a service-oriented staff sitting behind help desk or equipment rental counters. Users were working with old technology systems to create tickets to get specific, one-off data sets or functionality. IT innovation and value to organizational goals were very difficult to showcase. Staff and users were in a comfortable position but were not ready to deal with the rapidly advancing technology needs that had been arising in recent years.

UTO leaders wanted to become a more **collaborative organization**, creating a culture that embraces proactive change to help respond to the rapidly evolving needs facing IT with new technologies coming down the line such as AI, digital interfaces, and augmented/virtual reality. The new chief information officer (CIO) saw these new tech needs and brought a fresh perspective and plan to ASU that created the opportunity to focus on investing in new and varied capabilities for the IT system. He wanted IT to approach projects and needs with a new lens, breaking through the traditional IT mindsets, instead focusing on how to try to fix problems, solve challenges, and create new solutions. In that process, the leaders wanted to focus not only on hard IT development skills but also on skills of culture and design to enhance communication, engagement, and collaboration across the institution. The goal was to create and scale IT cloud solutions that are ASU-centric, serving end users, especially the students.

With opportunities to build more of its own solutions, engage more stakeholders across campus, and effect widespread cultural change, UTO was ready to flatten the organization and focus on a new IT model that empowers users and IT staff with a new IT organization, named UTO 2.1.



Process

The move to a flatter and more agile IT was led by the new CIO, who co-opted vice provosts and other leaders at the highest levels across campus. He knew that a positive, open, authentic, and connected culture was essential to the success of this new organizational structure, and so he supported the hiring of Christine Whitney Sanchez as UTO's chief culture officer (CCO). With this team of high-level thinkers and planners supporting the desire for change, ASU was ready to tackle full-scale digital transformation.

Early on, a lot of the work was led by and focused on IT as the team concentrated on creating a new cloud-focused infrastructure. They started with a small team of tech-capable folks: a key data architect, a project manager, and security and operations staff to help set up a more flexible and agile cloud system and shift away from the old computer platforms that had been standard since the early 2000s. Staff were comfortable with this old platform because they knew how to run it, so convincing them to manage and support the change to a new system is where some of the cultural work started to come in.

The leaders behind the transformation plan believed they needed to help ASU become tech-relevant by morphing the IT project management processes into a modern business model capable of dealing with rapid changes as they occur in the tech world. They used the cultural skills of their new CCO to help the rest of the institution trust the IT teams as they began to try new things and potentially make mistakes. They built Positive



Core Values and Leadership Principles and shared them throughout the ASU enterprise. For end users working in the new system, they focused on positive messaging. This messaging followed along with the core leadership principles, letting users know that testing and working with the new system would not lead to heads rolling if mistakes were made, but rather that they would learn from those mistakes and continue to highlight successes as they came in.

To help emphasize the successes of the new IT development system as the first apps and services were developed and deployed, the IT team ensured visibility to leadership, users, staff, and faculty. For example, the ASU mobile app was a large-scale project, so they created a cross-functional development team, with buy-in and feedback from four areas of the provost office along with several shared services and business services across campus.

IT made sure they continued to work with other leaders outside tech at the institution to develop and sponsor projects as they created new projects. The involvement of nontechnical sponsors is purposeful and ensures that each project has a clear, nontechnical vision for why they need to do the project and what value it can provide. This creates solidarity between IT and the sponsor, as well as clarity during the presentation to sell the project to the president or other leader for approval. Also, without sponsorship, IT can too easily go back to being an insular department. IT coming together in these businesslike partnerships helps define sprints and goals and leads to much better project outcomes across the organization.



Outcomes and Lessons Learned

It's scary to completely make an organizational change like this, but it's easier when you create a positive and proactive culture. The CCO and other ASU leaders have worked to build the “organizational soul” of ASU founded on a culture of trust so that staff believe it when they hear leadership tell them they are empowered to make decisions. As the large-scale digitization began, the CCO worked in parallel on culture, designing a community of practice within the organization focused on culture needs. In fact, ASU reported that many staff members who left the organization in the past several years came back because they missed the culture and the trust that had been developed. The specifics are difficult to define, but with the community and structures the CCO has put in place, staff feel that there is more responsibility for behaviors and are more comfortable bringing up any issues if things get tense or uncomfortable.



If you're building your tools and apps, invest in user experience research. ASU has one of the largest engineering schools in the nation, and ASU offers those students the opportunity to be part of the IT development and product testing team as user experience (UX) researchers and subjects. Initially, ASU invested 1.5 FTEs in UX, but that has grown to 10 FTEs now, building design mock-ups that students can test or that internal stakeholders can see and provide feedback on before development is complete. This helps lower waste and lets the teams test potential features to see how viable they are. Additionally, this growth of researcher users and subjects has benefited other areas of the campus as well. Groups such as the Council of Student Presidents now solicit feedback from this group of up to 2,200 students willing to take remote surveys or participate in in-person testing. This type of user experience researcher provides a level of intimacy with institutional nuance beyond what almost anyone else could provide.

Development work is reusable and can reduce time to completion for future projects. A lot of initial work is required to move systems to the cloud or develop a new system or app, but once that initial work is done, economic paybacks are available down the line. Baseline systems can be reused for new projects, and participating in committees and conversations with stakeholders and users leads to experience developers can pull from for their next project. As a result, instead of taking one hundred percent of development time for the next project, ASU has reported that subsequent projects might take half the time, and then a third of time the next time around. And the fact that they run their systems in the cloud means they can test new features and functions in existing apps more quickly, also allowing them to spend more time engaging with customers. They have a project management system where they can have an easy launch but also just as easily a pullback if there are issues. All these aspects of the new cloud system lead to quicker time to project completion with each subsequent project.



Where to Learn More



For more information, visit the [UTO Arizona State University](#) website or reach out to any of the authors.



Access additional materials, including an infographic and case studies, on the Spectrum Enterprise Dx [Research Hub](#).



To discover more about Spectrum Enterprise solutions for Higher Education, visit enterprise.spectrum.com/HigherEd.

EDUCAUSE

Spectrum
ENTERPRISE

Dx through Workforce and Governance Shifts at Universitat Oberta de Catalunya: An EDUCAUSE Research Case Study

by Sean Burns, José-Ramón Rodríguez, Eva P. Gil-Rodríguez, and Daniel Caballé

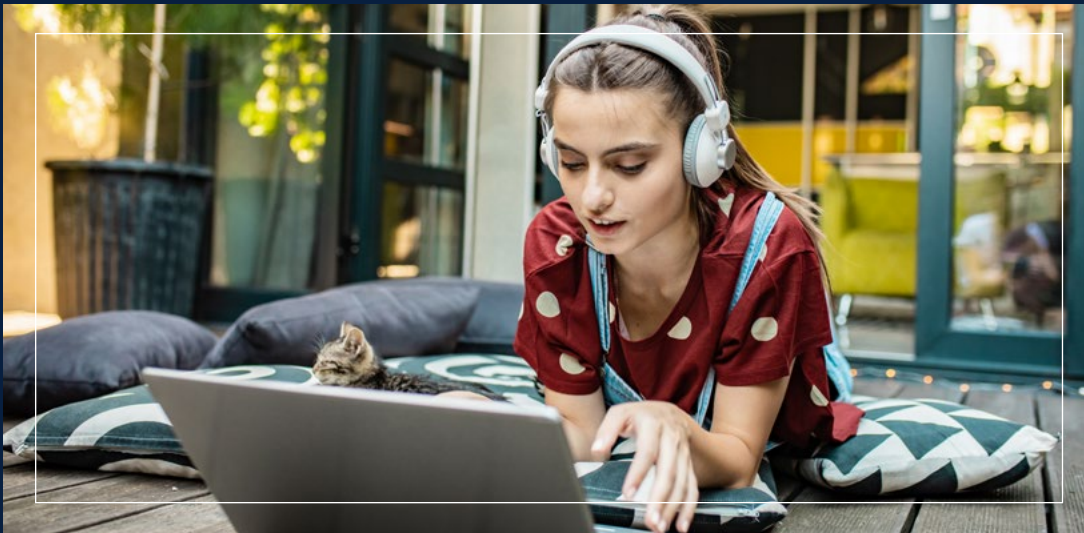
Institutional Profile

The Universitat Oberta de Catalunya (UOC) was created in Barcelona in 1994, and teaching began in 1995, with 200 students. It was the first university ever to run exclusively online, including the whole teaching and learning process. With a community spanning more than 142 countries and over 200,000 individuals including professors, tutors, 77,500 students, and more than 89,300 graduates, it is now one of the biggest universities in Spain. UOC offers lifelong learning and works to improve and increase global access to higher education.

The Challenge/Opportunity

In the context of higher education, digital transformation (Dx) goes beyond integrating new technologies in the teaching and learning process, with impacts on other fundamental processes such as research, academic and financial management, and course marketing. Decisions about where, how, and when to invest become crucially important if higher education leaders are to ensure that investments in technology are aligned with an institution's strategy. And when it comes to IT project management and governance, agility-based models have become more mainstream among information system production methods. These models' purpose is to align development deliverables with business goals and customer needs, and their scalable implementation creates a culture change that affects the entire organization, extending far beyond the IT department.





Creating and implementing a strategic plan is a process many institutions struggle with. It can be an even greater struggle if the strategic plan is being created and implemented with the goal of integrating portfolio management and shared IT governance between the information systems department and academic and administrative staff. At the Universitat Oberta de Catalunya, IT leaders began implementing just such a new IT strategic plan in 2014 as the university board and top managers aimed to align IT with the UOC strategic plan, increase investments in IT, and have a roadmap to IT-enabled transformation. The initial focus areas were the growth and sustainability of a transformed university, but in 2017 the team reviewed and updated its strategic plan when they discovered a new concern—the academic and administrative top and middle management could not easily participate in decisions about which IT projects should be prioritized and could not give feedback and updates on the situation before results were given. Communication and connection between IT business areas and academic staff was lacking, and IT leaders saw a chance to build better relationships between IT and staff, as well as better processes for the portfolio management.

UOC used this opportunity to design and execute three phases of transformation, with a selective process for the investment of IT time and effort based on the input of academic and administrative committees. The execution and delivery of IT projects were two of the most important focus areas at UOC as they planned and implemented the new processes. They knew they needed to start at the upper strategic level, having a committee at the top level that can assist with and participate in the prioritization of IT project investments, but with a need down the line for co-responsibility and contribution from the rest of the academic and administrative staff.



A few other challenges and opportunities were identified as the IT leaders planned to integrate a larger and more diverse workforce into the IT governance of program and project management. First, the business language of KPIs and business values was new for many academic staff, requiring a campaign to help empower academic staff so they could more easily engage with upper management. Promoting these concepts to academic staff would also enable them to take on some of the decision-making responsibility and allow a more transparent portfolio management process. Additionally, the leadership team saw an opportunity to switch from a waterfall approach for the IT development process to something more flexible and agile. This was an essential part of the process to ensure IT could execute projects in pieces and deliver value earlier based on regular feedback as they transformed their processes and worked to focus on the priorities that were being set by the academic and administrative staff.

Process

Leaders at UOC began the first phase of their Dx efforts by creating an overarching committee consisting of high-level management to develop a strategy to incorporate the academic and administrative staff into the prioritization and execution process for IT projects. The committee worked with academic and administrative communities on campus to help identify the initial top priority areas for project investment. They identified and focused on projects with large and broad benefits to the institution that would provide long-lasting realignment.



Once the initial projects were completed, the second phase of the transformation saw the decision-making process become more decentralized, establishing structures and processes to help academic and administrative staff mature the definitions of their needs. To address the communication and execution issues arising from the waterfall approach, UOC adopted and adapted the basic [Scaled Agile Framework \(SAFe\)](#) to help ensure more responsive and collaborative program management. This framework focuses on an incremental development and delivery system, providing direct economic benefits to those involved in planning and development, as well as to the end users who get to see value throughout the process instead of only seeing value once the project has been completed.

The second phase also called for more committees of administrative and academic staff to begin to help nurture and mature the new opportunities set up by the original organization process. Each member of the original IT governance corporate committee became a sponsor of one of the individual committees that was created for decentralized program and project management. Each of the individual committees held some members who brought local knowledge to the project and were able to provide more frequent feedback and input to the project thanks to the regular meetings and communication with the rest of the committee, including IT members. Additionally, when considering the way to begin engaging academic staff, UOC initially took advantage of some committees and commissions that already existed to find ready and engaged members. These included deans and directors of different academic departments across campus, as well as faculty.



For the second phase, UOC leaders worked to share more information with staff on some business language to ensure they could be empowered during the decision-making process. If staff were not able to speak the business language of KPIs and project value, they would not be able to be co-responsible for and contribute to the agile processes that had been established. Both administrative and academic staff engaged in training and conversations when they joined the committees to more effectively communicate and measure the value of the projects they work on.

In the past year, UOC has moved on to phase three—piloting even more dispersed IT operational governance and project management. This has involved more cultural changes, and UOC leaders are making sure they go step-by-step with their people, giving them a proposal to start with and then refining the language and definitions until both the IT staff and the rest of the committee members feel comfortable. The committees meet and discuss to establish priorities and initiatives for their projects. As these committees work on their planning, they try to avoid the “idea of requirements.” Rather, the committee leaders facilitate conversations to prioritize needs and business results with KPIs based on values management—how they meet the needs of stakeholders such as students, staff, faculty, and communities. According to the director of process management, determining specific KPIs was “much more difficult than you imagine,” so much so that UOC hired experts to help them determine the best KPIs for their academic and administrative staff. Over time, the committees reported that all their people, including the IT and academic staff, adapted well to the new language and focus and have helped create a better prioritization process for program and project management.



Outcomes and Lessons Learned

IT has been put on top of the strategic agenda, paving the way for Dx initiatives. As UOC has expanded the influence and interaction with IT through top-down and bottom-up initiatives, institutional leaders have seen an increase in the investments of time and funding for IT projects. These investments have helped set them up to succeed with their newly adapted agile framework, and the diverse workforce now involved in IT program management can adapt to fulfill the various and changing needs of stakeholders across campus. In fact, the new systems in place helped UOC rapidly shift procedures to safer, distant methods for their in-person testing during the COVID-19 pandemic, involving communication and collaboration between academic, administrative, and IT staff. This type of quick, major shift would have been unthinkable without the recent investments in IT governance.

Establish trust relations between academic and administrative staff and the IT department with transparency and empowerment. Previously, UOC IT project success was measured and shared mostly internally, focusing on results such as how close they came to the original budget and time-to-completion targets. These traditional measures made it easy to reward the execution of projects, but the change in project management at UOC has encouraged a change in thinking. While these traditional measures are still considered when looking at the outcomes of IT projects, the expanded group of academic and administrative staff involved in the process now engage with IT throughout the cycle. Now there is a focus before, during, and after a project on defining and measuring business goals showcasing value, effort, and activity directly related to institutional goals and strategies. The measurement of these values has helped staff at all levels at UOC see how projects are improving productivity, processing time, enrollments, and more. This has helped build trust between end users and IT, and in fact, UOC has continued to improve relationships with staff by surveying them about their satisfaction. The results have overall been positive, with most respondents reporting satisfaction with the contributions of the new processes because they feel their presence is useful and contributes to the overall development of the institution and their area in particular.



Institutions need to incentivize individual people to be involved in specific projects. Participating in the new production cycle requires time and effort, and while it does provide value in the delivery and execution of projects, institutions will see more success if incentives are provided for participation. Additionally, it's difficult to find individual professors with sufficient IT skills to be able to be involved in a full-time project team, so once someone like that is found, providing financial or other incentives for them to continue to provide their expertise is a worthwhile expense. The time to train and integrate new members can be costly in terms of worked hours and project timeline, so working to retain members familiar with processes pays for itself fairly quickly.

Putting resources into IT governance can help improve other types of governance across the institution. At UOC, even as a fully digital university with staff and leadership accustomed to digital capabilities for connecting to each other, issues with silos persist. The focus on improving IT governance by building committees and connecting formerly siloed groups has meant there is already a basis for other types of governance to start from. Staff are more aware of others they can connect with for assistance, as well as the management cycles that have come along with the changes to IT governance. The committees that exist thanks to the investment of IT resources can be used or adapted to help other departments get a jump-start on any new governance mechanisms they want to put in place. Overall, leaders at UOC have reported that “if you put in place IT governance with the hard work and investment of IT resources, it helps with the governance of the whole institution.”



Where to Learn More



To connect directly with José Ramón, Eva, and Daniel, or to learn more about their decision-support maturity work at Universitat Oberta de Catalunya, email Eva, the Processes Management Director, at egilrod@uoc.edu.



Access additional materials, including an infographic and case studies, on the Spectrum Enterprise Dx [Research Hub](#).



To discover more about Spectrum Enterprise solutions for Higher Education, visit enterprise.spectrum.com/HigherEd.

EDUCAUSE

Spectrum
ENTERPRISE

Dx through Technology Change at Southern Methodist University:

An EDUCAUSE Research Case Study

by Sean Burns, Jason Warner, Curt Herridge, and Rachel Mulry

Institutional Profile

Founded in 1911, Southern Methodist University (SMU) is a private research university employing 2,000 staff and faculty to support more than 12,000 students. SMU's tree-lined campus is just five miles north of downtown Dallas and houses seven schools and colleges, in addition to the Guildhall graduate video game development program.

The Challenge/Opportunity

Institutions of higher education are rarely characterized by an ability to swiftly respond to change. The internal composition of technology organizations and infrastructures of our institutions are often characterized by the same challenges: how can traditional technology service groups “jump back and regroup” and reorganize—both technically and culturally—to meet the changing and ever-escalating needs for modern data science and research support and discovery? At SMU, external and internal forces challenged IT leadership to initiate a holistic transformation of fragmented technology services and cultures into a unified and more cost-effective single IT unit.





Tasked with unifying traditional operations-centric people and infrastructure, SMU “broke the mold” for organizational design and implemented an IT organization prepared for performance, a design characterized by change and agility. No longer constrained by fragmented technology or legacy technology culture of the past, SMU IT leaders saw an opportunity to combine centralized IT with the school-based IT organizations across campus into a single IT organization. This approach would not only improve normal operations and business processes but also position IT tools, networks, infrastructure, and people to more rapidly and professionally support the burgeoning and ever-changing demands of computational researchers across such disciplines as data science, the Internet of Things, and high-performance computing (HPC). This capability was vital to SMU’s strategic plans.

SMU’s campus comprises many schools and departments, all with their own IT needs and wants. The previous organizational structure of many different IT departments led to several challenges and issues. Some of the biggest problems are similar to those faced by IT organizations across the world. IT was forced to work reactively to requests and demands across campus, and the siloing of the departments meant they were unable to visualize or create any big-picture strategies. This led to slow and sometimes redundant technology and work due to the lack of communication and collaboration between IT departments.

The siloing of departments led to one of the big challenges IT was facing at SMU. The institution had a huge investment in IT resources across campus, and while IT staff were effective at responding to the smaller-scale tickets and needs of users, reports from around campus suggested that not many deans or leaders were saying that IT was meeting their larger goals. One area in particular was researcher access to and use of HPC. The barriers to entry were high—for example, users had to access the cluster by Linux command line, and an increasing number of faculty wanted to get involved in data science. With the reorganization to a single IT unit, leaders at SMU knew they could be a more flexible and agile development group, capable of supporting emerging opportunities such as HPC, as well as laying the foundation for other emerging areas related to digital transformation (Dx).



Process

To help realize the goals of the Office of Information Technology (OIT), the president elevated the chief information officer (CIO) to report directly to him and encouraged an expanded approach to hiring a diverse team with the right skills to manage and run the new system. Officials at SMU take hiring in IT extremely seriously, treating every position “like a million dollar position,” with a goal of making sure the people they are hiring are “smarter than they are.” They have reported that this approach has led to the creation of a fantastic leadership team that has worked to improve internal functions as well as develop strategic partnerships across the organization, especially with academic affairs, student affairs, facilities, the Center of Teaching Excellence, and the SMU libraries. The focus on both internal and external development and collaboration has helped overcome some of the barriers that came up early in the process.



From the higher-level perspective of this shift in IT, the expectations and objectives of the new plan were clear and well laid out. OIT developed a three-year strategic plan focusing on collaboration, cultivating partnerships, and laying out objectives that align with the overarching strategic plan at SMU. These are all important institutional competencies needed for successful Dx. Many of the objectives focused directly on supporting innovative practices and digital environments for different technology needs on campus. One of the main pillars was the support of research and data science at the institution, striving to deliver seamless support services and collaborations with the following objectives:

- **Objective 1: Grow Dedicated Capacity and Capability for Research and Data Science**
- **Objective 2: Improve, Simplify, and Expand Research Utilization and Experiences in HPC**
- **Objective 3: Unify IT Services to Researchers with Processes, Portfolio Management, and Reporting That Simplify and Minimize Burdens for Faculty**
- **Objective 4: Continue to Meet Differential Research Needs through a Unified University Research Computing and Data Science Environment Dedicated to Research and Innovative Scholarship**



Each objective also had specific plans and strategies outlined to help achieve these goals, and each main pillar or priority was given the same treatment throughout the strategic plan. With such clear goals and objectives laid out, OIT has been able to build solid relationships and support the strategic goals of the university. After all, relationships are currency.

As this unified model of IT on campus continues to develop to help the institution's varied departments achieve objectives through processes, people, and technology, IT leaders have focused on standardization and consistency—characteristics important in preparing for larger Dx efforts. One of the main methods employed is the development of a data warehouse with a cloud-first approach for small departmental applications, while pursuing on-premises deployments of large, enterprise applications. This model has made the consistent integration and updating of technologies easier for both the IT and user sides, especially because IT has also concentrated on creating and maintaining documentation for technology services. The entire workflow process is now becoming more standardized, which has been helping both IT staff and users.



Outcomes and Lessons Learned

“Relentless positivity” was a key approach to managing and overcoming issues arising from staffing changes. A big challenge that leaders had to manage when they moved to a single, centralized IT organization was that many staff felt that they had “lost” people who used to work in their department, and they thought this would result in a degradation of service. All the IT leaders worked to stay positive and respond with positive messaging in the many emails and meetings that came with the reorganization—a mantra of “As we do this, we’ll be the same or better.” They used numbers of tickets and other service metrics to help dispel any worries that quality had decreased. They also worked to reassure people that the new IT process didn’t have to “fit into the same old IT box,” reminding them that they’re here to help faculty and staff and that if they ask questions and provide their needs to IT, they’re now in a better position to adapt and develop solutions for their constituents.

Coaching leadership to embrace clear organization goals sets your transformation up for success. As mentioned earlier, the clear goals and objectives laid out by the overarching SMU strategic plan, as well as the OIT strategic plan, led to very successful progress and outcomes. IT can help leaders define organizational goals by helping them understand the intersection of instruction, research, and technology. Once the goals and objectives are well defined, the organization has a clear direction forward toward building digital environments that are agile, flexible, and aligned with institutional strategy.

Focusing on enabling digital agility and flexibility can prepare you to support emerging opportunities and needs. The successful transformation of IT organizational design and culture proved well suited to IT’s ability to more rapidly enable and support staff, faculty, and students transitioning online at the same time, especially during the COVID-19 pandemic. Overall, SMU’s IT transformation offers a model for how engineered processes and technology can be implemented to offer operational IT services at lower costs, as well as how shared tools and extraordinary people can enable research and data science. While not without the natural friction that comes from change, incredible outcomes are suddenly possible, especially those that move beyond strong operations and into partnering with faculty to enable the creation of new knowledge.



Where to Learn More



For more information, visit SMU's [OIT](#) website or reach out to some of the [leaders of OIT](#).



Access additional materials, including an infographic and case studies, on the Spectrum Enterprise Dx [Research Hub](#).



To discover more about Spectrum Enterprise solutions for Higher Education, visit enterprise.spectrum.com/HigherEd.

EDUCAUSE

Spectrum
ENTERPRISE

ABOUT SPECTRUM ENTERPRISE

Spectrum Enterprise, a part of Charter Communications, Inc., is a national provider of scalable, fiber technology solutions serving many of America's largest businesses and communications service providers. The broad Spectrum Enterprise portfolio includes networking and managed services solutions: Internet access, Ethernet access and networks, Voice and TV solutions. The Spectrum Enterprise team of experts works closely with clients to achieve greater business success by providing solutions designed to meet their evolving needs. For more information, visit enterprise.spectrum.com.

ABOUT EDUCAUSE

EDUCAUSE is a higher education technology association and the largest community of IT leaders and professionals committed to advancing higher education. Technology, IT roles and responsibilities, and higher education are dynamically changing. Formed in 1998, EDUCAUSE supports those who lead, manage, and use information technology to anticipate and adapt to these changes, advancing strategic IT decision-making at every level within higher education. EDUCAUSE is a global nonprofit organization whose members include US and international higher education institutions, corporations, not-for-profit organizations, and K-12 institutions. With a community of more than 99,000 individuals at member organizations located around the world, EDUCAUSE encourages diversity in perspective, opinion, and representation. For more information, please visit edUCAUSE.edu.