Introduction

Since 2014, EDUCAUSE has examined higher education’s top strategic technology priorities. This year, in addition to reviewing the overall list of strategic technologies, EDUCAUSE will publish nine separate reports examining in detail the technology domains we asked about and reviewing each domain’s component technologies and the trends associated with those technologies. This report covers the 10 technologies and 4 trends included in the user support domain.

The trends and technologies related to the domain of user support describe a time of increasing user access to and demand for easy-to-use IT resources and services. Driven by the continued and burgeoning use of mobile devices across all aspects of higher education, greater access to resources that enable users to support themselves, and the increasing complexity of the higher education technology environment, IT leaders are looking for new ways to deliver services and technologies to provide better support to users while increasing operational effectiveness. A 2015 EDUCAUSE study found that higher education IT is in a transitional stage, moving from an era of IT as technology provider to one of IT as service provider. This focus on services encourages IT to take a more user-centric approach that considers the value of its services to users and aligns IT services with the institutional mission through that added value. The trends described in this report reflect that shift in focus, as IT leaders look for ways to support users in all aspects of their engagement with IT services.

Understanding the impact of these trends on your institution’s user support is an important part of adapting to this quickly evolving environment. The tools described in this report reflect both IT efforts to manage the increasingly complex set of technologies and services that support user needs, as well as user demands for getting their work done from anywhere on any device and with collaborators across both institutional and international boundaries.

The focus of this report is the trends and strategic technologies associated with user support. Mature, commonly deployed technologies (such as financial information systems or networks) may be among the most mission-critical technologies, but they are generally more likely to receive operational rather than strategic attention. Strategic technologies, by contrast, are the relatively new technologies institutions will be spending the most time implementing, planning for, and tracking in 2017. None of the 10 user support technologies analyzed in this research is currently in place in more than 30% of institutions.

Technologies are what IT organizations do. Trends, on the other hand, are widespread external factors that influence institutional and IT strategy and often spur the adoption of technologies. This report examines the trends that institutions are paying the most attention to and that are influencing emerging institutional IT strategy the most. This year’s trend list included four items closely associated with user support.
Covered in This Report

**Trends**

- Managing mobility (people, data, institutional resources)
- Reduced reliance on service desk as the primary model for support (includes shift to self-help, automated provisioning, BYO-support, etc.)
- Service management (ITSM, ITIL)
- Shared services

**Technologies**

- Institutional support for public-cloud storage
- Institutional support for speech recognition
- IT accessibility assessment tools
- IT asset management tools
- Mobile apps for enterprise applications*
- Mobile device management*
- Service level reporting tools
- Support for use of personal cloud services
- Tools to support cross-institutional and international collaborations
- Tools to support cross-institutional and international research data sharing

*Part of the overall 2017 Top 10 Strategic Technologies
Findings and Recommendations

What do we know about the kind of progress higher education might make with user support technologies? What trends might influence this progress? While our data can never be a substitute for an institution’s own user support strategic plan or roadmap, this report can inform an institution’s overall IT strategy and user support technology-deployment strategy.

The Trends

We characterized a trend as “influential” if it was already incorporated into IT strategy or exerting a major influence over emerging IT strategy. We used that characterization to classify the trends into four levels of influence, based on the prevalence of influence across institutions:

- **Most influential**: Trends that are influential in 61% or more of institutions
- **Taking hold**: Influential in 41–60% of institutions
- **Worth understanding**: Influential in 21–40% of institutions
- **Limited impact**: Influential in 20% or less of institutions

Understand how the most influential trends are affecting your institution.
None of the user support trends is influential at 61% or more of colleges and universities.

Review the trends that are taking hold and address them at your institution.
None of the user support trends is influential at 41–60% of institutions.

Understand these trends, and consider their possible role at your institution.
The influence of all four user support trends is limited to 21–40% of institutions. Higher education is monitoring these trends (listed below from highest to lowest level of influence) with respect to emerging IT strategy and the deployment of user support strategic technologies:

- **Managing mobility (people, data, institutional resources)**. As mobile devices become more ubiquitous, as the Internet of Things expands, and as stakeholders expect seamless connectivity through mobile devices to institutional resources and data, institutions need to consider a number of IT and business processes that cover the management, administration, and support for mobile services. Finding a balance of access and control is important.
- **Service management (ITSM, ITIL).** As colleges and universities increasingly expect their IT departments to deliver services and, more importantly, value, ITSM and ITIL are receiving considerable attention. ITSM stands for IT service management and is the practice of running the IT organization with a focus on delivery of services to constituents in a repeatable, measurable, and proactive way that is aligned with organizational needs. ITIL (information technology infrastructure library) is a framework of service management processes (such as change, incident, and configuration management) designed to optimize the internal operations of the IT organization. ITIL is a way to operationalize ITSM concepts. Other, complementary processes and frameworks that support ITSM include COBIT (for governance, audit, and compliance), Lean (for continuous improvement), agile (for development), and DevOps (to integrate development and service delivery).

- **Shared services.** Shared services, the provision of a service by one part of an organization or group that had previously been provided by more than one part of the organization, offers an economy of scale that may lead to decreased costs and greater value for the institution. However, attaining that economy of scale can require a large and challenging scope expansion. A shared-services solution differs from centralization in that the former focuses on collaboratively developing business processes and service level agreements that deliver value to the business. Centralization typically emphasizes compliance and control more than service value. Strategies that include leadership engagement, good change management practices, shared governance, and a long-term financial model will lead to greater success in shared-services efforts.

- **Reduced reliance on service desk as the primary model for support (includes shift to self-help, automated provisioning, BYO-support, etc.).** Knowledge management and automation are enabling IT organizations to provide alternatives that supplement the traditional call or walk-in center model of service desk support. This helps offload growing demand for IT support, as faculty, staff, and students increasingly want to access institutional resources from their personal devices and environments. Support staff are challenged to keep up with all the complexities of supporting so much variety. Web- or app-based self-help is also an efficient way to supplement the hours of the help desk to provide institutional communities with support 24/7.
The Technologies

The list of strategic technologies included in our survey was derived from the 2016 list and from several authoritative sources that annually identify emerging and maturing technologies in higher education. A total of 10 of the technologies in the survey pertain to user support. For each of those technologies, respondents selected one of six response options to indicate the level of activity for that technology at their institution in 2017:

- **Institution-wide deployment**: Full production-quality technical capability is in place, including ongoing maintenance, funding, etc., with deployment potentially supporting institution-wide access.
- **Expanding deployment**: In 2017, we will move from initial or partial to broader or even institution-wide deployment.
- **Planning, piloting, initial deployment**: This technology is not yet available to users; however, meaningful planning for deployment is either in development or in place. Staff are investing significant time (multiple person-weeks of effort) and resources in executing the plan to pilot or deploy this technology within a defined time frame.
- **Tracking**: Multiple person-days of effort will be assigned but restricted to monitoring and understanding this technology (much more than just reading articles).
- **No deployment**: None of this technology is in place, and no work will be under way or resources committed for this technology in 2017.
- **Don’t know**: I don’t know what this technology is.

We assigned attention scores to the responses, and the scores were weighted to highlight responses indicative of higher levels of activity (expanding deployment; planning, piloting, initial deployment; and tracking) over responses that suggest little or no activity of that kind (institution-wide deployment, no deployment, and don’t know).

Understanding what peer institutions (both current and aspirational) are doing can help you gauge whether your institution’s current approach is on track or might warrant reconsideration. Some technologies are more relevant for some types of institutions than others. We looked at broad demographic categories, including Carnegie class, institutional size, and approach to technology adoption, and found differences in attention score based on those factors. In figure 1, the U.S. mean is the average attention score for an item from all U.S. respondents. The minimums and maximums are the lowest and highest average attention scores among all groups within the categories of Carnegie class, institution size, and timing of technology adoption, with labels indicating which group or groups returned that score. In the event of a tie, all tied groups are represented.
Looking beyond attention scores, we sought to understand the kind of effort that the largest proportion of institutions is devoting to each technology. We created four attention categories by combining adjacent responses:

- Expanding deployment and institution-wide deployment, combined as **deploy and maintain**
- Planning, piloting, initial deployment and expanding deployment, combined as **pilot and deploy**
- Tracking and planning, piloting, initial deployment, combined as **decide and plan**
- No deployment and tracking, combined as **track and learn**

Although nearly every technology was represented to some degree in each attention category, we assigned each technology to the attention category with the greatest amount of institutional activity for that technology in 2017.
Complete initial deployment and maintain these technologies.
Our research shows that institutions are planning to **deploy and maintain** one user support technology:

- **Institutional support for public-cloud storage.** Public cloud storage options provide easy access, sharing, and backups of files and data. Institutions are moving to options such as Box to provide cloud storage and collaboration services that work with the university’s identity management system, integrate with other services, and provide contractual assurances of privacy, security, and uptime.

Pilot and start deploying these technologies.
At this time, institutions are planning to **pilot and deploy** one user support strategic technology:

- **Mobile apps for enterprise applications.** Mobile apps for enterprise applications refers to web-based applications that run on mobile devices such as smartphones and are designed to integrate with all aspects of an organization’s businesses and processes. These apps make it possible to access enterprise-wide resources (such as course catalogs, student information systems, and human resource systems) and to conduct enterprise transactions from mobile devices.

Decide when these technologies fit your strategy, and start planning.
Institutions are carefully watching two user support strategic technologies (listed below from higher to lower attention), **deciding and planning** for potential future deployment:

- **Mobile device management.** Mobile device management is the approach an institution takes for the policies, support, and procedures related to the variety of cell phones, tablets, and laptops on campus. Mobile device management involves a balance between security of institutional data and user convenience and productivity. Some institutions use third-party products and services to manage mobile devices. Considerations include data security issues, support for personally owned equipment, and application management.

- **IT asset management tools.** IT asset management tools provide an institution with an account of the significant components of the IT environment, including their dependencies and life cycles. As IT assets expand beyond central IT, both on campus and in the cloud, asset management becomes more complex. IT asset management tools can help institutions better understand, plan for, and make decisions about the resulting technology mix.
Learn about and track these technologies.
Institutions are tracking and learning about the following user support strategic technologies (listed below from highest to lowest attention):

- **Service level reporting tools.** Service level reporting tools allow institutions to track and report on IT service delivery and management. They facilitate tasks and workflows associated with delivering IT services and track how well the delivery of services conforms to service level commitments.

- **IT accessibility assessment tools.** IT accessibility assessment tools allow institutions to test the designs of their web pages and other online materials to ensure they are usable by individuals with disabilities.

- **Tools to support cross-institutional and international collaborations.** Collaborating with colleagues beyond the institution is getting easier through a variety of options that include enterprise-level collaboration tools and free web-based tools. Enterprise tools offer more assurance of privacy and security through the institution’s identity management system.

- **Support for use of personal cloud services.** Many faculty, staff, and students use personal cloud services such as Apple’s iCloud or Google Drive instead of or in addition to institutionally supported cloud storage services. IT needs to be aware of this possibility and prepare guidelines or policies to ensure information security.

- **Tools to support cross-institutional and international research data sharing.** A core mission of higher education is research, and researchers are increasingly working with colleagues from other institutions and internationally in order to do their work. Understanding the issues of sharing research data with these colleagues is necessary for IT to be prepared to provide the tools and support to enable this sharing. Tools in this space may address issues ranging from metadata to data access and usage rights to file format interoperability.

- **Institutional support for speech recognition.** Speech-recognition systems interpret human speech and translate it into text or commands. Institutional support for such technologies may focus on straightforward educational applications (e.g., language learning) or improving accessibility for students who are blind or physically disabled or have learning disabilities.
Preparing for the Future

Understanding the technologies that are most relevant for your institution and how fast a certain strategic technology may be growing is critical to institutional IT strategy. We estimated the pace of growth based on the percentage of institutions we predict will implement each technology over the next five years (by 2022). Figure 2 positions each technology in one of 12 cells based on institutional intentions (the “recommendation for today”) and the expected pace of growth of that technology. Reflecting what was noted above, the figure shows that most of the technologies we tracked are still being explored—rather than deployed—by most institutions.

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Expected pace of growth

SLOW

MEDIUM

FAST

Figure 2. Plans for 2017 and pace of growth for user support strategic technologies
Conclusion

The domain of user support is characterized this year by increasing complexity, complexity that’s reflected within IT itself—such as the need to manage accessibility, assets, and service levels—and within the users’ increasing demand for technology-mediated interactions and services—such as accessing cloud services and collaborating with others beyond institutional borders. The strategic technologies listed here suggest ways that colleges and universities can develop their technological capabilities in order to manage and support this increasing complexity. In terms of current attention, institutions are still tracking and learning about many of the user support technologies rather than piloting and deploying them. IT leaders should carefully consider the impact these technologies could have on the strategic capabilities of the institution and make plans to adopt those with the most potential for their institutions.

The trends in the user support domain are not yet widely influential in higher education. Now is the time to monitor progress of these trends and plan for possible changes in IT strategy in order to adapt to those trends.

Notes

1. Read more about this transition at IT Service Delivery in Higher Education.

2. EDUCAUSE tracks these types of established technologies in the Core Data Service because they are widespread enough to enable institution-level benchmarking.

3. Primary sources were The Horizon Report, Gartner’s Top 10 Strategic Technology Trends for 2014, and multiple 2014 Gartner Hype Cycles (education, big data, cloud computing, cloud security, enterprise architecture, enterprise information management, GRC, identity and access management, IT operations management, privacy, business intelligence and analytics, and emerging technologies). We augmented those with several additional technologies, most notably in analytics.