The EDUCAUSE 2017 Top 10 Strategic Technology lists reflect the level of attention that the higher education technology community is giving to various existing and emerging technologies. Based on survey responses, EDUCAUSE has identified the top 10 strategic technologies for higher education. By our definition, strategic technologies are those relatively new technologies that institutions will be spending the most time implementing, planning, and tracking in 2017. This year, 249 U.S. and 36 non-U.S. EDUCAUSE CIOs and IT leaders shared their current practices and intended deployment plans for 85 different technologies. The number of respondents rating individual technologies ranged from 181 to 236.

We organized the 85 technologies into 12 domain areas: analytics; cloud; communications/networking; infrastructure and operations; integrated planning and advising for student success; Internet of Things; mobile; research and scholarship; security, identity, privacy, and GRC; social/personal; teaching and learning; and user support. Many technologies were included in more than one domain because they don’t live in a mutually exclusive environment. For example, next-generation Wi-Fi applies to three domains (Internet of Things, infrastructure and operations, and communications and networking) and it appears in the technology list for each domain.

The following lists rank the technologies within each domain area. Separate reports will be published in 2017 that examine each domain and its component technologies in detail. View additional resources on the research hub.
Analytics Technologies

1. Technologies for improving the analysis of student data*
2. Technologies for planning and mapping students' educational plans*
3. Technologies for triggering interventions based on student behavior or faculty input*
4. Technologies for offering self-service resources that reduce advisor workloads*
5. Predictive analytics for institutional performance
6. Technologies for degree auditing (documenting and tracking students' educational plans)
7. Technologies for integrating student-records data across case management systems
8. Predictive analytics for learning
9. Flexible interactive platforms for descriptive and predictive analytics of institutional data
10. Predictive learning analytics (course level)
11. Mobile apps for institutional BI/analytics
12. Talent/workforce analytics
13. Massively scalable database architectures and software

* Part of the overall top 10
Cloud Technologies

1. Uses of APIs*
2. Blended data center*
3. Institutional support for public-cloud storage
4. Private-cloud computing
5. Cloud-based security services
6. Cloud-based identity services
7. Data center capacity planning and management tools
8. Support for use of personal cloud services
9. Cloud access security broker (CASB)
10. Cloud-based HPC
11. Cloud monitoring platform to track distributed infrastructure apps, tools, and services
12. Blockchain

* Part of the overall top 10
Communications/Networking Technologies

1. Next-generation Wi-Fi
2. DDoS prevention products and services
3. Next-generation firewalls
4. Tools to support cross-institutional and international collaborations
5. IPv6
6. End-to-end e-mail encryption
7. Software-defined networks
8. Tools to support cross-institutional and international research data-sharing
9. Ethernet fabrics
10. DNSSEC
11. Science DMZ
Integrated Planning and Advising for Student Success Technologies

1. Technologies for improving the analysis of student data*
2. Uses of APIs*
3. Technologies for planning and mapping students’ educational plans*
4. Technologies for triggering interventions based on student behavior or faculty input*
5. Technologies for offering self-service resources that reduce advisor workloads*
6. Mobile app development
7. Technologies for degree auditing (documenting and tracking students’ educational plans)
8. Technologies for integrating student-records data across case management systems
9. Predictive analytics for learning
10. Flexible interactive platforms for descriptive and predictive analytics of institutional data
11. iPASS (Integrated Planning and Advising for Student Success) technologies
12. Predictive learning analytics (course level)
13. Mobile apps for institutional BI/analytics

* Part of the overall top 10
Internet of Things

1. Next-generation Wi-Fi
2. IPv6
3. Uses of the IoT for campus management
4. Uses of the IoT for teaching and learning
5. Uses of the IoT for purposes other than teaching and learning, research, or campus management
6. Drones
7. Uses of the IoT for research
8. Augmented reality
9. Uses of in-memory computing
10. Affective computing
Infrastructure and Operations Technologies

1. Uses of APIs*
2. Mobile apps for enterprise applications*
3. Blended data center*
4. Next-generation Wi-Fi
5. Application performance monitoring
6. Next-generation firewalls
7. IT asset management tools
8. Service-level reporting tools
9. Next-generation LMS
10. Data center capacity planning and management tools
10. IPv6
12. Software-defined networks
13. Uses of the IoT for campus management
14. Life-cycle contract management
15. Ethernet fabrics
16. Cloud monitoring platform to track distributed infrastructure apps, tools, and services
17. Massively scalable database architectures and software

* Part of the overall top 10
Mobile Technologies

1. Incorporation of mobile devices in teaching and learning*
2. Mobile apps for enterprise applications*
3. Mobile device management*
4. Mobile app development
5. Development tools to support multiple key platforms
6. Mobile apps for institutional BI/analytics
7. Location-based computing
8. High-precision location-sensing technologies

* Part of the overall top 10
Research and Scholarship Technologies

1. Blended data center*
2. Private-cloud computing
3. Flexible interactive platforms for descriptive and predictive analytics of institutional data
4. Tools to support cross-institutional and international collaborations
5. Institutional repositories for research data
6. Data center capacity planning and management tools
7. IPv6
8. Tools to support cross-institutional and international research data-sharing
9. Disciplinary repositories
10. Uses of the IoT for research
11. Virtual reality
12. Cloud-based HPC
13. Science DMZ
14. Text/content analytics
15. Massively scalable database architectures and software
16. High-precision location-sensing technologies
17. ELNs (electronic lab notebooks)
18. Uses of in-memory computing
19. Affective computing
20. Quantum computing

* Part of the overall top 10
Security, Identity, Privacy, and GRC Technologies

1. Database encryption*
2. Mobile device management*
3. DDoS prevention products and services
4. Next-generation firewalls
5. Federated identity technologies
6. Private-cloud computing
7. E-signature technologies
8. Cloud-based security services
9. Cloud-based identity services
10. End-to-end e-mail encryption
11. IT risk management automation
12. Content-aware DLP
13. SIEM (context-aware security)
14. Life-cycle contract management
15. Applications of analytics to security
16. Cloud access security broker (CASB)
17. DNSSEC
18. Privacy-enhancing technologies
19. Enterprise GRC systems
20. Cryptocurrencies

*Part of the overall top 10
Social/Personal Technologies

1. CRM for alumni and/or institutional advancement
2. Support for use of personal cloud services
3. Privacy-enhancing technologies
4. Location-based computing
5. Institutional support for speech recognition
6. Augmented reality
7. Integration/uses of machine speech recognition
8. Integration/uses of voice-user interfaces
9. Affective computing
10. Blockchain
11. Cryptocurrencies
Teaching and Learning Technologies

1. Active learning classrooms*
2. Technologies for improving the analysis of student data*
3. Incorporation of mobile devices in teaching and learning*
4. Uses of APIs*
5. Technologies for planning and mapping students’ educational plans*
6. Technologies for triggering interventions based on student behavior or faculty input*
7. Technologies for offering self-service resources that reduce advisor workloads*
8. Mobile app development
9. Open educational resources
10. Technologies for degree auditing (documenting and tracking students’ educational plans)
11. Courseware
12. Technologies for integrating student-records data across case management systems
13. IT accessibility assessment tools
14. Predictive analytics for learning
15. Next-generation LMS
16. Adaptive learning
17. iPASS (Integrated Planning and Advising for Student Success) technologies
18. Predictive learning analytics (course level)
19. Games and gamification
20. Remote proctoring services
21. Uses of the IoT for teaching and learning
22. Digital microcredentials
23. Virtual reality
24. Text/content analytics
25. Institutional support for speech recognition
26. Augmented reality
27. Integration/uses of machine speech recognition
28. Affective computing
29. Blockchain

* Part of the overall top 10
User Support Technologies

1. Mobile apps for enterprise applications*
2. Mobile device management*
3. Institutional support for public-cloud storage
4. IT asset management tools
5. Service-level reporting tools
6. IT accessibility assessment tools
7. Tools to support cross-institutional and international collaborations
8. Support for use of personal cloud services
9. Tools to support cross-institutional and international research data-sharing
10. Institutional support for speech recognition

* Part of the overall top 10