Blue Ribbon Task Force on Academic Information Technology

Report and Strategic Recommendations

In support of UC2019 and the Academic Master Plan

www.uc.edu/af/ait_planning
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Executive Summary

**Background and Task Force Charge and Scope of Work**

In its 1999 accreditation report, the Higher Learning Commission (HLC) noted that the University of Cincinnati (UC) lacked sufficient planning and support for information technology, including academic information technology (AIT). In advance of receiving the report, the university had already begun to change its information technology environment with the establishment of a new cabinet position of vice president and CIO, as well as an IT governance process, with a committee focused on academic technology planning. The 2009 HLC report noted further progress as the university began strengthening its IT infrastructure, established a robust email system, created electronic classrooms and centers to assist faculty in the use of technology to support learning, and adopted a course management system, among other enhancements. Over time, however, these transformations were insufficient to meet the growing expectations of students, faculty and staff in the digital age. A confluence of factors, including the rapid acceleration of new technologies impacting teaching, learning and research, a lack of strategic planning for academic information technology, historically insufficient funding for IT, and infrastructure, resource and governance limitations, had given rise to a growing dissatisfaction with the university’s current academic information technology framework and services and its ability to remain competitive.

In the face of these growing expectations and concerns about the current and future states of academic information technology at the University of Cincinnati, the Senior Vice President for Academic Affairs and Provost and the Senior Vice President for Administration and Finance charged a Blue Ribbon Task Force with developing a vision and strategic plan for academic information technology at UC for the next five to 10 years. (Blue Ribbon Task Force Charge and Membership, Appendix A)

The Blue Ribbon Task Force divided its work into three major components:

1. Assess the institution’s current state of academic information technology;
2. Benchmark with peer and aspirational institutions;
3. Create a future framework and implementation plan that would support the institution’s overarching goals for preeminence and transformative learning and research, as articulated in the university’s strategic plan, UC2019, and in the Academic Master Plan (AMP).

In advance of undertaking these major components, the Blue Ribbon Task Force thoroughly discussed the scope of academic information technology. That is, what should be included in the definition of academic information technology for purposes of our work? The task force decided to focus on those functions, resources and services that directly impact teaching, learning and research such as access, hardware, software, equipment, smart classrooms,
computer labs, computing power, instructional technologies and tools, Blackboard, faculty training on technology use, mobile and social learning and the like. Both unit and centralized resources were included in the scope; however, enterprise systems such as UC Flex and the student information system were not.

With the scope defined and in collaboration with Gartner Consulting, a leading technology research and advising company, the Blue Ribbon Task Force then undertook an extensive data collection to assess current AIT assets, resources and costs. The primary objective of Gartner’s assistance was to provide industry best practices and guidance for the university’s data gathering and analysis which would allow for valid benchmarking comparisons. The data collection process used both quantitative and qualitative methods. The quantitative aspect covered the level of spending to support academic information technology across UC for FY09-10. Gartner research provided comparative metrics for spending and staffing levels to a relevant peer group of higher education institutions. The qualitative component included sessions and surveys for undergraduate and graduate students to gather their perspectives on and satisfaction with AIT; sessions with faculty and deans to collect similar information and perspectives; sessions with and surveys for IT representatives from central and local units to confirm services, processes, assets and infrastructure, initiatives and potential risks; and sessions with senior executives to solicit input on strategic priorities.

The assessment also provided the building blocks of a framework for AIT strategic priorities. The Blue Ribbon Task Force articulated these within a set of future themes, which were discussed and validated at a visioning workshop, held April 26, 2011, that included students, faculty, IT staff and representation from the academic and administrative leadership.

Another component of building the future framework flowed from a studio course consisting of a multidisciplinary team of graduate and undergraduate students. The student team examined how faculty teach, what the learning environments look like, what skills the students of 2019 might possess, and what these findings suggest for the capability requirements at the end of the decade. A fuller description of the studio collaboration and the student report can be found below and in Appendix B.

### Shared Vision for Academic Information Technology in 2019

A central focus and primary outcome of our work was the development of a shared vision for UC’s Academic Information Technology (AIT). It was important that this vision reinforce and support UC2019 and the Academic Master Plan (AMP) and also serve to differentiate us in the global marketplace. UC2019 characterizes our institution as a “first choice for students, faculty and staff” and one that achieves excellence in our primary mission of research and teaching. Furthermore, it states we will measure our success against the elite peers represented by the Association of American Universities (AAU) and the Top American Research Universities.

With AIT serving as a key enabler and resource for the academic mission, the Blue Ribbon Task Force agreed that an equally ambitious and transformational AIT vision was critical. The guiding principles for technology must support UC’s transformation to international prominence and broad-based excellence. Our comprehensive assessment of AIT capabilities strongly support that these competences and supporting infrastructure could be a differentiating feature of the UC experience. As our current campus facilities age and become less distinctive, innovative and extensive integration of AIT in teaching
and research could be an emerging source of UC distinction. With these ambitious goals in mind, the Blue Ribbon Task Force’s overarching vision for UC’s AIT is as follows:

The University of Cincinnati will support a dynamic information technology infrastructure through appropriate funding and leveraging of resources in support and advancement of the goals and objectives of UC2019 and the Academic Master Plan.

This overarching vision is supported by a set of future themes which list the critical AIT components required to achieve academic preeminence. The future themes, in no particular order, include the following:

- UC’s students, faculty and staff have anytime, anywhere access to technologies and a library of scholarly digital content that support their learning, research and work.
- UC’s IT governance ensures effective and collaborative decision-making, policy development and IT acquisition development and implementation.
- UC’s IT providers, at the central and unit levels, are trusted as high quality providers of a portfolio of academic technologies and services.
- UC’s data management and security policies and procedures align with industry best practices and trends.
- UC facilitates collaboration across the university through technologies that support and advance the institution’s mission and goals.
- UC has uniform and well distributed instructional technologies and capabilities across units and disciplines that reflect market and pedagogical demands and advances.

To realize this vision for academic information technology the Blue Ribbon Task Force articulated a series of strategic priorities categorized by time to completion: several focused on short to mid-term (1-3 years) and others aimed at the longer term (4-10 years). Summaries and details of the findings and strategic priorities are below in their respective sections and appendices.
Summary of Task Force Priorities & Recommendations

After much discussion and analysis, the Blue Ribbon Task Force agreed on a set of strategic priorities for the short and mid to long-term. The goal of the short-term priorities is to establish a solid foundation of best practices from which to build and implement the long-term priorities, which may require significant changes in the organization, management, and funding of AIT. Implementation plans for each of the strategic priorities will be developed by an action team, a description of which follows each priority statement.

Short and Mid-term Strategic Priorities and Action Steps – Year 1

**Fill the Chief Information Officer (CIO) position on a permanent basis with a visionary leader with a strong service orientation who will build consensus and partner with the academic units to advance and support learning and research at UC.**

- **Action Steps:**
  - Search Committee for CIO uses the Blue Ribbon Task Force Report on Academic Information Technology to inform its selection and recommendation of a candidate to fill the CIO position.
  - The Senior Vice President for Administration and Finance directs the successful candidate to work toward the realization of the strategic priorities described in this report, as appropriate.
  - The CIO continues to report to the Senior Vice President for Administration and Finance, but has a dotted line reporting relationship to the Provost for matters related to academic information technology.

**Enhance IT governance structure and process to better facilitate collaboration, coordination, decision-making and implementation of technology solutions and services to ensure that needs of end-users are reflected.**

- **Action Steps:**
  - Establish and charge an action team to identify several governance models and make recommendations based on the pros and cons of those models. The recommended model becomes part of the institution’s integrated decision-making process, functioning like the Academic Coordinating Committee and the Fiscal Coordinating Committee.
Based on action team’s recommendation, establish and charge the new IT governance committee.

The new governance structure receives input from the IT managers committee, described below.

---

**IT managers group**

**knowledge sharing**  
**solid foundation of**  
**best practices**

- **Improve IT communication, collaboration, integration and knowledge sharing across units and centralized offices.**
  - **Action Steps:**
    - Interim CIO formally charges current working IT managers group and extends their duties to include issue spotting and providing recommendations to CIO and new governance structure. Group includes representatives from Blue Ribbon Task Force, central Help Desk, Systems and Operations, Information Security, Network, and Telecommunications Systems, Instructional and Research Computing, and unit levels, including representation from regional campuses.
    - Newly charged IT managers group drafts an IT service catalog and service level agreements at unit and central levels based on the Information Technology Infrastructure Library (ITIL), an IT management framework that provides practices for Information Technology Services Management (ITSM), IT development and IT operations, and other best practices such as those existing at UC Santa Cruz and others. The IT managers group then forwards its recommendations to the CIO and governance structure for consideration.
    - Following approval through the integrated decision-making process, the IT service catalog and service level agreements are implemented and communicated to the university community.
    - Newly charged IT managers group explores and makes recommendations to CIO and governance structure for potential cost efficiencies such as consolidated purchases and virtualization. Next steps for this issue and subsequent issues follow governance and integrated decision-making process.

- **Improve support for distance and online learning.**
  - **Action Steps:**
    - Charge an action team to make recommendations for improving the coordination and utilization of distance learning support personnel and resources at the unit and centralized levels.
- Action team identifies issues, opportunities, costs, and organizational structure to address current inefficiencies. Team also establishes implementation timelines.
- Provost and CIO ensure implementation.

Short and Mid-term Strategic Priorities and Action Steps – Years 2 - 3

**identify and implement emerging trends and technologies**

- **Establish an academic information research and development (R&D) function/organization that can help identify and implement appropriate emerging trends and technologies that advance the learning and research missions.**
  - **Action Steps:**
    - Charge an action team to make recommendations on the scope, funding and implementation timelines for establishing an academic information technology R&D function/organization.
    - Action team recommendations are vetted through the governance structure and considered by the CIO, Provost, and Senior Vice President for Administration and Finance for funding and implementation.

- **Establish a baseline for academic information technology service on which to build improvements and provide a basis for future comparisons.**
  - **Action Steps:**
    - Charge an action team or the IT managers group to assess current levels of academic information technology service.
    - Action team or IT managers group defines scope and mechanisms for data gathering, and analyzes findings.
    - Based on findings, team makes recommendations for service improvements, with cost estimates and implementation timelines, to CIO and through the governance structure.

- **Enhance data management policies and procedures to align with industry best practices.**
  - **Action Steps:**
    - CIO charges an action team or the IT managers group to review and assess current data management policies and
procedures and make recommendations for improvement based on best practices.

- Action team recommendations are vetted through the governance and integrated decision-making process.
- CIO ensures implementation and communicates changes to the university community.

Enhance faculty understanding of instructional technologies such that they meet the learning needs of students and advance the institution’s mission and goals.

- **Action Steps:**
  - Charge an action team to make recommendations on instructional technologies training for faculty.
  - Action team considers opportunities and issues, analyzes pros and cons of various approaches and models, estimates costs and crafts implementation plan with metrics and timelines.
  - Recommendations and plan are vetted appropriately and then considered for funding and implementation.

Reassess academic information technology and develop a schedule for subsequent assessments.

- **Action Steps:**
  - CIO charges an action team to undertake a second academic information technology assessment, similar to the assessment done for this report, and plan for subsequent assessments.
  - Action team develops assessment mechanisms, undertakes assessment, analyzes and submits findings to CIO, Provost, and Senior Vice President for Administration and Finance
  - Findings inform the priorities and planning for Years 4-10.
Establish plan for funding and implementation to transition UC as a leader in learning and research that is supported by a dynamic academic information technology infrastructure.

Action Steps:
- Charge a task force to make recommendations and plans for taking UC to the next level in its academic information technology infrastructure and services.
- The plan addresses the following: 1. anytime, anywhere access to content and applications that is device independent (a "cloud" or similar solution); 2. provisions and support for requisite learning technologies in all learning spaces; 3. sufficient AIT capabilities to match course delivery needs; 4. enhancements to faculty training and development in instructional technologies; and 5. other improvements and innovations that further advance UC’s leadership in learning and research.
- The plan includes strategic objectives, cost estimates, implementation steps, timelines and appropriate metrics.

Establish regional and corporate partnerships that advance UC’s leadership in AIT.

Action Steps:
- Charge the appropriate team or office with crafting a plan for identifying and building regional and corporate partnerships that couple UC’s strengths and objectives in AIT with partners’ strengths and objectives.

Summary of Findings

As noted above, the Blue Ribbon Task Force’s data collection used both quantitative and qualitative methods. The quantitative collection identified AIT spending and staffing in the following categories:

- Technology Category – Hardware, Software, Personnel, Connectivity and Disaster Recovery;
- AIT Functional Areas and Technology Domains – Mainframe, Wintel and Unix Servers, Storage, Local Area Network, IT Help Desk, Computers and Printers, Classrooms and Labs, and Blackboard; and
- Comparative Benchmarks in overall AIT spend and staffing levels, cost efficiency in delivery of specific AIT functions, and relative maturity level of IT infrastructure and operations processes.
Based on FY09-10 expense data, UC’s total AIT spending equaled $37,149,217, with UCIT’s spending comprising 55.2% of that total since its expenses included enterprise level services. Spending comparisons by category are summarized below.

The qualitative collection was conducted through a series of stakeholder surveys and sessions, which included undergraduate and graduate students, faculty, deans, AIT service delivery teams, IT representatives from colleges/units and senior executives. Across all the stakeholder groups a number of common technology strengths and opportunities for improvement were identified.

**Examples of technology strengths included the following:**

- UC’s portfolio of centrally managed core systems (email, Internet, Web development) are seen as effective and well supported.
- The existence of a learning management system and a simplified sign-on system were also noted as strengths.
- Stakeholders believed that unit IT staff members have appropriate skills and understanding to effectively deliver services.

**opportunities** integration leverage excellence build R&D capacity consistent delivery

**Stakeholders identified numerous opportunities for improvement such as:**

- Improve connectivity and uniform access to the latest technology tools.
- Create better integration of UC systems and applications.
- Provide more tools to facilitate secure file storage.
- Increase number of “smart” classrooms across campus.
- Give UC technical/unit staff a larger role in defining system requirements and needs rather than solutions being developed and delivered top down.
- Work with IT leadership to build confidence and trust in UCIT’s capabilities in order to successfully change.
- Build research and development capacity to help identify emerging trends and technology.
- Leverage pockets of excellence among IT managers across the university.
- Create a centralized body for distance and online learning that would establish policies and standardize tools.
- Involve more IT staff members in IT policy development, defining and establishing standards and guidelines for AIT delivery.
- Provide more training on tools used to facilitate instructional design and distance learning.
- Provide a consistent delivery of AIT services and support and more coordination and integration between unit technology staff and UCIT.

With guidance from the Task Force, Gartner identified a peer group of 12 US-based public research intensive universities in its research database that matched well against key criteria. The Gartner benchmark information would allow UC to compare its resource spending, AIT preparedness, and maturity levels for infrastructure processes to those of the peer group. Please note that since Gartner shares only aggregate information, the benchmark institutions are not specifically named.
The benchmark study showed that the peer universities spent significantly more than UC did across all technology areas and had a higher level of FTE support for students and faculty, as the charts below illustrate.

### Benchmark Spending

<table>
<thead>
<tr>
<th>Benchmark Spending</th>
<th>UC</th>
<th>Peer Institution (AVG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware</td>
<td>$19.2M</td>
<td>$25M</td>
</tr>
<tr>
<td>Software</td>
<td>$2.3M</td>
<td>$7M</td>
</tr>
<tr>
<td>Personnel</td>
<td>$13.5M</td>
<td>$22M</td>
</tr>
<tr>
<td>Connectivity</td>
<td>$2M</td>
<td>$3.5M</td>
</tr>
<tr>
<td>Disaster Recovery</td>
<td>$83K</td>
<td>$1.2M</td>
</tr>
</tbody>
</table>

### Benchmark AIT FTE

<table>
<thead>
<tr>
<th>Benchmark AIT FTE</th>
<th>UC</th>
<th>Peer Institution (AVG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Per 1000 Students</td>
<td>7.3</td>
<td>8.7</td>
</tr>
<tr>
<td>Per 100 FT/PT Faculty</td>
<td>6.7</td>
<td>10.2</td>
</tr>
</tbody>
</table>

Furthermore, UC’s maturity levels for infrastructure processes are very low compared to peers, particularly in those processes supporting key AIT service management, including demand management, IT financial management, service level management, service portfolio management and service request management, as illustrated in the chart below.

<table>
<thead>
<tr>
<th>Process</th>
<th>UC Units (AVG)</th>
<th>Peer Institutions (AVG)</th>
<th>UCIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demand Management / IT Governance</td>
<td>1.9</td>
<td>3.2</td>
<td>3.0</td>
</tr>
<tr>
<td>IT Financial Management / Chargeback</td>
<td>1.7</td>
<td>3.2</td>
<td>4.0</td>
</tr>
<tr>
<td>Incident Management</td>
<td>2.2</td>
<td>3.4</td>
<td>2.0</td>
</tr>
<tr>
<td>Information Security Management</td>
<td>2.2</td>
<td>3.1</td>
<td>4.0</td>
</tr>
<tr>
<td>Service Level Management</td>
<td>0.8</td>
<td>2.7</td>
<td>3.0</td>
</tr>
<tr>
<td>Service Portfolio Management</td>
<td>1.4</td>
<td>2.5</td>
<td>3.0</td>
</tr>
<tr>
<td>Service Request Management</td>
<td>2.1</td>
<td>3.1</td>
<td>3.0</td>
</tr>
</tbody>
</table>
Gartner’s report further validated the findings of the Blue Ribbon Task Force in relation to UC strategic goals and objectives. For example:

- UC’s academic information technology capabilities are not well-defined, communicated or understood.
- UC does not currently have the ability to offer anytime, anywhere access to all students and faculty.
- UC faculty and staff require more advanced tools and processes surrounding data management and sharing.
- UC’s AIT providers, at both the unit and central levels, do not coordinate and cooperate effectively, resulting in a high variation of service delivery and support for academic information technologies.
- UC’s future-looking processes should be matured in order to transition UC towards becoming a leader in the identification and implementation of academic technologies.
- UC does not have agreed upon standard products and services that meet the needs of units and which can be leveraged across the university to drive consistency.
- UC’s IT management and governance structure does not have mechanisms that facilitate and coordinate AIT services within and across disciplines or sufficiently support the academic mission.
Assessment and Vision Planning

Methodology
The approach of this strategic planning team was comprehensive and in-depth. The team’s process included three major steps: 1) understanding the current state, 2) benchmarking with peers and aspirational institutions and 3) visioning future capabilities and processes. Detailed inventorying of our current infrastructure was a significant step in our process since UC did not have a current assessment of our Academic Information Technology (AIT) investment or capabilities. Benchmarking allowed us to compare UC’s capability set and investments to institutions comparable in mission, size and complexity. The final step was to identify a future capability set that would position UC competitively in the marketplace. Furthermore, it was critical that all recommendations support and leverage the Academic Master Plan which is also being developed. The following sections describe in greater detail the data collection, data analysis, validation and reporting steps for this work.

Infrastructure Survey
Assessing the current state of AIT at UC was a multi-step initiative. A primary objective of any strategic planning process is to develop a deep understanding of what systems and resources are currently in place and their capacity to support the academic mission of the institution. A survey approach was used to catalog the AIT infrastructure and provide an assessment of its maturity level. The survey was developed jointly by consultants from Gartner IT and members of the Blue Ribbon Task Force. Gartner provided benchmark questions that would allow comparisons with best practices as well as comparable higher education institutions in Gartner’s database. The resulting survey was extensive and quantified unit investment in hardware, software, connectivity, disaster recovery, the personnel that support those systems, and infrastructure maturity.

The target population for the data collection was all the academic units as well as key support groups such as UCIT, the libraries, and professional practice. Prior to the survey’s launch, face-to-face training and support materials were provided. At the training session, units gave feedback on the survey instrument which was then used to refine it. Survey data was collected over a four to five week period. During this time, additional survey help was provided via Web resources and a help line. In total, 14 colleges and four support units responded to these data surveys.

Studio Course
We recognized that to truly understand our current state it was important that our primary users provide a richer assessment of the performance and sufficiency of our current AIT systems and processes. This was accomplished using several approaches. First, student and faculty voice was collected in a quarter-long studio course. The course was multi-disciplinary in its composition of both students and faculty. More than a dozen graduate students and undergraduates from east and west campus colleges worked with a faculty team from an equally diverse unit profile. In the course of 10 weeks, the students examined how faculty teach and what our learning environments look like today,
envisioned what skills the student of 2019 might possess, and hypothesized what capabilities will be needed to support student learning in the current decade. Their findings were presented in three presentations and a final report.

**Web-based Surveys**
While the studio experience provided a detailed understanding of current teaching pedagogies and emerging trends, it didn’t capture the wealth of knowledge and creativity residing in the broader UC community. These insights were gathered through Web-based surveys of our students, research and teaching faculty, and IT professionals. Customized instruments were developed for each target group and made available to all students, faculty and IT professionals. The objectives of the Web surveys were to identify what was working well, where pain points existed, and what opportunities were available to enhance AIT support in the near and far term.

**Individual and Group Interviews and Focus Groups**
Surveying can be less costly and extend respondent reach but at the expense of feedback depth and variety. To ensure a comprehensive assessment was conducted, individual and group interviews were also held with key stakeholders. Gartner conducted small group and individual structured discussion sessions with students, faculty, IT professionals, and UC’s leadership team. One to two-hour meetings were held over a two-day period with the President, the Provost, the President’s Cabinet, and the Council of Deans as well as small cohorts of students, faculty and IT personnel. These discussions were similar in focus to the surveys, asking about current AIT pain points, current opportunities and future needs. These efforts were complemented by a three-hour intensive small group discussion, sponsored by the Blue Ribbon Task Force, with over 30 unit IT professionals. Findings from these extensive interviews were summarized by Gartner and the Blue Ribbon Task Force, compared with survey data, and used to inform the visioning session.

**Benchmarking**
Collecting institutional data in a format that allowed peer and aspirational institutional benchmarking was integral to our work. As noted earlier, the infrastructure survey was constructed to include specific variables that were comparable to information in Gartner’s extensive database. This approach allowed us to compare and report UC’s resource investment, AIT preparedness and IT maturity to other similar higher education institutions. Gartner’s benchmark data was augmented by a small sample of external surveying conducted by the Blue Ribbon Task Force. A short Web-based survey was developed and distributed to CIOs at peer institutions, but response to this effort was limited.
Visioning

Visioning activities were conducted using several methodologies. Student voice was collected in the student studio. During the quarter, three corporate speakers (Cisco, Microsoft and Apple) were invited to share their vision of changes and enhancements in academic computing over the next 5-10 years. These interactive sessions were also recorded and made available to the Blue Ribbon Task Force. In addition, AIT ideas from our leadership team, faculty, students and IT staff were collected through surveys and interviews. Stakeholder data collection included questions about expectations of how teaching and research would be conducted and the capability set needed to support that work. The final visioning step was a four-hour visioning session held with UC's leadership team, which included the Provost and his executive team, UC's CIO, Deans, Associate Deans, faculty representation and key IT personnel. The purpose of this session was threefold: to develop consensus about future needs based on themes from our internal and benchmarking efforts, identify key enablers for each initiative, and identify any major gaps in our findings. The structure of this program centered around working groups of 6-8 people discussing nine themes in depth and providing summary comments for each action item. Most respondents commented that the session and format were highly productive.

Assessment Response Rates, Validation and Analysis

Infrastructure Survey

The AIT infrastructure survey was sent to all of the IT managers for each of the academic units, UCIT and the key supporting units such as the libraries, professional practice and the Provost Office. An email from the Provost was sent prior to the survey's launch explaining the survey's objective and the timetable for completion. All unit surveys were returned; most were completed but a few respondents only provided minimal data. Colleges with separate schools (e.g., A&S, CEAS, Medicine) sent the surveys to IT managers within each unit and returned separate spreadsheets from each school or aggregated the individual workbooks and sent a combined workbook. In total more than 50 Excel workbooks were returned and aggregated at the unit and university levels. After the data were aggregated, portions of it were validated to ensure accuracy. For example, personnel costs were checked to ensure they were accurately distributed across IT activities. Gartner also reviewed the aggregate data for consistency and accuracy. Outliers were identified, checked and corrected where necessary.
Stakeholder Surveys and Interviews
Four separate online surveys were conducted and the response rate was significant. They were administered using SurveyMonkey® and distributed through faculty and staff listservs and a Blackboard link for students. The surveys were open for at least two weeks and reminders were sent to increase response rates. Survey participation was significant with more than 250 students, 413 teaching and 375 research faculty, and 27 IT professionals responding. Students, faculty, and IT staff from all units responded to the surveys but not necessarily in proportion to their instructional base. Most respondents completed all parts of the surveys, and many individuals provided detailed open-ended comments. As evident from these numbers, community interest and passion about AIT was extensive. Appendices C1-C5 (student, teaching faculty, research faculty and IT staff survey and round table discussion guide) show the respondent profile and questions for each survey.

AIT Theme Validation Session
Data from the surveys and stakeholder interviews were summarized, refined and validated by the UC stakeholders. Key themes emerged from summaries of the internal surveys and Gartner interviews. These themes were then validated by tying major conclusions with supporting quotes from the stakeholder analysis to each finding. Next, these themes were discussed by the entire Blue Ribbon Task Force to ensure each one accurately represented the data. Theme wording was edited where needed and at least one additional theme was added as a result of committee review. Finally all themes were validated by UC’s leadership team in the visioning session held in late April. The findings discussed at the visioning session are listed in Appendix D.

Key Findings

University Leadership
President Greg H. Williams, Senior Vice President and Provost Santa Ono, Senior Vice President for Administration and Finance Robert Ambach, Executive Vice President Karen Faaborg, Vice President for Student Affairs and Services and Chief Diversity Officer Mitchel Livingston, former Vice President for Research Sandra Degen, Interim CIO Michael Lieberman, the Deans and other leaders were interviewed to learn their perspectives on the current and future states of AIT at UC.

“facilitate group work... be nimble... respond to needs”

The president and members of his staff spoke about AIT within the context of the university’s strategic priorities. President Williams noted the need to facilitate collaboration given the growing emphasis on multidisciplinary approaches to teaching, learning, research and scholarship: “Our technology and systems must facilitate group work and be nimble enough to respond to the needs and expectations of the students and faculty.” He was also interested in how technology would further assist the university in measuring results for learning, research, sustainability, mission-based health care, and all the goals of UC2019.

Similar themes were echoed by the senior vice presidents, who also spoke about the university’s increasing dependence on data to support decisions and measure outcomes.
“Universities must have computational firepower to stay competitive,” they noted. They also mentioned the importance of understanding technology trends and finding the best fit for the institution’s needs to advance teaching, learning and research. They also saw the benefits of standardization and believed the university could find the right balance to address institutional and unit level needs. In addition, they recognized that it was time to assess the IT governance structure, especially in terms of the best representation on key committees.

Leadership in student affairs and services focused on AIT in terms of enabling and measuring learning, and in the use of technology to support recruitment. In addition, they underscored the need to meet future students’ expectations for connectivity, smart learning spaces and collaborative experiences. “Many of our systems and services are not yet 24/7, but that’s what students expect” was a remark noted numerous times. Also noted was that “students are more tech savvy than faculty and staff,” so the institution needs to find better ways to increase the skill levels of the employees.

Research leadership expressed the need for more computational firepower and asked how technology could help the institution meet compliance requirements related to sponsored and other research. Participants in this session also noted the need for more integration of resources and improved mechanisms within the IT governance structure and process to capture the views and needs of end users. Not surprisingly, there was also much discussion on improving IT security as more researchers work with sensitive data.

The deans expressed the need for more speed, power, and access. Several noted the special computational needs in the sciences, for learning and research, and concerns about data preservation and management, including a technology solution for chemical management. All agreed with the goal of a 100% wireless campus. There was a robust discussion about the centralization versus decentralization of AIT, including services and expertise related to instructional design. Many of the concerns stemmed from trust issues dating back to the previous leadership and management of UCIT. There was acknowledgement that some standards could improve service and delivery and bring down costs through consolidated purchases. Several deans noted that UCIT needed visionary leadership with a service orientation, someone who would work with the academic units. The deans also expressed dissatisfaction with the current IT governance structure, arguing that unit needs are not reflected in the decision-making process. Also noted were concerns about system integration, data storage and easier remote access. Deans admitted that there has been a culture of not sharing information and expertise related to IT but saw the benefits of moving toward a different model that allowed for more collaboration among IT managers and staff.

**Teaching Faculty and Researchers**

Faculty expressed that technology would be a key enabler for their success in the classroom and in research. Classroom AIT needs included flexible spaces with technology that facilitated enhanced learning and assessment. For example, availability of student interaction and collaboration technologies such as PRS and SmartBoard were frequently mentioned in the survey. Also, furnishings that allowed for fitting space to pedagogy was a common theme. These spaces should be systematically maintained and supported such that response time was minimal when problems occur. There was support for investment in collaboration spaces, for an “infrastructure which is flexible, dynamic, and allows all new technologies to easily [connect] to it.” Training was another requisite need. Faculty noted that trainers should have “practical experience with the
technology, designed for those not familiar with it. Too often training is done by geeks who expect that we know what they know about technology. We need real world examples by someone who can relate to faculty who don't spend all day focusing on technology."

UC information access, processing and delivery are expected to be largely virtual by the end of the decade. Mobile technology will be less the exception and more the dominant paradigm. Faculty noted “students no longer expect the majority of learning to come in the classroom so we need to adapt, which means a robust Web infrastructure where we can deliver content to and receive content from our students securely and efficiently…."

Most of our instructional materials will also be electronic. Respondents suggested "cloud computing could solve many of the above issues since it provides access to powerful computing without tying up one’s own machine." But, they also recognized this will require significant infrastructure upgrades by the institution. Lastly, the growth and opportunity in online learning were acknowledged as well as the need for new course development and collaboration capabilities to support that enterprise.

Researchers use technology tools common to all faculty but also have unique AIT requirements. They cited regular use of desktop and mobile computational tools (e.g. computers) but expressed a greater need for sophisticated communication, data capturing and collaboration technologies. Technologies such as videoconferencing systems, voice recording, video production, scanners and PDA systems were also frequently mentioned. As expected, the research faculty stored and accessed significantly more data and had greater computational and data security requirements. Many also noted specialized technologies required for their research. In addition to hardware, these faculty more frequently used statistical, media production, scientific writing and reference software, as well as accessed electronic databases.

This constituency group mirrored opportunities for improvements heard from other students, faculty, and staff. First, our aging infrastructure must be upgraded both locally and at the centralized level. New capabilities must propel UC ahead, not just move us to parity with our peers. Second, it was also suggested that increased technical training and support are needed. Without adequate internal assistance, faculty are reluctant to use new technologies, to spend enough time getting up to speed or to seek external help. Greater UC advice and support for new technology tools could accelerate their use and improve efficiency. Finally, centralized IT resources are not viewed as leading edge, cost efficient, easily accessible or readily customized to individual needs. This group like others recognized that prioritization is an imperative in a resource constrained environment as well as the importance of highly leveraging our asset base.
Students
The student studio concentrated on three elements of our learning environments: learning spaces, users and the evolving importance and usage of technology in our institution. To appreciate the diversity of current spaces, student teams visited diverse classes across campus. They concluded that the placement of technology aids, location of faculty, and orientation of students ultimately directed the learning focus.

user-centered approach

A user-centered approach was used to profile students of 2019 who are today's nine year olds. Using this unique pedagogy, they created persona profiles of our 2019 Class using Facebook. Seeing the faces, interests and hobbies of these young students helped our Task Force begin to appreciate the skills and expectations the Class of 2019 will have relative to technology.

Another course exercise was focused on understanding when technology might hinder or have no benefit to the student learning. Three “simulated” classes were held and students were instructed to use technology as a distraction to themselves and others around them. After participating in these disruptive experiences, students noted, “these insights opened our minds to the complex orchestration and sophistication of training needed to produce constructive learning environments as a faculty member.” New technologies may offer additional capabilities and contemporary connections; however, without appropriate integration in the curriculum, they can often be destructive and distracting.

turning off technology in the classroom not the solution

The studio experience was summarized by several themes. The first was the pervasiveness and impact of technology. Students noted that “turning off” technology in the classroom when its use becomes a distraction is not the solution. Instead faculty must work with students to harness that capability to empower student learning in new and innovative ways. Furthermore, our students concluded the capabilities of these devices will become an integral part of their ability to act and will enhance their ability to control their destiny. Thus, they view these tools as key enablers for taking responsibility for personal learning and development.

ready access tools and data anytime / anywhere

The follow-on student survey focused on two broad topics: learning spaces and technology tools. First we asked about study locations. Providing ready “access” to tools and data anywhere/anytime is a key consideration for today's learner. Understanding where students work, what tools they use, and how often tools are used and by whom (students or faculty) was important. Results suggest students largely work at home, in classrooms and university computer labs. The most popular secondary locations are campus social spaces and the libraries. In these spaces they’re using computers, thus
they need wireless and power access. While not an IT issue, students also noted the classroom environment affected their ability to work effectively, citing elements such as the number of students, flexibility of the chairs/desks, and even area lighting.

The tools used most frequently in class include Blackboard, email, textbooks, the Web and the Microsoft Office suite of products. Students commented favorably about classroom technology (e.g., smart classrooms), noting it enhances the learning environment, but only when an instructor effectively utilizes these instructional aids. Finally, we asked about initiating a laptop requirement for all students. The majority (63%) believe UC should encourage laptop purchases, but the same number (65%) felt this should not be a requirement.

**IT Managers**

Our first line providers of AIT services are the unit-based IT groups and UCIT. These groups had numerous constructive suggestions for enhancing services and better utilizing our resources. Three themes emerged from their feedback. The most significant imperative was the need for new AIT governance and budgeting structures. Current systems reinforce decentralized building of unit AIT systems and processes. For example, our governance structures do not systematically bring unit IT and UCIT personnel together to discuss needs and share knowledge, nor do these groups work together to build new shared systems. This approach has resulted in college-based services that currently address user needs adequately, but are increasingly becoming less effective due to shrinking resources and increased demand. Unit IT managers suggest that services could be improved through greater centralization of baseline infrastructure. Investment in a more sophisticated IT backbone will require a new budgeting approach for AIT and a reallocation of existing resources.

**shared idea & decision making responsibility & accountability**

Managers articulated other critical criteria for the governance structure as well. First, the system should encourage frequent communication and idea sharing across the units and with UCIT. This would increase skill development and R&D within the AIT organization and forge a path toward greater baseline system usage. A new structure should also incorporate shared decision-making for centralized system investments. Unit managers were often surprised by UCIT AIT investments and felt these new capabilities were often redundant with unit systems or non-compatible. A new system of shared responsibility and accountability for AIT system strategy and development would reduce the current perception of top down decision-making and the resulting mistrust of UCIT. Finally, the new structure must promote a service-based culture for AIT. Units have a strong service orientation toward their college constituents but believe UCIT’s approach is more directive focused rather than problem-solving in orientation.

IT managers provided numerous suggestions for re-balancing our mix of local versus centralized services. Opportunities for centralization include Web services (e.g., CMS), distance learning support, faculty AIT training, help desk functions, printing services, email, major software/hardware purchases, maintaining and supporting servers and computer lab management. While many of the above are currently handled centrally, several such as centralized purchasing, creation of server farms and computer lab management are major departures from current approaches. Many unit-based IT managers felt desktop and classroom support should remain a local service since response time and personalization was important. Unit AIT managers also advocated for
continued local development to build customized systems to address unique college requirements.

A host of future needs beyond the above suggestions was proposed. With the expected increase in distance learning pedagogies and programs, the infrastructure to support it must also be expanded. Specific new needs included virtual spaces so students can easily collaborate and share documents. A secure cloud-based network could facilitate collaboration as well provide access to specialized software needs for courses. Improved connectivity across campus was also cited. Wireless bandwidth/coverage should be constantly increased and updated to fit the needs of the university. Finally, collaboration and connectivity could be enhanced by implementing a unified network for both internal and external partners. In summary, IT managers recognized the imperative of a more efficient and effective use of our resources and expressed enthusiasm for new systems that would foster greater collaboration and cooperation as an AIT organization.
Benchmark or Comparative Data Highlights

As noted earlier, the Blue Ribbon Task Force asked Gartner to identify 12 urban research intensive institutions in their database that had student enrollments, number of faculty, and operating expenses similar to UC. The statistics were based on the U.S. Department of Education Institute of Education Sciences National Center for Education. Statistics for UC's operating expenses were taken from UC's Budget Plan for FY 2009-2010. As illustrated in the slides below, peer institutions are spending significantly more on AIT across all technology categories than UC. Furthermore, UC's total AIT FTEs are low compared to peer institutions on a per student and per faculty member basis.

UC AIT Investment Levels are Compared to a Peer Group of 12 Universities that Match Well Against Key Criteria

- A peer group of 12 US-based public research intensive universities was selected with the following Median statistics:
  - Operating Expense* - $1.736B
  - FT/PT Faculty* - 3,036
  - Students* - 41,363

- UC’s results are displayed in comparison with the following reference points:
  - Peer Average: representing the average for the comparative group
  - Peer Middle quartile range: representing the range between the 25th and 75th percentiles for the comparative group
  - Peer Range: representing the high to low range of results for the comparative group

- Differences in spending and staffing metrics derived from this analysis provide insight into current Academic IT investment levels relative to comparable universities. These measures should always be considered within the context of UC future state Academic Excellence objectives.

*Statistics based upon U.S. Department of Education Institute of Education Sciences National Center for Education Statistics
**Statistics taken from the University Current Funds Budget Plan FY 2009-2010 for Uptown and Branch Campuses (Clermont and Raymond Walters.)
Peer Universities are Spending Significantly more on Academic Information Technology Across all Technology Categories

Relative UC AIT Dollar Expenditure vs. Peer Average

- **Hardware**: UC $19,285,426, Peer $7,000,000
- **Software**: UC $13,542,086, Peer $7,000,000
- **Personnel**: UC $1,964,814, Peer $3,500,000
- **Connectivity**: UC $1,200,000, Peer $3,500,000
- **Disaster Recovery**: UC $83,067, Peer $7,000,000

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UC FY09-10 AIT FTEs – By College & Unit

- **Total AIT FTEs**: 290
- **Salaried AIT FTEs**: 183
- **Student Labor AIT FTEs**: 104
- **Contractors**: 3
Benchmark results for the UC AIT Staffing against the 12 peer universities along the following two dimensions are as follows:

The benchmarking also captured data relevant to infrastructure processes – those processes that produce value and lead to maximum efficiencies. Maturity levels were rated on a scale of 0 to 5, with 5 rating as the highest maturity. As demonstrated below, UC’s maturity level for infrastructure processes are very low compared to peers, particularly in those processes that support key AIT service management areas. That said, the maturity level for UCIT’s processes were generally better than unit averages and better than peers in a few areas. (Definitions for the infrastructure processes can be found on slides 90-94 in the full Gartner report [Appendix E.])
Appendices

A. Task Force Charge and Membership
B. Studio
C. Stakeholder Surveys
   1. Student
   2. Teaching Faculty
   3. Research Faculty
   4. IT Managers
   5. Roundtable Discussion Guide
D. Visioning Workshop Report
E. Gartner Report and Benchmark Data
APPENDIX A Task Force Charge and Membership

The Blue Ribbon Task Force on Academic Information Technology was charged jointly by then Sr. Vice President and Provost for Academic Affairs, Anthony Perzigian and Sr. Vice President for Administration and Finance, Robert Ambach on May 25, 2010. The written charge follows:

Charge to Blue Ribbon IT Task Force

The University’s enormous investment in new buildings and facilities over the past twenty years is proving to be insufficient to keep pace with the challenges and opportunities we now face because of advances in the digital age. Through information technology, competing institutions and entities now have the capacity to create virtual environments that are highly attractive to new learning communities and markets. UC can and must enhance its own competitive position and secure its future through effective IT planning that builds upon the advantages provided to us by our extraordinary physical facilities. In the midst of the sweeping changes of the digital age that are transforming and reshaping higher education, UC must now develop the vision and adaptive strategies to move with those changes in a competitive, innovative, and strategic fashion.

In that context, this Task Force is charged to develop a vision and strategic plan for academic information technology (AIT) at UC. The guiding motif of the Task Force should be the achievement of a highly flexible delivery architecture where mission-critical resources are available anytime and anywhere. Through the work of the Task Force, UC needs to acquire a comprehensive understanding of its AIT infrastructure needs over the next five to ten years. The Task Force will identify baseline technology needs including access levels and resources for all students as well as a delineation of that information technology infrastructure necessary to support UC’s research and scholarly enterprise.

The Task Force will recommend funding strategies and organizational structures that effectively support and sustain a flexible, adaptable IT infrastructure. Within the context of performance-based budgeting, funding considerations will address college vs. central vs. system-level (i.e. USA) responsibilities. The Task Force will also address such issues as UC’s wireless infrastructure, electronic classroom inventory, capacity to expand its portfolio of e-learning activities, and systems to support a globally networked scholarly enterprise, including a review of the current IT governance structure at UC. Through a mid-project meeting in early November, the Task Force should update the Provost Office on its progress to date. Preliminary recommendations and a draft report will be submitted to the Provost by December 31, 2010.
## Task Force Membership

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>College or Department</th>
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<tbody>
<tr>
<td>Peg Buttermore, Co-Chair</td>
<td>Sr. Associate Vice President</td>
<td>Administration and Finance</td>
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<tr>
<td>BJ Zirger, Co-Chair</td>
<td>Associate Professor</td>
<td>Lindner College of Business</td>
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<tr>
<td>Eric Anderson</td>
<td>Associate Librarian</td>
<td>UC Blue Ash College</td>
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<tr>
<td>Cathy Barnes</td>
<td>Associate To</td>
<td>Administration and Finance</td>
</tr>
<tr>
<td>Tom Cruse</td>
<td>Director Academic</td>
<td>UC Blue Ash College</td>
</tr>
<tr>
<td>Chris Edwards</td>
<td>Assistant Dean</td>
<td>College of Nursing</td>
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<tr>
<td>Bill Fant</td>
<td>Associate Dean</td>
<td>Winkle College of Pharmacy</td>
</tr>
<tr>
<td>Mark Faulkner</td>
<td>Associate Vice President</td>
<td>UC Information Technology</td>
</tr>
<tr>
<td>Dominic Ferreri</td>
<td>Director AF Information Technology</td>
<td>Administration and Finance</td>
</tr>
<tr>
<td>Wayne Hall</td>
<td>Vice Provost</td>
<td>Office of the Sr. Vice President and Provost</td>
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<tr>
<td>Anton Harfmann</td>
<td>Associate Dean</td>
<td>College of Design, Architecture, Art and Planning</td>
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<tr>
<td>Ken Hirsh</td>
<td>Director Academic</td>
<td>College of Law</td>
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<tr>
<td>Kyle Gundrum</td>
<td>Student</td>
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<tr>
<td>Michael Lieberman</td>
<td>Interim Vice President and Chief Information Officer</td>
<td>UC Information Technology</td>
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<tr>
<td>Joe Ludwig</td>
<td>Student Co-Op</td>
<td>College of Business</td>
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<tr>
<td>Lee Person</td>
<td>Sr. Associate Dean</td>
<td>McMicken College of Arts &amp; Sciences</td>
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<tr>
<td>Jim Plummer</td>
<td>Vice President for Finance</td>
<td>Administration and Finance</td>
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<tr>
<td>Kathy Qualls</td>
<td>Associate Sr. Vice President</td>
<td>Office of the Sr. Vice President and Provost</td>
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<tr>
<td>Leslie Schick</td>
<td>Associate Dean and Director</td>
<td>University Libraries</td>
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<tr>
<td>Matt Stephens-Rich</td>
<td>Student</td>
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<tr>
<td>Nelson Vincent</td>
<td>Associate Dean</td>
<td>College of Education, Criminal Justice and Human Services</td>
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<tr>
<td>Stephen Young</td>
<td>Assistant Dean</td>
<td>UC Clermont College</td>
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</table>
The course was multi-disciplinary in both its composition of students and faculty. More than a dozen graduate and undergraduates from east and west campus colleges worked with a faculty team from an equally diverse unit profile. In the course of 10 weeks, the students examined how faculty teach, what our learning environments look like today, envisioned what skills the student of 2019 might possess and hypothesized what capabilities will be needed to support student learning in the current decade. Their findings were presented in three presentations and a final report.

The work of the studio can be reviewed at

https://sites.google.com/site/envisionaitstudio/
# APPENDIX D  Visioning Workshop Report

## AIT2019 Visioning Big Ideas

<table>
<thead>
<tr>
<th>Theme</th>
<th>Idea</th>
<th>Blue Ribbon Votes</th>
<th>Other Votes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  UC’s students, faculty and staff have anytime, anywhere access to technologies that support their learning, research and work.</td>
<td>UC cloud/collaboration tools</td>
<td>7</td>
<td>1</td>
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<tr>
<td></td>
<td>Total integration vs. current distributed system</td>
<td>1</td>
<td>1</td>
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<td></td>
<td>Remove bureaucratic hurdles</td>
<td>6</td>
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<td></td>
<td>Classroom = gathering places</td>
<td>5</td>
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<td></td>
<td>Create a culture that embraces new technologies</td>
<td>2</td>
<td>13</td>
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<td></td>
<td>UC leader in access, connectivity &amp; communications</td>
<td>1</td>
<td>7</td>
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<td>2  UC’s IT providers, at the central and unit levels, are trusted as high quality providers of a portfolio of academic technologies and services.</td>
<td>Anytime; anywhere tech support</td>
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<td></td>
<td>Develop and implement tech standards</td>
<td>1</td>
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<td></td>
<td>Move AIT to Provost office</td>
<td>3</td>
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<td></td>
<td>AIT functions transparently as one team</td>
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<td></td>
<td>Reconceptualize AIT organizational model</td>
<td>3</td>
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<td></td>
<td>Create community of IT providers (understand needs and changing roles)</td>
<td>3</td>
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<td></td>
<td>Resource model that supports IT innovation and expertise</td>
<td>3</td>
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<tr>
<td>3  UC’s data management and security policies and procedures align with industry best practices &amp; trends.</td>
<td>More agility in responding to an insecure world (resource for policy/procedures)</td>
<td>5</td>
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<td></td>
<td>Partner with other universities (backup &amp; recovery)</td>
<td>1</td>
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<td></td>
<td>Create culture of data protection</td>
<td>1</td>
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<td></td>
<td>Partner to create regional/state data facility &amp; expertise</td>
<td>1</td>
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<td></td>
<td>Balance innovation and risk</td>
<td>6</td>
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<td></td>
<td>Centralized data warehousing</td>
<td>2</td>
<td>3</td>
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<td>Automated backup (cloud computing)</td>
<td>1</td>
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<tr>
<td>4  UC facilitates collaboration across the university through technologies that support and advance the institution’s mission and goals</td>
<td>Culture that rewards and stimulates collaboration</td>
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<td>18</td>
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<td>Low cost access to collaboration tools</td>
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<td></td>
<td>Create collaboration spaces for students</td>
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<td></td>
<td>Integrated tools and data services to facilitate collaboration</td>
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<td>Create collaborative/interdisciplinary programs</td>
<td>10</td>
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<td></td>
<td>Remove disincentives and create incentives for collaboration</td>
<td>2</td>
<td>9</td>
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<td>3</td>
<td>48</td>
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## AIT2019 Visioning Big Ideas

<table>
<thead>
<tr>
<th>Theme</th>
<th>Idea</th>
<th>Blue Ribbon Votes</th>
<th>Other Votes</th>
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<tbody>
<tr>
<td>5</td>
<td>UC has <strong>uniform and well distributed instructional technologies</strong> and capabilities across units and disciplines that reflect market and pedagogical demands and advances.</td>
<td>Comprehensive vision for tech expectations</td>
<td>-</td>
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<tr>
<td></td>
<td>Grow CET&amp;L to become a UC academy of pedagogy innovation</td>
<td>2</td>
<td>7</td>
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<td></td>
<td>Centralized software purchasing available in the cloud</td>
<td>-</td>
<td>18</td>
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<td>System to encourage/support faculty technical proficiency</td>
<td>-</td>
<td>7</td>
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<tr>
<td></td>
<td>Model institutional standards based on national standards of assessment (online)</td>
<td>-</td>
<td>3</td>
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<td></td>
<td>Develop enterprise center with regional partners to become a leader in IT</td>
<td>-</td>
<td>1</td>
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<tr>
<td></td>
<td>Partner with industry/community to facilitate innovation/tech acquisition (true Weill Collaborative model)</td>
<td>1</td>
<td>30</td>
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<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>3</strong></td>
<td><strong>46</strong></td>
</tr>
<tr>
<td>6</td>
<td>UC's <strong>IT governance</strong> ensures effective and collaborative decision-making, policy development and IT acquisition development and implementation.</td>
<td>Better representation at the table</td>
<td>-</td>
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<tr>
<td></td>
<td>IT governance should reflect academic mission and organization</td>
<td>4</td>
<td>3</td>
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<td></td>
<td>Develop structure for better communication and broader representation</td>
<td>7</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>Start from scratch with IT structure</td>
<td>-</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Take risks to satisfy local IT needs</td>
<td>-</td>
<td>6</td>
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<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>11</strong></td>
<td><strong>35</strong></td>
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<tr>
<td>7</td>
<td>UC is a <strong>leader in learning and research</strong> that is supported by a dynamic academic information technology infrastructure.</td>
<td>Branch campuses must have voice</td>
<td>1</td>
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<tr>
<td></td>
<td>Create UC S303c for AI/IT strategic innovation</td>
<td>1</td>
<td>2</td>
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<tr>
<td></td>
<td>UC needs to be IT Triers and Innovators</td>
<td>-</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Partnership/teamwork/trust is critical</td>
<td>1</td>
<td>1</td>
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<td></td>
<td>By 2019 all students have a system (ePortfolio) to document academic achievements</td>
<td>1</td>
<td>1</td>
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<td>Infrastructure is transparent &amp; academic strategy drives IT</td>
<td>1</td>
<td>8</td>
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<tr>
<td></td>
<td>Create an IT corridor by partnering with other institutions</td>
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<td>-</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>4</strong></td>
<td><strong>19</strong></td>
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