This paper was produced by the Coalition of Higher Education Information Technology Associations (CHEITA) Benchmarking Working Group. For more information about CHEITA, visit www.cheita.org.
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CITATION FOR THIS WORK


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PREAMBLE

By comparing ourselves with our peers, we open the door to conversations about how our IT services are provisioned. This helps us to identify areas of strength as well as those areas where we are not performing as effectively as other institutions.

Benchmarking requires participants to openly share their data and their experiences. The greater the sharing, the richer the result. The authors would like to thank Beth, Vanessa, Paul, and Tim (and his predecessor Denis) for being willing to share and for their enthusiastic participation and contributions to this study.

INTRODUCTION

Most, if not all, of the Coalition of Higher Education Information Technology Associations (CHEITA) member associations carry out some form of benchmarking; however, the outputs from those initiatives vary.

To accomplish cross-border comparisons appropriate for the global higher education business, it is necessary to have a way of comparing individual institutions. To facilitate this, at the beginning of 2014 CHEITA began discussing the possibility of comparing different IT benchmarking initiatives around the globe, with the goal of identifying a single model that would enable the international higher education IT community to use consistent and relevant information for institutional decision making.

The CHEITA Benchmarking Working Group was created to explore the viability of benchmarking IT in higher education on a global scale and to identify a way to undertake such an initiative. Among the mechanisms already in use, the Complexity Index developed by the Council of Australian University Directors of Information Technology (CAUDIT) was identified as a suitable starting point, and from this the CHEITA Global Complexity Index was developed.

CHEITA GLOBAL COMPLEXITY INDEX

The CHEITA Global Complexity Index uses staff numbers, student numbers and research income as the basis of its algorithm. University staff make demands on IT budgets through software licensing, telecommunications charges, applications development (human resources, finance, student administration, etc.), identity management, internet access, networking, access to storage, and hardware (desktop, laptop, tablet) as well as through direct IT support and service desk calls. The total number of university staff is therefore effectively a proxy for the cost of common IT services.

Students make demands on IT budgets through software licensing and hardware costs (student labs), networking costs (to support student labs and provide wireless access), identity management, applications development (e.g., online services, virtual learning environments,
portals), printing, internet access, direct support, and service desk calls. The total number of students is therefore a proxy for the cost of IT services related to teaching and learning.

Research activity makes demands on IT costs for high-performance computing, research data repositories, software licensing, specialist support and integration with central IT services, support of nonstandard IT activities arising from research activities, networking, federated identity management, and e-research services. The level of research activity is an indicator of the cost of research-related IT services. Research income is a proxy measure for research activity.

The use of the CHEITA Global Complexity Index to compare IT expenditure across different universities is a considerably more sophisticated approach than making comparisons based on a percentage of revenue (which is common in other sectors of the economy). CHEITA has already used the index to compare IT expenditure data from 235 universities in 11 countries across the globe (see Benchmarking: A Global Approach).

The purpose of this follow-up study is to verify the efficacy of using the Global Complexity Index as a mechanism to facilitate the easy identification of “like” institutions around the world, thereby providing a starting point for further and deeper comparisons and discussions with the aim of improving performance.

INTERNATIONAL PEER GROUP SELECTION

CHEITA used the Global Complexity Index to select four universities across three countries to participate in this international peer group benchmarking study. Aside from the index no other data were used to select the four participants:

- University of South Australia (Australia)
- University of Texas at San Antonio (USA)
- University of Wisconsin–Milwaukee (USA)
- Carleton University (Canada)

These four universities were invited based on their respective complexity indexes falling within a relatively narrow band of 3.25 to 3.52 (see table 1).

**Table 1. The four institutions included in the study**

<table>
<thead>
<tr>
<th>Metric</th>
<th>University of South Australia</th>
<th>University of Texas at San Antonio</th>
<th>University of Wisconsin–Milwaukee</th>
<th>Carleton University</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student FTE</td>
<td>22,264</td>
<td>24,362</td>
<td>23,479</td>
<td>25,213</td>
</tr>
<tr>
<td>Staff FTE</td>
<td>3,076</td>
<td>3,788</td>
<td>3,449</td>
<td>2,006</td>
</tr>
<tr>
<td>Total research income</td>
<td>$63.8m</td>
<td>$45.8m</td>
<td>$53.2m</td>
<td>$59.0m</td>
</tr>
<tr>
<td>Complexity index</td>
<td>3.35</td>
<td>3.52</td>
<td>3.43</td>
<td>3.25</td>
</tr>
</tbody>
</table>
DATA GATHERING

The CIOs of each of the four study participants were invited to provide information about their institution on a range of dimensions, including

- Institutional strategy
- Teaching and learning strategy
- Research strategy
- IT environment (governance, scope, challenges, expenditure, etc.)

STUDY PARTICIPANTS

The four study participants exhibit several similarities at an institutional level. All are PhD-granting institutions with a total number of students (FTE) in a narrow range between 22,264 (University of South Australia) and 25,213 (Carleton University). All are metropolitan-based universities that are striving to develop deep connections with their respective communities. To set context for each institution in this study and examine what makes them viable comparators, this section provides an overview of their institutional characteristics.

University of South Australia

The University of South Australia is Australia’s university of enterprise and is a globally focused, locally engaged institution established on the dual principles of equity and excellence. It is South Australia’s largest university and in 2015 was ranked 25th in the QS World University Rankings for institutions under 50 years old.
The University of South Australia offers degree programs across a wide range of subjects, including business, law, education, arts and social sciences, health sciences, information technology, engineering, and the environment. On average, over the past five years 90% of the university’s graduates going on to full-time work are employed in a professional occupation within four months of completing their degree. A total of 88% of the graduates surveyed in 2014 were satisfied with the quality of their program.

The primary aim of its strategic action plan, called Crossing the Horizon, has been to ensure that UniSA engages fully with the professions and industry globally; that its research is informed, leading edge, and relevant; and that its graduates are the new professionals driving the national and international economy through their skills, capabilities, and innovation potential.

The university’s commitment to excellence is reflected in the caliber of its academics and researchers. The number of UniSA staff with a doctoral qualification has grown remarkably, with 73% of academic staff now holding a PhD degree.

The University of South Australia has 32,079 students (22,264 FTE), of which 3,810 FTE are postgraduate students (including 550 FTE PhD students). It also has 3,839 FTE international students, of which 449 FTE study offshore via teaching arrangements with offshore partners.

Approximately 64% of the university’s revenue comes from the Australian Commonwealth Government. The remainder is from a variety of sources, including fee-paying students and industry (for contract research). Research-related income represents about 18% of the university’s total revenue.

The University of South Australia has four major campuses in metropolitan Adelaide and two campuses in regional South Australia (Whyalla and Mt. Gambier).

University of Texas at San Antonio

The University of Texas at San Antonio is an emerging Tier One research institution with nearly 29,000 students. It is the largest university in the San Antonio metropolitan region. Students engage with their peers, faculty, and researchers, working in collaborative environments and contributing to cutting-edge research. The university’s location at the heart of a vibrant urban center allows students to participate in internships and service programs that develop their knowledge and skills and cultivate their leadership abilities. The university fosters an environment that creates a sense of belonging for every student.

The University of Texas at San Antonio has been ranked as one of the top 400 universities in the world, as well as one of the world’s top 100 under 50 years old. It offers 70 bachelor degree programs, 68 master degree programs, and 24 doctoral degree programs, plus 9 undergraduate certifications and 19 graduate certifications. Seventy-five percent of its graduates go on to full-time work and are employed in a professional occupation within four months of completing their degree.
The primary aim of its strategic plan, called Blueprint UTSA, is to transform students into successful scholars, global citizens, and leaders; to create scholarly work and research that significantly impacts society; to enrich the quality of life and economic prosperity of the communities the university serves; to deliver world-class resources, support, and infrastructure commensurate with a Tier One institution; and finally to achieve recognition and esteem as a premier research university.

The university is funded by a combination of state funds (including statutory tuition), designated funds (including designated tuition), service center/recharge, restricted funds (e.g., gifts, sponsored programs, financial aid), auxiliary enterprise funds (e.g., housing, parking, athletics), and plant funds (e.g., deferred maintenance, repair and renovation).

The University of Texas at San Antonio comprises three campuses: the Main Campus, located in the Northwest of San Antonio, the Downtown Campus, and the Hemisfair Park Campus, also located in downtown San Antonio.

**University of Wisconsin–Milwaukee**

The University of Wisconsin–Milwaukee, which is Wisconsin’s only public urban research university, offers a uniquely relevant learning experience, educating more Wisconsin residents than any other university in the world and recruiting a growing population of international students and faculty. Discovery and learning at the university has put it in the top 102 public doctoral research institutions in the country.

The University of Wisconsin–Milwaukee offers 186 degree programs—93 undergraduate, 59 master’s, and 34 doctoral—plus many cross-disciplinary certificate programs. Its 14 schools and colleges house more than 90 scholarly centers, institutes, and laboratories. Among these is the School of Freshwater Sciences, whose mission is to advance fundamental and strategic science and train the next generation of freshwater professionals to inform policy, improve management, and promote the health and sustainability of freshwater systems worldwide.

In addition, the School of Architecture and Urban Planning (SARUP), a Center of Excellence in the University of Wisconsin System, offers an extensive array of degree programs—BSAS, M.Arch, M.S.Arch, PhD, MUP, and Coordinated M.Arch/MUP, matched by only six other architecture schools nationally.

The university’s Strategic Plan 2020 focuses on student success, research growth, and community impact. It aspires to graduate highly skilled individuals, generate discoveries and scholarly outcomes, deepen its positive impact in the city and region, and foster a culture that embraces innovation, creativity, and diverse perspectives within an inclusive environment.
The University of Wisconsin–Milwaukee has 1,600 faculty and instructors, academic advisors, personal mentors, and more than 28,000 students from 48 states and nearly 80 countries (90% are Wisconsin residents). Approximately 18% of the university’s budget comes from the state of Wisconsin; however, with a declining population, funding dollars from the state are decreasing. The university has one main campus of 104 acres, with other locations such as the School of Freshwater Science, the School of Continuing Education, the School of Public Health, and other research and collaborative locations in the Milwaukee metropolitan area.

Carleton University

Carleton University is just minutes from the heart of Canada’s capital city of Ottawa in the province of Ontario, enjoying easy access to the many organizations, associations, and businesses that thrive in Ottawa. Many of Ontario’s leading high-tech companies surround the campus, where cutting-edge research joins with highly innovative teaching to solve real-life problems. As members of a dynamic, research-intensive university, Carleton’s faculty and staff provide a superior learning experience for students who hail from every province and from over 100 countries around the world. Ninety-five percent of Carleton’s academic staff (865 full time) hold a PhD.

Carleton University offers 65 programs of study in areas as diverse as public affairs, journalism, film studies, engineering, high technology, and international studies. Its creative, interdisciplinary, and international approach to research has led to many significant discoveries and creative
works in science and technology, business, governance, public policy, and the arts. Research Info Source ranks Carleton 23 out of 97 members of Universities Canada.

Its strategic plan is titled Collaboration, Leadership and Resilience—Sustainable Communities, Global Prosperity and has four focuses, for Carleton to be known

- nationally and internationally for its research and teaching in programs that respond to the needs of society today and anticipate the needs of the future
- for promoting research excellence and connectedness and as a leader in research that focuses on tangible outcomes and the development of knowledge with longer-term impacts
- nationally and internationally known for being student centered, linking its academic endeavors and student support to empower students as productive and engaged citizens in an increasingly diverse world
- for nurturing leadership, encouraging innovation, recognizing achievement, and embracing sustainability

Carleton has more than 28,000 students, of which more than 4,000 are postgraduate students, including 1,300 PhD students. The total student body has grown by 18% over the past 10 years, with graduate enrollment increasing by 18% at the master’s level and 36% for PhDs. International student enrollment has increased by 43% (3,555).

Operating funds at Carleton University are 53% from tuition, 33% from government grants, 11% from research, 2% from miscellaneous fees and income, and 1% from interest. Carleton is situated on 62 hectares just south of Ottawa’s city center.

**SUMMARY**

The key characteristics of the study participants are summarized in table 2.

**Table 2. Characteristics of the four institutions in the study**

<table>
<thead>
<tr>
<th>Metric</th>
<th>University of South Australia</th>
<th>University of Texas at San Antonio</th>
<th>University of Wisconsin–Milwaukee</th>
<th>Carleton University</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complexity index</td>
<td>3.35</td>
<td>3.52</td>
<td>3.43</td>
<td>3.25</td>
</tr>
<tr>
<td>Age (years)</td>
<td>25</td>
<td>48</td>
<td>61</td>
<td>75</td>
</tr>
<tr>
<td>Number of students</td>
<td>32,079</td>
<td>28,628</td>
<td>27,596</td>
<td>28,845</td>
</tr>
<tr>
<td>Students FTE</td>
<td>22,264</td>
<td>24,362</td>
<td>23,479</td>
<td>25,213</td>
</tr>
<tr>
<td>Undergraduate student FTE</td>
<td>18,454</td>
<td>21,594</td>
<td>20,087</td>
<td></td>
</tr>
<tr>
<td>Postgraduate FTE</td>
<td>3,810</td>
<td>2,769</td>
<td>3,393</td>
<td>4,239</td>
</tr>
<tr>
<td>International student FTE</td>
<td>3,839</td>
<td>1,562</td>
<td>1,400</td>
<td>3,555</td>
</tr>
<tr>
<td>Staff FTE</td>
<td>3,076</td>
<td>3,788</td>
<td>3,449</td>
<td>2,006</td>
</tr>
</tbody>
</table>
### CHEITA International Peer Group: Benchmarking IT Study

<table>
<thead>
<tr>
<th>Metric</th>
<th>University of South Australia*</th>
<th>University of Texas at San Antonio†</th>
<th>University of Wisconsin–Milwaukee‡</th>
<th>Carleton University†</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total institutional income</td>
<td>$607.7m</td>
<td>$502.6m</td>
<td>$532.3m</td>
<td>$572.7m</td>
</tr>
<tr>
<td>Total research income</td>
<td>$63.8m</td>
<td>$45.8m</td>
<td>$53.2m</td>
<td>$59.0m</td>
</tr>
<tr>
<td>Percentage of revenue from government</td>
<td>64%</td>
<td>43%</td>
<td>34%</td>
<td>38%</td>
</tr>
<tr>
<td>Percentage of revenue from research</td>
<td>18%</td>
<td>9%</td>
<td>10%</td>
<td>11%</td>
</tr>
<tr>
<td>Bachelor’s degrees</td>
<td>193</td>
<td>70</td>
<td>96</td>
<td>62</td>
</tr>
<tr>
<td>Graduate degrees</td>
<td>221</td>
<td>68</td>
<td>64</td>
<td>58</td>
</tr>
<tr>
<td>Doctoral degrees</td>
<td>22</td>
<td>24</td>
<td>33</td>
<td>44</td>
</tr>
<tr>
<td>Campuses</td>
<td>6</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>The Times Higher Education ranking</td>
<td>251–300</td>
<td>351–400</td>
<td>501–600</td>
<td>501–600</td>
</tr>
</tbody>
</table>

* Calendar year 2015; $AUD.
† Financial year 2014.
‡ Financial year 2014; $CAD.

### KEY STRATEGIES

Strategy sets the tone for direction and operational work; to compare ourselves at a detailed level it is important to find peers with similar aims. The four study participants all have commonalities in terms of teaching and learning strategy as well as research strategy.

### TEACHING AND LEARNING

All four institutions in this study are using technology intensively in support of teaching on campus and to support a move to more flexible delivery via blended and full online learning. There is recognition across the group that supporting faculty to use technology as effectively as possible in their teaching is important. They also all identify a focus on student success and the importance of implementing the tools necessary to monitor and achieve student success. This section provides a detailed view into each institution’s teaching and learning strategy.

#### University of South Australia

The University of South Australia has developed a whole-of-university teaching strategy to deliver an engaging curriculum, support students to be productive professionals in a digital age,
expand flexible learning arrangements, develop academics to be leaders in the digital learning experience, and inspire the entire UniSA community through lifelong learning.

By 2020 UniSA is aiming to be recognized internationally as a leading university for its use of innovative digital technologies to ensure a high-quality student learning experience. Through the Digital Learning Strategy the University intends to make at least 25% of all courses (subjects) available online, offer degrees fully online, and dramatically increase the flipped classroom approach to blended learning. The Digital Learning Strategy has resulted in the following:

- A Digital Teaching Equipment Fund to support almost $1m in investments in digital equipment and teaching resources
- Green screen rooms being made available on all campuses to enable academic staff to produce video recordings
- A program of academic staff development being offered, including learning cafes and webinars by visiting presenters
- Awards for teaching staff who excel in digital learning and grants to fund innovative projects are being offered annually
- Data-rich learning analytics dashboards for all courses to evaluate programs and students at risk
- A Graduate Diploma in Education Studies (Digital Learning) to help upskill academic teaching staff.

More recently the university has made 11 programs available for online study through UniSAonline. These programs are backed by a comprehensive system of support services to help ensure learner success.

University of Texas at San Antonio

The University of Texas at San Antonio is dedicated to offering students a superior educational experience that builds on the rich experiences and cultures they bring to prepare them for the jobs of the future, including those that may not even exist today. Its programs balance rigor and high expectations with supportive learning experiences and inspiring mentors. It offers a rich student experience built on its cultural diversity. At University of Texas at San Antonio, teaching models include traditional lecture, flipped classroom, hybrid, and online teaching.

The Office of Online Learning (OOL) encourages and supports the use of learning technologies across the university. The university has seen an increase in online courses in recent years but still needs to focus on development of fully online graduate programs. The number of enrollments in online and hybrid courses has continuously increased each academic year. In 2015, the total was 15,743; in 2016, the total was 21,846.

The strategy to move more fully online graduate programs online includes faculty recruitment and training. Teachers for online courses are recruited from faculty who are interested and via open calls for proposals, which are vetted by the department chairs. The university is currently...
developing four fully online graduate programs, two from the College of Business and two from the College of Education.

Online courses sponsored by the OOL are required to go through the Teaching Online Academy, which focuses on providing an immersive experience for faculty new to online teaching. The goal is to help them acquire pedagogical skills in such areas as instructional design, online learning, facilitation, copyright, and technology tools.

In addition, the OOL created open online courses in response to faculty and student training needs for Blackboard Learn and teaching online. Each academic course has a Blackboard shell where faculty provide supplemental materials, submit grades, provide feedback, and interact with students. The learning management system plays a major role in student engagement, and for fully online and hybrid courses, it is essential for course delivery and student academic success.

UTSA’s Office of Information Technology worked in collaboration with other offices, including the Provost’s Office and Academic Advising, to secure a Bill and Melinda Gates Foundation iPASS (Integrated Planning and Advising for Student Success) grant. As an evergreen project, iPASS will continually evaluate implementations to determine opportunities for increased impact, change pathways to minimize shortcomings, and share data to help improve student graduation and retention rates.

University of Wisconsin–Milwaukee

Graduating highly educated individuals at all degree levels, from undergraduate to doctorate, the University of Wisconsin–Milwaukee makes learning accessible and affordable at every age and stage of life. As a research university, it provides students opportunities, from their first year through postdoctoral studies, to enhance their education through research, internships, and international learning. The university will engage more students in these enriching activities, develop new programs, and improve the academic success of students, with the goal of graduating students who are highly engaged and invested in our communities.

University of Wisconsin–Milwaukee also participates in the University of Wisconsin Flexible Option, which allows students to start self-directed, competency-based degree and certificate programs any month, to work at their own pace, and to earn credit for prior knowledge.

Current and emerging technology plays an underlying role in all of the digital teaching and learning initiatives. University of Wisconsin–Milwaukee’s Digital Future planning effort aspires to the following:

- Promote the use of digital technologies for active learning across campus to positively affect student engagement, learning, and retention, with attention to access for all.
- Further develop the capacity to investigate emerging technologies to provide evidence of impact on student learning outcomes.
• Develop more online and blended degrees so that each school and college has this capacity.
• Develop an instructor training and development support plan for the digital future.
• Promote pedagogical strategies facilitating active learning through the use of emerging technologies, such as mobile technologies, social networking, collaborative technologies, high-fidelity simulations, student-created content, e-texts, and third-party vendor course materials.
• Create a virtual teacher center to showcase and support pedagogical success.
• Increase the use of digital course materials for teaching and learning through open content.
• Ensure hardware and software accessibility of learning resources is inclusive of all needs.
• Improve digital access for all students and increase student preparedness to participate in digital learning and discovery at University of Wisconsin–Milwaukee and beyond.

Carleton University

Carleton University has an overall teaching and learning strategy—“Towards an integrated academy: A teaching and learning framework”—that encourages six core values: inclusivity, respect, responsiveness, flexibility, integrity, and community.

The framework articulates teaching and learning principles that guide the university’s approach to student success. The diverse pedagogies employed by faculty members include learner-centered models like seminars, discussion groups, flipped and blended learning, and problem-based and experiential pedagogies.

Carleton seeks to be known nationally and internationally for being student centered linking its academic endeavors and student support to empower students as productive and engaged citizens in an increasingly diverse world.

Educational technologies and e-learning are seen as a critical part of supporting flexibility, responsiveness, community, and inclusivity. All faculty at Carleton incorporate some aspect of educational technology in their teaching:

• Technology permeates nearly all facets of teaching at Carleton.
• All classrooms include teaching technology (displays, network, and computing).
• Approximately 75% of all courses make use of the learning management system.
• The university is establishing an e-portfolio system that will be integrated into both courses and programs to support learning and the assessment of learning.
• A lecture capture system (screen recording technology) is available to all instructors, on or off campus, to integrate into their teaching.

Carleton’s teaching and learning framework describes blended and online learning opportunities as providing flexibility to students, and as ways to accommodate different preferences to teaching and learning.
Analytics are collected from a variety of systems and are available to instructors to support decision-making, to monitor student engagement, and to prepare strategies for helping students at risk of failing the course.

RESEARCH

All four study participants are teaching intensive rather than research intensive. Research revenue as a percentage of total revenue varies from 9% for the University of Texas at San Antonio to 18% for the University of South Australia. However, all four have strong ambitions with respect to their overall research performance. The University of Texas at San Antonio, for example, seeks to become a Tier One research institution, while the University of Wisconsin–Milwaukee aspires to develop a top-tier research environment that promotes growing research impact. Realizing these research ambitions requires investment in supporting IT services, and all four study participants are developing data storage, data management, and compute services for their researchers. This section explores the specific research initiatives at each of the four universities.

University of South Australia

The University of South Australia’s research strategy, Inspired Partnered Excellence, is designed to develop a vibrant research culture, high-performing research leaders, scale and focus in areas of research strength, effective partnerships with the end users of the research, and translation for real-world outcomes. Key research themes are an age friendly world, transforming industries, cancer prevention and management, scarce resources, healthy futures, and society and global transformation.

The 2015 Excellence in Research for Australia evaluation reported that 97% of the University of South Australia’s research was rated world class or above, indicating an eightfold improvement in research quality in the past three years.

The broad strategy for e-research services is to connect researchers to infrastructure and services that already exist within the sector (e.g., nationally) and only develop services internally where they are not available externally or where the University has a responsibility (or need) to develop them (e.g., for research data management). The university’s current demand for high-performance computing, for example, is being satisfied either by computer servers funded by a particular research group, school, or institute; by virtual machines provided by the IT department, known as Information Strategy and Technology Services (ISTS) and by the research computing consortium eResearch South Australia (eRSA); by the Tango supercomputer provided by eRSA; or by the supercomputing resources at the National Computational Infrastructure.

A research services hub has been developed to connect researchers (both staff and higher degree research students) quickly and easily with the wide range of services that have been developed for them.
A virtual research environment (VRE) has been established to allow researchers to collaborate with their colleagues from other universities and industry and commercial partners. Access to the VRE for non–University of South Australia researchers is available via the Australian Access Federation.

A database has been developed to allow participants to search for research instruments that are available locally at the university, thus precluding the need to travel to access similar instruments elsewhere. A software development service is available to assist researchers with more significant software development projects.

A variety of research data storage and management services have been developed, including the following:

- Data storage options such as networked storage drives, private cloud storage offerings (to support specific applications or instrumentation), large-scale storage, and OneDrive
- A data management planning system to assist researchers to generate a research data management plan that can be used to support their grant applications
- A data access portal to publish open data sets
- A metadata repository to store metadata about the University of South Australia’s research data collections (the metadata are harvested automatically by Research Data Australia and indexed by Google, so they can be accessed by researchers all over the world).

University of Texas at San Antonio

The University of Texas at San Antonio’s Vision is to become a Tier One research institution. The university has 22 research centers and institutes that collaborate with 17 national research laboratories such as Argonne National Laboratory, Berkeley Lab, and National Energy Technology Lab, in addition to Department of Defense research laboratories. The university’s key research themes are sustainable communities and critical infrastructure, social and educational transformation, integrated biomedicine, advanced materials, and cloud, cyber, computer and analytics.

The Research Computing Support Group (RCSG) promotes and encourages the use of the computing equipment in the Research Data Center (RDC). RCSG also continues to promote the use of its centrally managed high-compute cluster. By utilizing these free resources, university researchers not only save valuable research dollars, but they can focus on their research instead of the technology behind the scenes.

The RDC has proved to be so successful that it is quickly running out of space. The RCSG has strategies to address this that include consolidating several systems to free up space and moving compute loads offsite to “clouds” hosted by third-party partners. Data analytics is a growing field in industry, education, and research. To accommodate this ever-growing field, RCSG will provide four high-powered computer workstations within the Advanced Visualization Lab (VizLab) in the Multidisciplinary Studies (MS) building.
The RCSG will also continue to explore and recommend areas for increased network bandwidth. Specific areas include computer labs on campus as well as connectivity to external partners such as the Southwest Research Institute (SwRI), the UT Health Science Center at San Antonio (UTHSCSA), and the San Antonio Military Health System (SAMHS).

RCSG works closely with researchers working on grant proposals and assists them with the technical portions of their proposals. This promotes the most efficient use of grant funding and enables more funds to be spent on the research work rather than on the technology. The group also provides technical support and assistance for application troubleshooting, hardware acquisitions and management, account management, and the day-to-day administrative duties that go along with maintaining a secure, robust high-performance compute environment.

The Video Production Group supports the areas of research at the University of Texas at San Antonio by producing video segments that document advances and discoveries by university researchers. Video production will be leveraged to be an integral part of promoting discovery and innovative research at UTSA.

University of Wisconsin–Milwaukee

The University of Wisconsin–Milwaukee generates discoveries and scholarly outcomes that are recognized within the global research community and that have an impact on society, locally to globally. The university’s nationally and internationally recognized research programs produce discoveries and new knowledge from research labs, students’ real-world learning experiences, and collaborations from across the street to across the globe.

The university aspires to develop a top-tier research environment that promotes growing research impact, including focused research clusters. To deliver top-tier research, technology support focuses on the high-performance computing environment, data curation, and data security.

The University of Wisconsin–Milwaukee High Performance Computing (HPC) Service provides powerful computational resources to University of Wisconsin–Milwaukee researchers and their student assistants from the College of Engineering and Applied Science, the College of Letters and Science, the School of Freshwater Sciences, and the College of Health Sciences. Each participating school or college funds a facilitator, who aids researchers in getting started and making effective use of the service. Facilitators can also guide researchers to other resources that may be more applicable to their research.

The campus also has a Data Services librarian and has fully embraced the tools and practices of data storage and management. Services exist such as OneDrive/SharePoint, a growing enterprise storage environment, and computational storage environments. The librarian collaborates with researchers on storing and managing their data.
Carleton University

Carleton University seeks to be recognized as a university that promotes research excellence and connectedness and as a leader in research that focuses both on tangible outcomes and the development of knowledge with longer-term impacts. Carleton’s Strategic Research Plan has four major research themes:

- the human condition and evolving societies
- the changing environment
- foundational sciences and technological innovation
- policy, governance, and economic activity

There are provincial and federal initiatives to assist with integration of research across government science portfolios and to advise on major priorities of “Big Science,” which includes a national compute infrastructure. Multiple national organizations, such as CANARIE and Compute Canada, plus partnerships, industry investment in R&D, entrepreneurship, regional economic development, and innovation transfer continue to inform government priorities, and also are working to develop a national data strategy.

Information Technology Services (ITS) continues to collaborate with researchers; key initiatives include

- the creation, support, and management of an on-site Research Computing and Development Cluster (RCDC) targeted to entry-level researchers looking for compute services
- membership in the Institute for Data Science, which supports interdisciplinary research and collaboration in data science

ITS is currently reviewing the requirements to increase IT support for the research community with a centrally funded and supported inventory of research tools and software, and managed data storage services.

**IT ENVIRONMENT**

Peer benchmarking studies should begin with a clear goal in mind; the most appropriate peer comparators may vary from goal to goal. Institutions with similar strategies may serve as viable institutional peers but may not prove to also be sensible for an operational comparison—institutional peers are not always IT peers as well. To assess IT operational comparability, several key financial and staffing metrics can be used (see table 3).
### Table 3. Key components of IT expenditure and staffing for the four study participants

<table>
<thead>
<tr>
<th>Metric</th>
<th>University of South Australia*</th>
<th>University of Texas at San Antonio†</th>
<th>University of Wisconsin–Milwaukee‡</th>
<th>Carleton University§</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total IT staff (FTE)</td>
<td>186</td>
<td>280.8</td>
<td>211.8</td>
<td>158</td>
</tr>
<tr>
<td>Central IT staff (FTE)</td>
<td>147</td>
<td>145.8</td>
<td>104</td>
<td>98</td>
</tr>
<tr>
<td>Decentralized IT staff (FTE)</td>
<td>39</td>
<td>135</td>
<td>107.8</td>
<td>60</td>
</tr>
<tr>
<td>Total IT expenditure</td>
<td>$34.9m</td>
<td>$33.2m</td>
<td>$28.7m</td>
<td>$20.6m</td>
</tr>
<tr>
<td>Central IT expenditure</td>
<td>$28.0m</td>
<td>$16.9m</td>
<td>$19.6m</td>
<td>$14.7m</td>
</tr>
<tr>
<td>Percentage of IT expenditure</td>
<td>80%</td>
<td>51%</td>
<td>68%</td>
<td>71%</td>
</tr>
<tr>
<td>centralized</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decentralized IT expenditure</td>
<td>$6.9m</td>
<td>$16.3m</td>
<td>$9.1m</td>
<td>$5.9m</td>
</tr>
</tbody>
</table>

* Calendar Year 2015; $AUD.
† Financial Year 2016.
‡ Financial Year 2016; $CAD.

In addition to standard financial and staffing metrics, a comparison of IT initiatives and operational models can help determine peer viability. The Appendix provides a comparison of the four study participants in the areas of

- Leadership and governance
- IT strategic planning and key objectives
- Key IT challenges
- Funding model
- Scope
- Centralization of IT
- Cloud computing
- Quality and management frameworks
- IT quality measures
- IT help desk

To summarize these findings, both similarities and differences exist across all four institutions. In terms of governance, Carleton University and the University of Wisconsin–Milwaukee have formalized governance structures with peak IT committees, whereas the University of South Australia and the University of Texas at San Antonio have less structured governance arrangements. In terms of IT strategy, although on the surface there is a significant difference in the way the key IT objectives are described by each university, there are similarities in their strategic focuses. All four are focused on improving IT service delivery and supporting research; IT...
funding and strategic use of resources is also an emerging theme. All four cite the availability of financial resources to meet growing IT demands as an ongoing key challenge.

At the University of South Australia and Carleton University, IT is fully funded and the cost of IT expenditure is seen more as an investment in driving higher-quality service delivery across the university, rather than as a cost of doing business. By contrast, at the University of Texas at San Antonio and the University of Wisconsin–Milwaukee, IT expenditure is not fully funded and is seen more as a cost of doing business.

Significant differences exist in the degree of centralization among the four study participants. On the basis of IT expenditure, centralization varies from 51% at the University of Texas at San Antonio to 80% at the University of South Australia. The degree of centralization can have a significant effect on the overall cost of IT services.

All the universities are using the ITIL framework for IT service management. In addition, all four are actively gathering feedback from staff and students about the quality of the IT services they provide. The University of South Australia, for example, is ranked sixth (out of 39) in Australia for overall student satisfaction with the quality of computing/IT resources, and at both the University of Texas at San Antonio and the University of Wisconsin–Milwaukee, more than 85% of survey respondents report positive experiences with the IT help desk. This feedback indicates that the study participants are delivering relatively high-quality services despite the financial resource challenges mentioned earlier.

The number of IT help desk contacts varies across the participant group, from 10,888 to 96,000 per annum. IT help desk operating hours vary considerably as well, with the University of South Australia being the only one offering 24/7 service (see table 4).

Table 4. Key IT help desk operating characteristics

<table>
<thead>
<tr>
<th></th>
<th>University of South Australia</th>
<th>University of Texas at San Antonio</th>
<th>University of Wisconsin–Milwaukee</th>
<th>Carleton University</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of help desks</strong></td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td><strong>Hours of operation</strong></td>
<td>24/7</td>
<td>7:00 a.m. to 7:00 p.m. M–Th</td>
<td>7:00 a.m. to midnight M–Th</td>
<td>8:30 a.m. to 10:00 p.m. M–F</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7:00 a.m. to 5:00 p.m. F</td>
<td>7:00 a.m. to 10:00 p.m. F</td>
<td>Noon to 8:00 p.m. Sat/Sun</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Closed Sat/Sun</td>
<td>8:00 a.m. to 8:00 p.m. Sat</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>9:00 a.m. to midnight Sun</td>
<td></td>
</tr>
<tr>
<td><strong>Annual contacts</strong></td>
<td>96,000</td>
<td>37,854</td>
<td>37,518</td>
<td>24,000</td>
</tr>
<tr>
<td><strong>Percentage resolved within thresholds</strong></td>
<td>90.50%</td>
<td>74.40%</td>
<td>60.20%</td>
<td>92.00%</td>
</tr>
</tbody>
</table>
CONCLUSION

The four study participants were chosen based on the similarity of their complexity indexes, which in turn are based on the number of students, number of staff, and research income of each participant. While the institutions chosen have similar broad dimensions, they also have similar ambitions at institutional, teaching and learning, and research levels.

Perhaps more importantly, from the perspective of this study, there are many similarities in the way IT service delivery is governed, planned, and managed. There are also important differences, which warrant further, and more detailed, exploration.

Based on the similarities between the study participants, this study has shown that the CHEITA Global Complexity Index is a suitable way of choosing an international peer group with which to undertake a deeper benchmarking activity.

Perhaps the value of the study is summed up best by two of the participants:

It was a new and fascinating process to see how UWM has so much in common with other universities internationally. As the participants in this study joined as a group, both online and in person, it was easy to discover commonalities with our strategy, budgeting, staffing, operations, and in providing IT support, as well as talk about how we are approaching them. It’s definitely a group of individuals and campuses that I will want to stay in contact with as we all encounter some of the same opportunities and challenges in our respective environments.

—Beth A. Schaefer, Director of IT Services, University of Wisconsin–Milwaukee

University of Texas at San Antonio is continually expanding our international initiatives, and global studies like this one are so important in serving our students both here on campus as well as online and in our university collaborate programs around the globe. This global project is one of two international projects where the UTSA Office of Information Technology is fully engaged and we look forward to serving our faculty and researchers in many more.

—Vanessa Kenon, Associate Vice President for Information Management & Technology, University of Texas at San Antonio
## APPENDIX: IT ENVIRONMENTS OF STUDY PARTICIPANTS

<table>
<thead>
<tr>
<th>University of South Australia</th>
<th>University of Texas at San Antonio</th>
<th>University of Wisconsin–Milwaukee</th>
<th>Carleton University</th>
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</thead>
<tbody>
<tr>
<td>The University of South Australia’s IT department, known as Information Strategy and Technology Services (ISTS), is led by the CIO. The CIO is also responsible for the university Library and reports to the university’s Chief Operating Officer (COO). The university’s Senior Management Team (of which the COO is a member) undertakes the governance role for IT.</td>
<td>IT at the University of Texas at San Antonio is led by the Interim Vice Provost for IT/CIO. The Interim Executive Director of Enterprise Systems and Deputy CIO, the Director of Video Technology, the Director of Research Computing Support and Innovative Solutions, the Director of Online Learning, the Assistant Vice Provost of IT, and the Information Securities Operations Officer have responsibility for governance roles for IT.</td>
<td>At the University of Wisconsin–Milwaukee the CIO oversees the Director of IT Services, who oversees central IT operations, the Chief Information Security Officer (CISO), and the Director of Research Computing. The CIO is a part of the Chancellor’s cabinet. The Information Technology Policy Committee (ITPC) is a standing committee of the university’s Faculty Governance system. The committee is charged with advising the faculty and campus administration on matters pertaining to information technology. Strategic planning for IT takes place with the University Information Technology Services (UTS) cabinet, which consists of the CIO, IT Services Director, CISO, Research Computing Director, and associate directors for applications, networking, and enterprise services.</td>
<td>Carleton University’s IT Governance consists of an Executive Committee, a Steering Committee, and three sub-committees that feed into the Steering Committee.</td>
</tr>
<tr>
<td>University of South Australia</td>
<td>University of Texas at San Antonio</td>
<td>University of Wisconsin–Milwaukee</td>
<td>Carleton University</td>
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| **Information Strategy and Technology Services (ISTS)** contributes to the University of South Australia’s strategic goals and objectives by “delivering digital transformation anytime, anywhere and on any device.” The ISTS annual plan has the following key objectives:  
- transforming teaching and the student experience  
- enhancing our research  
- improving the university’s digital dexterity  
- streamlining the university’s key business processes  
- delivering a great customer experience  
- being a highly skilled and enterprising team | The Office of Information Technology (OIT) at the University of Texas at San Antonio seeks to optimize the use of resources and increase customer satisfaction through automation and self-service. “Collaborate-Innovate-Succeed” is part of its strategy toward making every process as simple and as self-serve as possible. The objectives for collaborate are to expand internal collaboration, raise the university’s profile, and promote community engagement. The objectives for innovate are to expand data and technology infrastructure, increase research expenditures, enhance student services, and offer premier graduate online programs. The objectives for succeed are to enhance academic success, improve graduation and retention rates, manage enrollment growth, offer quality administrative services, and increase graduate enrollment. | The University of Wisconsin–Milwaukee’s IT Strategic Plan focuses on four major areas; key components of the plan include the following:  
**Infrastructure**  
- baseline functionalities, services, budget, and capacities for infrastructure  
- cyberspace for all spatial considerations  
**Teaching and Learning**  
- tech. to positively affect student access, engagement, learning, assessment, retention, flexibility, satisfaction, and success  
- information literacy for students and teachers  
- IT support for learning throughout every phase of a student’s experience and for every instructor’s professional life cycle  
**Research**  
- coordination for research IT support including cyberinfrastructure support for researchers  
**Operations and Services**  
- stable and sustainable funding strategy for flexible cyberinfrastructure  
- coordinated IT purchasing to achieve university-wide savings  
- ongoing evaluation and improvement of university operations and services | The IT strategic plan for Carleton University has three focuses:  
- enhancing IT governance  
- simplifying access to services  
- understanding IT spending |
### Key IT Challenges

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<thead>
<tr>
<th>University of South Australia</th>
<th>University of Texas at San Antonio</th>
<th>University of Wisconsin–Milwaukee</th>
<th>Carleton University</th>
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<tr>
<td>The University of South Australia is challenged with providing for growing user needs for mobility and flexibility; blended and online learning; analytics to support learning, customer relationship management, and decision-support and collaboration tools; support, e-Research services, and high-tech teaching and research facilities within a reducing (in real terms) budget envelope.</td>
<td>At the University of Texas at San Antonio, adequate funding, competition for staff, increasing demand for the latest and greatest technological resources (without funding), change management, perception, and non-centralized IT throughout the campus are the biggest challenges.</td>
<td>The University of Wisconsin–Milwaukee is facing challenges with budget constraints and is finding the need to make smarter investments in IT services. In progress is the Integrated Support Services project, which is an effort to design and implement an administrative structure that provides excellence across the university, focusing on the functions of Finance and Accounting, Procurement, Human Resources, and Information Technology. Among other goals, it is intended to accomplish long-term service efficiencies, increase effectiveness, make better use of technology, and enhance professional development opportunities in administrative areas.</td>
<td>Carleton University’s key IT challenges include maintaining a qualified IT workforce (to ensure adequate and flexible staffing capacity), information security, and standardizing the look and feel of current siloed enterprise applications. The latter challenge includes ensuring that business requirements validate the need for new applications and support the institution’s strategic plan, that the delivery of new enterprise applications is hastened, and that new applications are sustainable.</td>
</tr>
<tr>
<td>Funding Model</td>
<td>University of South Australia</td>
<td>University of Texas at San Antonio</td>
<td>University of Wisconsin–Milwaukee</td>
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<tr>
<td>At the University of South Australia, IT is almost 100% fully funded. There is a small amount of recharging for some IT-related services (such as mobile phone use by staff), but in the main recharging of services is almost nonexistent. IT expenditure is seen more as an investment in driving higher-quality service delivery across the university, rather than as a cost of doing business.</td>
<td>At the University of Texas at San Antonio, 88.85% of IT is funded from student fees. There is a small amount of recharging for telephone services. The rest of the funding comes from grants and collaboration funding through academic affairs resources. OIT expenditures are mostly viewed as a cost of doing business, and we are working diligently to change that perception of OIT. Our service delivery model is built and marketed as an investment and an integral part in driving higher-quality service delivery and products, and as a key resource for student, faculty, and staff research and development.</td>
<td>University of Wisconsin–Milwaukee has a mixed funding model, with most coming through a campus 101 budget, campus educational tech funds, and chargebacks. IT expenditure is seen as a cost of doing business, and those decisions are entrusted to the CIO in coordination with business owners and the CFO.</td>
<td>Carleton University’s Enterprise IT is fully funded centrally. There are a number of areas within ITS where chargeback is utilized; examples include telephony services, hosting of departmental servers, residence network and wireless services, etc. Decentralized IT groups are funded by the departments or faculty. Generally, it is seen as an investment in driving higher-quality service delivery across the institution, rather than as a cost of doing business.</td>
</tr>
<tr>
<td></td>
<td>University of South Australia</td>
<td>University of Texas at San Antonio</td>
<td>University of Wisconsin–Milwaukee</td>
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</table>
| **Scope**            | The University of South Australia’s ISTS provides university-wide IT support for all staff (professional, teaching, and research) and students:  
  - technical project management services for major, university-wide ICT projects  
  - development and communication of IT policies, procedures, and guidelines  
  - management of university-wide hardware and software purchasing arrangements  
  - over 2,700 on-campus computers for students  
  - teaching technology (including all audio-visual) in general purpose teaching spaces  
  - communication services such as fixed and wireless data networks, telephone systems, voicemail, and high-speed access to the internet  
  - collaboration facilities such as email, calendaring, video and audio conferencing, instant messaging, and document sharing  
  - central infrastructure (servers, data storage, and twin data centers)  
  - identification and management of ICT-based risks and disaster recovery planning  
  - all enterprise information systems | The OIT at the University of Texas at San Antonio is responsible for 12 functional areas:  
  - business and customer relations and communications  
  - customer and operations support services  
  - student computing services  
  - online learning  
  - learning technologies  
  - video technology  
  - research computing support and innovative solutions  
  - telecommunications  
  - infrastructure services  
  - application development and support  
  - information security  
  - enterprise managed customer solutions | At the University of Wisconsin–Milwaukee, central IT operations include the following:  
  - project management  
  - client services (including the Help Desk), technical training, campus classrooms  
  - the TechStore  
  - network infrastructure  
  - telephony  
  - data center  
  - storage  
  - infrastructure  
  - identity and access management  
  - student information system  
  - enterprise applications | At Carleton University, Information Technology Services (ITS) provides enterprise information technology solutions and services to support the learning, teaching, research, and administrative goals of the university:  
  - **Project Management**: information systems project management  
  - **Client Services**: service desk, hardware services, public student labs, site-licensed software  
  - **Operations and Infrastructure**: network, wireless, voice, data center, campus card, email, operating systems, research computing support  
  - **Web Services**: Carleton Content Management System (CCMS), Carleton E-commerce  
  - **Information Security**: security and information management policy, identity access management, IT audit  
  - **Enterprise Applications**: Banner, cuLearn, student systems, finance, HR and payroll systems, advancement systems |
<table>
<thead>
<tr>
<th>University of South Australia</th>
<th>University of Texas at San Antonio</th>
<th>University of Wisconsin–Milwaukee</th>
<th>Carleton University</th>
</tr>
</thead>
<tbody>
<tr>
<td>The University of South Australia has recently centralized its IT support arrangements and all IT support staff now report to the CIO. Responsibility for all system development and maintenance is also centralized; however, business analysis is decentralized. Approximately 80% of all IT expenditure is under the control of the CIO.</td>
<td>At the University of Texas at San Antonio, all areas of IT report to the Interim Vice Provost for IT/ CIO. Responsibility for all system development and maintenance sits with the Director of Infrastructure Services.</td>
<td>At the University of Wisconsin–Milwaukee, approximately 70% of IT spending is managed centrally. Approximately half of the IT staff report to the central IT unit University Information Technology Services. Currently, the other half of the IT staff are distributed on campus. A shared services unit is being implemented for the functions of finance and accounting, procurement, human resources, and information technology across the campus.</td>
<td>Carleton University operates within a centralized and distributed IT framework. Services such as departmental workstations and lab computers, including local client services, are provided by decentralized IT service units.</td>
</tr>
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</table>
### Cloud Computing

<table>
<thead>
<tr>
<th>University of South Australia</th>
<th>University of Texas at San Antonio</th>
<th>University of Wisconsin–Milwaukee</th>
<th>Carleton University</th>
</tr>
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<tbody>
<tr>
<td>The University of South Australia has developed a <strong>cloud strategy</strong> that is largely based on making maximum use of software-as-a-service (SaaS), particularly where this provides an opportunity to either implement a new system quickly, access new functionality, and/or reduce the cost and risk associated with running existing systems ourselves. Approximately 21% of UniSA’s large information systems are currently delivered via a SaaS model.</td>
<td>The University of Texas at San Antonio utilizes Microsoft Office 365 for enterprise offerings, including email, voicemail, data storage (OneDrive), collaboration (SharePoint, OneNote, Planner), and business intelligence (Power BI). Microsoft Azure is used for data storage and backup/retention. These may account for 30% of the large information systems.</td>
<td>At the University of Wisconsin–Milwaukee, the responsibility for enterprise system development and maintenance sits with multiple areas. The University of Wisconsin System provides centralized services such as HRS (Human Resources System) and Shared Financial System (SFS) for our accounting system. The system development and maintenance for UWM student information services is done by UITS, which developed and maintains many other systems. The university has moved to hosted Office 365, and the web environment WordPress/CampusPress is also in a hosted environment. Approximately 10% of applications are being delivered via SaaS. The trend to SaaS is increasing.</td>
<td>When developing new applications, Carleton University considers a number of service delivery methods, including cloud services, software licensing, and custom development. The majority of Carleton’s enterprise applications (e.g., Banner for finance and HR, SciQuest for purchasing, and Tribal for client relationship management) utilize in-house software licensing and custom code. Examples of cloud services include Microsoft Office 365 for student, faculty, and staff email services and internal and external cloud computing and storage services for researchers.</td>
</tr>
<tr>
<td>Quality and Management Frameworks</td>
<td>University of South Australia</td>
<td>University of Texas at San Antonio</td>
<td>University of Wisconsin–Milwaukee</td>
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</tr>
<tr>
<td>IT service management at the University of South Australia is based on the ITIL framework, which was first implemented in 2002. IT project management is based on PMBOK.</td>
<td>The University of Texas at San Antonio follows an ITIL framework of service management including Incident &amp; Service (2012), Problem (2015), Change (2016), and Event Management (2012) best practices. Microsoft System Center Service Manager is the university’s ticketing system and it incorporates ITIL and Microsoft MOF practices.</td>
<td>The University of Wisconsin–Milwaukee Information Technology Service Management (ITSM) program, which began in 2008, focuses on improving the quality, effectiveness, and efficiency of delivering IT services to the campus community. Incident Management, Change Management, Service Portfolio, Service Catalog, Service Proposals, and Requirements have all been implemented. IT project management methodology is based on the Project Management Institute’s standard.</td>
<td>Carleton University’s IT service management is based on the ITIL framework, which was first implemented in 2009. IT project management is based on Project Management Methodology (PMM), utilizing standards established by the Project Management Institute (PMI).</td>
</tr>
</tbody>
</table>

<p>| IT Quality Measures | The University of South Australia gets feedback on the quality of its IT services from the Australian University Experience Survey and the International Student Barometer survey. This feedback indicates that 86% of students are satisfied with the quality of computing/IT resources (placing UniSA sixth in the Australian University sector). In addition, the University is rated third and fourth in the Australian University sector for international student satisfaction with technology and the IT Help Desk, respectively. | The University of Texas at San Antonio gathers feedback from faculty and staff through the Annual OIT Survey, training surveys, and event surveys. Student perspectives are gathered through focus groups, event surveys, and social media monitoring. Eighty-seven percent of faculty are satisfied or very satisfied with OIT Connect (the central help desk). Wi-Fi access, data storage, and customer support were identified as issues. | The University of Wisconsin—Milwaukee gathers feedback from internal help desk customer surveys and conducts focus groups to gather information about student expectations. The university also participates in the National Survey of Student Engagement. In excess of 85% of respondents report positive experiences with the help desk. | Carleton University conducts two satisfaction surveys annually. Different IT services are targeted each year. The Employee Satisfaction Survey conducted in spring 2016 rated the email service 7.8 out of 10 and the identity management system 8.4 out of 10. The Student Satisfaction Survey conducted in fall 2016 rated the public lab/e-kiosks 8.4 out of 10 and wireless services 7.2 out of 10. |</p>
<table>
<thead>
<tr>
<th>IT Help Desk</th>
<th>University of South Australia</th>
<th>University of Texas at San Antonio</th>
<th>University of Wisconsin–Milwaukee</th>
<th>Carleton University</th>
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<tr>
<td><strong>The single IT Help Desk at the University of South Australia resolves 43.9% of reported issues either at first contact or subsequently. The Help Desk manages 772 contacts per FTE staff member per month, which is well above the Gartner benchmark of 324 per FTE staff member per month for organizations with fewer than 100,000 contacts per annum.</strong></td>
<td>The IT help desk at the University of Texas San Antonio is made up of 10 part-time telephone support technicians (students) and 9.5 full-time desktop support technicians. The IT help desk also includes an academic support group (5 full-time support technicians) who provide dedicated technical support to the specific colleges and schools of learning on campus.</td>
<td>The University of Wisconsin–Milwaukee has 6 full-time positions allocated to the Help Desk and Campus Computer Labs and on average 75 student employees.</td>
<td>The Carleton University IT help desk group is composed of approximately 50% full-time staff and 50% part-time staff and students. Approximately 55% of contacts were resolved by the Service Desk staff at first contact or subsequently. The help desk call answer rate is 88%, which is above the best-in-class rate of 85%.</td>
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</table>