



INFORMATION TECHNOLOGY  
2008 SURVEY ANALYSIS

JULY 28, 2008

# CSUN IT 2008 Survey Analysis

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## I. EXECUTIVE SUMMARY

IT undertook this survey to establish baseline measures of performance for many of CSUN's most important technologies and services. We also hoped to use the results to inform important initiatives that are currently underway or in advanced stages of planning. We are pleased that the feedback we have received from students, faculty and staff will provide us with valuable insight and information in regard to both goals. We appreciate the time and effort that all the respondents took to give us their feedback, share their ideas and make suggestions for improvement. While we may not be able to act on all of them right away, the results provide us with a roadmap to areas of strength as well as opportunities for improvement.

This executive summary highlights the key findings from each of the major areas of inquiry within the survey. We have organized it to follow the same structure as the full report. It starts with a summary of insights from questions related to the use of technology in instruction and research, continues with highlights of results from questions related to core technologies and user support services and concludes with findings related to governance. There is a rich amount of additional detail in the full report and we encourage readers to access those sections for additional findings, analysis, and data tables in areas of interest to them. Finally, the summary concludes with a set of recommended actions for CSUN to take in light of the learnings from this survey.

### **Technology in Support of Teaching, Learning and Research**

Students and faculty reported relatively low frequency of use of most of the learning technologies we inquired about in the survey. It is unclear from the results whether this is attributable to shortcomings in the particular technologies, lack of understanding of their availability and use or an indication that faculty have not found them to be effective tools to promote student learning. Or, it may just be an indication that we are still early in the adoption cycle for most of these technologies. This is an area that bears further monitoring and conversation to deepen our understanding.

The technologies used most often were those that are arguably more mature and universally applicable in coursework. These included data projectors, computer labs and the CSUN learning management system, WebCT. For most of the technologies we inquired about, students and faculty reported an average frequency of use that was between never and seldom.

Students and faculty were most satisfied with the performance of the learning technologies that are used most frequently. Video projectors, in-class internet access and computer labs were among the technologies students and faculty ranked highest. Using a five point the mean satisfaction score for these technologies was 3.50 or greater (between good and very good). In fact, all but one technology received a mean score of 3.00 or greater from faculty. Students expressed somewhat lower levels of satisfaction. The mean evaluations provided by students were 3.00 or greater for all but five of the learning technologies. Students expressed mean satisfactions of between 2.00 and 3.00 (between fair and good) for smart boards, Elluminate, Moodle, podcasting and video conferencing.

Clearly there was concern among faculty regarding the features of WebCT. The mean evaluation of WebCT by faculty was 2.75 between poor or fair. In contrast, Blackboard received mean score of 3.60 and Moodle 3.08 from the limited numbers of faculty who use them. Students' evaluation of WebCT stands in contrast to that provided by faculty. Student respondents reported a mean satisfaction with WebCT of 3.60, thus students reported higher satisfaction with WebCT than the faculty using it.

In addition to supporting teaching and learning, technology is also playing an increasingly important role in faculty research and scholarship. Faculty were somewhat confident that CSUN technology was sufficient to support their research and scholarship. Mean responses from faculty were almost halfway between neutral and agree that CSUN technology meets their current and future research needs. Faculty were less confident that CSUN technology helps them to collaborate effectively with colleagues at other institutions.

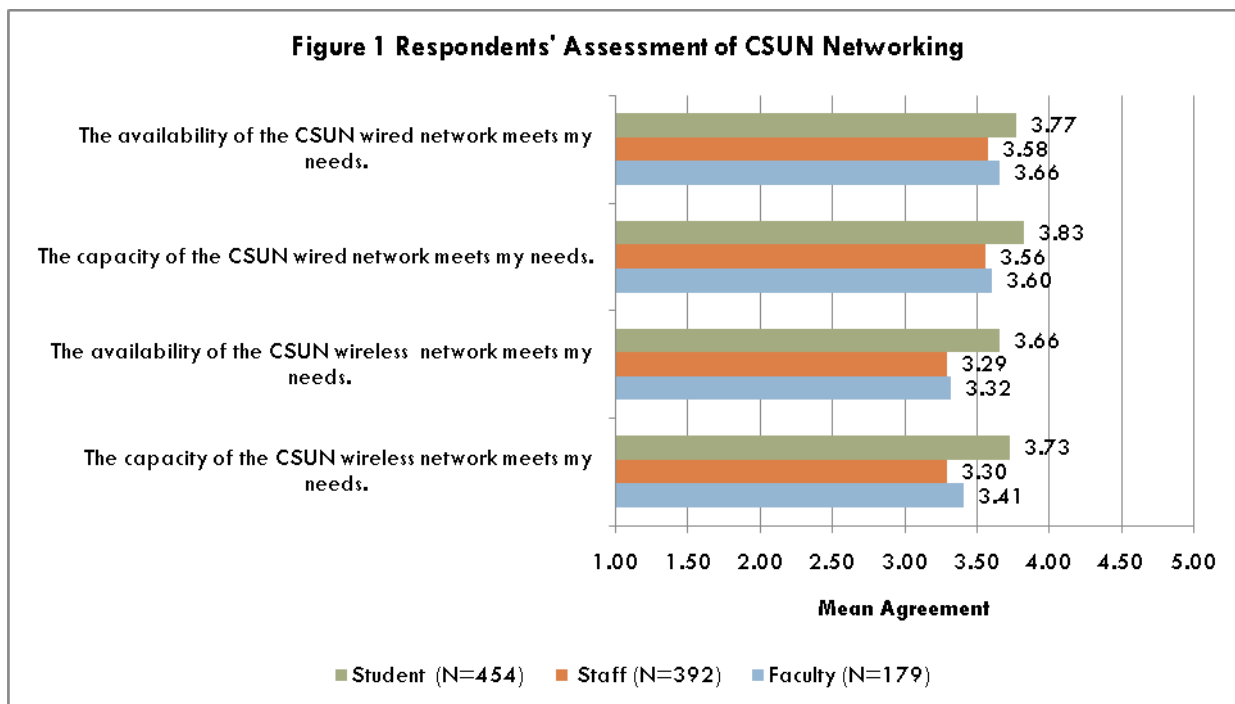
We identified one pattern that may provide some insight into what differentiates faculty that were satisfied with the technology to support research and from those that were not satisfied. We observed a statistically significant relationship between confidence in the availability and capacity of the wired and wireless network and confidence in the adequacy of technology to support research. Faculty who expressed concern about network performance also disagreed that technology was adequate to support current and future research needs.

### Performance of Core Technologies

We asked respondents to assess four technologies that are used widely by many at CSUN or are of particular importance to one of the constituents (faculty, students and staff). Specifically, we inquired about satisfaction with the CSUN network, email, the portal and computer labs.

#### Networking

Overall, the wired and wireless networks appeared to meeting the needs of students, faculty and staff. Across all categories respondents reported a mean agreement that the availability and capacity of the wired and wireless network met their needs. Faculty were most concerned about the wired network capacity. However, fewer than 15 percent of faculty respondents responded that the wired network’s capacity and availability did not meet their needs. In fact, more than 60 percent of faculty and staff and more than 69 percent of students agreed or strongly agreed that the wired network met their needs.



Scale: 1 – strongly disagree, 2 disagree, 3 – neither disagree nor agree, 4 – agree, 5 strongly agree

Respondents were slightly less satisfied with the capacity and availability of the wireless network. Nearly a fifth of students (19.1 percent) disagreed or strongly disagreed that the availability of the wireless network was sufficient to meet their needs. A similar percentage of faculty expressed the same concern about the availability of the wireless network (18.4 percent). Students' assessment of the wireless network was more broadly distributed. The concerns students expressed may have something to do with the areas of campus in which they predominantly take their courses. We found a statistically significant relationship between the college a student is enrolled in and their satisfaction with the availability of wireless networks.

**Email**

Most staff recently transitioned to Microsoft Exchange for email. Overall, respondents were in agreement (means greater than 3.5) that they understand how to use Exchange and that the product has the features they need. In fact, only 10.2 percent of respondents disagreed that Exchange has the features they need. Thirty-eight percent of respondents agreed or strongly agreed that Exchange is better than their previous email client. The majority (41.2 percent) were neutral on the question of whether Exchange was better and a fifth disagreed. Given that staff transitioned to Exchange from different legacy systems we expected and found a statistically significant relationship between a respondent's division and their satisfaction with Exchange. Specifically, respondents from Academic Affairs and Student Affairs on average agreed less strongly that Exchange is better than their previous email solution.

**Table 1 - Staff Respondents' Assessment of Email Capabilities (N=392)**

	Mean	Std. Deviation
I understand how to use Microsoft Exchange (e.g., Outlook or Entourage).	3.89	1.084
Microsoft Exchange has the features I need.	3.57	0.986
Microsoft Exchange is better than the previous email client I used.	3.27	1.148
Spam mail is effectively blocked from my email.	3.10	1.258

Scale: 1 - strongly disagree, 2 - disagree, 3 neither disagree nor agree, 4 - agree, 5 - strongly agree

All CSUN students are provided with email, but their use of it varies significantly. More than half (53.2 percent) of student respondents accessed their email ten or fewer times in the past month including a fifth who reported never having accessed their email in this time period. Many students choose to forward their CSUN email to another email account. Nearly three quarters of respondents (72.5 percent) reported that they forward their CSUN email to an external email account. The choice to forward email related statistically to a students' academic standing. While the majority of students at every level chose to forward email, the practice was much more common among juniors, seniors and graduate students.

In general, students seemed satisfied with the performance of their CSUN email. Students reported mean agreements of greater than 3.50 (more than halfway between neutral and agree) with statements that asserted that CSUN email is easy to use, has sufficient features and provides adequate storage capacity. Students were also in agreement (mean 4.05) that spam mail is effectively blocked from their CSUN email. In fact, the only statement with which more than 11 percent of respondents disagreed was that the mailbox provided adequate storage capability. Slightly more than 16 percent of respondents disagreed with this statement.

It is important to students that CSUN provide them with a University email account. More than half of respondents (50.5 percent) strongly agreed that it was important that CSUN provide a university email account and another 24.4 percent agreed. It is important to note that the importance students place on having

University email is not the same as asking the students whether CSUN should operate student email or if they would prefer it be outsourced to a third party (e.g., Google). It is possible that students are most interested in having a CSUN email address or a place where they can be assured of receiving CSUN related email. This issue will warrant further attention as CSUN weighs its options for operating student email in the future.

In light of the initiative to gather faculty requirements for a new email solution, we asked respondents to provide feedback both on the performance of their current email and the importance of some potential features they might want in a new solution. Faculty were somewhat satisfied with the features of their current email, but are dissatisfied with the sufficiency of email quotas (at the time of the survey). The majority of respondents (62.0 percent) agreed or strongly agreed that the functionality of the present email system meets their needs. Many faculty were concerned about the sufficiency of the email quota at the time of the survey. In fact, 41.9 percent of respondents indicated that the quota did not meet their needs. Subsequent to the survey, the email quota was increased which presumably should assuage this concern.

To gain a sense of how faculty are impacted by the quota, we asked respondents to tell us how frequently they must delete emails in order to stay within the email quota. For most faculty, the necessity to delete email solely to remain within the quota is periodic, but not routine. There were 12.3 percent of respondents who reported that they must delete emails daily and 21.2 percent who delete emails often (weekly) to remain within the old quota. With the new quota in place, this situation should be lessened. However, this bears further monitoring and may require alternative solutions for email storage and sharing large attachments.

## Portal

Overall, the views of all three constituent groups of the portal were fairly positive. The assessments given of the ease of use of the portal and the ability to find information within it were usually between neutral and agree. While there is room for improvement, the technology is new and presumably faculty, students and staff will become more familiar with its use over time. We also saw within the responses evidence that suggests more should be done to raise awareness of some of the portal's features. For several of the capabilities we inquired about we noted that there were fairly large numbers of respondents who chose the response choice don't know. This may suggest that they have not tried this feature or were unaware of it. Key findings include:

- On average, student respondents agreed that it was easy to view grades in the portal, access the portal and view and pay fees in the portal. Each of these statements received a mean agreement of 3.96 or greater. Students gave a similar assessment of the ease of registering for classes using the portal.
  - While mean responses still exceeded neutral, students were less in agreement that it was easy to locate information in the portal and that it was easy to personalize the portal.
  - We found a relationship between academic standing and a students' level of agreement that it was easier to search for courses using the portal. Freshman and sophomores provided significantly higher mean response (greater agreement) than did juniors, seniors or graduate students.
- Faculty were most in agreement that it was easy to view course rosters and submit grades using the portal. Both these items received means greater than 4.00.
- Faculty respondents were on average between neutral and agree in their assessment of the ease of downloading rosters from the portal and the ease at which one could navigate through the portal. Faculty were in less agreement that the portal was easy to navigate and personalize.

We asked staff primarily about the ease at which they can navigate, locate information and personalize the portal. Staff responses on average were between neutral and agreement with each of the statements. Staff were most in agreement that they could personalize the portal and least in agreement that it was easy to navigate the portal.

### **Computer Labs**

Students' use of computer labs varies. Among respondents, the majority reported that they had made between 1 and 10 visits to a campus computer lab in the month prior to the survey. A quarter of respondents had made no visits while 16.1 percent had visited 20 or more times. The reasons students reported that they use computer labs varies as well. Students reported they visit labs most frequently to access the internet or to check email. Both these items received mean frequency over 4.00 (often to almost always). Students least frequently use computer labs to work on course assignments within the learning management system or to use specialized software to support course assignments.

- In general across all colleges, the labs were used more frequently for printing and to use Microsoft Office products for course assignments than for work on assignments in the learning management system or on specialized software. However, within each activity area the frequency of use did vary by college. For example, students in Business and Economics and Health and Human Development reported a higher frequency of printing during their visits to the labs. Students in the College of Science and Math reported a higher frequency of use of labs to perform course assignments in the learning management system. Engineering and computer science students reported much higher frequency of use of specialized software. These differences no doubt stem from curricular differences across the colleges.
- A student's enrollment status also appeared to be related to their use of the labs. Across the board full-time students reported a greater frequency of use of labs for activities. However, the relative ordering from most frequent to least frequent activity was similar for both groups.
- Students rated the labs most positively for the condition of the printers, availability of software and the condition of the computers. They were slightly less positive in their assessment of printer availability and the knowledge of the lab staff.

We observed a statistically significant relationship between the frequency of a student's visits to the lab and the frequency they reported using the lab for each individual activity. Interestingly, the more frequent visitors more frequently performed each of the activities listed. Our hypothesis had been that frequent visitors were typically stopping into a lab to print or check email. While this is true, they also reported that they frequently work on course assignments in the MS Office suite and the learning management system. In fact, it is the less frequent visitors to computer labs who seem to use the labs predominantly for the internet access, checking email and printing.

### **User Support Services and Training**

User support at CSUN is provided by a variety of organizations and individual including the IT Help Desk and Walk-in Center, technology support staff working in academic and administrative departments and individuals trying to help themselves and their colleagues. The breadth of sources of support was driven home by the survey results.

- Faculty reported that they primarily receive support from a technology staff member situated in their college or department. In fact, 45.3 percent identified this as their primary source of support. The

second most prominent source of support for faculty was some form of self-help. A combined 30.2 percent of faculty reported that their primary sources of support are either themselves, a faculty colleague or a friend or family member.

- Students were even more reliant on self-help as their primary source of support. Among respondents, 35.7 percent indicated that they view themselves (solve it myself) as the primary source of support. In fact, if this self-support is combined with the number of students who turn to a fellow student (15.1 percent) or a friend or family member (22.2 percent) than nearly three-quarters of students utilize some form of self-help as their primary means of support.
- In contrast to students, staff receive their primary support from a technology professional rather than self-help. The majority (54.3 percent) received their primary support from a technology staff member in their department.

We asked respondents to indicate their level of agreement with three statements regarding the adequacy of their technology support. Specifically, we inquired if they had access to the support they need, had their problems resolved in a timely fashion, and were satisfied with the overall quality of support at CSUN. As table 5 illustrates, the mean level of agreement with all three statements across all three survey populations was between neutral and agree with means ranging from 3.40 to 3.70.

**Table 2 – Faculty, Student and Staff Assessment of Technology Support**

	Faculty Mean (N=179)	Std. Deviation	Student Mean (N=868)	Std. Deviation	Staff Mean (N=392)	Std. Deviation
I have access to the technology support I need.	3.39	1.092	3.57	0.883	3.71	0.926
My technology problems are resolved in a timely fashion.	3.39	1.062	3.47	0.895	3.59	0.963
I am satisfied with the quality of CSUN technology support.	3.35	1.099	3.50	0.906	3.56	0.989

Scale: 1- strongly disagree, 2 - disagree, 3- neither disagree nor agree, 4 - agree, 5 - strongly agree

While the IT Help Desk and Walk-in Center may not be the primary source of support for most respondents, those who use them reported satisfaction with the services they received.

- Among students, faculty and staff that have used the IT Help Desk or the Walk-in Center over the past 12 months, the mean evaluation of its performance was between good and very good.
- The mean ratings for the Walk-in Center were actually higher than for the IT Help Desk both in terms of knowledge of staff, ability to solve problems and timeliness.
- For the IT Help Desk, the lowest mean rating from all three groups was for the time required to solve a problem.

The primary mechanism a respondent turns to for support appeared to have a bearing on their overall satisfaction. For example, among students we found a statistically significant relationship between a students' primary source of support and their overall satisfaction with the availability and quality of support. Students who primarily relied on self-help mechanisms were in fact less satisfied than those that turned to the IT Help Desk or Walk-in Center as their primary means of support. In fact, there was a fairly large drop in mean agreement for all three statements between students who turn primarily to the IT Help Desk or Walk-in Center



and those that turn to another student, friend or family member or attempt to solve the problem themselves. We observed similar patterns among the responses from faculty and students as well. However, the numbers of responses were not always sufficient to verify their statistical significance and the strength of the relationship between the two variables.

Respondents' had similar priorities for expanding support. Among a list of seven potential extensions of help desk and Walk-in Center services offered by IT, respondents were most interested in seeing the help desk extend its operations to 24 hours a day, seven days a week. For faculty and staff, the second most frequently selected expansion of services was to operate the help desk on weeknights. Approximately half of faculty and student respondents selected these two options as their top priority for extended service. Providing more Walk-in Centers on campus was the second most frequently selected extension of service for student respondents.

The majority of respondents had not taken part in a CSUN IT training class in the last 12 months. Among staff, 55.1 percent had not attended any CSUN IT training classes in the last 12 months and 44.1 percent had taken between one and five. The percentage of faculty who had not participated in any CSUN IT training in the past 12 months was 57.0 percent and the percentage who had participated in one to five classes was 41.9 percent.

- Both staff and faculty respondents reported a mean agreement between neutral and agree that they were confident in their technology skills. Faculty and staff reported a similar level of mean agreement that they had access to the technology training they need to do their jobs.
- Respondents were in less agreement that CSUN IT training classes met their needs. Among staff, most 56.9 percent were neutral to the statement that CSUN training classes meet my needs.
- The faculty respondents provided mean responses that hovered around neutral to the statements that available training to integrate technology in the classroom meets my needs and the training available to create on-line courses meets my needs. In fact, 27.9 percent of faculty agreed with the latter statement.

## IT Governance

In the past 24 months, the University has significantly restructured its IT governance and advisory bodies and the survey provided us an opportunity to gauge how well we had communicated the purpose and nature of these changes. The responses received from faculty and staff suggests that there is work that needs to be done to build understanding of the role of the governance groups and the process by which important IT decisions are made.

- Both faculty and staff on average disagreed that they understood the role of the IT governance groups and that they were sufficiently informed about how technology decisions are made (see Table 3).
- The mean level of agreement did not vary with statistical significance based on either a respondent's length of time at CSUN or the area in which they worked. Even staff within IT expressed disagreement with both statements.

**Table 3 - Faculty and Staff Assessment of Understanding of IT Governance**

	<b>Faculty Mean (N=179)</b>	<b>Std. Deviation</b>	<b>Staff Mean (N=392)</b>	<b>Std. Deviation</b>
I am sufficiently informed about the role of the IT Governance groups.	2.50	1.078	2.46	0.998
I am sufficiently informed about how technology decisions are made that affect my work.	2.36	1.074	2.44	1.020

Scale: 1- strongly disagree, 2 - disagree, 3- neither disagree nor agree, 4 - agree, 5 - strongly agree

## Conclusion and Next Steps

We take away from these results several important conclusions regarding CSUN technology and support services.

- Respondents were generally satisfied with the performance of CSUN technology and there are no areas of severe weaknesses.
- Additionally, there are certainly opportunities for improvement in the areas of wireless networking, faculty email, support for on-line learning and learning technologies, the learning management system and self-help user support.
- The results validate some recent decisions and confirm the priority of proposed projects.
  - The decision to expand faculty email quotas should alleviate some of the concerns expressed in the survey responses.
  - The need to define requirements for a new learning management system is confirmed by the relatively lower levels of satisfaction expressed by faculty with WebCT. However, it will be important as we strive to meet faculty requirements we understand and not sacrifice the aspects of WebCT that drive students' satisfaction with it.
  - The need to work collectively on a unified help desk strategy that better leverages self-help along with departmental and central IT staff is further validated by the survey results.
- In addition, the results point to areas that warrant further investigation and monitoring,
  - We need to better understand the pockets of concern expressed by faculty and students about the availability and capacity of the wireless network and determine if it maps to known or unknown access issues in particular zones of campus.
  - We must work closely with faculty performing computing intensive research and determine what aspects of the network and/or other infrastructure may need to be addressed to better support their current and future research.
  - We need to step back and better understand our IT training needs as an institution and determine how to better align in-house and outsourced offerings with those needs.
  - We need to engage students in a dialogue to better understand their expectations surrounding email and assess how these needs can be most effectively met.

- Finally, the results issue a clear challenge to University and IT leaders to re-introduce the purpose and role of the governance groups to the institution and continue to strive to create greater transparency in IT decision-making.

## II. INTRODUCTION

Over the past two years, the Division of Information Technology (IT) has sought to improve the reliability of the University's technology and the quality of our service. We have also made a commitment to operate with greater transparency and accountability and to use data wherever possible to support decision-making. With these goals and values in mind, the IT leadership surveyed faculty, students and staff on the state of CSUN technology and services. Our goals were straightforward:

- To obtain feedback from the community and gauge satisfaction with technology and services
- To gather data about technology usage to inform some near-term decisions
- To identify areas that require improvement
- To establish a baseline against which to measure future performance.

The IT leadership team worked with an outside consultant to develop three survey instruments and this analysis. While the surveys had many common elements, we tailored questions as appropriate to the three unique audiences we surveyed. The surveys were reviewed by our IT governance and advisory committees including the Executive Technology Steering Committee, the Technology Infrastructure and Services Committee, the SOLAR and Administrative Systems Committee, the Advisory Committee on Academic Technology, and the Academic Technology Committee. The results were then analyzed and reported on by higher education IT consultant Phil Goldstein. Mr. Goldstein brought familiarity with survey analysis and CSUN information technology to the project.

### Methodology

The survey was administered via the web using the Student Voice survey tool. An email with a link to the tool was sent to a sample of faculty, students and staff. The sample was constructed by random sample. The survey was open for responses during the period of April 21st to May 6th this year. The response rates for the survey were encouraging; we received response from 16% of faculty, 9% of students and 44% of staff (table 1).

**Table 4 – Response Rate by Survey Population**

Population	Invited to Participate	Submitted Responses	Response Rate
Faculty	1,094	179	16%
Students	10,000	868	9%
Staff	1,033	455	44%

Additional aspects of our analytical approach include:

- Only completed and submitted surveys were analyzed.
- An initial analysis of results was performed by our outside consultant and presented to the IT leadership.
- Relationships between variables are noted in the report where they are statistically significant and meaningful.

- Percentages in tables may add to greater than 100% due to rounding.
- While IT staff participated in the survey, their responses are excluded from all presentations of staff results. Responses from the IT staff are noted separately in areas where they are particularly noteworthy.
- Response choices of “don’t know” or “not applicable” were treated as missing responses unless otherwise noted in the text.

## Respondent Demographics

Responses were received from representatives of all parts of the University. Faculty and student respondents represented all CSUN colleges and staff represented all divisions. Among faculty the majority (43.6 percent) were tenured and have been at CSUN for more than six years (63.1 percent). More than three quarters of the student respondents (77.0 percent) were enrolled full-time and most were juniors (26.8 percent), seniors (32.4 percent) or graduate students (24.2 percent). The staff respondents also have had considerable CSUN experience. The majority (56.7 percent) have worked at CSUN for six or more years. Tables 2 and 3 present the distribution of respondents by school or college and division.

**Table 5 - Student and Faculty Respondents by School or College**

School or College	Percent Faculty (N=179)	Percent Students (N=807)*
Mike Curb College of Arts, Media and Communication	11.7%	13.0%
Business and Economics	7.3%	21.9%
Michael D. Eisner College of Education	12.3%	12.6%
Engineering and Computer Science	7.3%	8.4%
Health and Human Development	12.8%	12.5%
Humanities	12.3%	8.3%
Science and Mathematics	13.4%	6.4%
Social and Behavioral Sciences	19.6%	16.7%
Oviatt Library	3.4%	NA

\*61 students were undeclared majors or did not know their College affiliation. Tseng College was not a College response option.

**Table 6 - Staff Respondents by Division**

Division	Percent (N=455)
Administration and Finance	22.9%
Academic Affairs	35.2%
Student Affairs	21.3%
University Advancement	4.6%
IT	13.8%
University Corporation	2.2%

### III. TECHNOLOGY IN SUPPORT OF TEACHING, LEARNING AND RESEARCH

The survey asked both students and faculty to assess how frequently various technologies were used in their teaching and coursework. Respondents were asked to use a five point scale that ranged from never to almost always. The technologies used most often were those that are arguably more mature and universally applicable in coursework. These included data projectors, computer labs and the CSUN learning management system, WebCT. For most of the technologies we inquired about students and faculty reported an average frequency of use that was between never and seldom (Table 7).

There are several possible explanations for the relatively infrequent use reported. For some technologies the low frequency of use may be attributable to their use at CSUN on a pilot basis such as Moodle and Blackboard. It is possible that faculty are less familiar with some of the technologies and therefore have not incorporated them into their courses. Or, it is possible that faculty have experimented with some of the technologies and not found much utility in them. Interestingly, in a follow-up question we asked faculty to assess their relative satisfaction with each of these technologies. For many, faculty chose a response choice of don't know rather than assess the performance of the technology. This may indicate that faculty have not yet tried many of the technologies. It is likely worth a concerted effort to publicize their availability and to encourage faculty who have found useful ways to incorporate these technologies into student learning to share their experiences.

**Table 7 - Frequency of Use of Technology in Courses Last 12 Months**

	Faculty Mean (N=172)	Std. Deviation	Student Mean (N=746)	Std. Deviation
Data projector (to view websites, PowerPoint presentations, etc.)	3.68	1.567	3.62	1.493
In-class internet access	2.88	1.505	2.49	1.568
Computer labs	2.51	1.541		
WebCT	2.41	1.707	3.67	1.501
Video	2.26	1.334	1.81	1.248
Laptops in class for class work	2.21	1.532	2.02	1.505
Scientific labs	1.55	1.202		
Turnitin.com	1.42	0.886	1.60	1.018
University Video Network	1.41	0.854	1.45	0.986
Document camera	1.39	0.874	1.27	0.815
Clickers	1.38	1.000	1.61	1.257
Smart board	1.36	0.960	1.23	0.768
BlackBoard	1.34	0.960	1.70	1.360
Elluminate	1.32	0.889	1.15	0.677
Podcasting	1.22	0.649	1.11	0.475
Video conferencing	1.18	0.617	1.12	0.516
Moodle	1.10	0.573	1.11	0.555

Scale: 1 - never, 2 - seldom, 3- sometimes, 4 - often, 5 - almost always

Students and faculty were most satisfied with the performance of the learning technologies that are used most frequently. Video projectors, in-class internet access and computer labs were among the technologies students and faculty ranked highest (Table 8). In fact, using a five point the mean satisfaction score for these

technologies was 3.5 or greater (between good and very good). In fact, all but one technology received a mean score of 3.00 or greater from faculty. Students expressed somewhat lower levels of satisfaction. The mean evaluations provided by students were 3.00 or greater for all but five of the learning technologies. Students expressed mean satisfactions of between 2.00 and 3.00 (between fair and good) for smart boards, Elluminate, Moodle, podcasting and video conferencing.

Faculty expressed the greatest dissatisfaction with WebCT. The mean evaluation of WebCT by faculty was 2.75 (poor or fair). In contrast, Blackboard received a mean score of 3.60 and Moodle 3.08 from the more limited number of faculty who use them. Students' evaluation of WebCT stands in contrast to that provided by faculty. Student respondents reported a mean satisfaction with WebCT of 3.60. The faculty's lower levels of satisfaction with WebCT validates the recent decision to review learning management system requirements and evaluate alternative solutions. However, it is important that CSUN understand and try to preserve the aspects of WebCT that students like while addressing the short-comings that faculty experience.

**Table 8 - Satisfaction with Technology Used in Teaching and Learning**

	Faculty (N)	Faculty Mean	Std. Deviation	Student (N)	Student Mean	Std. Deviation
Data projector	144	3.74	1.097	646	3.92	1.056
Computer labs	101	3.61	1.039			
BlackBoard	35	3.60	1.193	215	3.25	1.290
In-class internet access	130	3.56	1.107	508	3.79	1.221
Smart board	27	3.48	1.424	87	2.82	1.521
Laptops in class	77	3.44	1.219	362	3.70	1.247
Scientific labs	31	3.42	1.089			
Elluminate	28	3.39	1.133	73	2.60	1.552
University Video Network	39	3.38	1.227	183	3.05	1.283
Turnitin.com	42	3.38	0.962	279	3.27	1.271
Video	93	3.38	0.977	259	3.39	1.161
Video conferencing	22	3.23	0.813	73	2.53	1.519
Podcasting	20	3.15	0.933	65	2.43	1.369
Clickers	28	3.11	1.197	213	3.10	1.383
Moodle	13	3.08	1.038	63	2.37	1.462
Document camera	27	3.00	1.240	104	2.93	1.457
WebCT	100	2.75	1.201	736	3.60	1.181

Scale: 1- poor, 2 = fair, 3 - good, 4 - very good, 5 – excellent

Teaching on-line did not have a bearing on faculty satisfaction with the learning technology tools asked about in the survey. Among respondents, 23.5 percent reported that they teach partially or fully on line. These faculty did not offer an evaluation of learning technologies that varied in a statistically significant way from faculty who taught completely in person. Similarly with students, there was not a statistically significant difference in the mean evaluation of learning technologies between students who have taken all their courses in the past 12 months in person and those that have taken at least one on-line course.

Faculty were more positive about the technology and technical support available to support on-line courses than they were about other learning technologies. We asked faculty who taught at least partially on-line in the last 12 months to indicate their degree of agreement with five statements regarding the support for on-line learning. The mean agreement with all five statements were relatively low (3.29 or less) indicating there

is likely room for improvement across the board (Table 9). Faculty reported the highest mean agreement with the assertions that available technologies to create on-line courses met their needs and that technical support for on-line courses met their needs. These were the only two statements with mean responses above neutral. Faculty were least confident in the assertion that students taking courses on-line received the technical support they required. With the exception of the statement regarding the availability of technologies to create on-line courses, the distribution of the responses followed similar patterns. About 30 to 40 percent of respondents disagreed with the statement, about 30 percent were neutral and the remainder agreed or strongly agreed. There were insufficient numbers of responses to determine if the distribution of respondents could potentially be explained by differences in faculty rank, college affiliation or the amount of on-line teaching the respondent engaged in.

**Table 9 - Assessment of Technology Support for On-line Learning, By Faculty Who Teach On-line**

	Mean	Std. Deviation
The technologies available to create online courses meet my needs. (N=38)	3.29	1.137
The technical support for online courses meets my needs. (N=39)	3.10	1.046
Support for delivering online courses meets my needs. (N=39)	2.95	0.972
Support for developing online courses meets my needs. (N=39)	2.82	1.023
My online students receive the technical support they require. (N=36)	2.78	0.866

Scale: 1 –strongly disagree, 2 – disagree, 3- neither agree nor disagree, 4 – agree, 5 – strongly disagree

Interestingly, the reason faculty most frequently selected from among a list of seven potential responses as the predominant reason that they do not teach on line is that “no one has asked me”. This choice was selected by 31.3 percent of respondents. Respondents were able to select multiple response choices. The second most frequently selected reason was the on-line courses “do not improve learning outcomes.” This was selected by 29.1 percent of respondents. In addition, a quarter of respondents said that they had “no interest” in teaching on-line. The least frequently selected reasons were insufficient technology tools (8.4 percent) and insufficient staff assistance to create on-line course (8.9 percent). It appears that the majority of respondents would be willing to try to teach on-line. What we don’t know from the survey data alone is whether these faculty are teaching courses that are strategically important to CSUN to move into an on-line or hybrid format. Nevertheless it appears that about two thirds of the respondents have not closed the door on the potential of on-line learning. Sufficiency of staff support and adequacy of technology tools were not identified as a significant impediment to faculty teaching on line. While this is a positive affirmation of the efforts of those who support the development and delivery of on-line courses, our current capacity will likely not be sufficient should on-line learning be attempted at a larger scale. As more courses are moved on-line and less experienced faculty become involved in developing on-line or hybrid courses, support requirements are likely to increase.

Given the importance of hybrid courses and on-line learning to the future of the University, it is worth trying to better understand where faculty believe existing support for the creation and delivery of on-line instruction is lacking. The survey alone does not enable us to understand the nature of the gap faculty experience especially in terms of support. Support could mean more extensive staff support, more release time to create on-line courses or more recognition for a willingness to develop on-line courses. Of equal concern is the faculty’s perception that on-line students are not receiving the technical support they require.



In addition to supporting teaching and learning, technology is also playing an increasingly important role in faculty research and scholarship. As Table 10 illustrates, faculty were somewhat more confident that CSUN technology was sufficient to support their research and scholarship. Mean responses from faculty were between neutral and agree that CSUN technology meets their current and future research needs. Faculty were less confident that CSUN technology was helping them to collaborate effectively with colleagues at other institutions.

**Table 10 - Faculty Assessment of Technology In Support of Research and Scholarship (N=179)**

	Mean	Std. Deviation
CSUN's technology supports my current research needs.	3.44	0.948
CSUN's technology will likely support my research needs in the future.	3.41	0.952
CSUN's technology helps me collaborate effectively with faculty at other institutions.	3.17	0.892

Scale: 1 -strongly disagree, 2 - disagree, 3- neither agree nor disagree, 4 - agree, 5 - strongly disagree

We identified one pattern that may provide some insight into what differentiates faculty that were satisfied with the technology to support research and from those that were not. We observed a statistically significant relationship between confidence in the availability and capacity of the wired and wireless network and confidence in the adequacy of technology to support research. Faculty who expressed concern about network performance also disagreed that technology was adequate to support current and future research needs (Table 11). This suggests that faculty in areas of research that place high demands on the network (e.g., those who need to access large data sets or manipulate instruments remotely) have technology needs that are specialized and not being completely met by the current infrastructure.

**Table 11 - Faculty Assessment of Technology in Support of Research by Assessment of the Capacity of the Wired Network<sup>1</sup>**

The capacity of the CSUN wired network meets my needs.	Mean*	Std. Deviation
Strongly disagree (N=4)	1.00	0.000
Disagree (N=22)	2.82	1.006
Neither agree nor disagree (n=40)	3.30	0.791
Agree (N=88)	3.63	0.748
Strongly agree (N=25)	3.92	0.997

Scale: 1-strongly disagree, 2, disagree, 3 – neither agree nor disagree, 4 – agree, 5-strongly agree

\* Q: CSUN's technology supports my current research needs.

Finally, faculty were asked to evaluate how important a specific set of technologies would be to their research in the future. Respondents placed the most importance on high performance computing which received a mean response of 3.57 and e-journals which received a mean of 3.45 (the five point response scale was none, minor, moderate, high and very high). The only other technology on the list with a mean importance above moderate was visualization technologies (mean of 3.11). The remaining technologies received mean importance ratings of between 2 and 3 and included in declining order of importance tools to manage large data sets, simulations, document collaboration tools, web conferencing and video conferencing.

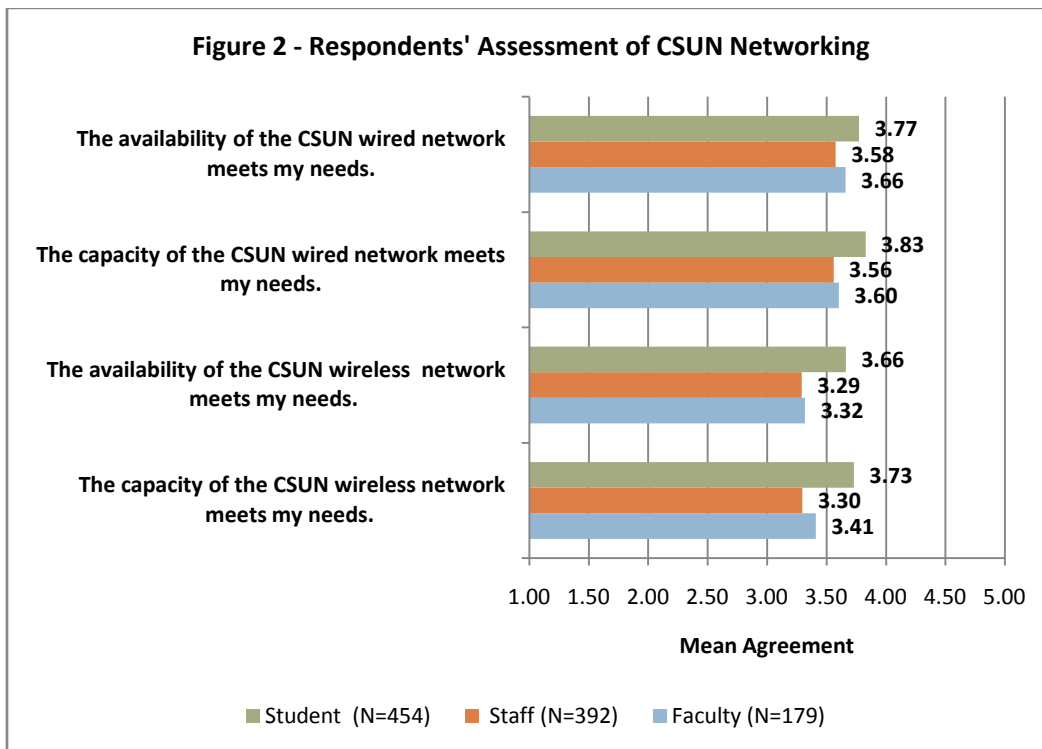
<sup>1</sup> Statistical significance of the relationship was verified by combining the strongly disagree and disagree responses and the agree and strongly agree responses to compensate for the smaller number of responses.

## IV. CORE TECHNOLOGIES

The survey also provided an opportunity to obtain feedback on the performance of core technologies and services. We inquired about four areas: networking, email, portal and computer labs. These were selected either because they have been recently implemented (e.g., portal) or are critical to a large number of IT's constituents (e.g., the network) or both. The key findings around each technology in presented in the remainder of this section.

### Networking

The wired and wireless networks are at the foundation of virtually all computing applications and services at CSUN. Therefore its performance and reliability is critical to faculty, students and staff. We asked all three constituent groups to assess both the availability and capacity of the network. As Figure 2 illustrates, there were similar patterns of responses across all three constituents. Overall, the wired and wireless networks appeared to meet the needs of students, faculty and staff. Across all categories respondents reported a mean agreement that the availability and capacity of the wired and wireless network met their needs. Faculty were most concerned about the wired network capacity. However, fewer than 15 percent of faculty respondents responded that the wired network's capacity and availability did not meet their needs. In fact, more than 60 percent of faculty and staff and more than 69 percent of students agreed or strongly agreed that the wired network met their needs.



Respondents were slightly less satisfied with the capacity and availability of the wireless network. Nearly a fifth of students (19.1 percent) disagreed or strongly disagreed that the availability of the wireless network was sufficient to meet their needs. A similar percentage of faculty expressed the same concern about the availability of the wireless network (18.4 percent). Fewer faculty (14.5 percent) disagreed or strongly disagreed that the capacity of the wireless network was sufficient to meet their needs. Nearly half of faculty respondents agreed or strongly agreed that the wireless network capacity (48.5 percent) and availability (45.8 percent) met their needs. Staff were more neutral about the availability and capacity of the wireless

network. Slightly less than half of all staff respondents neither agreed nor disagreed that the wireless network met their needs.

Students' assessment of the wireless network was more broadly distributed. Fewer respondents were neutral and many (nearly 70 percent) were quite positive that the capacity and availability of the wireless network met their needs. However, as stated before nearly a fifth of students reported concerns about the availability of the wireless network. The concerns students expressed may have something to do with the areas of campus in which they predominantly take their courses. We found a statistically significant relationship between the college a student is enrolled in and their satisfaction with the availability of wireless networks. While the relationship was not terribly strong it was significant enough to report (significance=.012).

As table 12 illustrates, students in the College of Social and Behavioral Sciences and the College of Humanities were least in agreement that the availability of the wireless network met their needs. Those in the Colleges of Health and Human development and Business were most in agreement. College affiliation is likely only one possible explanation in the differences in perception among the student respondents. Even among these respondents in the Colleges with the least satisfaction, the standard deviation of the responses is still fairly large and there are substantial numbers of respondents who reported their needs are met and substantial numbers that are not satisfied. This pattern warrants further investigation to determine if there are particular buildings that these students frequent that have less wireless availability or if there is something different about their use of the wireless network that creates greater requirements for its availability than found among students in other colleges. Other factors may influence student opinions about the availability of the network. For instance, in qualitative comments some students mentioned the lack of wireless in the parking lot as a gap they would like to see closed.

**Table 12 - Student Assessment of Availability of Wireless by College**

College	Mean*	Std. Deviation
Health and Human Development (N=84)	3.89	1.064
Business & Economics (N=137)	3.89	1.122
Mike Curb College of Arts, Media and Communication (N=80)	3.66	1.179
Science and Mathematics (N=42)	3.64	1.206
Michael D. Eisner College of Education (N=53)	3.62	1.164
Engineering and Computer Science (N=53)	3.58	1.151
Humanities (N=50)	3.48	1.216
Social and Behavioral Sciences (N=98)	3.32	1.328

\*Q: The availability of the CSUN wireless network meets my needs.

## Email

Email is probably the most frequently used application for most of IT's constituents. However, it is not a uniform product at CSUN. Students, faculty and staff use different email solutions with differing capabilities and origins. The services are also in various stages of change. A newer email solution has recently been deployed for staff and administrators. A project to assess faculty email requirements and identify a new solution has been launched and we like many institutions are engaged in conversations regarding the potential benefits of outsourcing student email. With these differences in mind, the questions asked of staff, faculty and students in the survey varied. The results from each survey constituency are therefore presented separately.

## Staff Email

Most staff recently transitioned to Microsoft Exchange for email. With this transition in mind, staff were asked about their satisfaction with Exchange in comparison to their requirements and their experience using other email packages. Table 13 displays staff respondents' mean agreement with several statements regarding the performance of exchange. Overall, respondents were in agreement (means greater than 3.5) that they understand how to use Exchange and that the product has the features they need. In fact, only 10.2 percent of respondents disagreed that Exchange has the features they need. Thirty-eight percent of respondents agreed or strongly agreed that Exchange is better than their previous email client. The majority (41.2 percent) were neutral on the question of whether Exchange was better and a fifth disagreed.

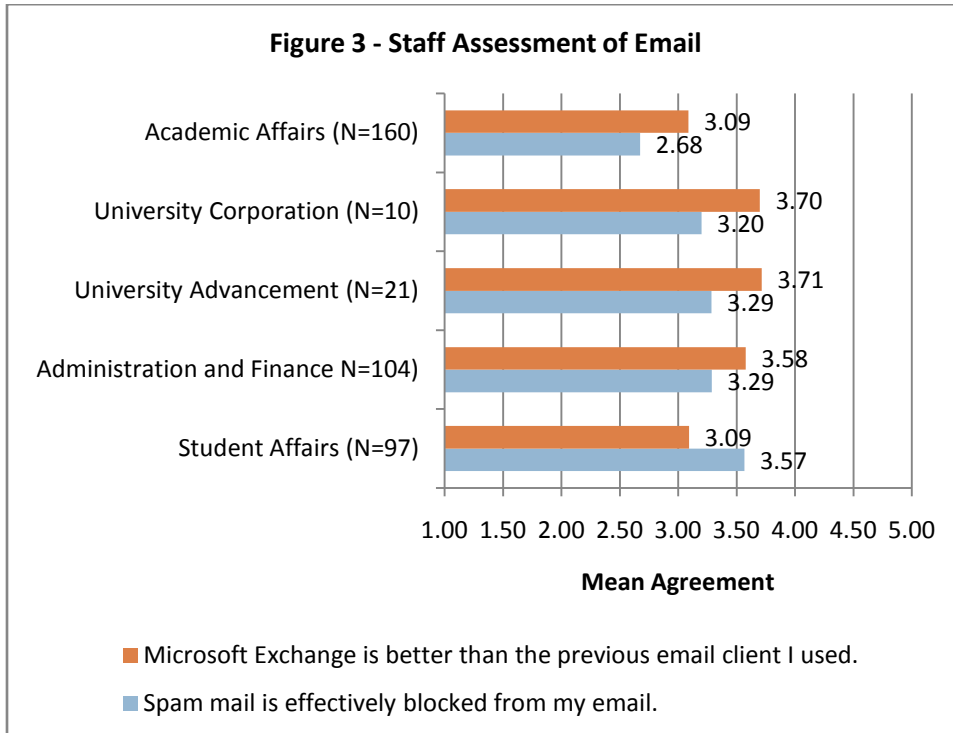
**Table 13 - Staff Respondents' Assessment of Email Capabilities (N=392)**

	Mean	Std. Deviation
I understand how to use Microsoft Exchange (e.g., Outlook or Entourage).	3.89	1.084
Microsoft Exchange has the features I need.	3.57	0.986
Microsoft Exchange is better than the previous email client I used.	3.27	1.148
Spam mail is effectively blocked from my email.	3.10	1.258

Scale: 1 - strongly disagree, 2 - disagree, 3 neither disagree nor agree, 4 - agree, 5 - strongly agree

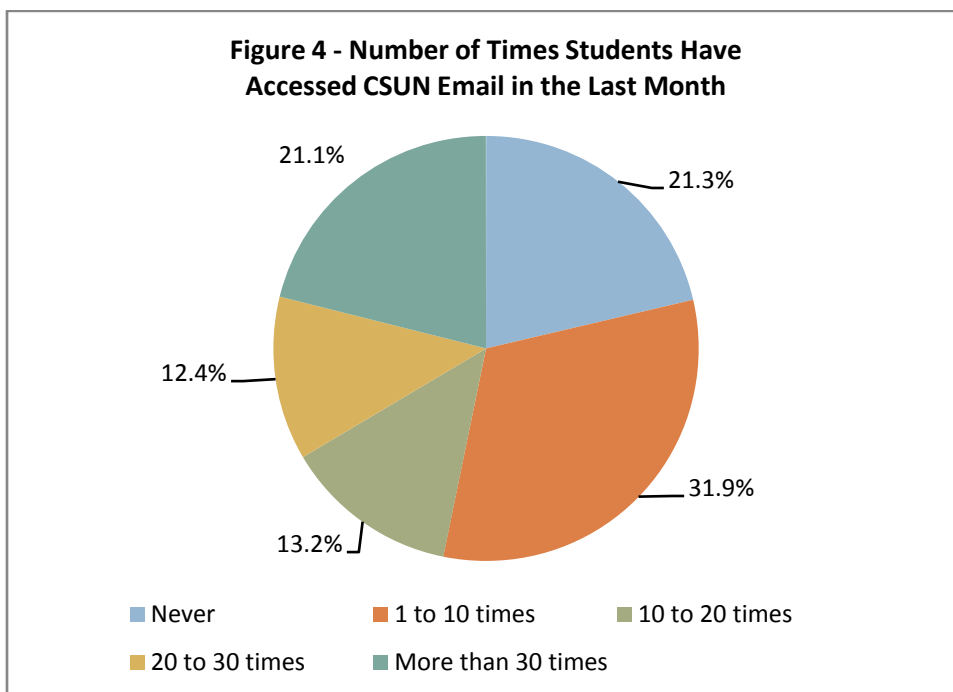
Staff agreed the least with the statement that spam mail is effectively blocked from their email. The mean agreement was close to neutral and nearly a third (32.7 percent) of respondents disagreed or strongly disagreed with the statement. The effective management of spam mail is a constant challenge for all technology organizations and the receipt of spam is an understandable annoyance to all email users. The relatively reduced levels of satisfaction with blocking of spam may be both a signal of a need for improved practices and a shift in expectations among respondents.

Satisfaction with email and spam blocking did appear to have some relationship to where the staff member works. We found a statistically significant relationship between respondents mean agreement with the statements that spam is effectively blocked and exchange is better than their previous email and the division in which the respondent works. This is presumably a reflection of historical differences among the divisions in the type of email client they used. Respondents who work in Student Affairs agreed the least that Exchange was better (figure 3). Conversely, those in University Corporation and University Advancement agreed the most. In terms of spam blocking, staff in Academic Affairs agreed the least that spam was blocked effectively and those in Student Affairs agreed the most.



### Student Email

All CSUN students are provided with a CSUN email account, but their use of it varies significantly. For example, we asked students how often in the last month they had accessed their CSUN email account. As figure 4 illustrates, the use is quite varied. More than half (53.2 percent) accessed their email ten or fewer times in the past month including a fifth who never accessed their email. On the other hand, 21.1 percent of students reported that they have accessed their email more than 30 times in the past month.



Nearly three quarters of respondents (72.5 percent) reported that they forward their CSUN email to an external email account. The choice to forward email related statistically to a students' academic standing. While the majority of students at every level chose to forward email, the practice was more common among juniors, seniors and graduate students. For example, 56.0 percent of freshmen and 62.3 percent of sophomores forward their email externally. Among juniors the percentage rises to 70 percent, and among seniors 78.6 percent forward their email. A similarly high percentage of graduate students (76.7 percent) reported they forward email externally. This variation in practice by standing could be attributable to multiple factors. Fewer first and second year students may realize they can forward their CSUN email or may not yet have taken the time to do so. Or, they may prefer to keep their university email segmented from email from family and friends. Juniors, seniors and graduate students may be more likely to be managing work, school and social email conversations and may elect to have them consolidated. Or they may be more comfortable with the practice of forwarding email. Of course, the reason to this pattern may be attributable to factors other than those uncovered by the survey.

In general, students seemed satisfied with the performance of their CSUN email. Students reported mean agreements of greater than 3.50 (more than halfway between neutral and agree) with statements that asserted that CSUN email is easy to use, has sufficient features and provides adequate storage capacity. Students were also in agreement (mean 4.05) that spam mail is effectively blocked from their CSUN email. In fact, the only statement with which more than 11 percent of respondents disagreed was that the mailbox provided adequate storage capability. Slightly more than 16 percent of respondents disagreed with this statement. Interestingly, there was not a statistically significant difference among respondents' assessment of the sufficiency of email storage capacity and whether or not they forward their email externally. One would assume that students who do not forward their email would be more concerned about storage capacity. However, among respondents that was not the case.

**Table 14 - Student Assessment of CSUN Email**

	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>
My CSUN email account is easy to use.	773	3.80	1.103
My CSUN email account has sufficient features to meet my needs.	761	3.64	1.155
My CSUN email box storage capacity meets my needs.	720	3.54	1.263
Spam mail is effectively blocked from my CSUN email.	669	4.05	1.000
It is important that CSUN provides me with a university email account.	816	4.23	1.035

Scale: 1 - strongly disagree, 2 - disagree, 3 - neither disagree nor agree, 4 - agree, 5 - strongly agree

Despite the fact that nearly three quarters of respondents choose to forward their student email externally, it is important to students that CSUN provide them with a university email account. More than half of respondents (50.5 percent) strongly agreed that it was important that CSUN provide a university email account and another 24.4 percent agreed. Enrollment status also appears to have a bearing on student opinions regarding the importance of a university email account. There was a statistically significant relationship between whether a student attends full or part-time and their opinion regarding the importance of university email accounts. Both groups of students provided mean responses of greater than 4.00 (agree).

However, it was more important to full-time students (mean response 4.29) that they are provided with a university email account than it was for part-time students (mean agreement 4.01).

The importance students place on having university email is not the same as asking the students whether CSUN should operate student email or if they would prefer it be outsourced to a third party (e.g., Google). It is possible that what students are most interested in is having a CSUN email address or a place where they can be assured of receiving CSUN related email. This issue will warrant further attention as CSUN weighs its options for operating student email in the future.

### Faculty Email

In light of the initiative to gather faculty requirements for a new email solution, we asked respondents to provide feedback both on the performance of their current email and the importance of some potential features they might want in a new solution. As a baseline, we found the majority of respondents (54.7 percent) use only webmail to access their CSUN email. Others use a variety of methods including outlook, Eudora and Thunderbird. There was not clear favorite among those who use alternatives to webmail.

As Table 15 illustrates, faculty are somewhat satisfied with the features of their current email, but are dissatisfied with the sufficiency of email quotas (at the time of the survey). The majority of respondents (62.0 percent) agreed or strongly agreed that the functionality of the present email system meets their needs. However, 26.8 percent disagreed or strongly disagreed with the same statement. We did not find any statistically significant relationship among the variables in the survey that might explain the differences among faculty whose needs are met by the current email and those that are not. Clearly, faculty were considered about the sufficiency of the email quota at the time of the survey. The mean response was below neutral (disagree) and 41.9 percent of respondents indicated that the quota did not meet their needs. Subsequent to the survey, the email quota was increased which presumably should assuage this concern.

To gain a sense of how faculty are impacted by the quota, we asked respondents to tell us how frequently they must delete emails in order to stay within the email quota. For most faculty, the necessity to delete email solely to remain within the quota is periodic but not routine. On a five point scale of never, seldom, sometimes, often and daily, 66.5 percent of faculty reported that they have to delete email with frequency of sometimes or less. This included 41.3 percent of faculty respondents who reported that they never or seldom have to delete email to remain within the quota. On the other hand, there were 12.3 percent of respondents who reported that they must delete emails daily and 21.2 percent who delete emails often (weekly) to remain within the old quota. With the new quota in place, this situation should be lessened. However, this bears further monitoring and may require alternative solutions for email storage and sharing large attachments.

**Table 15 - Faculty Assessment of Email and Calendaring Capabilities**

	N	Mean	Std. Deviation
The CSUN email functionality meets my needs.	178	3.46	1.203
The CSUN email quota limits meet my needs.	173	2.85	1.398
It is important to me to synchronize my email with a PDA or Smartphone.	163	2.77	1.316
It is important to me to have an electronic calendar that I can share with others to schedule joint meetings.	171	2.75	1.288
It is important to me to synchronize my calendar with a PDA or Smartphone.	164	2.74	1.365

Scale: 1- Strongly disagree, 2- disagree, 3 - neither disagree nor agree, 4 -agree, 5 - strongly agree

As we think about a replacement for faculty email, we wanted to understand the importance to faculty of several potential features such as integrated calendaring that enabled scheduling of joint meetings and

synchronization of calendars and email with a Smartphone or PDA. On average, faculty indicated that these features were not important to them. The mean response to all three potential capabilities was around 2.75 (between disagree and neutral. For each statement there were about a quarter of the respondents who agreed or strongly agreed. This certainly represents a potentially sizeable portion of the faculty with differentiated needs that would need to be considered.

## Portal

The CSUN portal *myNorthridge* was implemented this past year and is used by faculty, students and staff. Therefore, we asked questions in the survey to understand how well the portal was performing and how well understood its capabilities were among students, faculty and staff. Overall, the views of all three constituent groups were fairly positive. The assessments given of the ease of use of the portal and the ability to find information within it were usually between neutral and agree. While there is room for improvement, the technology is new and presumably faculty, students and staff will become more familiar with its use over time. We also saw within the responses evidence that suggests more should be done to raise awareness of some of the portal's features. For several of the capabilities we inquired about (described in detail later in this section) we noted that there were fairly large numbers of respondents who chose the response choice don't know. This may suggest that they have not tried this feature or were unaware of it. While some may have no interest in using this aspect of the portal, others may want to but be unaware of how.

### Students and the Portal

Students were particularly positive about the ease of use of three aspects of the portal (table 16). On average, student respondents agreed that it was easy to view grades in the portal, access the portal and view and pay fees in the portal. Each of these statements received a mean agreement of 3.96 or greater. Students gave a similar assessment of the ease of registering for classes using the portal. While mean responses still exceeded neutral, students were less in agreement that it was easy to locate information in the portal and that it was easy to personalize the portal. A significant number of respondents (23 percent) responded that they "didn't know" if it was easy to personalize the portal perhaps indicating that they have not tried due to lack of knowledge, lack of interest or some other reason. Perhaps with more information on how to personalize the portal, students might see better results in terms of the ease in which they can find information within the portal.

**Table 16 - Students' Assessment of the Portal**

	N	Mean	Std. Deviation
I can easily view my grades using the <i>myNorthridge</i> portal.	833	4.10	0.972
I can easily access the <i>myNorthridge</i> portal.	863	4.05	1.021
I can easily view and pay fees using the <i>myNorthridge</i> portal.	829	3.96	1.072
I can easily register for classes using the <i>myNorthridge</i> portal.	863	3.86	1.129
I can easily search for classes using the <i>myNorthridge</i> portal.	862	3.62	1.214
I am able to easily locate the information I need using the <i>myNorthridge</i> portal.	864	3.56	1.186
I am able to personalize the <i>myNorthridge</i> portal home page to display the information resources I need.	668	3.42	1.213

Scale: 1 - strongly disagree, 2 - disagree, 3 - neither disagree nor agree, 4 - agree, 5 - strongly agree

There were some statistically significant differences among students' responses based on their academic standing. Specifically we found a relationship between academic standing and a students' level of agreement that it was easier to search for courses using the portal. Freshman and sophomores provided



significantly higher mean response (greater agreement) than did juniors, seniors or graduate students. The mean agreement of freshman and sophomores was approximately 3.90, for juniors and seniors it fell to 3.60 and for graduate students it fell to 3.40. This may indicate a shortcoming in the capability of the portal or SOLAR to help students perform more complex course searches as they move to a portion of their academic career in which they are choosing more electives or are trying to balance more demands on their time. An interest in improved course search features and registration processes was a prominent theme in respondents' qualitative comments. One student respondent commented, "I would like to see the registration process be improved. Sometimes it has a lot of unnecessary steps students need to go through to enroll in a class."

Students' qualitative comments suggested that some did not distinguish between *myNorthridge* and the technologies and services accessed through it. In fact, 16% of students who provided written suggestions for improving the *myNorthridge* specified an improvement to a policy, process or technology accessed via the portal. The following comment was typical of many others. "I think it is wrong to have to pay a service charge to pay for fees using the portal. This service should be free and easy to use."

### Faculty and the Portal

The assessment by faculty members of the portal was generally positive on two characteristics and neutral to positive for others. As table 17 identifies, faculty were most in agreement that it was easy to view course rosters and submit grades using the portal. Both these items received means greater than 4.00. Faculty respondents were on average between neutral and agree in their assessment of the ease of downloading rosters from the portal and the ease at which one could navigate through the portal. Faculty were in less agreement that the portal was easy to navigate and personalize. In their qualitative suggestions for improvement, a third of faculty who provided comments suggested a need to improve the navigation and organization of the portal. A similar pattern was observed among staff and student respondents. The following comment was typical of many. "Try to make the tab names and button names less ambiguous. Each time I try to find something - and I mean EVERY TIME - it is a huge investment in time. The names are all branded and cute and forward thinking but, unfortunately, they're also inscrutable."

We did observe one interesting pattern in the assessment of the ease of navigation. Tenured and tenure track faculty had a lower mean agreement that the portal was easy to navigate than did full-time and part-time lecturers. However, the relatively smaller number of respondents in each category limited the ability to determine the statistical significance of this difference.

A review of the distribution of responses reveals pockets of dissatisfaction with the portal. For example, 27.4 percent of respondents disagreed or strongly disagreed that it was easy to navigate through the portal. Similarly, 30.2 percent disagreed or strongly disagreed that they could easily locate the information they need in the portal. In general, few respondents were neutral in their evaluation of the portal.

**Table 17 - Faculty Assessment of the Portal**

	N	Mean	Std. Deviation
I can easily view my course roster using the <i>myNorthridge</i> portal.	171	4.12	0.832
I can easily submit grades using the <i>myNorthridge</i> portal.	168	4.06	0.894
I can easily download my course roster using the <i>myNorthridge</i> portal.	167	3.55	1.123
I can easily navigate through (move around) the information resources in the <i>myNorthridge</i> portal.	168	3.33	1.123
I am able to personalize the <i>myNorthridge</i> portal home page to display the information resources I need.	133	3.20	1.021

Scale: 1 - strongly disagree, 2 - disagree, 3 - neither disagree nor agree, 4 - agree, 5 - strongly agree

As we saw in the student responses, a significant number of faculty (25.7 percent) chose don't know as their response choice to the statement that they are able to personalize the *myNorthridge* portal home page. As suggested previously, this may be an opportunity to offer additional information about how to personalize the portal as well as the benefits of doing so.

### Staff and the Portal

We asked staff primarily about the ease at which they can navigate, locate information and personalize the portal. Staff responses on average were between neutral and agreement with each of the statements. Staff were most in agreement that they could personalize the portal and least in agreement that it was easy to navigate the portal. In fact, about a quarter of staff respondents disagree that they could easily navigate the portal and locate the information they need within it. Table 18 displays the mean response from staff to each statement regarding the performance of the portal.

**Table 18 – Staff Members' Assessment of Portal**

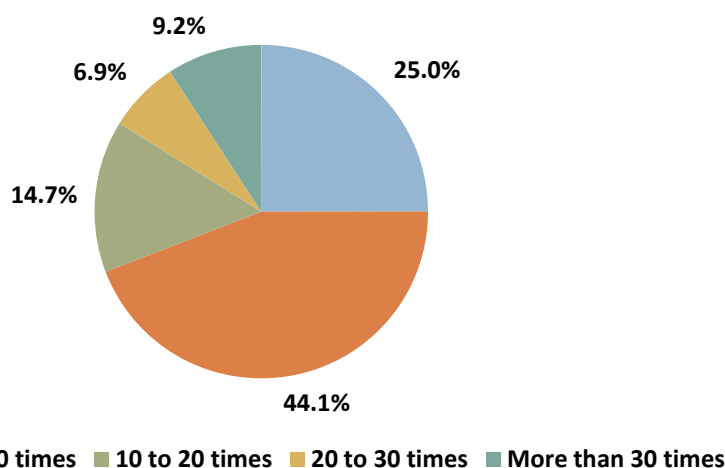
	N	Mean	Std. Deviation
I am able to personalize the <i>myNorthridge</i> portal home page to display the information resources I need.	369	3.40	0.962
I am able to easily locate the information I need using the <i>myNorthridge</i> portal.	386	3.33	1.112
I can easily navigate through (move around) the information resources in the <i>myNorthridge</i> portal.	386	3.29	1.121

Scale: 1 - strongly disagree, 2 - disagree, 3 - neither disagree nor agree, 4 - agree, 5 - strongly agree

### Computer Labs

The final area of core technology that we assessed in the survey was the use of computer labs by students. The goal was to gather information to better understand the predominant reasons students use the computer labs as well as their overall satisfaction with them. Students' use of computer labs varies. Among respondents, the majority reported that they had made between 1 and 10 visits to a campus computer lab in the month prior to the survey. A quarter of respondents had made no visits while 16.1 percent had visited 20 or more times.

**Figure 5 - Number of Visits to A Computer Lab in Last Month  
(N=868)**



The reasons students reported that they use computer labs varies as well. We asked students to use a five point frequency scale (never, seldom, sometimes, often, and almost always) to evaluate a list of potential purposes for their visits to computer labs. As table 19 illustrates, students reported they visit labs most frequently to access the internet or to check email. Both these items received mean frequency over 4.00 (often). Students least frequently use computer labs to work on course assignments within the learning management system or to use specialized software to support course assignments. It appears that the convenience factor of dropping into use the computer lab to check email or look up something on the internet is the predominant reason that most visit the labs.

**Table 19 - Student Use of Computer Labs by Activity Performed (N=651)**

	Mean	Std. Deviation
Access the internet	4.49	0.943
Check e-mail	4.18	1.254
Print	3.71	1.328
Work on course assignments using Word, PowerPoint or Excel	3.57	1.431
Work on course assignments within the learning management system (e.g., WebCT, Blackboard)	2.93	1.496
Work on course assignments using specialized software available in the lab	2.61	1.587

Scale: 1- Never, 2- seldom, 3- sometimes, 4 - often, 5 - almost always

We did observe some interesting relationships between why students use the labs and their college affiliation, enrollment status and the frequency of visits. These differences suggest that students depend on the labs differently depending on the amount of time they spend on campus, their academic program and perhaps their access to other computing resources. Table 20 shows the mean frequency which students report performing different activities in the lab based on the college in which they are enrolled.<sup>2</sup> In general across all colleges the labs were used more frequently for printing and use of Microsoft Office products for course

<sup>2</sup> The reported frequencies for checking email and using the internet did not vary with statistical significance by college.

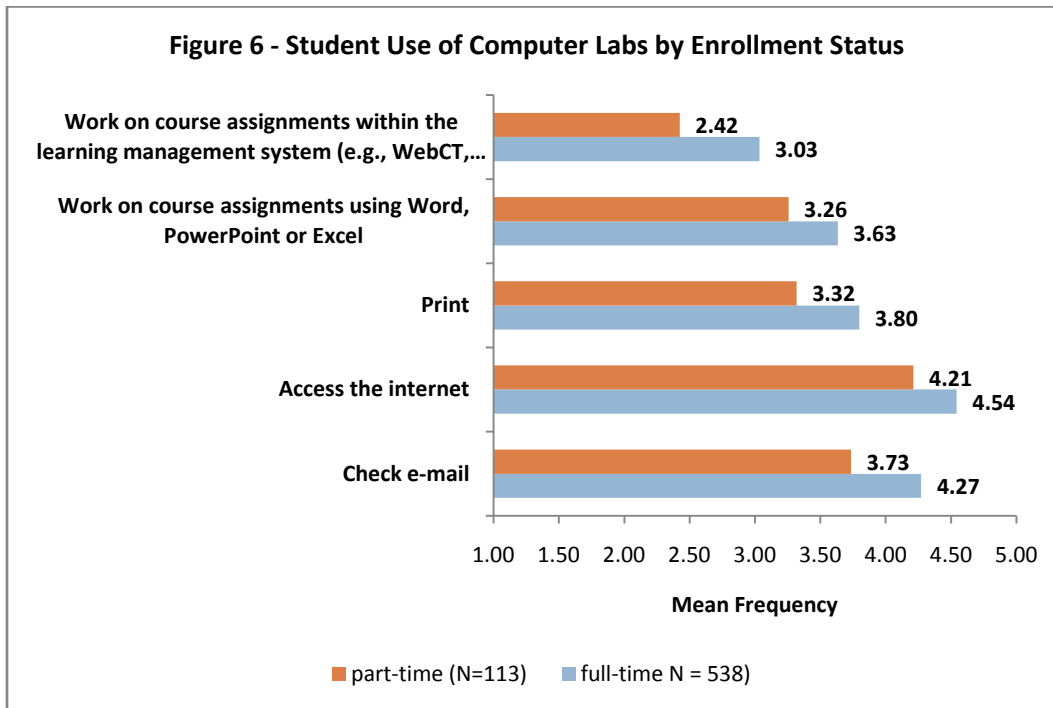
assignments than for work on assignments in the learning management system or on specialized software. However, within each activity area the frequency of use did vary by college. For example, students in Business and Economics and Health and Human Development reported a higher frequency of printing during their visits to the labs. Students in the College of Science and Math reported a higher frequency of use of labs to perform course assignments in the learning management system. Engineering and computer science students reported much higher frequency of use of specialized software. These differences no doubt stem from curricular differences across the colleges. However, they may offer clues as to how to best distribute lab resources around campus.

**Table 20 - Use of Computer Labs by Enrolled College**

College	Print	Work on course assignments using Word, PowerPoint or Excel	Work on course assignments within the learning management system (e.g., WebCT, Blackboard)	Work on course assignments using specialized software available in the lab
Business & Economics (N=152)	3.93	3.84	3.20	2.47
Health and Human Development (n=82)	3.90	3.32	2.52	2.16
Engineering & computer Science (N=51)	3.90	4.04	2.88	3.94
Science and Math (N=47)	3.83	3.74	3.43	2.91
Social and Behavioral Sciences (N=107)	3.79	3.67	3.07	2.64
Humanities (N=45)	3.38	3.33	3.24	2.07
Mike Curb College of Arts, Media and Communications (N=71)	3.25	3.04	2.44	2.73
Michael D. Eisner College of Education (N=50)	3.16	3.28	2.56	2.50

Scale: 1- Never, 2- seldom, 3- sometimes, 4 - often, 5 - almost always

A student's enrollment status also appeared to be related to their use of the labs. Across the board full-time students reported a greater frequency of use of labs for activities. However, the relative ordering from most frequent to least frequent activity was similar for both groups. Figure 6 lists the mean frequency of use by both full-time and part-time students.



Scale: 1- Never, 2- seldom, 3- sometimes, 4 - often, 5 - almost always

Lastly, we observed a statistically significant relationship between the frequency of a student’s visits to the lab and the frequency they reported using the lab for each individual activity. Interestingly, the more frequent visitors more frequently performed each of the activities listed. Our hypothesis had been that frequent visitors were typically stopping into a lab to print or check email. While this is true, they also reported that they frequently work on course assignments in the MS Office suite and the learning management system. In fact, it is the less frequent visitors to computer labs who seem to use the labs predominantly for the internet access, checking email and printing. It is unclear from the survey data alone whether frequent visitors to the lab are there because there is a lot they can do or because they are dependent on the labs as their primary source of access to a computer.

**Table 21- Computer Lab Use by Purpose and Frequency of Visits**

Visits in Last Month	Check e-mail	Access the internet	Print	Work on course assignments using Word, PowerPoint or Excel	Work on course assignments within the learning management system (e.g., WebCT, Blackboard)	Work on course assignments using specialized software available in the lab
1 to 10 times (N=383)	3.81	4.24	3.35	3.12	2.55	2.20
10 to 20 times (n=128)	4.59	4.74	4.05	4.02	3.23	2.86
20 to 30 times (N=60)	4.77	4.93	4.25	4.30	3.53	3.52
More than 30 times (n=80)	4.84	4.93	4.53	4.44	3.79	3.54

Scale: 1- Never, 2- seldom, 3- sometimes, 4 - often, 5 - almost always

Finally, we asked students to evaluate their satisfaction with various aspects of the labs. Overall, students rated each aspect of the lab between good and very good. As table 22 illustrates, students rated the labs most positively for the condition of the printers, availability of software and the condition of the computers. They were slightly less positive in their assessment of printer availability and the knowledge of the lab staff. We note that the standard deviations for many of the questions were large (greater than 1.20) and there were certainly some segments of the respondents who had neutral to less positive assessments of the labs. We did not find any significant relationship between as students assessment of the lab and either their enrollment status, college affiliation or frequency of visits. It is possible that differences in satisfaction are attributable to variables we did not measure such as time of day a student visits or the particular lab they use.

**Table 22 -Student Satisfaction with Computer Labs**

	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>
Condition of printers	603	3.51	1.143
Availability of software	578	3.51	1.176
Condition of computers	639	3.50	1.120
Availability of computers	643	3.39	1.197
Availability of printers	608	3.28	1.227
Knowledge of lab staff	496	3.24	1.222

Scale: 1- poor, 2- fair, 3- good, 4- very good, 5 – excellent

In their qualitative comments, students expressed a strong interest in seeing an expansion of the number of labs and the number of computers within them. Approximately 30 percent of the students who provided comments suggested that CSUN extend the availability of labs either by adding more computers, more labs or extending the hours of operation. Other comments suggested that the computers in the labs needed to be faster, some peripherals (e.g., mice) needed to be more frequently refreshed and more printing capacity needed to be offered. Some respondents suggested that the productivity of their visits to labs could be enhanced if students better monitored their own conduct. They expressed concern that student use of social networking sites or excessive cell phone use with degrading the utility of labs. One student wrote, "I often find that in any computer lab I walk into, there is a really large group of people on social networking sites such as MySpace and Facebook. In several occasions I have had to wait on someone to finish commenting on countless profiles before I can use a computer to write a paper or use SPSS."

In summary it appears that labs are an important part of the computing environment at CSUN for many of the students. However, they appear most essential to about a fifth of the respondents who are the most frequent visitors. These students seem to seek out labs for their full range of capabilities. Others seem to use the labs for specialized tasks depending on their academic program or for convenient access to resources to print or use the internet. These usage patterns may suggest in the future ways that IT could target the configuration of labs more closely to the curriculum in certain schools or provide more access to workstations for printing and internet access in kiosks outside of traditional labs. This would enable smaller, full service labs to be accessible to the portion of the student body that seeks to utilize them the most.

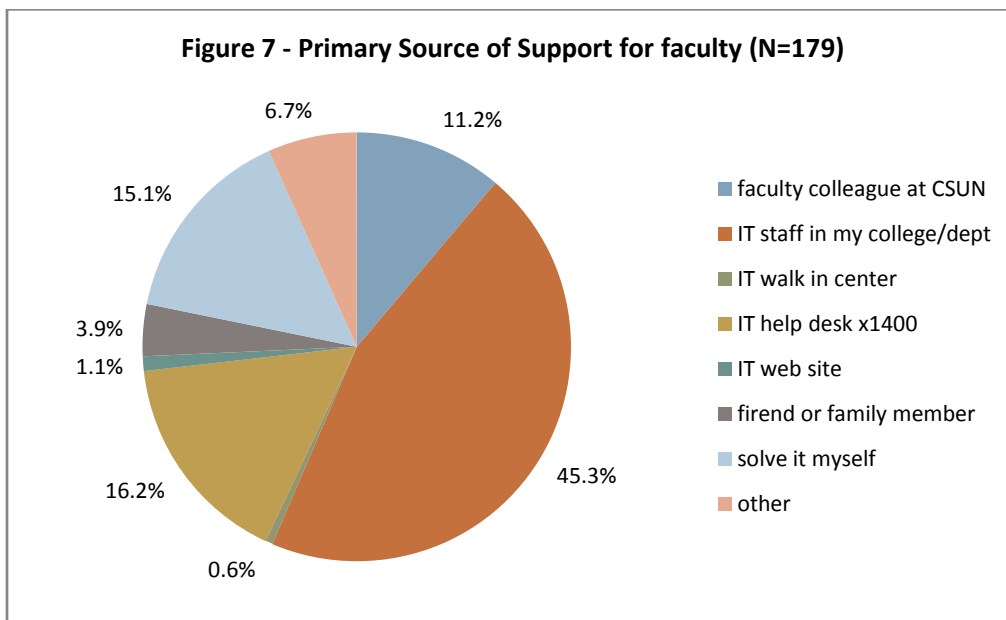
## V. USER SUPPORT AND TRAINING

Faculty, students and staff can only derive value from CSUN technology if they have access to the support they require for training and problem resolution. In this section we look at the survey results related to user support and training. User support is a shared responsibility between IT and our colleagues working in academic and administrative departments. As we will see in the results, individual users of technology also play a significant role supporting themselves and their colleagues. User training is an IT responsibility that we anticipate changing significantly as we move into the future. Historically we have provided most training in-house and have focused on broadly used applications such as Office or SOLAR. As we think about the future we will use this survey to help us anticipate new needs and opportunities to better focus our training investments.

### User Support

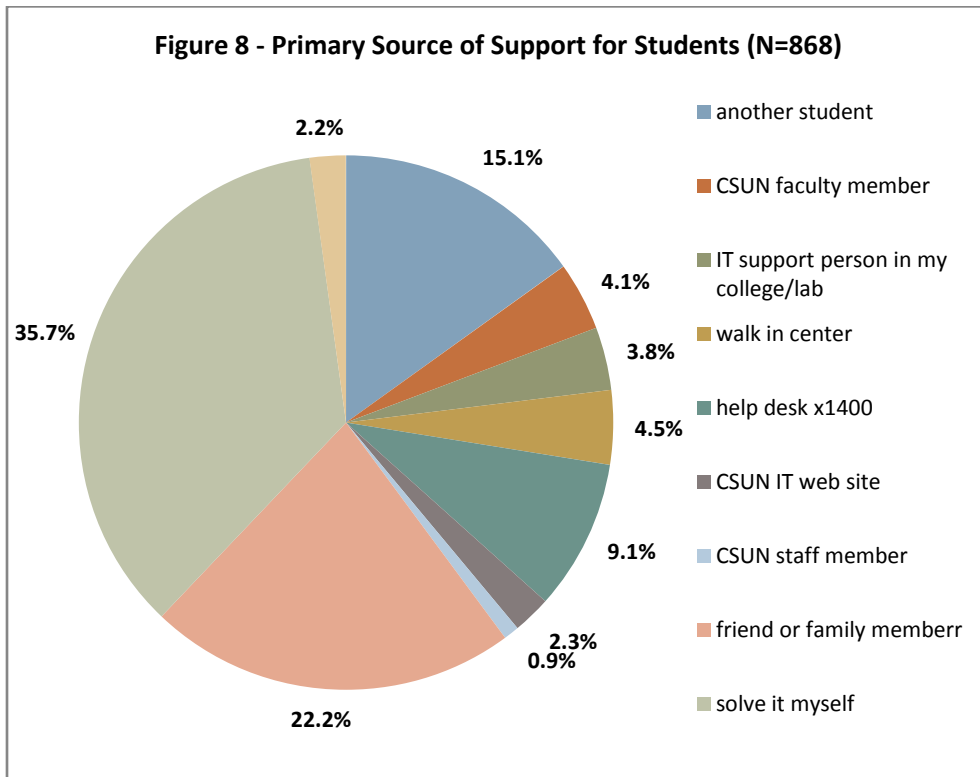
User support at CSUN is provided by a variety of organizations and individuals including the IT Help Desk and Walk-in Center, technology support staff working in academic and administrative departments and individuals trying to help themselves and their colleagues. The breadth of sources of support was driven home by the survey results. We asked students, faculty and staff to indicate their primary source of support to technology questions and problems. As the three figures below illustrate the sources are numerous and varied by populations.

Faculty reported that they primarily receive support from a technology staff member situated in their college or department (figure 7). In fact, 45.3 percent identified this as their primary source of support. The second most prominent source of support for faculty was some form of self-help. A combined 30.2 percent of faculty reported that their primary sources of support are either themselves, a faculty colleague or a friend or family member. Resources from the IT department are also utilized by some faculty. The IT Help Desk was identified as the primary source of support by 16.2 percent of faculty.



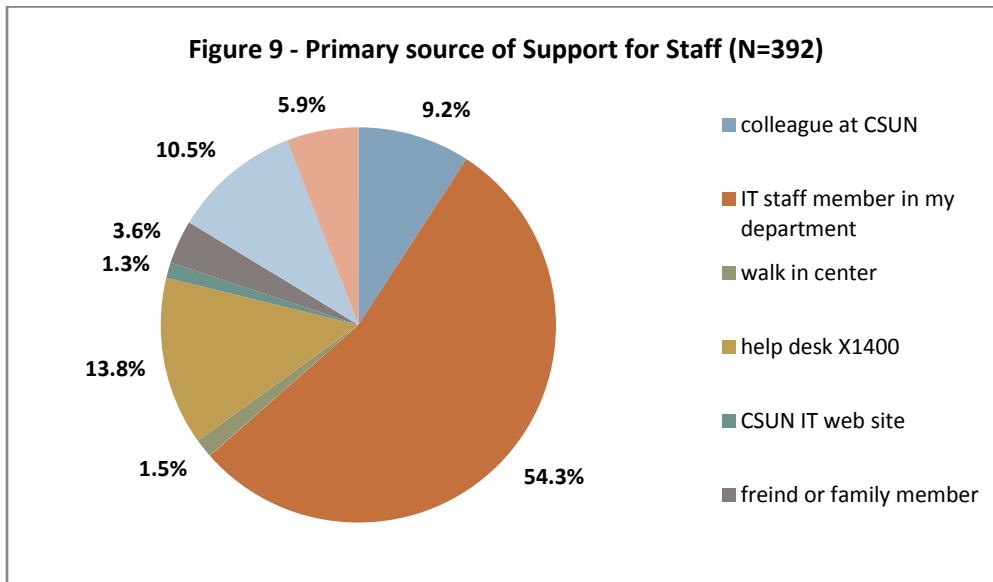
Students were even more reliant on self-help as their primary source of support. Among respondents, 35.7 percent indicated that they view themselves (solve it myself) as the primary source of support. In fact, if this self-support is combined with the number of students who turn to a fellow student (15.1 percent) or a friend or

family member (22.2 percent) than nearly three-quarters of students utilize some form of self-help as their primary means of support. Moving forward, it will be important to understand if this emphasis on self-help is what students prefer or if they turn to it out of necessity because institutional support mechanisms are not sufficiently available to them.



In contrast to students, staff receive their primary support from a technology professional rather than self-help. The majority (54.3 percent) received their primary support from a technology staff member in their department. The second most prevalent source of primary support was the IT Help Desk (13.8 percent). Even among staff, nearly a quarter of them (23.3 percent) engage in a form of self-help including asking colleagues or friends and family.





### Satisfaction with Support

We asked respondents to indicate their level of agreement with three statements regarding the adequacy of their technology support. Specifically, we inquired if they had access to the support they need, had their problems resolved in a timely fashion, and were satisfied with the overall quality of support at CSUN. As table 23 illustrates, the mean level of agreement with all three statements across all three survey populations was between neutral and agree with means ranging from 3.40 to 3.70.

**Table 23 - Respondents' Satisfaction with Technology Support**

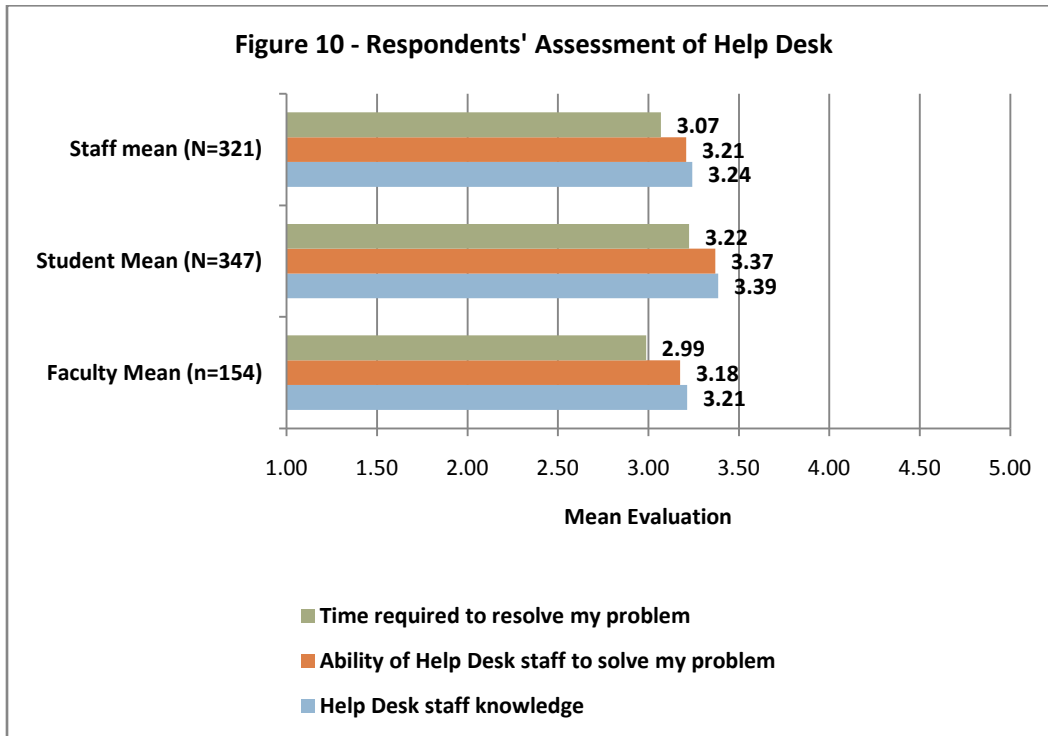
	Faculty Mean (N=179)	Std. Deviation	Student Mean (N=868)	Std. Deviation	Staff Mean (N=392)	Std. Deviation
I have access to the technology support I need.	3.39	1.092	3.57	0.883	3.71	0.926
My technology problems are resolved in a timely fashion.	3.39	1.062	3.47	0.895	3.59	0.963
I am satisfied with the quality of CSUN technology support.	3.35	1.099	3.50	0.906	3.56	0.989

Scale: 1- strongly disagree, 2 - disagree, 3- neither disagree nor agree, 4 - agree, 5 - strongly agree

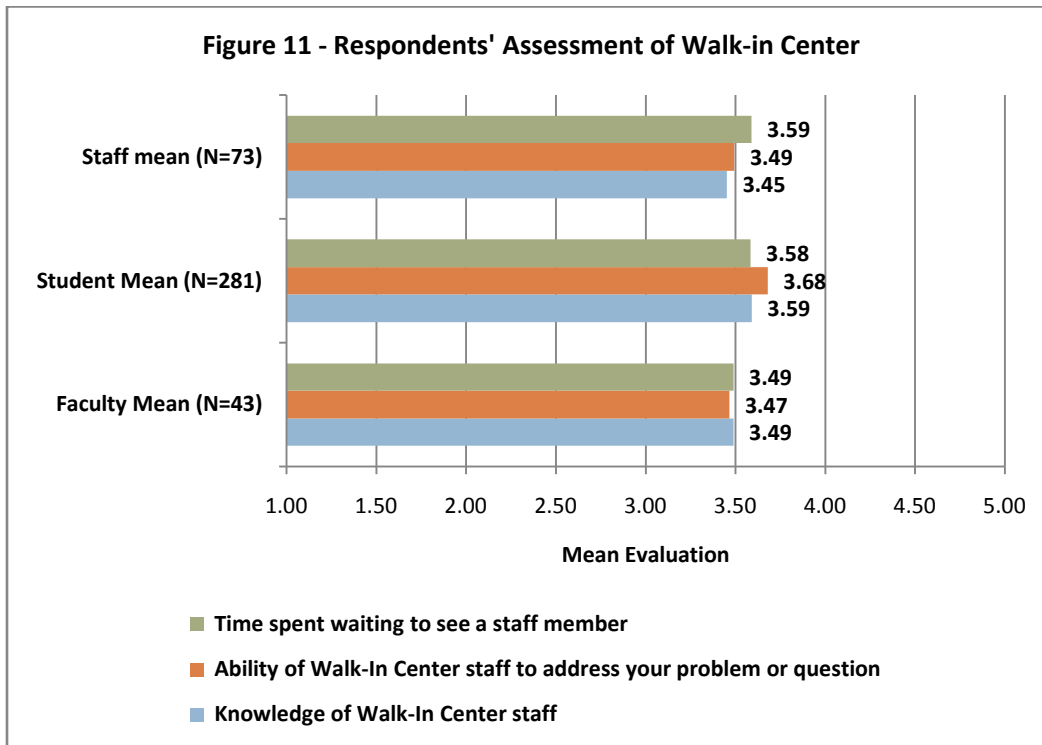
In fact, among faculty and staff the majority of respondents agreed or strongly agreed that they were satisfied with the quality of CSUN technology support. Among faculty respondents, 52.5 percent agreed and among staff 59.7 percent agreed they were satisfied. Among faculty however, a fifth (22.9 percent) did disagree that they were satisfied. The number of staff who disagreed was lower at 13.8 percent. We did note a pattern of responses that suggest that satisfaction was related to the college or division that a respondent worked in. However, we did not have sufficient numbers of respondents in all cases to conclude that this relationship was statistically significant.

Among students, almost half (48.1percent) agreed they were satisfied with the quality of support. In fact, only 8.6 percent disagreed. A larger percentage of students were neutral to the statement possible suggesting that while support is not a major concern it is an area where improvements can be made in the minds of many student respondents.

While the IT Help Desk and Walk-in Center may not be the primary source of support for most respondents, those who use them reported satisfaction with the services they received. Among students, faculty and staff that have used the IT Help Desk or the Walk-in Center over the past 12 months, the mean evaluation of its performance was between good and very good. As figures 9 and 10 illustrate, the mean ratings for the Walk-in Center were actually higher than for the IT Help Desk both in terms of knowledge of staff, ability to solve problems and timeliness. For the IT Help Desk, the lowest mean ratings from all three groups was for the time required to solve a problem. This warrants further exploration to determine strategies for reducing the time to resolve problems.



Scale: 1 – poor, 2- fair, 3- good, 4- very good, 5 –excellent



Scale: 1 – poor, 2- fair, 3- good, 4- very good, 5 -excellent

## Additional Factors Influencing Satisfaction

The primary mechanism a respondent turns to for support appeared to have a bearing on their overall satisfaction. For example, among students we found a statistically significant relationship between a student's primary source of support and their overall satisfaction with the availability and quality of support. Students who primarily relied on self-help mechanisms were in fact less satisfied than those that turned to the IT Help Desk or Walk-in Center as their primary means of support (table 24). In fact, there was a fairly large drop in mean agreement for all three statements between students who turn primarily to the IT Help Desk or Walk-in Center and those that turn to another student, friend or family member or attempt to solve the problem themselves. We observed similar patterns among the responses from faculty and students as well. However, the number of responses were not always sufficient to verify their statistical significance and the strength of the relationship between the two variables.

**Table 24 - Students' Satisfaction with Support by Primary source**

Who is the primary resource you rely on for technology questions or problems?	I have access to the technology support I need.	My technology problems are resolved in a timely fashion.	I am satisfied with the quality of CSUN technology support.
IT Help Desk x1400 (N=79)	4.01	3.86	3.95
Walk-in Center (N=39)	4.00	3.92	4.10
CSUN staff member (N=8)	4.00	3.75	3.75
IT support person in my college/lab (n=33)	3.97	3.91	3.91
CSUN faculty member (n=36)	3.64	3.50	3.53
CSUN IT web site (N=20)	3.60	3.65	3.55
Solve it myself (n=310)	3.54	3.46	3.46
Friend or family member (N=193)	3.41	3.32	3.33
Another student (N=131)	3.40	3.25	3.30
Other (N=19)	3.16	3.00	3.00

Scale: 1- strongly disagree, 2 - disagree, 3- neither disagree nor agree, 4 - agree, 5 - strongly agree

This finding presents some interesting and important challenges for CSUN. First, we must explore whether those who pursue self-help do so out of preference or necessity. We must understand if there are cost-effective strategies we can employ that would enable a greater number of students and faculty to access professional support staff as their primary source of support. Second, we should explore if there are means we can employ to provide better resources to facilitate self-help. Third, we must strengthen the connections between self-help resources, departmentally based technology support and the support provided by the IT staff. We must find ways to tap common knowledge bases, hand-off problems to one another for escalation and resolution and maximize that likelihood that a problem gets to the right place for resolution quickly.

### Expanding Support

Students, faculty and staff were asked to identify their top priority for expanding support from among a list of seven alternatives. Each alternative related to an aspect of support that was centrally provided and therefore did not represent the full range of options CSUN could pursue to improve technology support. However, the responses provide us with a sense of where respondents would choose to see the Division of IT invest to extend its support services.

As table 25 illustrates, operating the help desk on 24 hours a day, seven days per week was the most frequently selected choice for faculty, students and staff. This was the preferred option of between a quarter and a third of each group of respondents. Among faculty and staff, the option selected by the second largest numbers of respondents was to extend the hours of the help desk on weeknights. The creation of more Walk-in Centers was selected by the second largest percentage of student respondents as their priority for extending support.

**Table 25 - Priority for Extending Support**

	Staff (N=455)	Students (N=868)	Faculty (N=179)
Help desk available 24x7	26.6%	35.6%	32.0%
Increase number of walk in Centers	15.4%	20.4%	14.6%
Help desk available weekend days	16.0%	12.6%	15.2%
Extend service at walk in Center	11.6%	11.6%	10.7%
Help desk available weeknights	21.8%	9.6%	24.2%
Extend hours of walk in Center	5.7%	7.5%	2.8%
Help desk available weekend nights	2.9%	2.8%	0.6%
Total	100.0%	100.0%	100.0%

Q: If we could expand technology support, which of the following is the highest priority?

## Training

The majority of respondents had not taken part in a CSUN IT training class in the last 12 months. Among staff, 55.1 percent had not attended any CSUN IT training classes in the last 12 months and 44.1 percent had taken between one and five. The percentages of faculty who had not participated in any CSUN IT training in the past 12 months was 57.0 percent and the percentage who had participated in one to five classes was 41.9 percent. Both staff and faculty respondents reported a mean agreement between neutral and agree that they were confident in their technology skills (table 26). Faculty and staff reported a similar level of mean agreement that they had access to the technology training they need to do their jobs.

**Table 26 - Faculty and Staff Assessment of Technology Skills and Training**

	Staff Mean (N=392)	Std. Deviation	Faculty Mean (N=179)	Std. Deviation
I am confident in my technology skills.	3.65	0.937	3.54	1.082
I have access to the technology training I need to do my job.	3.59	0.856	3.40	1.003
CSUN's IT training classes meet my needs.	3.13	0.798		
The training available for me to effectively integrate technology into my classes meets my needs.			3.18	1.025
The training available for me to create online courses meets my needs.			2.98	0.997

Scale: 1- strongly disagree, 2 - disagree, 3- neither disagree nor agree, 4 - agree, 5 - strongly agree

Respondents were in less agreement that CSUN IT training classes met their needs. Among staff, most 56.9 percent were neutral to the statement that CSUN training classes meet my needs. Interestingly there was not statistically significant difference in the assessment provided by those who had and had not participated in training classes.

Faculty also seemed to identify gaps in available training. The faculty respondents provided mean responses that hovered around neutral to the statements that available training to integrate technology in the classroom meets my needs and the training available to create on-line courses meets my needs. In fact, 27.9 percent of faculty agreed with the latter statement. Further, there was not a statistically significant difference in the mean agreement with these statements provided by faculty who teach on line and those who teach only in person. Seemingly, this is an opportunity for improvement.

## VI. UNDERSTANDING OF IT GOVERNANCE

Our final area of inquiry in the survey related to faculty and staff familiarity with CSUN IT governance structures and decision-making. In the past 24 months, the University has significantly restructured its IT governance and advisory bodies and the survey provided us an opportunity to gauge how well we had communicated the purpose and nature of these changes. Specifically, we asked respondents to indicate their agreement with two statements having to do with governance. The first inquired whether respondents were sufficiently informed about the role of IT governance groups. The second asked whether the respondent felt sufficiently informed about how technology decisions are made that affect their work.

The responses received from faculty and staff suggest that there is work that needs to be done to build understanding of the role of the governance groups and the process by which important IT decisions are made. As table 27 illustrates, both faculty and staff on average disagreed with both statements.

**Table 27 - Faculty and Staff Assessment of Understanding of IT Governance**

	Faculty Mean (N=179)	Std. Deviation	Staff Mean (N=392)	Std. Deviation
I am sufficiently informed about the role of the IT Governance groups.	2.50	1.078	2.46	0.998
I am sufficiently informed about how technology decisions are made that affect my work.	2.36	1.074	2.44	1.020

Scale: 1- strongly disagree, 2 - disagree, 3- neither disagree nor agree, 4 - agree, 5 - strongly agree

The mean level of agreement did not vary with statistical significance based on either a respondent's length of time at CSUN or the area in which they worked. Even staff within IT expressed disagreement with both statements.

In an effort to foster inclusion and participation in decision-making CSUN has formed several different advisory bodies that are involved in decision-making. In addition, planning has been underway for the design of a new process for requesting and prioritizing IT projects. These changes are both still relatively new and it is not surprising that we have more work to do here to explain who is on these advisory and governance groups, what they do and how they do it.

The need to build understanding of our governance is clearly important in its own right. However, we also noticed that respondents who agreed that they understood the governance expressed greater levels of satisfaction with many of the measures of IT effectiveness in the survey. They often reported mean agreement and satisfaction that was higher than those that did not. In many cases these differences were of statistical significance. While we cannot claim causality between understanding of governance and satisfaction with IT outcomes, it is likely reasonable to assume that if faculty and staff have a better sense of why things are happening they will be more likely to judge them to be effective.

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## VII. CONCLUSION AND NEXT STEPS

We take away from these results several important conclusions regarding CSUN technology and support services.

- Respondents were generally satisfied with the performance of CSUN technology and there are no areas of severe weaknesses.
- Additionally, there are certainly opportunities for improvement in the areas of wireless networking, faculty email, support for on-line learning and learning technologies, the learning management system and self-help user support.
- The results validate some recent decisions and confirm the priority of proposed projects.
  - The decision to expand faculty email quotas should alleviate some of the concerns expressed in the survey responses.
  - The need to define requirements for a new learning management system is confirmed by the relatively lower levels of satisfaction expressed by faculty with WebCT. However, it will be important as we strive to meet faculty requirements we understand and not sacrifice the aspects of WebCT that drive students' satisfaction with it.
  - The need to work collectively on a unified help desk strategy that better leverages self-help along with departmental and central IT staff is further validated by the survey results.
- In addition, the results point to areas that warrant further investigation and monitoring,
  - We need to better understand the pockets of concern expressed by faculty and students about the availability and capacity of the wireless network and determine if it maps to known or unknown access issues in particular zones of campus.
  - We must work closely with faculty performing computing intensive research and determine what aspects of the network and/or other infrastructure may need to be addressed to better support their current and future research.
  - We need to step back and better understand our IT training needs as an institution and determine how to better align in-house and outsourced offerings with those needs.
  - We need to engage students in a dialogue to better understand their expectations surrounding email and assess how these needs can be most effectively met.
- Finally, the results issue a clear challenge to University and IT leaders to re-introduce the purpose and role of the governance groups to the institution and continue to strive to create greater transparency in IT decision-making.

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