

Reorganization of Information Technology at the University of Oregon

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Executive Summary

1. The objective of this project has been to understand the staffing of information technology across the University of Oregon and to make recommendations for better resource utilization. It follows previous reports that highlighted the distributed nature of IT at UO.
2. Information technology at UO is decentralized, with responsibility spread over 29 organizations.
 - Approximately 30% of IT expenditures and 25% of IT staffing reside in the central IT organization. The remainders lie in the distributed academic and administrative units.
3. Accompanying decentralization is work fragmentation, as each unit must replicate a broad set of IT functions with limited people. People do lots of different things. Fragmentation creates inefficiencies and makes it more difficult to consolidate resources.
 - As examples, 134 individuals provide tier-1 user support to faculty and staff, but together they make up 11.69 FTE. Similarly, 58 individuals on campus, accounting for just 3.59 FTE, purchase hardware. One hundred and six people (5.1 FTE) research new technologies.
 - Fragmentation was found to varying degrees in nine areas of IT: user support, parts of infrastructure, applications development, web development, academic technologies, asset management, security, professional services (e.g., project management), and management.
 - A thoughtful method for realigning staff, skills and duties is required.
4. To begin consolidation, IT units in schools and colleges should be dissolved as independent units, with all staff moving organizationally to IS or the Library. Some will assume new duties but many will be left in place to provide ongoing support.
 - The consolidation process should begin with the academic units because they offer the greatest opportunity to streamline redundant services, utilize IT staff more effectively, and coordinate strategic investments and spending.
5. Reassignment of staff to IS or to the Library, along with their duties, should follow discussions between IS, the Library, the appropriate IT Director, and the employee.
 - Interviews and survey data suggest that of 61 IT staff in academic units: 25 could be reassigned to IS for new roles; 22 could stay in existing (but likely modified) support roles; and 14 could be assigned to the Library for new assignments or academic support.

6. Information Services (IS) must be positioned strategically as the central unit that, in consultation with others, sets technical direction, manages institutional IT assets, and is the authoritative voice for information technology at UO. It must be funded and staffed to meet the expectations of the campus.
7. The Library should be designated the campus lead for academic technologies, with an Associate Dean of Libraries, Chief Academic Technology Officer who will be appointed to serve on a part-time basis as the liaison to IS and to be part of the CIO's leadership team.
8. Consolidation of administrative units will be left for a later phase, although specific areas (web development, user support) may be targeted for more rapid integration.
 - New University policies and governance around technology investments need to be developed and will likely affect ongoing initiatives.
9. IT staff in the research and outreach units will be left alone. The best thing that UO can do (from an IT perspective) to boost research is to improve infrastructure (network, storage, computing) that is already underway.

There are four attachments to the report:

- Summary of recommendations (appended)
- List of people interviewed
- School and college overview
- Administrative IT staff activities

Attachment A

Summary of Recommendations

This attachment brings together the numerous recommendations made in the report.

Phase 1

The University should decide to assimilate academic IT units to central reporting, with staff to be transferred organizationally to IS or the Library. Deans will need to be consulted.

IS and the Library should develop plans to absorb dozens of new staff. This requires an analysis of needs, skills sets, and service models.

The Library needs to clarify its scope of services in schools and colleges vis-à-vis classrooms and labs. The Library will have inherited support staff with existing commitments and those need to be understood.

The CIO should initiate discussions with the IT Directors about reassignment of staff, internal reconfiguration of duties, and plans to ensure ongoing support. Where appropriate, the Library should be brought into the talks. The first conversation should be with the Director who will become Director of Integration, who will then head the transition team. The CIO should also talk to the IT Directors about their own career goals and next assignment.

CIO and Provost should communicate to the campus about the IT reorganization. Schools and colleges will need special reassurance that plans are in place for continuing support functions.

IS, working with the schools and colleges, should designate a lead IT person as its local liaison.

The support units of the College of Education and SOMD should be merged.

The CIO should work with Human Resources on job descriptions and reassignments.

IS should identify web development resources in the administrative units who can supplement IS' new web competency. Administrative leaders and IT Directors should be part of that process and care must be taken not to disrupt ongoing projects.

The University should make an institutional commitment to IS as the lead IT organization on campus. The continuing work on governance should reflect the new organizational model.

Phase 2

The University should designate the Library as the center for academic technologies at UO. There should be an MOU between IS and the library about division of responsibilities and governance. The Dean of the Library should appoint an Associate Dean of Libraries, Chief Academic Technology Officer to serve part-time as the liaison to IS and to be part of the CIO's leadership team.

With IS now responsible for all non-instructional faculty, staff, and student support, IS must rethink the support model. The process to select replacement software for help desk ticketing and IT service management that best meets requirements should be near completion.

With the absorption of CASIT and its business model, IS will need to rethink its model for services and charges. While doing so, IS needs to remove the barriers (e.g., high back-up costs) that inhibit relocation of servers to a central facility.

IS should initiate a process to develop a service catalog and service-level agreements. With new staff and responsibilities (e.g., web development), IS needs to clarify for the campus what it does, how it operates, and what it charges for services.

The University needs to align the IS budget model to accommodate new IS expenses (especially personnel) and the absorption of CASIT's book of activity.

The University should develop a policy on administrative and enterprise applications that offers clarity on authority, planning requirements, and funding (i.e., no more pass-the-hat).

IS needs a plan to develop stronger ties to the research and outreach IT communities. As IS gains more strength, it needs to reintroduce itself and its services.

Working with the Provost's office, IS should develop a secure funding model for IT at UO Portland.

IS needs to develop policies and practices for cloud computing. IT professionals in the research and outreach units should be well-represented in that process.

IS should develop a training and professional development program for IT staff in IS and the distributed administrative units.

Support staff within the administrative units should be absorbed into IS.

The IS Business Office, leveraging inherited CASIT resources, should initiate a study on a campus-wide technology replacement program.

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Three consulting reports issued between 2012 and 2015¹ highlighted the decentralized nature of IT services at the University of Oregon. All emphasized the problems of fragmentation: a lack of consistency in policies and practices, an inability to focus on institutional objectives, and overlapping and redundant services. All three recommended fundamental changes in the organization of IT on campus.

While encouraging centralization, the reports lacked specificity on how to achieve it. Still, they were compelling enough to persuade the University to make “leveraging resources” one of its short-term strategic objectives, with centralization as the goal. The March, 2016 presentation by Information Services to the Board of Trustees identified criteria for centralization decisions: opportunities for economy of scale, more efficient use of resources, general services that do not require specialized knowledge of a unit, improved service, and mitigation of risk.

In February, 2016, I was asked by the Provost’s Office to develop a plan for redeploying IT professionals at UO. As I cautioned at the time, wholesale centralization in a function as varied as IT is not the solution. Some services need to be maintained locally and some are best left alone. I proposed a study that would achieve a more nuanced approach to redistributing IT staff.

The objectives of the engagement were to:

- Document the current allocation of IT services and resources between central and distributed units.
- Engage academic, administrative, and IT leaders from across the University in a discussion of rebalancing IT services.
- Develop a high-level organizational design of IT resources that will achieve institutional goals of effectiveness, cost savings, and security.

¹ Daniel Updegrave, Steven Corbató, and Kenneth C. Green, “External Review Committee on Information Technology and Information Services at the University of Oregon,” 2012; Moran Technology Consulting, “Information Technology Strategic Plan, Final Report,” November, 2015; Baker Tilly, “Information Technology Risk Assessment,” November, 2015.

As I conducted my interviews, I found signs that centralization is already occurring across campus. Servers are migrating to central facilities. There are fewer email systems, Exchange servers, and active directories. IT groups have pooled their purchasing power. CAS IT, Campus Operations and Student Life have done internal consolidations. Most encouraging, I sensed a consensus at the University that the current state is unsustainable, change is inevitable, so let's just get on with it.

Organization of This Report

The report has six sections:

- A. Methodology (p. 3)
- B. The decentralized nature of IT at UO (pp. 4-6)
- C. The fragmentation of IT work (pp. 7-8)
- D. The impact of fragmentation in ten areas of IT: user support, infrastructure, applications development, web development, academic technologies, research, asset management, security, professional services, and management (pp. 8-26)
- E. Organizational impacts (pp. 26-33)
- F. Changing the culture of IT at UO (pp. 33-35)

There are four attachments:

- A. Summary of recommendations made throughout the report, with time frame
- B. List of people interviewed
- C. Summaries of school and college IT units
- D. Summary snapshots of current IT staff and activities in the administrative units

The bottom line recommendations are these:

- IT units in schools and colleges should be absorbed into central units. All staff should move organizationally to either IS or the Library. Some will assume new duties but many will be left *in situ* to provide ongoing support.
 - If fully enacted the outcome will be 61 IT FTE and \$10.3 million of expense removed from the schools and colleges.
- The Library should be designated the center for academic technologies and will appoint someone to serve part-time as liaison with IS and on the CIO's leadership team.
- Administrative units should be left for a later phase, although specific areas (web development, user support) may be targeted for more rapid integration. New University policies and governance around technology investments are needed and will likely affect ongoing initiatives.
- IT professionals in sponsored research and outreach units should be left alone. The best way IT can support research is through good infrastructure. UO is already making those investments.
- Information Services (IS) must be positioned strategically as the central unit that, in consultation with others, sets technical direction and manages institutional IT assets. It must be funded and staffed appropriately. The authority of the CIO needs must be clarified.

A. Methodology

In April and May I conducted interviews and focus groups with over 100 people across campus: vice presidents, deans and other academic leaders, IT directors and managers in the central and all of the distributed IT groups, faculty, researchers, and administrative assistants. (A complete list of interviewees is presented in Attachment B.)

To make recommendations on staffing reassignments, I needed a clear understanding of what people are currently doing. A survey was developed that asked IT professionals to specify how they spend their time. They were given 55 activities within broader areas² and asked to allocate their time over the course of a year. Starting with a generic template, I worked with a team³ to make the activity dictionary relevant to UO. This was vetted by the central IS leadership team and then by the distributed IT Directors. As a final quality check, the Directors took the survey as a beta test.

Identifying survey recipients was a challenge. Who are IT professionals at the University? Classified staff are covered by union agreements and salary tables helped identify incumbents. For faculty and officers of administration, job titles were scanned for fragments of key words.⁴ IT Directors and others around campus were consulted and names were added. Throughout the process we got emails from people wondering if they should take it.

A total of 370 requests to take the survey went out and 278 responses came back. Of these, twenty were discarded for being duplicates, having no data, or not being an IT position. Among the 92 non-respondents, 37 were researchers, 17 from IS, 15 from administrative offices, four from the CIS department, five from the bookstore, and the rest from diverse corners of the University. All missing data are causes for regret, but I was most interested in getting responses from the schools and colleges, and of those there were only four non-respondents.

One respondent commented, “I hope decisions about my future in IT here are not based on my answers to this survey.” I hope so too. Reassignments should be based on an analysis of needs and skills sets and on discussions between IS, the Library, the academic IT Directors and the employee. Deciding how best to consolidate, streamline, and reassign must be done on a unit-by-unit and person-by-person basis. Ultimately, who gets assigned where must be a management decision.

²The areas were: instructional technology, applications development, web development, asset management, infrastructure, research computing, security, professional services, user support for faculty, user support for students, and management.

³ Miriam Bolton (Assistant Dean, College of Arts & Sciences), Corrie Bozung (Director of IT, School of Journalism and Communication), and Cleven Mmari (Director of IT Services, Division of Student Life). I greatly appreciate their experience, judgment and the enthusiasm with which they embraced the project.

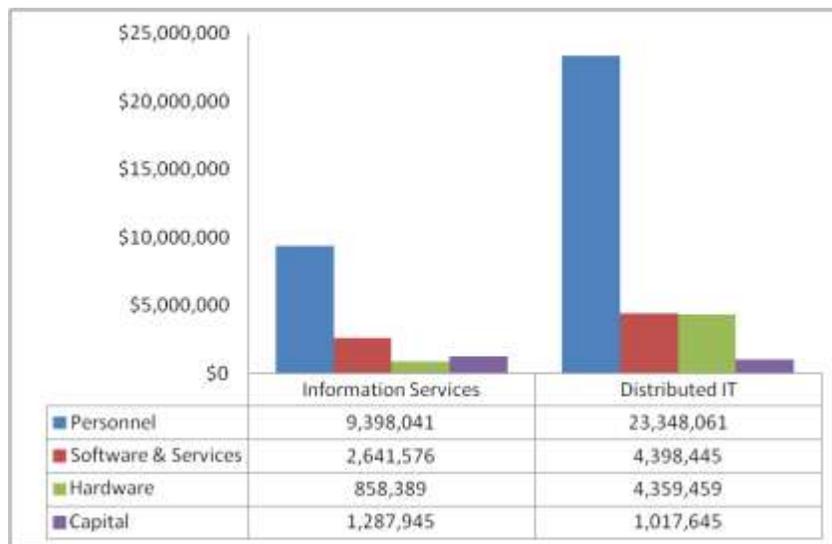
⁴ The fragments were: App, Data, Eng, Info, IT Net, Sec, Softw, Sys, Tech, Web.

B. Distribution of Central and Local Resources

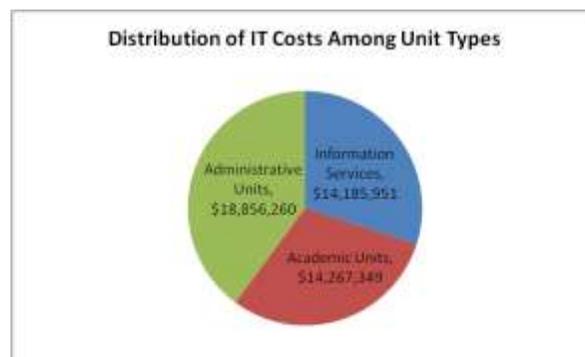
It is a well-known fact, but one that frames everything else in this report: IT resources at the UO are greatly decentralized. The reasons are largely historical. In the absence of a strong central IT department, academic and administrative units were left to fend for themselves. The result is a University IT service catalog (<https://it.uoregon.edu/services-grid/all>) that is a smorgasbord of offerings from administrative and academic units.

The financial implications of decentralization are best seen in a FY2015 budget analysis performed by Leeann Ford, Business Manager in Information Services.

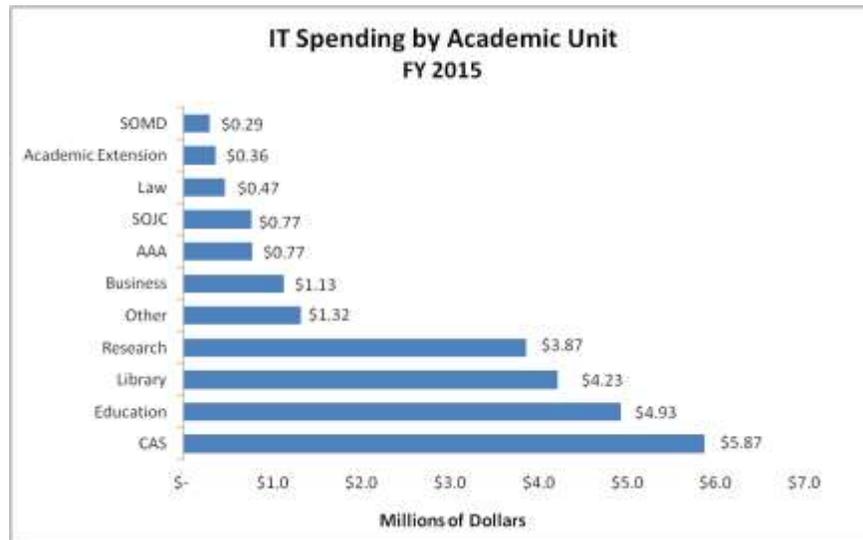
In FY2015, \$47.309 million was spent on IT personnel, software and services, hardware, and capital. Of that amount, 30 percent (\$14.186 million) was spent by the central IS organization, with the remaining 60 percent (\$33.123 million) by the distributed units.



Within the distributed units, most of the cost is incurred by administrative rather than academic units.

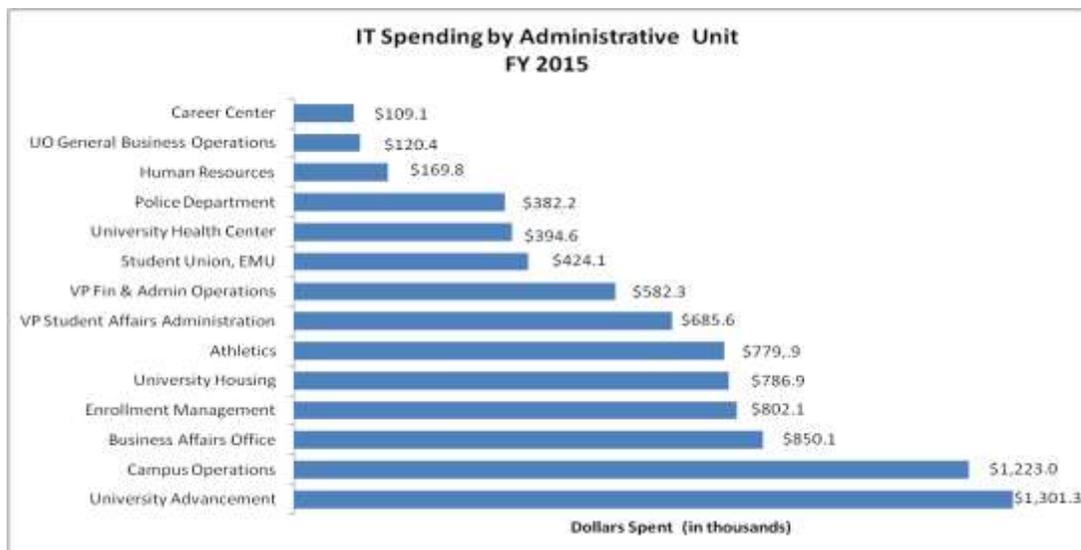


Within the academic units, IT spending varies greatly across the schools and colleges.⁵



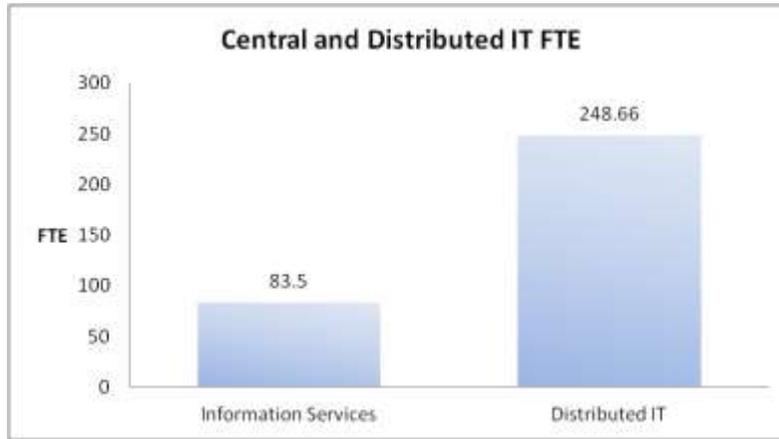
The \$4.23 and \$5.87 million spent by the Library and CAS are not a surprise, but why is the College of Education spending nearly five million dollars on IT? The answer is that COE has numerous research and outreach centers that rely heavily on applications and web services.

Of the 31 administrative units, 17 spent less than \$100,000 on IT. Of these 17, only one (General Counsel) had costs related to personnel. The following chart shows the IT budgets of the remaining 11 administrative units.



⁵ "Other" includes Undergraduate Studies, International Affairs, Senior VP and Provost Operations, UO Portland, Academic Affairs, Graduate School, and Honors College.

Let's turn from overall IT spending to the distribution of FTEs. According to the FY2015 data, there were 332 FTEs identified as doing IT work. Just a quarter of them work in Central IS.



In FY2015, 29 academic and administrative units on campus (in addition to IS) were reported to have IT staff. Within these distributed units, the largest numbers were in the College of Education (44.25 FTE), CAS (44), the Library (36), Research (29.25), and University Advancement (12). The remaining 24 units have seven or fewer people; 13 – one third of all units – have three or fewer.

Number of Units by IT FTE

Number of FTE in Unit	Number of Units	Unit Names
7	1	Business Affairs
6	6	Student Life, College of Business, Housing, Athletics, Enrollment Management, SOJC
5	2	AAA, Finance and Administration
4	2	School of Law, Campus Operations
3	1	Undergraduate Studies
2	7	Health Center, Academic Extension, SOMD, UO Portland, Provost Operations, International Affairs, Student Union
1	5	Human Resources, General Counsel, UOPD, Career Center, Academic Affairs

Some of these units nest within others (e.g., Housing and the Health Center within Student Affairs), but having even two dozen independent IT units on campus is quite remarkable. And as the prior consultant reports maintained, decentralization has harmful effects: duplication of effort; lack of consistency in policies, process and standards; heightened security risks; difficulty in pursuing university-wide goals; and the general impedance that occurs when information and work cross organizational boundaries.

C. Fragmentation

There is another pernicious effect of decentralization: extreme fragmentation of work. Because each unit stands alone, each one has had to provide a range of services. With small staffs, everyone has to perform multiple functions.

Survey respondents were asked to assign their time across 55 activities. We asked people to limit answers to activities where they spend at least 10% of their time, but this was routinely ignored. Many respondents checked off 20 or more items.

- A Systems Administrator claimed to do 38 tasks, and then commented “It's not possible to really estimate how much time I spend on any specific area as it is always changing. I just put 1% in any category that I do some function of on a regular basis.”
- A Service Coordinator in a college checked off 34 items and wrote, “Position requires knowledge and expertise in all areas of responsibility listed even though I may not spend a significant amount of time in those areas. IT staff are expected to fill any gaps in support whenever called to action.”

Some respondents wished there had been more activities because the 55 didn't fully reflect what they do.

Consider as examples three pseudonymous people from the sample.

Bernie is a User Support Specialist in a college. The bulk of his time (44%) is spent on user support for faculty and students and training end users to use technology. He spends 13% of his time in instructional technology, doing such tasks as working with faculty, supporting classroom technology, managing instructional labs, managing a public lab, and supporting production facilities. Another 13% of this time is spent on asset management: managing the lifecycle of hardware and software, researching new products and services, and purchasing equipment specific to that school. Five percent of his time goes to administering systems. Three percent of his time is spent maintaining hardware for researchers. An additional 5% of his time is spent on project management, technology selection, and researching emerging technologies. Finally, although he is not a manager, he spends 17% of his time managing student staff and providing IT leadership and strategy.

Hillary is a Web Developer in an administrative unit. Forty-two percent of her time is spent on web development: writing code, developing custom applications, and supporting an intranet and external website. Security scanning, patching, and responding occupy 20%. Another 20% goes to tier-1 and tier-2 user support. She spends 9% on researching new technologies, technology selection, and project management. Five percent goes to server administration. An additional 2% of her time supports area-specific applications and databases. The final 2% is divided evenly between managing communications and providing IT leadership and strategy.

Don is an IT Director in an academic unit. Forty percent of his time is spent managing his three professional staff. Another 17% goes to other management activities: managing student staff, budgeting, communications, and IT leadership and strategy. Sixteen percent goes to

professional services such as project management, technology selection, and researching new technologies. Ten percent of his time supports his unit's researchers through developing applications and tools, maintaining hardware, and managing and archiving data. Eight percent goes toward asset management: buying hardware and researching new products. User support for faculty and staff takes up 5%. Two percent goes to managing telecom services. One percent supports the unit's web site, and the remaining 1% is spent responding to security breaches.

These are people's best estimates about what they do, and the answers may have been different if the survey had been done at, say, the start of the school year. But they – along with 255 other survey responses – tell a compelling story of work fragmentation and an IT environment that encourages people to be jacks of all trades.

Fragmentation is important for three reasons. First, having many people doing the same thing is inherently inefficient. Some tasks, such as procurement and user support, offer opportunities for economies of scale and reducing duplication. In addition, jumping from task to task consumes time and energy. It inhibits focused attention and depth of expertise. There is a reason why successful enterprises practice division of labor.

Second, the dispersal of resources makes it hard to provide adequate coverage.

- Canvas, the learning management system, needs to be up 24/7 but there are reportedly only two people in the Library to maintain it.
- The server hosting math homework assignments also needs to be up all the time, but only one person in CASIT administers it.
- For that reason, among others, Campus Operations, UOPD and Parking & Transportation are moving to a shared service model that will allow the one support person in UOPD to become part of a five-person rotation.

Third, fragmentation makes it harder to consolidate resources. If a person spends all of her time on, say, web development, that person can be reassigned easily. But how do you relocate 20% of an FTE? Take the case of Bernie the Support Specialist – if you make him 100% support, who picks up on the 56% of his time spent on instructional technology, asset management, systems administration, research support, project management, and supervision of students?

Fragmentation makes the IT function, especially in the distributed units, a crazy quilt of job assignments. Responsibilities have accreted over the years in response to the local needs and opportunities. For this reason, consolidation must be undertaken unit-by-unit and person-by-person.

D. IT Functions and Services

Almost all of my interviews and focus groups included a variant of this question: "What do *you* think should be centralized?" The aggregated list of responses is long and varied, with most suggestions getting multiple mentions: data centers, storage, server virtualization, desktop virtualization, firewall services, email/calendaring, Sharepoint (collaboration services), disaster

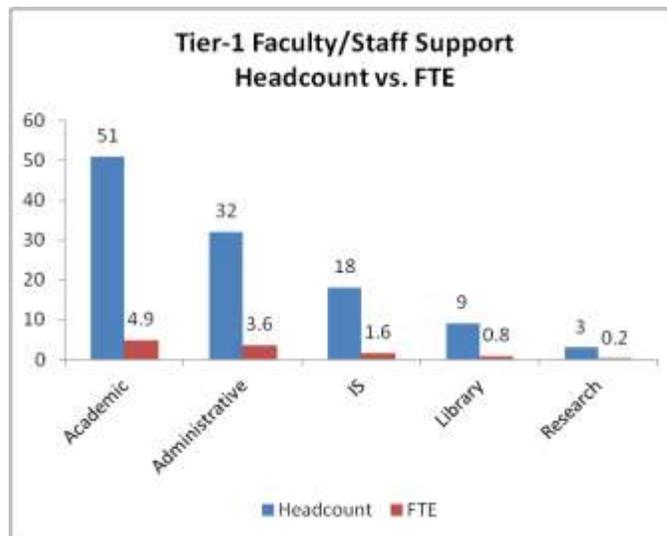
recovery and continuity, wikis, pay-for-print, videoconferencing, project management software, project management services, SCCM (System Center Configuration Manager, for management of PCs), Casper (same service for Macs), cloud support, user account management, and purchasing.

This is a diverse list that points to IT's multiple activities and skill sets. In this section I discuss work fragmentation, its consequences, and other pertinent issues in ten areas of IT: user support, infrastructure, applications development, web development, academic technologies, research computing, asset management, security, professional services, and management. Each of these has its own opportunities and challenges for consolidation.

1. User Support

User support is one of the most fragmented of all IT activities.

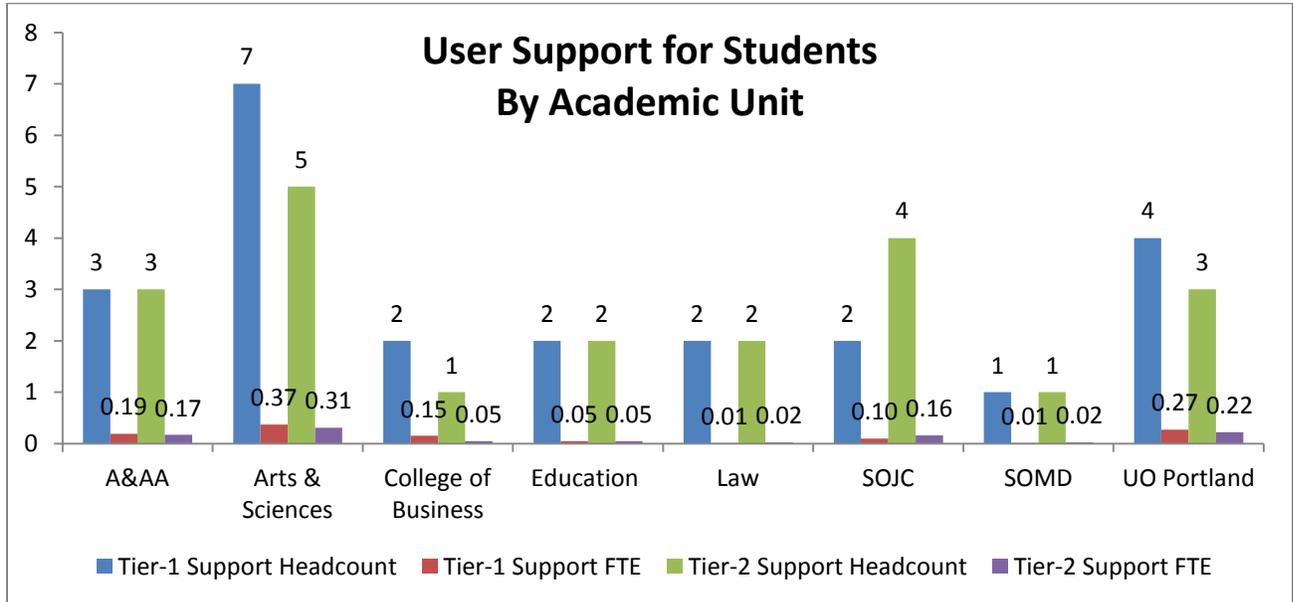
Tier-1 support addresses common problems of limited scope with known solutions. One hundred thirteen IT professionals on campus – almost half of the total survey sample – provide tier-1 support to faculty and staff. Yet adding their time together, they account for just 11.2 FTE. One ITC in CASIT spends 80% of his time on tier-1 support; more commonly, people spend just 1% to 5% of their time on it. On average, people who provide tier-1 support spend 11% of their time – about half a day a week – on it. Headcount refers to the number of individuals who claimed to do that activity.



A similar graph could have been constructed for tier-2 support (for problems affecting whole units or that take longer to resolve), which involves 134 individuals but only 11.69 FTE.

I had assumed that IS was primarily responsible for providing user support to students. Yet the survey showed that all types of units provide student support. Within schools/colleges,

responsibility for supporting students is broadly distributed even in small IT shops with few people. The chart below compares the number (headcount) and FTE of IT professionals providing tier-1 and tier-2 support to students for each academic unit.



My conversations in the distributed units – especially the academic ones – quickly came around to the heavy support burden. One IT Director spoke of being “mired down in support” and on the “support hamster wheel.” Another said that “Support is my day.” Because everyone gets called into support, it is difficult to get other things done.

End user support for students is provided by IS via a walk-in and phone help desk in McKenzie Hall. There are 3 full-time staff at the desk, two account administrators, plus 15-20 student workers. This group also provides tier-2 support to the rest of campus. Last year there were 17,500 interactions. They also provide account administration for the campus. My own experience in getting provisioned with email was excellent – students were helpful and the process was easy and fast.

All academic and administration units (Advancement is an exception⁶) use RT as their ticketing system. No one claimed to like it very much (“cumbersome”), but it is adequate for the limited ways it is used. Because metrics must be wrested manually from the system, most units don’t collect them. There is no differentiation between a project, an incident and a service request.

In the UO RT world, each unit is its own island of support, although multiple queues can be viewed by support staff. RT is open source and units manage their own queues. Requests are

⁶ Advancement uses Help Scout because it has workflows and metrics. It is symptomatic of how units solve their own problems that Help Scout could be scalable but is not scalable because of how Advancement built it out. At the time of the interviews, CASIT was also exploring proof of concept for a separate support ticketing system.

routed to the local help desk. Issues are not escalated to IS in a systematic way; discussions and actions are not always recorded, so the end user may have to re-explain the problem with each follow-up encounter. Some people avoid RT altogether and just call or email who they know. One IT Director said he got tired of the backing-and-forthing so he avoids RT and calls who he knows.

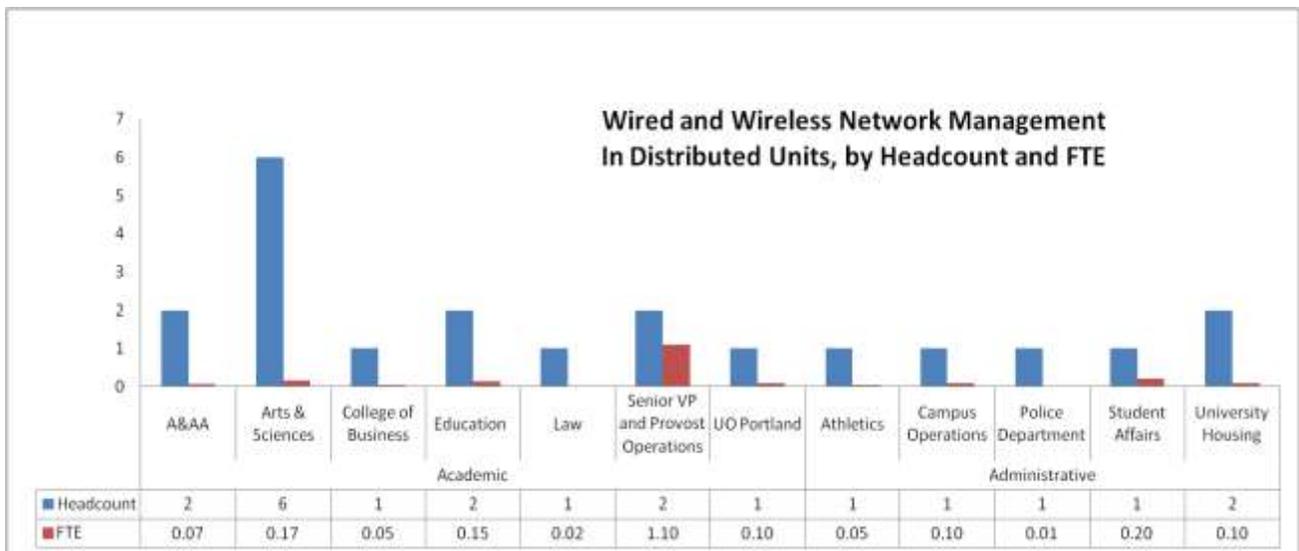
IS is currently seeking a new ticketing system as part of its ITSM effort. This should be more than a technology replacement project. In a later section I recommend the reassignment to IS of the support people in the colleges and schools. This will effectively make IS responsible for all non-instructional support for faculty, staff, and students. This is a fundamental shift in mission and scale for the IS Customer Experience group. Distributed IT leaders should be brought into the conversation now, and with IS they should envision the new support model.

When asked what *had* to go right in the consolidation of IT, one dean said, “Maintain service levels.” Along with the network being down, there is no more visible sign of IT failure. My proposed reorganization leaves resources at the local level to ensure those service levels do not diminish.

2. Infrastructure

Infrastructure encompasses systems, servers, data centers, telecommunications, networks, and email/calendaring services. Given the investments required, it is not surprising that infrastructure is among the most centralized of all IT areas.

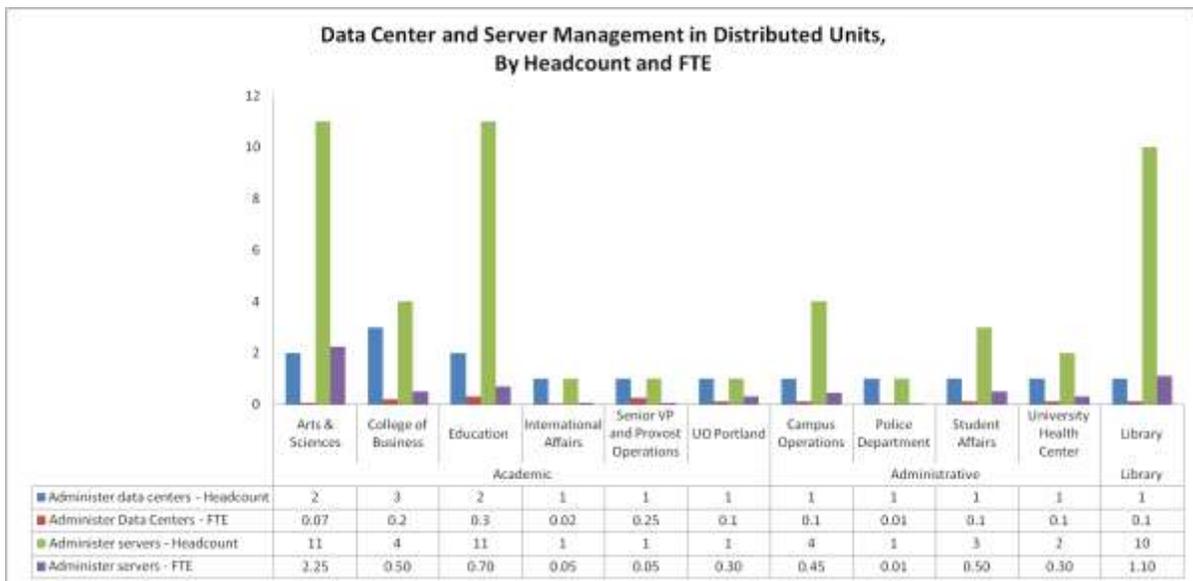
Turning first to networks, IS has 16 people totaling 7.71 FTE who manage the wired and wireless networks. Within the distributed units, 21 people accounting for 2.12 FTE do these tasks.



Centralization is even more marked in the management of telecommunications. IS has 11 people who spend 3.6 FTE on these tasks. Four people in A&AA, CAS, Education, and Provost Operations spend a total of 0.27 FTE on telecom; three people in Athletics, UOPD, and Housing account for 0.11 FTE. No one in the Library or Research units spends time on telecommunications.

The proliferation of data centers and server rooms on campus was noted by other consultants and, with the building of the data center in Allen Hall, has raised hopes within the IT community about server condos. If all server management was centralized, what would be the impact on people’s jobs?

Within the distributed units, the survey data show that 15 people manage data centers and that 49 people (many of them likely the same ones) administer servers. If all these operations were magically centralized in IS, it would redistribute 7.56 FTE. Actually, it would redistribute fewer FTE than that since IS would need to dedicate more resources to it and people in the units would still play a role in tending to their own servers.



FTE savings aside, a compelling reason to centralize servers is security. Beyond protection from malware and hackers, centralized facilities provide a better physical environment. The server room in the Graduate School is reportedly vented by a pipe leading out of a window. The Student Health Center has a server room that relies on a single air conditioner.

Cost savings would also accrue from closing down server rooms. An estimate provided by Campus Operations suggests that a “typical” server room costs \$4,000 to \$8,000 annually: \$2,000 to 5,000 for utilities and \$2,000 to 3,000 for maintenance.

There is already a move toward centralizing server resources. Campus Operations has migrated all but one of its servers to IS and that too will go at some point. The Library supported an array

in IS and hopes to decommission its server soon. SOJC is migrating its servers. Half of the racks in the Student Life server room are empty and the goal is to close the room within five years as new equipment gets placed in IS. Nobody I spoke with said that servers would have to be pried from their cold, dead fingers.

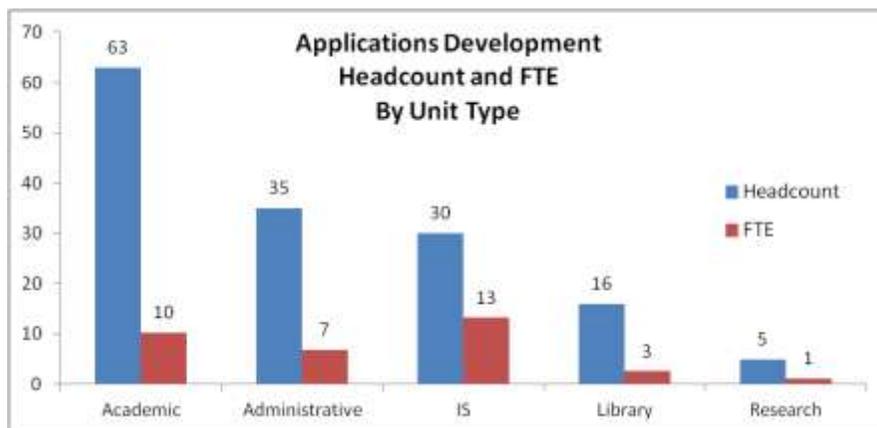
There are several factors inhibiting the transfer of servers to a central location. People in the units (e.g., SOMD, College of Business, Psychology) noted the high cost of back-up. The technology used by IS is reportedly more effective but also more expensive. IS is working with the Library on a lower-cost back-up method and a business model for that service will need to be developed. Technical experts within IS also said that they had the capacity to house all servers, but that lack of capital to maintain the hardware would make the effort unsustainable.

The data center in Allen Hall reportedly has the capacity to absorb (with virtualization) all of the servers on campus. Academic and administrative units are already moving in that direction. The researchers I spoke with are not averse to a server condo but first need to be convinced that the staffing, funding, environmental controls, and cost savings are real. As one said, “What we do now does work.”

3. Applications Development

In the Applications Development category, respondents were asked if they spend time designing, developing, and supporting databases, custom tools and applications, custom reports and queries (e.g., Cognos/IDR), and/or university-wide applications (e.g., Banner, Exchange).

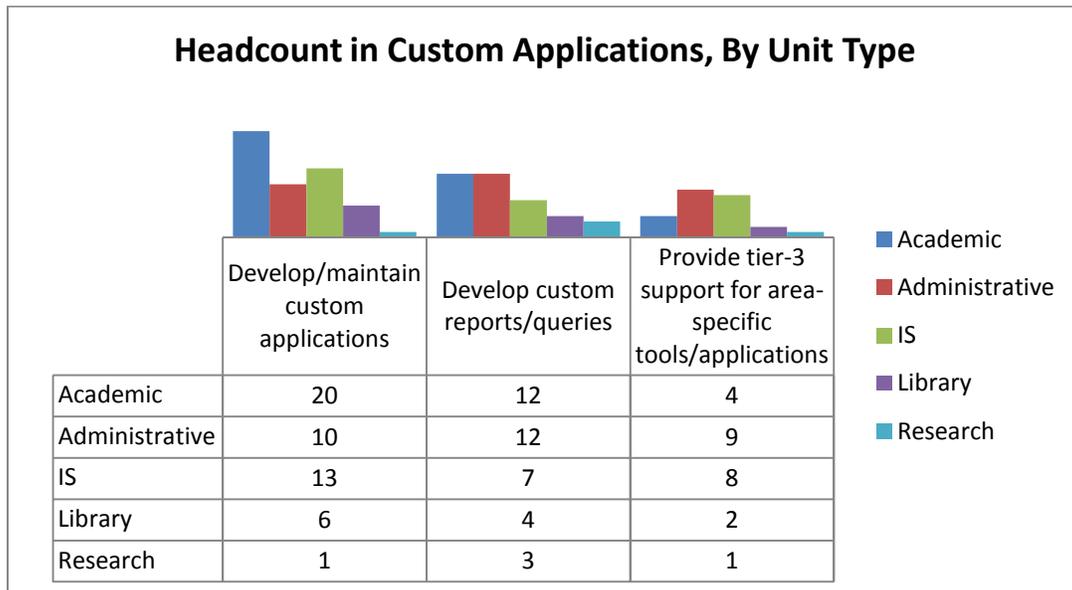
The degree of fragmentation is less serious in this domain and work is concentrated among relatively fewer individuals – with the emphasis on *relatively*. Looking at the category “applications development” as a whole, 149 individuals are doing the work of 34 FTE, a smaller headcount-to-FTE ratio than we find in user support and asset management.



The ability to consolidate applications development depends in part on whether the applications and tools are custom or common. Specialized knowledge and skills may not

transfer well to a central environment and their removal may put the distributed unit at risk. In LCB, for example, applications related to level of effort and learning outcomes are used for accreditation; losing control of those resources may make the dean nervous. Should any of the people working on these specific applications be transferred to IS, their commitments to their previous unit must be honored.

To understand the extent of custom applications, the survey asked people if they develop/maintain custom applications, develop custom reports and queries, or provide tier-3 support for area- of discipline-specific tools and applications.



The column totals are 50, 38, and 24 (many of them responses from the same individuals), with a combined level of effort across these three areas of 11.2 FTE, much of it in the distributed units.

The merger of academic IT units into IS raises the question of enterprise software. There is no institutional definition of “enterprise,” but enterprise solutions are commonly assumed to be those that are used by multiple organizations on campus, contain core institutional data, are centrally funded, and are more or less critical for running the university. Most colleges and universities assign oversight for these applications to a campus group, often the central IS organization, as custodians for the entire institution. Banner clearly falls in this category.

Under the current decentralized regime, many IT units bought or developed applications and then shared them with the campus.

- The College of Business contracted with BlueJeans, a videoconferencing room system for up to 100 users. The system is also used by A&AA, the Library, COE, SOJC, Academic Extension, IS, and UO Portland. University Advancement has their own agreement with BlueJeans.

- The Virtual Desktop Infrastructure environment implemented by the College of Business is being used by the Library for its Pharos printing stations.
- The UO Inventory System developed by CASIT has become the campus standard.
- A&AA provides software licenses and Mac support on a reimbursement basis to Campus Planning, Design, and Construction.
- Student Affairs pays Advancement for licenses to its Casper (Mac management system). Casper is also used by A&AA and the Library. For security videos, SAIT relies on UOPD. Says the SAIT Director, “We jump on those opportunities.”
- A&AA, SOMD, and COE cooperate in the licensing of Panopto, a lecture capture software.

UO needs to determine which applications are “enterprise” and should come under IS supervision. IS will inherit some, such as the inventory system, by virtue of CASIT’s organizational dissolution; users claimed to be happy with the application and it should be maintained. In other cases, a license held by a college could be transferred to IS; the survey tool Qualtrics (initiated in LCB) has already made that journey. LCB’s BlueJeans license could also be declared an enterprise app and managed by either IS or the Library; in either case, getting into the videoconferencing business implies support, integration, and other resource needs.

When making these determinations, the capacity of IS to absorb enterprise applications must be a prime consideration. For example, the InfoGraphics Lab in the Department of Geography developed an innovative GIS application for indoor mapping that is used by Campus Operations. Recognizing its broader potential, the Lab had talks with IS about expanding its use but backed away when IS did not have the staffing to support it. This is one emerging enterprise application that needs to await IS’ ability to staff and finance it.

Another example of IS capacity: Advancement pioneered the use of Casper for the management of Macs and numerous units use Advancement’s license. Advancement wouldn’t mind handing management of Casper over to IS as an enterprise solution so it can focus on its core business. But with Casper, Advancement is ahead of IS on encryption and so Advancement is understandably reluctant to turn over responsibility.

One of the most immediate priorities is what to do about customer relationship management (CRM) software. In 2012, Enrollment Management, working collaboratively with IS and Central Administration, launched a project to integrate Talisma (CRM software) into Enrollment Management’s recruiting operations. The office has embraced Talisma to the extent that the EM IT Director’s job description gives him “responsibility for and authority over” the CRM system and appoints him the liaison between the vendor, IS and campus partners.

There has been talk of expanding Talisma to serve a broader set of needs and in May Enrollment Management invited nine units to a meeting to meet the vendor and discuss where everyone wants to go with it. Expanding Talisma to the campus and integrating it with current systems is no small effort. It will require five to seven people for applications mapping, integration, project management, and communications. IS currently does not have these

people. Neither does Enrollment Management. A plan and a budget are needed that include added staff, clear outcomes, and distribution of responsibility and authority.

Meanwhile, the College of Business has obtained final purchasing information for expanding the capability of their Salesforce instance, a different CRM system. UO has the potential to have two CRM systems on campus. IS lacks the authority – or is perceived broadly to lack the authority, which is pretty much the same thing – to intervene in either set of decisions.

Email is another enterprise application that should be resolved. IS and staff across the campus are on Exchange, but there are hold-outs among faculty. Faculty members in the School of Law are on an IMAP email. They are reportedly resistant to change and the strategy is to transition off IMAP as people leave or die. CASIT maintains Google Apps for Education for calendar and email. Depending on the source, there are either 500 or 170 faculty members using Google. Administrative assistants were especially vocal about the time wasted trying to schedule meetings across two calendaring systems. In the sometimes contentious relationship between CASIT and IS, email is an iconic and emotional touchstone. With CASIT being assimilated, there is an opportunity to standardize on Exchange, with the ultimate goal being a unified mail and calendaring system.

And finally, IS will need to make some decisions about which applications should die off. Many of the interviewees gave examples of areas where decentralization has meant “there are 11 solutions for each problem” and “we spend too much time supporting pets.” The applications tree needs to be pruned, and there is already a process in place to make that happen.

IS will absorb whatever enterprise systems are embedded in the academic units. But as long as the administrative IT units retain their independence, those units must nonetheless accept IS’ leading role in setting the University’s technology direction, overseeing enterprise applications (unless decided otherwise) and intervening when the interests of the institution as a whole are at stake. I heard lots of talk about application owners, sponsors, and managers. The current meanings of these terms are fuzzy, they obscure responsibility, and they need to be clarified.

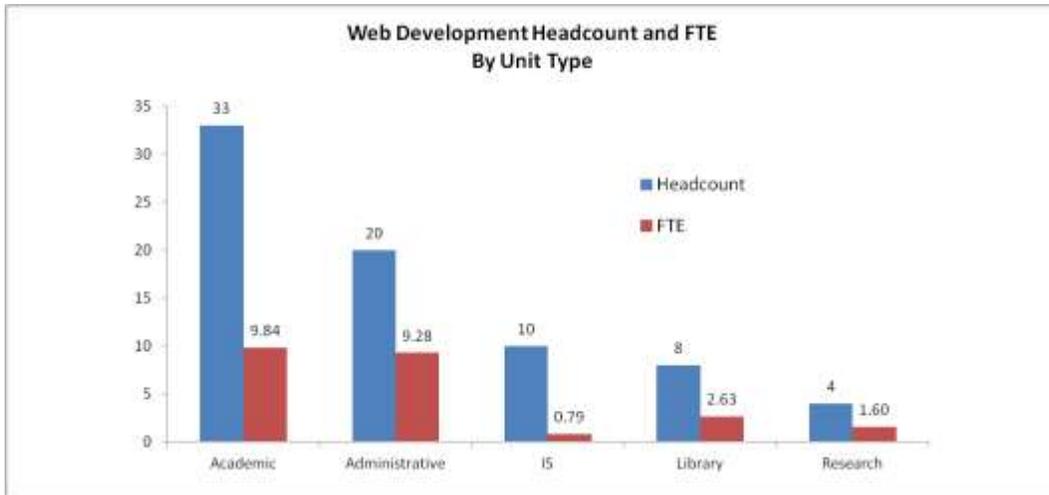
A final note on applications, appended here because it was mentioned by many: IS must develop a strategy and policies for cloud computing, ensuring a consistent way of managing vendor relations and interfacing with existing systems. Again, this should be the responsibility of the central IT organization with appropriate consultation and governance.

4. Web Development

Web development includes two major elements: the technical back end and the front end of content and communication. Any plan to consolidate “web people” is therefore complicated, made more so by the ongoing centralization of front-end administrative Communications resources.

The survey focused on the technical side and asked respondents to consider five types of activities: developing and supporting external website structure and design; developing code

for dynamic web pages; managing deployment, version control and testing; developing an intranet; and developing custom web applications.



Compared to areas like user support and applications development, the ratio of 75 headcount for 24 FTE is relatively flat. Jobs that are web-related seem to focus more of a person's time on that set of tasks. That is good news, since a concentration of FTE allows for a more seamless redeployment of people.

Within the academic units, there are seven people with "web" in their title; there are an additional eight in the administrative units. I do not know what they are supporting, how busy they are, how their skills sets might apply to other projects, or how integral they are to their units. Given the Communications reorganization and the demand for web resources, each of these web resources needs to be considered individually and reassigned (if appropriate) elsewhere.

5. Academic Technologies

Academic technologies encompass the tools and facilities that enable teaching and learning. They include: technology-equipped classrooms; open and specialized labs; Canvas and other learning management systems (LMS); and videoconferencing. Also included in this category is digital scholarship, which by definition relies heavily on IT.

Canvas is the primary learning management system (LMS) for the campus. The transition from Blackboard occurred in 2014 and was by all accounts a well-supported and successful migration. Global and Online Education (an outreach unit in the College of Education) has developed its own LSM, ObaVerse, that is used in COE and in K-12 globally.

The Library is responsible for Canvas through its Center for Media and Educational Technologies (CMET). All of the schools and colleges (except Law) also have at least one person on hand to

assist with Canvas. The amount of time required to support Canvas is minimal, but critical, since it involves support to faculty.

Academic Unit Support of Canvas		
	Headcount	FTE
A&AA	3	0.20
Arts & Sciences	1	0.02
Education	2	0.30
SOJC	1	0.20
SOMD	1	0.01
UO Portland	1	0.03
Grand Total	9	0.76

As instruction becomes more reliant on technology, classrooms become complex electronic tools subject to problems. The Library has nine people (1 FTE) working on classroom support, as does IS (two individuals, 0.1 FTE). Schools and colleges have 23 people supporting classrooms, but on average spend less than 10% of their time doing so.

Academic Units Supporting Classroom Technologies		
	Headcount	FTE
Academic	23	2.05
A&AA	4	0.175
Academic Extension	1	0.1
Arts & Sciences	4	0.13
College of Business	6	0.5
Education	1	0.2
SOJC	3	0.12
SOMD	1	0.005
UO Portland	3	0.82

The responses might be a little inflated because the question also asked about support for videoconferencing, but the general pattern found elsewhere remains: a broad distribution of local resources supporting faculty in the classroom.

There are three types of labs on campus:

- Public labs, available to anyone at UO, are located in the Global Scholars Hall Library Commons, McKenzie Lab, Knight Library Learning Commons, Science Library Learning Commons, and the Social Science Instructional Lab (SSIL).
- Instructional labs reserved for class use are the McKenzie Lab, Millrace Lab, and SSIL.
- Departmental labs affiliated with and managed by schools, colleges and departments offer software and tools specific to their disciplines: A&AA, School of Business, SOMD, COE, and SOJC. Other department labs are the Adaptive Technology Lab, Social Science Data Services Lab, and Yamada Computer Lab.

A map of computing labs, along with URLs for each one, can be found at <https://it.uoregon.edu/labs-map>.

The departmental labs have applications and tools that are discipline-specific; a lab in SOMD, for example, has cameras that enable students to view a pianist’s every move. Specialized tools and applications could make central management challenging.

In the survey, instructional and departmental labs were aggregated. Managing these labs does not take a lot of time, but it does take a lot of people.

Academic Units Supporting Labs				
	Manage public labs -		Manage	Manage
	Headcount	Manage public labs - FTE	instructional labs -	instructional labs -
			Headcount	FTE
A&AA	4	0.371	4	0.291
Arts & Sciences	6	0.42	7	0.6
College of Business	3	0.13	5	0.13
Library	2	0.17	2	0.12
SOJC	2	0.06	2	0.11
SOMD	1	0.03	1	0.02
UO Portland	1	0.01	2	0.12
Grand Total	19	1.191	23	1.391

Finally, the survey asked about digital research data curation, preservation, and management. The Library is clearly the campus leader in this area and will gain more resources in the reorganization. But many units have a common interest in this area, even if digital management means different things to practitioners in the Library, University Advancement, and Research.

Units Performing Digital Curation and Management		
	Digital Curation and Preservation - Headcount	Digital Curation and Preservation - FTE
Academic Extension	1	0.05
Arts & Sciences	3	0.09
College of Business	3	0
Education	4	0.23
Information Services	1	0.16
Library	7	1.42
Research	1	0.15
Student Affairs	1	0.2
University Advancement	1	0.15
UO Communications	1	0.05
Grand Total	23	2.5

6. Research

“Research” in this context refers to the IT professionals who work on sponsored projects and programs. They are in centers, outreach units, and on individual grants. Of the 13 research-dedicated IT people who responded to this survey (and 37 did not), three are Officers of Administration, five are classified, and five are NTTF.

In 2006, as principal investigator for an EDUCAUSE study on IT in the research enterprise,⁷ I wanted to understand which IT functions were best done centrally or locally. Applications and tools for research, it turned out, are best placed locally, where IT is integrated deeply into the research enterprise. Researchers employing big data, specialized applications or visualization typically fund their own IT people and sensibly want them close at hand. Discipline- and project-specific IT resources are best left alone.

In contrast, core services common to all researchers – a reliable and fast network, data storage and back-up, high-capacity computing – are best provided at the central level. The University is already going down this road, adding the HPC in Allen Hall and investing in network upgrades. That work should continue.

In this light, it is worth noting that within the Office of the Vice President for Research and Innovation is a unit called Research Technology Services. They do not offer services in direct support of research (one person called that “aspirational”). Instead, the office provides desktop support and website redesign. CASIT, on the other hand, has brought in experts in visualization, parallel processing, and big data, hoping that researchers would take advantage of the resources. It is not clear that they have, but they have yet to be presented to the campus at large.

The survey asked people how much time they spend on direct support of funded research. The large numbers of non-respondents in this area do not provide high levels of confidence. Still, they indicate areas – data management, hardware support, and server administration – where a more robust capacity in central IS could help distributed research IT people shave time off their more mundane responsibilities.

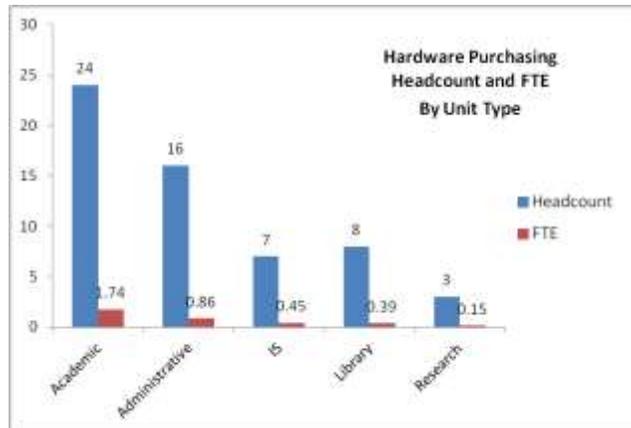
Headcount and FTE for Research IT Activities									
	Data Management/ Archiving - Headcount	Data Management/ Archiving - FTE	Support applications/ tools - Headcount	Develop Applications/ Tools - FTE	Support/ Maintain Hardware - Headcount	Support/ Maintain Hardware - FTE	Administer Servers - Headcount	Administer Servers - FTE	Total Research Computing FTE
Arts & Sciences	6	2.27	7	2.11	6	0.49	4	0.17	5.04
Education	4	0.19	7	2.3	6	0.48	5	0.29	3.25
Library	2	0.15	1	0.02			1	0.02	0.19
Research	2	0.80	5	2.5	3	0.30	3	0.77	4.37
Grand Total	14	3.41	20	6.93	15	1.27	13	1.25	12.85

⁷ *IT Engagement in Research: A Baseline Study*, with Sandra Braman, Richard Katz, and Gail Salaway. Volume 5, 2006.

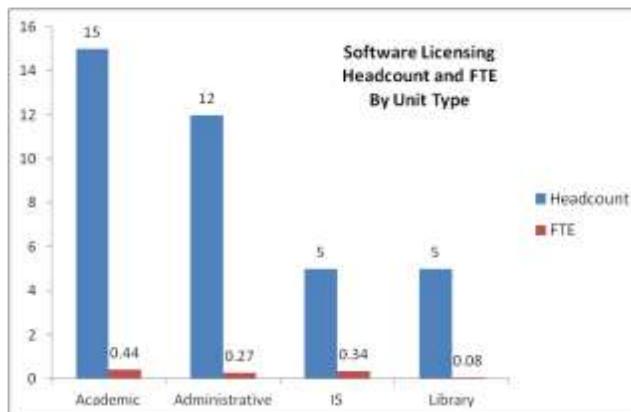
7. Asset Management

Asset management includes the purchase of hardware, licensing of software, purchase of area- or discipline-specific equipment, oversight over the inventory lifecycle, and research into new products and services.

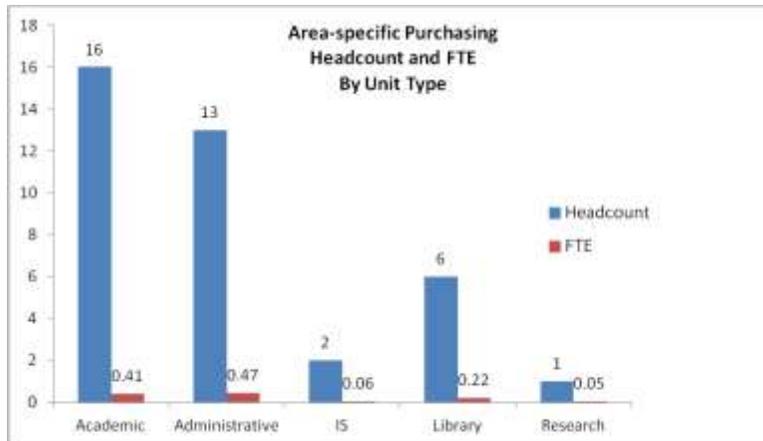
Procurement is one of the most fragmented IT activities. Lots of people buy things, but spend little time doing it. High headcount-to-FTE ratios can be seen in hardware procurement, where 58 individuals do the work of 3.59 FTE....



....and in software negotiation and licensing, where 37 people do the work of 1.13 FTE. And these numbers, recall, do not include the 92 people who declined to take the survey.



The survey asked IT professionals if they purchase area- or discipline-specific equipment. Based on interviews, these people are less likely to be enthused about central purchasing: How can they know my specific needs? Thirty-eight people, totaling 1.2 FTE, buy things they think are unique to their department.



To be sure, acquiring discipline-specific products and software requires discipline-specific knowledge. People in the units do know their needs better, but they can still use a central purchasing facility with knowledge of procedures and state contracts; many of them currently do.

Looking at all five asset management activities across the university, 118 individuals are involved in some way. But again, they are involved only sporadically and so they account for only 13 FTE. How many FTE could be saved by pulling most of this procurement activity centrally? It is hard to say, but one has to believe that people who buy things for a living would be more efficient. Is it a good investment of university resources to have 3 FTE spread over 21 units researching new products and services? The success of this centralization would depend on standardizing commodity hardware across campus.

Asset Management Activities by Unit							
	Purchase hardware	Negotiate/purchase software	Manage inventory lifecycle	Research new products/services	Purchase area-specific equipment	Total FTE	Headcount
Academic	1.74	0.44	2.03	1.07	0.41	5.68	48
A&AA	0.12	0.01	0.18	0.02	0.06	0.38	5
Arts & Sciences	0.54	0.28	0.87	0.39	0.07	2.14	15
College of Business	0.22	0.02	0.27	0.02	0.02	0.55	4
Education	0.57	0.07	0.05	0.34	0.10	1.13	12
International Affairs	0.01		0.01	0.01		0.03	1
Senior VP and Provost Operations	0.02	0.01	0.12	0.02		0.17	2
SOJC	0.15	0.02	0.28	0.11	0.07	0.63	4
SOMD	0.05	0.03	0.03	0.03	0.06	0.20	1
Undergraduate Studies	0.04		0.04	0.06		0.14	1
UO Portland	0.03		0.18	0.07	0.03	0.31	3
Administrative	0.86	0.26	0.69	0.51	0.44	2.76	29
Athletics	0.05	0.05	0.15	0.15	0.25	0.65	3
Business Affairs Office	0.05			0.02	0.02	0.09	2
Campus Operations	0.11	0.06	0.16	0.10	0.06	0.49	5
Enrollment Management	0.02		0.05	0.08	0.00	0.15	6
Police Department	0.01	0.01	0.01	0.01	0.01	0.05	1
Student Affairs	0.10	0.00	0.10	0.10	0.10	0.40	3
University Health Center	0.10	0.10				0.20	1
University Housing	0.20	0.03	0.11	0.03		0.37	5
VP Fin & Admin Operations	0.22	0.01	0.11	0.02	0.00	0.36	3
IS	0.45	0.34	0.77	1.02	0.06	2.64	25
Information Services	0.45	0.34	0.77	1.02	0.06	2.64	25
Library	0.39	0.08	0.45	0.23	0.22	1.37	13
Library	0.39	0.08	0.45	0.23	0.22	1.37	13
Research	0.15		0.13	0.10	0.05	0.43	3
Research	0.15		0.13	0.10	0.05	0.43	3
Grand Total	3.59	1.12	4.07	2.93	1.18	12.88	118

IS needs to play a bigger role in procurement activities. The infusion of resources from CASIT can help, especially if it leverages CASIT's computer replacement program on a campus-wide basis. It will also need to do a better job communicating its services and their benefits.

8. Security

Before IS hired its first full-time Chief Information Security Officer (CISO), the security program had been scattered, with no central focus and few tools. The CISO has put the University in a good place defensively, and is starting to engage in proactive measures: security is now part of the new employee orientation and an off-the-shelf training program is being rolled out to the campus.

Security is an area where you want everyone to be involved to some extent. Outside of IS, 17 units on campus have at least one person who scans for vulnerabilities, responds to security breaches, and/or performs security patching. Depending on the activity, 38, 64, and 73 people (many of them the same from column to column) are involved in security. Together they represent 6.9 FTE.

Security Activities in Distributed Units						
By Headcount and FTE						
	Scan Vulnerabilities - Headcount	Scan Vulnerabilities - FTE	Respond to Security Breaches - Headcount	Respond to Security Breaches - FTE	Count of Security - Perform security patching	Perform security patching - FTE
A&AA	2	0.06	1	0.00	3	0.07
Academic Extension	2	0.05	1	0.05	2	0.05
Arts & Sciences	8	0.36	16	0.67	12	0.44
Athletics	1	0.05	2	0.10	1	0.05
Business Affairs Office	1	0.04	1	0.01	1	0.11
Campus Operations	1	0.01	3	0.06	4	0.07
College of Business	2	0.16	2	0.01	4	0.28
Education	2	0.04	6	0.19	7	0.27
Enrollment Management	1	0.02	2	0.03	3	0.11
Information Services	4	0.19	12	0.86	14	0.58
Library	3	0.06	6	0.12	5	0.15
Police Department	1	0.01	1	0.01	1	0.01
Research	2	0.05	2	0.06	5	0.30
Student Affairs	1	0.00	1	0.00	2	0.20
University Advancement	1	0.02	1	0.02		
University Housing	3	0.12	2	0.06	3	0.11
UO Portland	1	0.01	1	0.01	2	0.15
VP Fin & Admin Operations	2	0.08	4	0.12	4	0.25
Grand Total	38	1.32	64	2.39	73	3.19

The CISO would like to expand his unit’s capacity to perform risk assessments, administer the campus-wide antivirus server, and put more of a security focus on the SCCM system. These measures, he believes, would remove some of the security burden – and time – from the distributed units.

9. Professional Services

The survey asked about “professional services,” a loose aggregation of activities that includes project management, business and data analysis, technology selection, and research on emerging technologies and needs.

I was told repeatedly during the interviews that there is a very weak culture of project management on campus: people start projects without a plan, sustainable funding, or a governance mechanism. Good ideas are pursued and then abandoned or scaled back. This lack of planning was attributed to several factors, including pass-the-hat funding, inexperience, and the overall culture of how IT is done at the University (see Section F).

Project management is indeed a problem at UO, exacerbated by the fact that so many people do it. The survey showed that across all units, 116 people claimed to be managing a project. However, these 116 people account in total for only 11.52 FTE, suggesting that these are small projects pursued on part-time basis. (The range went from the IS director who spends 70% on project management to the administrative applications developer who spends .005% of his time on it.

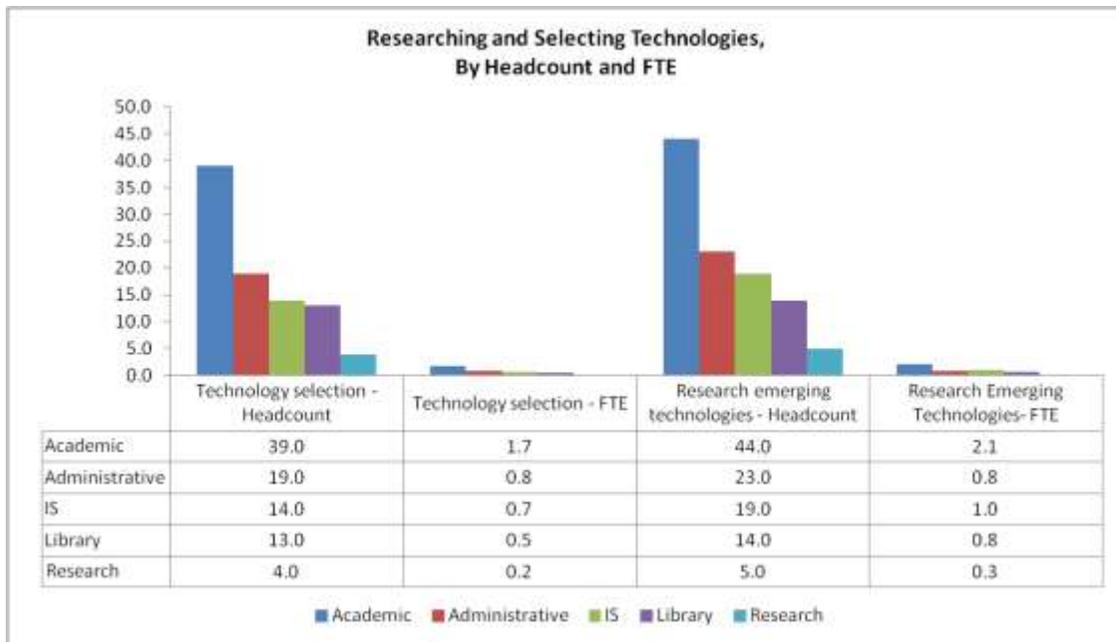
In the current decentralized system, it is not surprising that half of the respondents claimed to be managing a project. Without understanding the nature of these projects, it is hard to know

how many would go away or merge if IT units were consolidated. But at the very least, and given the immaturity of project management at UO, the people managing projects should be trained on effective techniques.

IS is developing a capacity for project management and that needs to be given priority. Many people in the interviews said that they would like to draw on expertise from IS but that they are unable to do so for lack of resources.

IS has for several years been trying to institute an IT Service Management (ITSM) framework to improve incident management, change management, the service catalog, user support, and project management. It is going slower than hoped, a casualty of constrained staffing. IS needs to accelerate progress in this area – especially project management and the service catalog – if it is to meet the demands that will be placed on it after consolidation.

Two of the other activities in this professional service set – researching and selecting technology – demonstrate the extreme fragmentation of IT at the University. Consider the following chart:



There are 106 people on campus who research new technologies and 90 people (many the same ones) who select technology. They account for 5.1 and 3.9 FTE, respectively. What we don't know is how many of them are researching the same technologies or how many are selecting tools that replicate something already on campus.

One could argue that the amount of time spent on these activities is small given the totality of what people do. But combine these activities with others where people are spending 1, 2, or 5 percent of their time on a task and it starts to add up.

10. Management

Management is the final area where decentralization has bred duplication. Nineteen people in the 12 academic units claim to manage budgets and communications. In the 29 academic and administrative units, 54 people provide IT leadership and strategy.

Number of People in Distributed Units Performing Management Activities						
	Manage Non-Student Staff	Manage student staff	Manage IT budgets	Manage communications	Provide IT leadership and strategy	TOTAL Management FTE
Academic	28	37	19	19	36	11.77
Administrative	13	16	9	13	18	6.79
Grand Total	41	53	28	32	54	18.56

On the administrative side, the existing management structure will remain in place until a later phase of consolidation. Even after the academic IT units are merged into IS, the people left embedded in the schools and colleges will need local leaders to communicate with clients and keep the trains running. But certainly a good portion of the 18+ FTE doing management can be redirected.

In sum, we find a consistent pattern of fragmentation across all domains of IT activity: 37 people, doing the work of 1.1 FTE, purchase or license software; 58 people, totaling 3.6 FTE, purchase hardware; 106 people, totaling 5.1 FTE, research new technologies; 90 people, or 3.9 FTE, select technology for their units. Job fragmentation is endemic to the UO IT universe and a drag on productivity.

E. The Organizational Lens

Having looked at IT functions and services, I turn to the units themselves. This is the part that will interest most IT professionals since it addresses the question, “What happens to me?”

The answer varies for different kinds of organizations. IT units in the schools and colleges will see the most change. IT staff in direct support of research and outreach will see the least. I begin with the central IS organization and then proceed to the academic units, the Library, administrative units, and finally research.

1. Information Services (IS)

Several decades ago, I was told, information technology at UO was in good shape. The University had even won an award in the 1990s from Wired magazine. In those days, technology was supported by a special student fee. But the tech fee was controlled by a committee and by the early 2000s the funds were being applied to uses other than core infrastructure. The fee eventually went away, money for technology had to come from the general fund, and there were always other needs. And so UO’s technology started to atrophy. The University’s current catch-up investments in the network and computing, along with the Board of Trustee’s concern about IT, are evidence of this.

One effect of IT's decline has been the eclipse of the Information Services organization. Whatever it was before 2002, IS is now underfunded, understaffed, and unable to meet the campus' varied and growing needs for technology. Short of resources for strategic initiatives, it has focused on keeping things running. As a result, distributed units had to develop, buy or improvise their own solutions. And they did, with gusto, creating a culture of decentralization that feeds off the weakness of the center. Two-thirds of IT professionals, recall, work outside central IS.

Everyone understands IS's predicament and most are sympathetic. Some wanted more policy direction and enforcement. Some expressed a longing for professional growth in a larger organization. Some volunteered that the current regime of decentralization is counterproductive. Most gave me a version of the statement: "I would happily give up [servers, email, anti-virus, purchasing] to IS but they don't have the capacity." I had not expected IT Directors to be so supportive of a more muscular IS.

One outcome of "leveraging resources" must be the strengthening of IS. IS is going through a reorganization that has included a reduction in CIO direct reports, the integration of the systems and networks units, and a realignment of some duties and skill sets. The realignment could add another 40 to 50 FTE to IS ranks.

For people in the distributed units to stop doing 26 things, they must be confident that IS can do them. Reducing numbers of people buying stuff will not happen until IS has a reliable sourcing alternative. People will continue their own security scanning and patching until IS has the automated tools to do it. Failure to invest in IS will encourage the same decentralized patterns of behavior.

With more staffing, IS needs to gain confidence in its more robust role. Numerous people in the distributed units said that IS, with a shortage of resources, has been hesitant to engage in activities because it will just increase their workloads:

- "When I go to IS they are reluctant to act for fear of commitments they cannot meet. They say they don't have a dog in that fight."
- "People come to IS with solutions, not problems."
- "You have to take things to IS as projects because they worry about time sucks."
- "People find the cheapest way to solve their problems. If units have their own server they will buy their own switch and that creates a time suck for IS."

The infusion of new people (many of whom will come with prior commitments) will not enable IS to meet all demands placed on it. But if IS is to serve as the premier IT organization leading the way to new frontiers, it will need to lose its "circle the wagons" response to campus demands.

IS needs to clearly define its mission and its services. This is a communication issue, but first and foremost it is a "who are we?" issue. Following the reorganization, IS will have a new unit for web applications, responsibility for all end user support on campus, oversight over enterprise applications, a plethora of inherited project and commitments, and dozens of new staff. The IS

service catalog (<https://is.uoregon.edu/service-catalog>) needs to be thoroughly reviewed. However, IS should provide services only if it has adequate resources.

IS needs to invest in professional development. Some distributed units have not had resources for training, so most people rely on vendor training and on-line courses from lynda.com. Career tracks in three- or four-person units are limited. Distributed IT professionals look at IS as a more interesting and career-advancing place to work. With IS growing in a sudden leap, it needs to develop a human resources plan to ensure alignment between strategic direction and skills sets. Several people noted, for example, that IS competency in cloud computing is weak. What is the plan to address this?

Moving forward, IS should be positioned as *the* organization to set technology direction, establish standards, oversee enterprise applications, and prioritize new initiatives - subject, of course, to established governance processes. There was a surprising uniformity of opinion across campus about how much authority the CIO has (a lot, if he or she grabs it) and how much support and understanding IS gets from senior leadership (not much). For IS to do the job it needs to do, both issues need to be clarified.

2. The Academic Units

All of the schools and colleges have their own IT organization and under the proposed reorganization they will all merge into IS.

The academic IT units range from the two-person outfit at SOMD to the 35-person “shadow IS” that is CASIT. All of them offer core services such as asset management, user support, and management of labs and classrooms. From there they expand their catalog to include web services, applications development, instructional technology, and other services. By and large, they have done a good job but it has meant duplication of effort and fragmentation of work.

These independent structures must disappear. All IT staff not in direct support of research should transfer *organizationally* to IS or to the Library, where responsibilities may be reassigned. Many of the staff, however, will remain in place to provide ongoing support. Their responsibilities may be reconfigured a bit, but their jobs will be pretty much what they are now. IT staff should not be yanked out of the schools and colleges. IS and the Library should adopt the cautious principle that faculty, staff and students should feel no diminution of service. For them, the reorganization should be a non-event.

Over time, additional opportunities to consolidate or streamline will present themselves. For example, contiguous units may merge their support operations. (The immediate merger of SOMD and COE is recommended below.) The Library might find it beneficial to move to a zone approach for classroom and lab support.

The biggest personal impact will be on academic IT Directors. They go by a variety of titles, but all of them oversee operations, manage staff and students, liaise with IS and other IT units, and generally look out for the technology interests of the unit. In the schools and colleges, with one

exception, the positions will disappear. The Directors themselves will be integrated into IS or the Library and will assume new roles and responsibilities that benefit both their own professional development and the University.

The IT Directors will be crucial for the transition. Working with the interim CIO and appointed Director of Integration, each IT Director needs to develop a transition plan that is calibrated as to assignments, actions, sequence, and process.

Many of the Directors will be seeking their next job at the university. Each has his or her own strengths, skills and career objectives. IS's litany of staffing needs in applications, project management, security, end user support redesign and other areas provides a good start to conversations about where they go next.

Director positions will go away, but each school and college will still need a lead liaison between the school/college and IS. Identifying who that will be should be part of the transition plan.

Budgets will need to be realigned. Assuming that personnel become an IS or Library expense, about \$10.3 million (using FY2015 numbers) will be reassigned. It may not be so cut-and-dried who pays for hardware, non-enterprise software, labs, equipment and student workers. The schools/colleges will also need to commit to providing IS with appropriate space and facilities.

Orchestrating the transition should be the responsibility of a Director of Integration. Chosen from among the existing IT Directors, his or her duties will include:

- Shepherding implementation of staff reassignments. In some cases new job descriptions will be needed and HR involvement will be needed. The DI will ensure that the transition keeps moving forward.
- Communicating with deans and other local academic leaders. The deans were supportive of centralization, but many expressed concern about continuing levels of support. The DI will maintain communications with the school/college leadership to catch issues before they become problems.
- Serving as the liaison with administrative units. As IS assumes a more strategic role at UO, good communications and governance will be important.
- Participating in developing a plan for professional development and training.
- Acting on opportunities for further resource realignment (e.g. contiguous schools) and improvement. This would also include planning the next phase of consolidation with the administrative IT units.

The Director of Integration should have ready access to finance, budget, human resource and other specialists.

Attachment C contains an overview of the IT function in each school and college.

3. Library

The Library is a key component in UO's IT universe. Libraries themselves are now repositories of digital resources, but in addition the UO Library has assumed responsibilities for academic technologies that often fall to campus IT organizations.

- The Library maintains 490 desktops and laptops in the library and in library-managed classrooms, two general computer labs in McKenzie and EMU, and 21 public printers.
- The Center for Media and Educational Technologies (CMET) "supports the physical and virtual learning environments" at UO through classroom technology support, faculty and GTF workshops on instructional technologies, the design of classroom audio/visual/presentation systems, and video production and streaming services.
- CMET also supports Canvas, the principal learning management system. The transition from Blackboard was widely reported to be a success and the Library is now integrating it with other Library modules.
- The Digital Scholarship Center helps faculty and students use media and digital technologies and offers services in digital asset management, digital preservation, and training.
- The Library runs Pharos, the pay-for-print service, for the campus (except for the School of Business and CAS).

With its focus on technology for teaching and learning, the Library *is* a central IT organization. It should be designated the University's central unit for academic technologies and should be given a seat at the IS leadership table. The Dean of the Library should appoint a Chief Academic Technology Officer to serve as the liaison to IS and member of the CIO's leadership team. This person will bring academic technology issues to the attention of IS and in turn will ensure that the Library's technical direction is consistent with the institutional strategy. The interface with IS will be a part-time set of responsibilities that can be carved out of a current position.

Where the Library is a potential recipient from a school or college, someone from the Library should be involved when reassignment decisions are made. The Library also needs to develop a plan for assigning and integrating its new staff.

Several times I heard that the Library, being short-staffed, had been slow to respond to classroom problems. With more local resources under its direct control in the schools and colleges, the Library needs to recommit to servicing those units through service agreements and equipment replacement schedules. An expansion of the Library's scope to include support for local discipline-based labs (A&AA, School of Business, SOMD, COE, SOJC and others) should be considered.

With new service responsibilities, the Library needs to improve communications with the faculty. Some faculty members claimed that they were unsure where to go with questions about classroom and other instructional support. One said that it took him two years at the university to find out about CMET.

The Library's gain of resources in research computing from CASIT may be a stretch to its mission, but it may offer new opportunities as well. Certainly there are synergies for the visualization expert in the digital humanities program.

4. Administrative Units

The administrative units have scores of IT personnel. But two considerations suggest that they be left to a second phase of consolidation. First, IS will have a significant challenge just absorbing and integrating resources spun off from the academic units. IS needs to be built up, not overwhelmed.

Second, IT is integrated into the fabric of administrative units in a way unlike that of the schools and colleges. IT is at the core of what they do.

- Campus Operations runs applications used by no other office: Siemens software for building automation, Carrier software for the chillers, and Wonderware for power plant control. These applications and the people who manage them are embedded in what Campus Operations does; it is not clear what benefits would accrue from having day-to-day oversight and annual performance reviews come from IS.
- The University Health Center has 15 applications of its own, including electronic health records, immunizations, insurance, and specialty testing. Why would they belong in IS? Wrenching IT from administrative units can be difficult.
- Security requirements at UOPD demand practices that IS cannot or do not accommodate, e.g., password complexity, frequency of password change, two-factor authentication, data retention for one year instead of one month.
- Advancement, too, has encryption requirements for donor information that IS has not yet met.

That said, the administrative units will not escape free and clear. First, there are areas in which selective centralization makes sense. Given the transition in the administrative communications and web area, it is worth considering the centralization of those resources in the near term. I have no recommendations to make on specific positions or individuals, although the numbers in the chart below may suggest possibilities. (When reviewing the numbers it is helpful to remember that 14 people in ten administrative offices did not respond: Advancement, Athletics, Business Affairs Office, Career Center, General Counsel, HR Operations (3), Institutional Research (3), Registrar, University Health Center, and VPFA IT.)

Distributed Applications and Web Resources in Administrative Units				
	Applications - Headcount	Applications - FTE	Web - Headcount	Web - FTE
Athletics	1	0.15		
Business Affairs Office				
Campus Operations	3	1.1		
Career Center	1	0.23	1	0.82
Enrollment Management	5	0.82	1	0.6
Enterprise Risk Services	1	0.2	1	0.1
Human Resources	2	0.5	1	0.3
Police Department	1	0.07	1	0.05
President Administrative Operations	1	0.6		
Student Affairs	4	1.25	2	1
Student Union, EMU			1	0.45
University Advancement	3	0.3	2	1.3
University Health Center	1	0.1		
University Housing	5	0.53	3	1.23
UO Board of Trustees				
UO Communications	2	0.25	4	2.01
VP Fin & Admin Operations	5	0.67	3	1.42
Grand Total	35	6.77	20	9.28

User support in the administrative units could also be brought into IS. The office of the VP for Finance and Administration, for example, has a four-person unit that provides desktop support, system administration and Active Directory support for 27 campus units. IS Customer Experience is currently going through a re-evaluation of its support processes and software. Administrative units should have input into that exercise even if the consolidation of their support personnel is delayed for a later phase.

Distributed User Support Resources in Administrative Units							
	Tier-1 User Support - Headcount	Tier-1 User Support - FTE	Tier-2 User Support - Headcount	Tier-2 User Support - FTE	Train end users - Headcount	Train End Users - FTE	Total User Support FTE
Athletics	3	0.6	3	0.45	1	0.05	1.1
Business Affairs Office	1	0.18	1	0.08	1	0.05	0.31
Campus Operations	4	0.25	4	0.25	4	0.32	0.82
Career Center							0
Enrollment Management	5	0.5	4	0.45	4	0.25	1.2
Enterprise Risk Services							0
Human Resources	1	0.01	1	0.01	1	0.01	0.03
Police Department	1	0.01	1	0.01	1	0.01	0.05
President Administrative Operations							0.1
Student Affairs	2	0.2	5	0.4	1	0	0.6
Student Union, EMU					1	0.03	0.03
University Advancement	4	0.5	5	0.7	2	0.15	1.4
University Health Center	1	0.1	1	0.2	1	0.05	0.35
University Housing	5	0.62	4	0.25	4	0.18	1.42
UO Board of Trustees	1	0.15					0.2
UO Communications			1	0.1	1	0.02	0.12
VP Fin & Admin Operations	4	0.48	4	0.62	2	0.05	1.15
Grand Total	32	3.6	34	3.52	24	1.17	8.88

Other areas offer room for efficiencies as well. The following chart shows headcount and FTEs in the administrative units for asset management, infrastructure, and security. Improvements in central processes can chip away at the time people spend in these areas. It would be progress if extending the reach of IS purchasing meant that the number of people thinking about procurement dropped from 35 to five, or even ten.

Headcount and FTE for Selected IT Activities in Administrative Units							
	Asset Management -		Infrastructure -		Security -		
	Headcount	Asset Management - FTE	Headcount	FTE	Headcount	Security - FTE	
Athletics	3	0.65	3	0.75	2	0.25	
Business Affairs Office	2	0.09	1	0.14	2	0.54	
Campus Operations	5	0.49	3	0.95	3	0.21	
Career Center	1	0.00	1	0.00			
Enrollment Management	6	0.15	1	0.30	5	0.46	
Enterprise Risk Services	1	0.02					
Human Resources	2	0.00			1	0.05	
Police Department	1	0.05	1	0.06	1	0.05	
President Administrative Operations	1	0.00			1	0.2	
Student Affairs	3	0.40	4	1.00	3	0.6	
Student Union, EMU					1	0.07	
University Advancement			4	1.46	1	0.14	
University Health Center	1	0.20	2	0.60	2	0.15	
University Housing	5	0.37	5	0.72	5	0.35	
UO Board of Trustees							
UO Communications	1	0.04			3	0.24	
VP Fin & Admin Operations	3	0.36	5	1.32	3	0.48	
Grand Total	35	2.82	30	7.30	33	3.79	

A second way in which the administrative units will be affected is in the area of policy. In addition to targeted consolidation, these units should have less leeway to do their own thing. Among the outcomes of the reorganization should be a more strategically-positioned IS, greater university oversight of enterprise applications, stronger governance, and an insistence that plans and funding be produced *before* investments are made. These outcomes will curtail unit prerogatives, but will result in more effective use of institutional resources.

These changes impose a greater burden on IS to communicate with IT and business leadership in the administrative units and to follow good governance practices. As suggested above, a liaison role with the IT Directors in administrative units will be a core responsibility of the newly-appointed Director of Integration. IS should also make provision to train the IT people in the administrative units. As in some schools and colleges, opportunities for professional development are scarce. As one administrative IT Director said, "If you want to get ahead you have to leave the organization." IS should raise the skills of all IT people at UO, even if they do not report directly up the IS chain.

F. Changing the Culture of IT at UO

Reorganization will achieve only so much without a fundamental shift in how the university thinks about and manages IT. The IT enterprise needs to escape from a culture of poverty, called by some the "Oregon Way," that is characterized by short-term planning, incremental and tentative investments, organizational parochialism, and diffused authority. In its place, IT

has to become a strategic resource characterized by rigorous analysis and planning, coordination, senior sponsorship, and a view to the success of the institution.

The icon of the UO way of managing IT is “pass the hat.” In the absence of institutional funding, budgets for many projects are assembled by contributions from interested units. The process, in addition to calling attention to differences between have and have-not units, has several pernicious effects.

First, “pass the hat” masks the true scale of the project. A budget number based on analysis of total cost of ownership and replacement costs would seem staggering. A smaller number is easier to sell than a larger number, and so there is a common agreement to avoid looking beyond the first installment. Pass-the-hat funding sometimes requires multiple rounds of discussions that can extend for years. If a group decides to drop out, it raises the ante for the others and can create bad feeling. People who have been at UO a while cited a string of projects that generated initial enthusiasm, got a little traction, and then petered out.

Short-term thinking inhibits analysis. With tentative funding and a fragile consensus, the incentive is to get started before the opportunity dribbles away. As a result, many of the fundamental tools of resource management – business analysis, requirements gathering, project planning – are missing. If you haven’t done the analysis, you can’t manage resources over the long term. As a result, there is no sustainable funding, one-time monies must be found each year, there is little thought of refresh policies, and there is no support for equipment at end of life.

Insecure and incremental funding inhibits a sense of enterprise. Units cooperate in endeavors because it suits them and cooperation (i.e., continuing to fund the hat) ends when it doesn’t. They solve their own problems, often in the cheapest way they can, with secondary regard to institutional financial stewardship. These decisions can have long-term effects, because as one IT Director said, “If you give people 300 choices, you have to support them all.”

Distributed funding diffuses authority and encourages inefficient decision-making. Everyone has a say, units can opt out, and no one is in control. No one says, “You can’t do that.” Among my more interesting conversations were those dealing with CIO authority. Does the CIO have the authority, for instance, to intervene in a unit’s decision to pursue a CRM solution? Or to mandate the use of Exchange for everyone? Or limit choices of hardware for standard use?

Opinion was split, but more people in the distributed units said ‘yes’ than I would have imagined. I also found surprising the number of people who expressed a desire for more central direction, mandates and leadership. Perhaps that is something one says to a consultant, but I did sense that many people across the university want to rationalize the use of IT resources even if it means curtailing their freedom of action.

The fundamental problem with IT at the University of Oregon is that what began as an adaptation to resource deprivation has become the accepted way of doing business. IT

professionals across UO have done the best they can in an environment that has fostered short-term and parochial thinking – and in the process they have lost the skills of project management, total-cost-of-ownership budgeting, and the institutional stewardship of scarce resources.

Attachment A

Summary of Recommendations

This attachment brings together the numerous recommendations made in the report.

Phase 1

The University should decide to assimilate academic IT units to central reporting, with staff to be transferred organizationally to IS or the Library. Deans will need to be consulted.

IS and the Library should develop plans to absorb dozens of new staff. This requires an analysis of needs, skills sets, and service models.

The Library needs to clarify its scope of services in schools and colleges vis-à-vis classrooms and labs. The Library will have inherited support staff with existing commitments and those need to be understood.

The CIO should initiate discussions with the IT Directors about reassignment of staff, internal reconfiguration of duties, and plans to ensure ongoing support. Where appropriate, the Library should be brought into the talks. The first conversation should be with the Director who will become Director of Integration, who will then head the transition team. The CIO should also talk to the IT Directors about their own career goals and next assignment.

CIO and Provost should communicate to the campus about the IT reorganization. Schools and colleges will need special reassurance that plans are in place for continuing support functions.

IS, working with the schools and colleges, should designate a lead IT person as its local liaison.

The support units of the College of Education and SOMD should be merged.

The CIO should work with Human Resources on job descriptions and reassignments.

IS should identify web development resources in the administrative units who can supplement IS' new web competency. Administrative leaders and IT Directors should be part of that process and care must be taken not to disrupt ongoing projects.

The University should make an institutional commitment to IS as the lead IT organization on campus. The continuing work on governance should reflect the new organizational model.

Phase 2

The University should designate the Library as the center for academic technologies at UO. There should be an MOU between IS and the library about division of responsibilities and governance. The Dean of the Library should appoint an Associate Dean of Libraries, Chief Academic Technology Officer to serve part-time as the liaison to IS and to be part of the CIO's leadership team.

With IS now responsible for all non-instructional faculty, staff, and student support, IS must rethink the support model. The process to select RT-replacement software that best meets requirements should be near completion.

With the absorption of CASIT and its business model, IS will need to rethink its model for services and charges. While doing so, IS needs to remove the barriers (e.g., high back-up costs) that inhibit relocation of servers to a central facility.

IS should initiate a process to develop a service catalog and service-level agreements. With new staff and responsibilities (e.g., web development), IS needs to clarify for the campus what it does, how it operates, and what it charges for services.

The University needs to align the IS budget model to accommodate new IS expenses (especially personnel) and the absorption of CASIT's book of activity.

The University should develop a policy on administrative and enterprise applications that offers clarity on authority, planning requirements, and funding (i.e., no more pass-the-hat).

IS needs a plan to develop stronger ties to the research and outreach IT communities. As IS gains more strength, it needs to reintroduce itself and its services.

Working with the Provost's office, IS should develop a secure funding model for IT at UO Portland.

IS needs to develop policies and practices for cloud computing. IT professionals in the research and outreach units should be well-represented in that process.

IS should develop a training and professional development program for IT staff in IS and the distributed administrative units.

Support staff within the administrative units should be absorbed into IS.

The IS Business Office, leveraging inherited CASIT resources, should initiate a study on a campus-wide technology replacement program.

Attachment B

List of People Interviewed

Information Services (IS) Staff

1. Rob Chevalier Enterprise Systems Developer
2. Patrick Chinn Associate CIO, Customer Experience
3. José Dominguez Network Architecture & Assistant Director, Network Engineering
4. Kevin Foote Identity Management Engineer
5. Leeann Ford Business Manager
6. Eric Fuller Assistant Director, Telecommunications Engineering
7. Noreen Hogan Associate CIO, Applications and Middleware
8. Jeff Jones Associate Director of Systems and Operations
9. Timothy Ketchum Banner SIS Administrator
10. Troy Knabe Systems Infrastructure Specialist
11. Chris Krabiel Interim Chief Information Officer
12. Will Laney Chief Information Security Officer
13. James Lewis Systems Infrastructure Specialist
14. Kelsey Lunsmann ITSM Program Manager
15. Joe Mailander Assistant Director of Customer Service
16. Steve Menken Associate CIO, Technology Infrastructure
17. Jon Miyake Senior IT Policy & Security Administrator
18. Andrew Morgan Network and Telecommunications Technician
19. Nancy Novitski Strategic Communications Specialist
20. Jenna Rakes HR Director
21. Micah Sardell Director of Systems & Operations
22. Tony Saxman Director of IT Programs & Projects
23. Sara Stubbs Director of Technical Services
24. David Teach Network Engineer
25. Andy Vaughn Network/Telecom Operations Manager
26. Tyfanie Wineriter Enterprise Data Asset Manager
27. Derek Wormdahl Enterprise Applications Manager

IT Directors

28. Tom Akers Department of Psychology
29. Shandon Bates Lillis College of Business
30. Dennis Bishop School of Law
31. Jim Bouse Enrollment Management
32. Corrie Bozung School of Journalism and Communication
33. Sara Brownmiller Knight Library
34. Chris Butler Athletics
35. Guy Eckelberger School of Music and Dance
36. Garron Hale College of Arts & Sciences
37. Mark McCulloch Business Affairs

- 38. Skip McFarlane Academic Extension
- 39. Tim Miller Finance and Administration
- 40. Cleven Mmari Student Life
- 41. Charles Powell Research
- 42. Gary Sullivan Architecture and Allied Arts
- 43. Kevin Williams Advancement
- 44. Jeff Woodbury College of Education

Distributed IT Staff

- 45. Bill Anderson Systems Administrator, UO Police Department
- 46. Alan Baker Clinical Applications Coordinator, Health Center
- 47. Duncan Barth Assoc. Director, Library Systems, Knight Library
- 48. Jim Blick Assistant Registrar, Statistical Reportingt & Analysis
- 49. Andrew Bonamici Associate Dean, Media & Digital Strategies, Knight Library
- 50. Ben Brinkley Associate Director, CAS IT
- 51. Michelle Brown Assistant Director, Systems and Infrastructure, Student Life
- 52. Peter Campbell Director of Information Systems, CAS
- 53. Helen Chu Director, Academic Technology, Knight Library
- 54. Sam Crow Help Desk Manager, CAS IT
- 55. Nina Fox LMS Administrator and Manager, Knight Library
- 56. Clark Hansen Technical Services Manager, UO Police Department
- 57. Douglas Hethmon Assistant IT Director, Housing
- 58. Jason Huebsch Associate Director, Web Services, Advancement
- 59. Loring Hummel Analyst Programmer 2, CAS IT
- 60. Sol Joye Online Instructional Design, Global and Online Education
- 61. Evan Kaufman Assistant Director, CAS IT
- 62. Kim Ledbetter Coordinator of Operations, Educational and Community Supports
- 63. Seth May PHP Developer, Educational and Community Supports
- 64. Daniel Mundra Web Services Manager, CAS IT
- 65. Sonia Potter Director, HR Operations
- 66. Dane Ramshaw Chief Technology Officer, Global & Online Education
- 67. Rob Robinson Analyst Programmer 2, Behavioral Research

Academic Leadership

- 68. Doug Blandy Sr. Vice Provost, Academic Affairs
- 69. Bruce Blonigen Associate Dean, Social Sciences
- 70. Brad Foley Dean, School of Music and Dance
- 71. Lisa Freinkel Vice Provost, Undergraduate Studies
- 72. Jane Gordon Interim Vice Provost, Portland Programs
- 73. Terry Hunt Dean, Clark Honors College
- 74. Randy Kamphaus Dean, College of Education
- 75. Paul Katz Director, Academic Extension
- 76. Adriene Lim Dean, Libraries

- 77. Moira Kiltie Associate Vice President, Office for Research and Innovation
- 78. Dave Landrum Assistant VP, Business Administration, Research and Innovation
- 79. Andrew Marcus Dean, College of Arts & Sciences
- 80. Michael Moffitt Dean, School of Law
- 81. Brook Muller Interim Dean, Architecture and Allied Arts
- 82. Julianne Newton Interim Dean, School of Journalism and Communication
- 83. Scott Pratt Dean, Graduate School
- 84. Hal Sadofsky Associate Dean, Natural Sciences, College of Arts & Sciences
- 85. Brad Shelton Interim Vice Pres for Research, Office for Research and Innovation
- 86. James Terborg Interim Dean, Lundquist College of Business

Administrative Leadership

- 87. Zach Barnett Director, University Advancement
- 88. Heather Brown Assistant VP, Advancement Operations
- 89. Trisha Burnett Chief Auditor
- 90. Kassy Fisher Assistant Vice President, Administration and COS
- 91. Kyle Henley Vice President, University Communications
- 92. Stuart Laing Director of Budget Operations
- 93. JP Monroe Director, Institutional Research
- 94. Nancy Resnick Chief Human Resources Officer, Associate Vice President
- 95. Kathie Stanley Associate Vice President, Chief of Staff, Student Life
- 96. Roger Thompson Vice President, Enrollment Management
- 97. Kelly Wolf AVP, Business Affairs/ Controller

Faculty and Researchers

- 98. Julie Alonzo Research Associate Professor, Behavioral Research
- 99. Hank Childs Associate Professor, Computer and Information Science
- 100. Scott S Fisher Lecturer & Outreach Director, Astronomy
- 101. Ken S Kato Associate Director, InfoGraphics Lab
- 102. Kurt Langworthy Director, CAMCOR
- 103. Leslie Leve Professor, Family and Human Services
- 104. Kent McIntosh Associate Professor, Special Education and Clinical Sciences
- 105. Raina Megert Projects and Personnel Manager, Behavioral Research
- 106. Josh Roering Professor, Geological Sciences
- 107. Fred Sabb Director, Lewis Center for Neuroimaging
- 108. Gerry Tindal Professor, Behavioral Research

Administrative Support Staff

- 109. Amber Andri Public Affairs Project Manager, Advancement
- 110. Leanne Dillon Executive Assistant, Vice President for Advancement
- 111. Christy Dotson Office Specialist 1, Purchasing and Contracting Services
- 112. Shelley Harshe Executive Assistant to Dean of Libraries
- 113. Kristin Smith Executive Assistant, Information Services

Attachment C

School and College Overview and Recommendations

CASIT

College of Arts & Science Information Technology represents the steroid version of a decentralized unit at the University. Filling gaps left by an underfunded IS, CASIT has expanded to include services and applications that meet the needs of CAS and the wider community. Under an entrepreneurial leader, CASIT has effectively become a shadow central IS organization that duplicates many IS offerings.

CASIT grew in part by taking over independent IT units within CAS. A cogent rationale for its consolidation efforts was offered in its 2015 annual report:

“Prior to 2009, CAS contained a number of different IT areas and personnel with overlapping responsibilities, which created costs and operational inefficiencies. CASIT was created to ... consolidate IT within CAS. There still remain several key areas of opportunity to consolidate both hardware and duplication of services within CAS.”

That case for consolidation is sound, and must now be extended to the institutional level.

We can get a sense of what people in CASIT do by looking at the aggregate survey data by IT domain. (One person in CASIT Operations did not respond.)

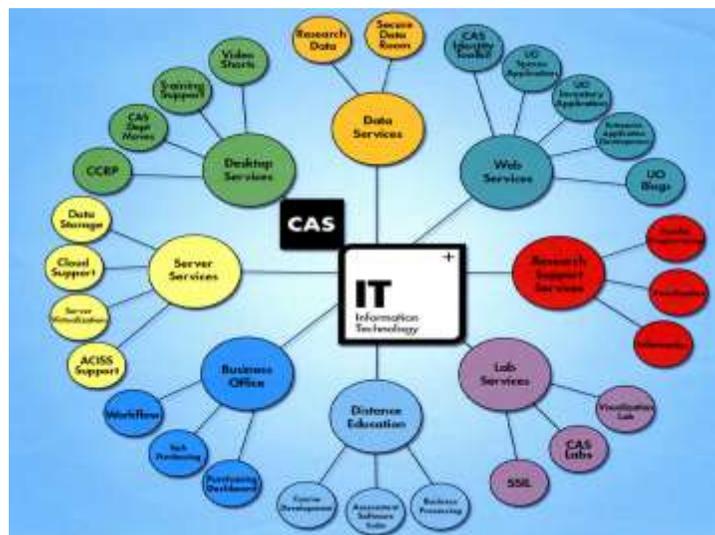
IT Domain	FTE
Infrastructure	5.25
User Support	4.06
Management	3.57
Professional Services	3.14
Web Development	3.03
Academic Technology	2.97
Applications Development	2.81
Research Computing	2.79
Asset Management	1.93
Security	1.62

The service areas and associated FTE identified in CASIT’s 2015 Annual Report are:

- Help desk (7 FTE), including general questions, hardware troubleshooting, virus removal, data migration and recovery, and computer imaging.
- Training services (1 FTE), including training on commercial (Microsoft, Adobe, WordPress) and UO-specific applications (UO Spaces, Canvas).

- Systems Services (6 FTE), primarily file servers/storage, virtual machines, and support for the high performance cluster (HPC) that is being replaced.
- Web Services (5 FTE), including web site design and development and instructional design for hybrid and online courses.
- Research Support Services (4 FTE), with expertise in visualization, big data, and parallel processing.
- Computer Lab Services (1 FTE, two part-time GTFs and 12 students), for lab development and technical support (including the Social Science Instructional Labs (SSIL).
- Data Services Lab (1 FTE and part-time GTF), which includes help in gathering data sources and the Secure Census Data Room for monitoring restricted-use data. Web Services has also developed enterprise applications such as UO Spaces (database of campus space utilization), CAS Purchasing Dashboard system, UO Inventory system, Online Education Course Management and Testing software (for proctored, customizable online exams). This unit has deployed a CAS Identity Toolkit for creating templates in Drupal and Wordpress.
- Purchasing Services (4 FTE), which include bulk and specialized purchasing, vendor negotiation, and management of the College’s computer replacement program.

Graphically, the CASIT service set is impressive indeed.



Its latest annual report boasts that it is working to roll out cloud-based solutions, mobile device management, and short video production.

At times, CASIT has seemed over-ambitious. It has gotten involved in the digital humanities, working with a professor in the English department to create a Digital Humanities minor for CAS. CASIT offers digital training workshops, writes proposals, created a steering committee, does outreach, and has explored a graduate credential. Depending on whom one talks to, there was, or was not, a concerted effort to work with the Library on this. In the same ambitious vein,

CASIT hired experts to assist researchers in parallel processing, big data, and visualization. It is not clear that there has been sufficient demand for these services, although there might be demand with greater publicity and awareness of the offerings.

CASIT can be entrepreneurial because, unlike IS, it charges for services such as server hosting, printing, web development and content management. With the services soon to be provided by IS, thought will need to be given to the budget implications.

There are several groups within CASIT and each should be transferred more or less *en masse* to other units. There is inconsistency across my information sources (org chart, CASIT reports, the survey, my interviews) about numbers and names associated with each group. Individuals and their roles will need to be clarified during transition discussions. And once again: CASIT has developed relations and obligations with other units. As people are given new assignments, existing commitments must be maintained until they are thoughtfully reconsidered and gracefully exited.

Senior management consists of a Director and an Associate Director, the latter with responsibility for internal operations, systems, web services, and the help desk. Their interest in academic technologies suggests that they would do well in the Library, although they should have the option of a position in IS.

An Assistant Director for Systems Services and a staff of four OSNA FTE provide file storage and support for users in CAS and elsewhere. By the end of 2015, CASIT had 92 virtual servers and was storing 300 TB. This group should be reassigned to the IS Technology Infrastructure group, the first task being integration of systems. Many servers are with CASIT rather than IS because of cheaper back-up, so there will need to be a short-term effort to align the two units' financial models.

A Web Services Manager oversees two analyst programmers and two students who do web and application development. One of the positions is for Enterprise Programming to support CASIT's enterprise applications: UO Inventory System, UO Spaces, CAS Purchasing Dashboard, and Online Education Course Management and Testing software. Web Services has had projects with other schools (e.g., A&AA, SOMD) and on externally-funded grants. This group should be transferred to IS and integrated into the Applications and Middleware group as the core of the IS web services group.

Helpdesk Services provides assistance to CAS faculty, staff and GTFs. Staff consist of a Manager, 5 ITCs and students. There is also a trainer who offers Office, Adobe, WordPress, Canvas, UO Spaces, and other training. This group should be transferred to Customer Experience within IS.

The academic technology branch of CASIT, SSIL/Lab Services offers instructional design, online testing, and proctored exams. It manages classrooms and the Social Science Instructional Labs. The Data Services Lab gathers data sources for researchers and manages the secure data room.

The group consists of a Manager, two half-time GTFs and students. They should be transferred to the Library.

Research Support Services has three FTE with specializations in visualization, parallel processing, and big-data computation. These research-oriented specialists should be transferred to the Library.

The Business Office has a Manager and three FTE. They do purchasing for all of CAS. This unit manages the four-year computer replacement program for CAS and other schools, and could provide the nucleus for a campus-wide program. This unit should be transferred to the IS Business Office.

CAS also has IT staff in Biology, English and CIS. They were not interviewed but still require consideration during the centralization process to determine their best reporting structure (i.e., to IS or the Library).

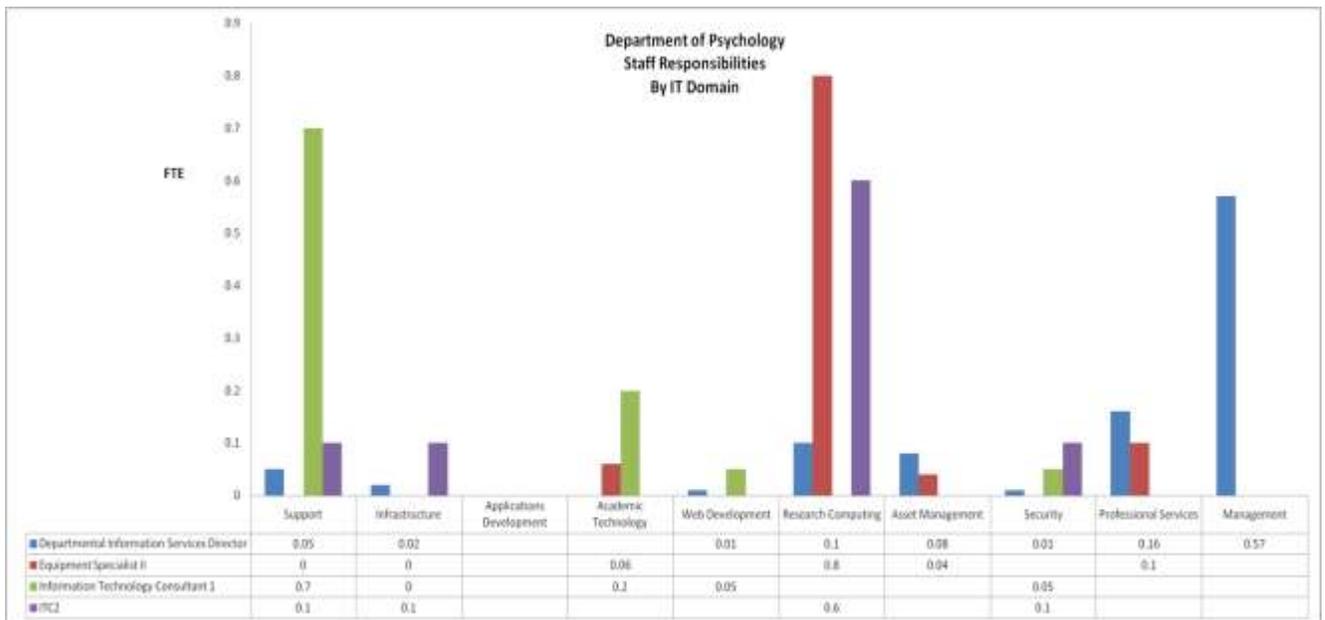
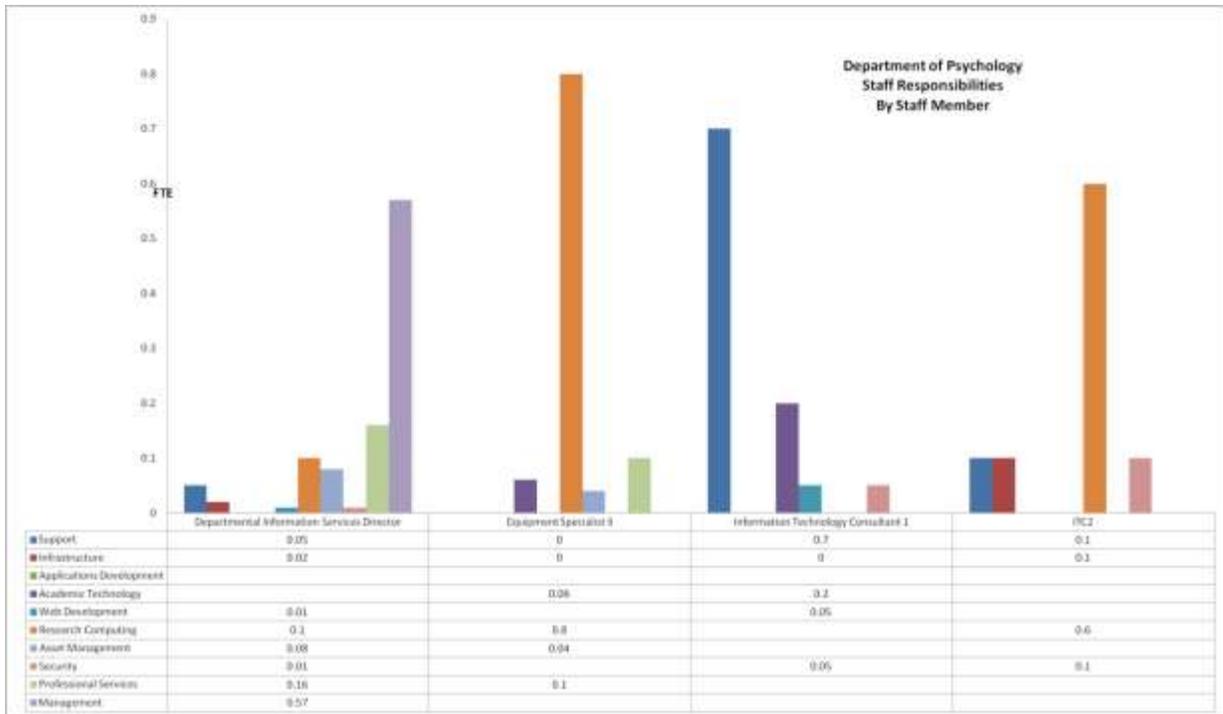
CASIT grew because it was entrepreneurial. CASIT prides itself on its service. People from CASIT drew a stark contrast between their unit and IS in customer service and agility. For some it was the main reason to stay independent and their main fear about being merged into IS. Many of its customers did attest to CASIT's responsiveness, and one hopes that they will bring that spirit of service with them to their new organizations – and that the Library and IS will nurture it.

Department of Psychology

The Department of Psychology is one of the few academic departments (Computing and Information Science being another) with its own IT organization. This has been appropriate since, as the Department IT Director explained, Psychology is as large as SOMD.

The unit does not have the full range of services of other distributed organizations. It does no web development and only a small amount of research-specific applications development. There are no database administrators. Storage and computer replacement is provided by CASIT.

The four-person unit defines its value as providing good support to faculty and researchers. The Equipment Specialist devises apparatus and does one-off applications for researchers with limited budgets. Classrooms are under the purview of the Library, but since Library support is hard to get, Psychology IT fills in the gap. The IT unit manages schedules and upgrades its own labs; the Director is proud that it can re-image all three labs in a day.



School of Journalism and Communication

The SOJC IT Department serves over 100 faculty and staff, 100 graduate students and 2200 undergraduate students.

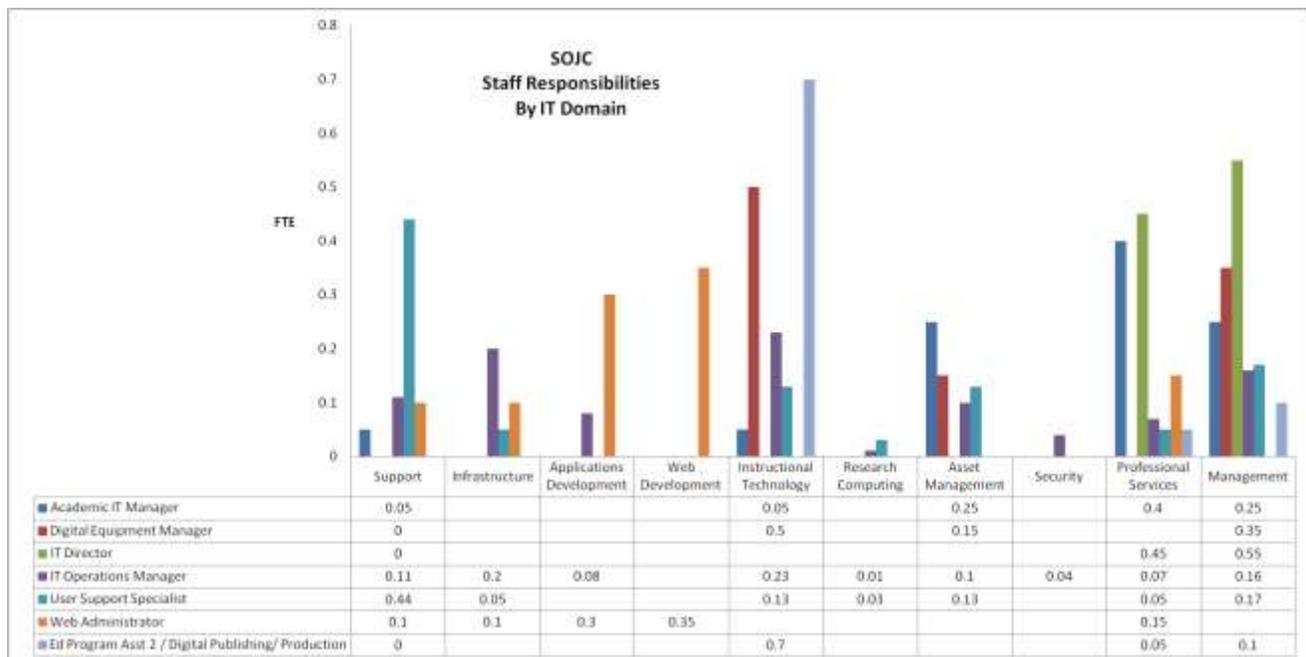
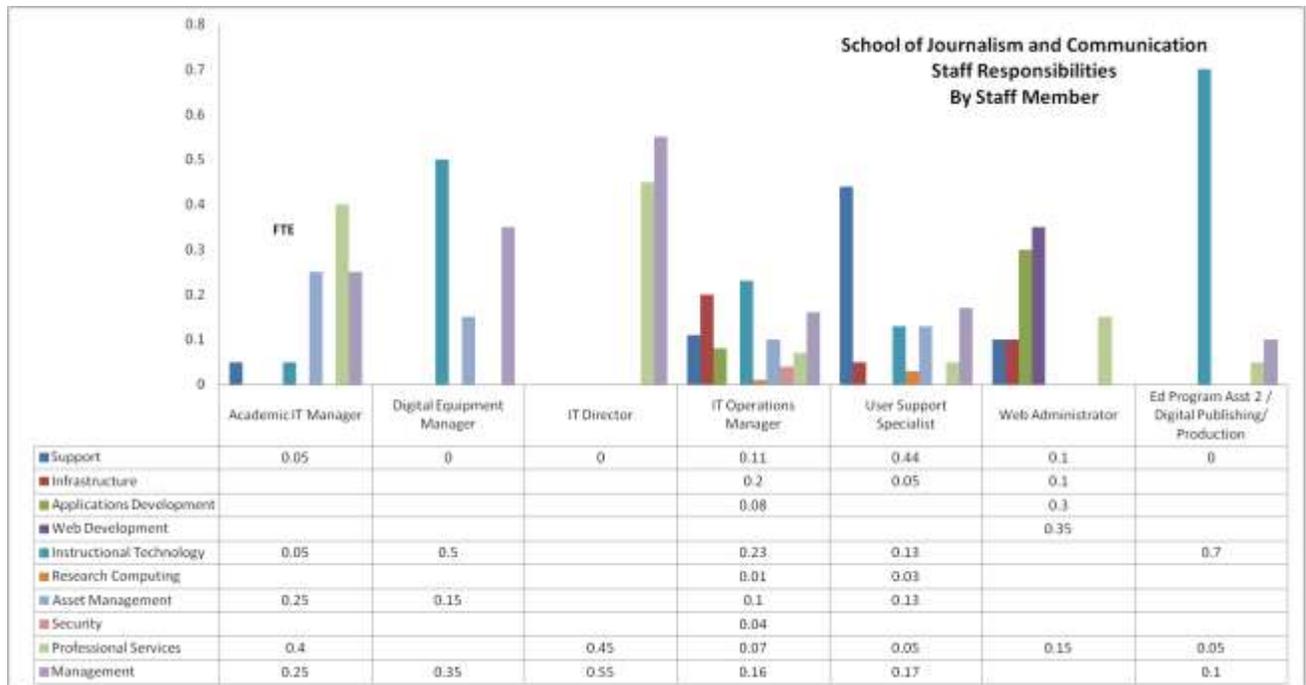
Their services and functions fall into seven categories:

- Technology help: desktop computer support, user accounts, software support, data backup, and access to SOJC' Digital Asset Management program.
- Classroom and lab support: classroom technology, five instructional computing labs, and Digital Commons (lab computers, projectors, instructor workstations, and general and SOJC- specific curricular software) support; done in collaboration with CMET.
- Creative and collaborative work spaces: production services for phone interviews, voice over recording, podcasting, and media production.
- Teaching and learning tools: course consultations, equipment allocation, Canvas support, production equipment support, lecture capture, technology demonstrations, and specialized technology consultation.
- Communication and collaboration: audio and video conferencing, event technology support, email, voice and data, wireless and file share.
- Publishing and printing: printing, YouTube and Vimeo, blogs, media duplication and live broadcasting.
- Web tools and applications: website design and development, website user support, domain name registration, and UO Blogs Support.

SOJC IT partners with other IT organizations for its services:

- Central IS, for telecommunications, virtual servers, and other services.
- CASIT, for the inventory management system.
- CMET (Library), for design and installation of audio-visual equipment in classrooms and labs.
- Library Services, for equipment checkout software and print management (Pharos) software.
- Advancement, for Casper, the enterprise management tool for Apple.
- Business School, for BlueJeans, a videoconferencing system.

The seven staff under a Director of Information Technology is organized into two segments: Academic IT and IT Operations. Both utilize student workers. The chart below shows their responsibilities by staff member. The following chart shows the same data by IT function.

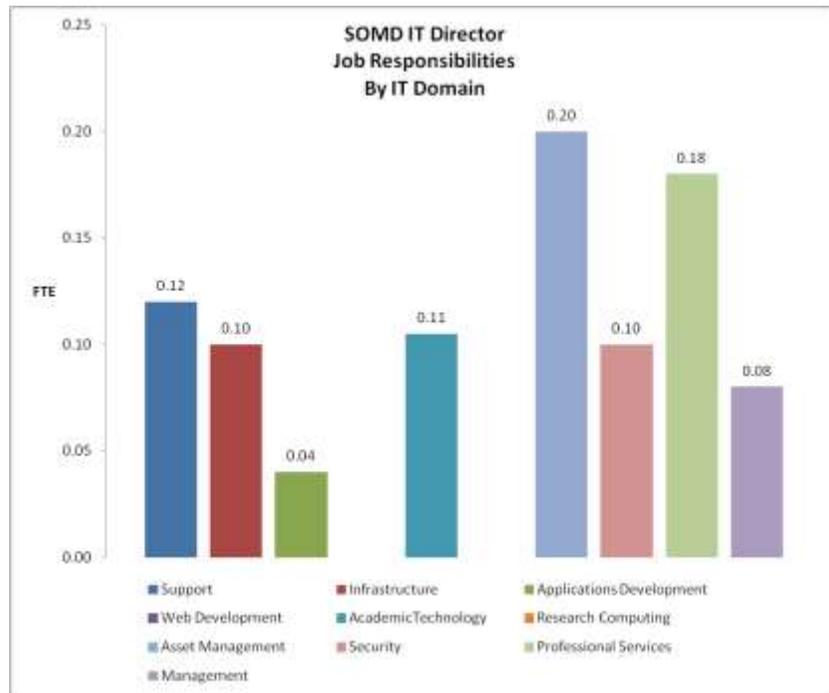


School of Music and Dance

SOMD is the smallest academic IT shop with only two professionals, a Director and an Information Technology Consultant (who did not respond to the survey) whose primary role is support. There is also an Audio Visual Technician and a Senior Sound/Video Recording Engineer but they are not IT positions.

SOMD relies on other units, e.g., CASIT for its inventory system and the Library for its Pharos printing server. The school rents rack space in the College of Education; the IT Director would like to move storage to IS but, as I heard consistently across campus, IS' back-up costs are too high.

The IT Director, himself a musician and recording studio technician, is well-positioned to support the School's academic mission. He has engaged on a project to rationalize the School's use of IT by (for example) reducing redundant applications and eliminating software that is no longer used.



The Director of SOMD should take the lead in a merged SOMD/COE support organization. Much of his time is spent on support, asset management, and infrastructure, duties that should be reduced as IS gains more capacity. The one support person should be retained in his current role, with duties (to be assigned) spanning both SOMD and COE.

College of Education

In FY2015, the College of Education was the third greatest spender (after IS and CAS) on IT. The reason for this is its 12 research and outreach units which focus on school reform, assessment, discipline and behavior management, family interventions, special education, early intervention, and other areas. These units receive grants from federal and state sources, and the College prides itself on being a top recipient of Department of Education funds. Some units also subcontract with other universities, license software, or sell products.

Each of these units has its own IT and support operations. Some are small (offering, for example, one person who does videography) but others are substantial; ECS, for example, has 17 people working in IT. I met with faculty and staff at three of these units.

- Behavioral Research and Teaching (BRT) has focused on assessment since 1984. They do a lot of product development and most grants have a technical component. Its three IT staff focus on infrastructure and product innovation. Its VM servers are housed in the Computer Center, but sensitive data sit on secure servers in Hedco.
- Global and Online Education is the home of ObaVerse, a home-grown learning management system that was a brain-child of an educational technology guru with an entrepreneurial bent. ObaVerse is supported by two people and a contract programmer.
- Educational and Community Support (ECS) supports 20,000 schools in 12 countries and boasts 200,000 connections a day. Supported by subscriptions and grants, ECS is one of the College's largest outreach units, with 43 faculty and staff. Its ECS Applications and IT Services team has 17 people, five of whom do customer support.

All three groups claimed that they were not funded from the General Fund. Being quasi-independent from the College – or at least believing themselves to be so – they were understandably concerned about this project. They shouldn't be. Each of these ventures presumably has a business model that supports its investment in IT. I have no basis on which to question that and so these units should be left alone except to the extent that IS can provide infrastructure (network, storage, and computing facilities) that assist these units to thrive.

The research and outreach units exemplify the ambivalent relationship of research with central IS and even with its own local IT organization. ECS, for example, maintains 15 physical and 85 virtual servers. They are likely to go into Allen Hall but ECS has questions about the financial sustainability of the server condo and COE's commitment to supporting the server room in Hedco. ECS guards its independence but would like more central services like faster bandwidth, licensing of more software (e.g., Sharepoint, Skype for Business, the rest of Office 365), data management, security, and a clear strategy for the cloud.

The disparate IT units in COE are islands unto themselves. BRT uses the College's IT unit for computer repair and anti-virus protection, but the lead technical person was not aware of other services being available. More telling, he had never been over to the Computer Center and was unaware of who he should contact if he wanted to learn about IS services.

The College of Education also has its own five-person IT unit that, as noted in the previous section, should be merged with SOMD as it is integrated into IS.

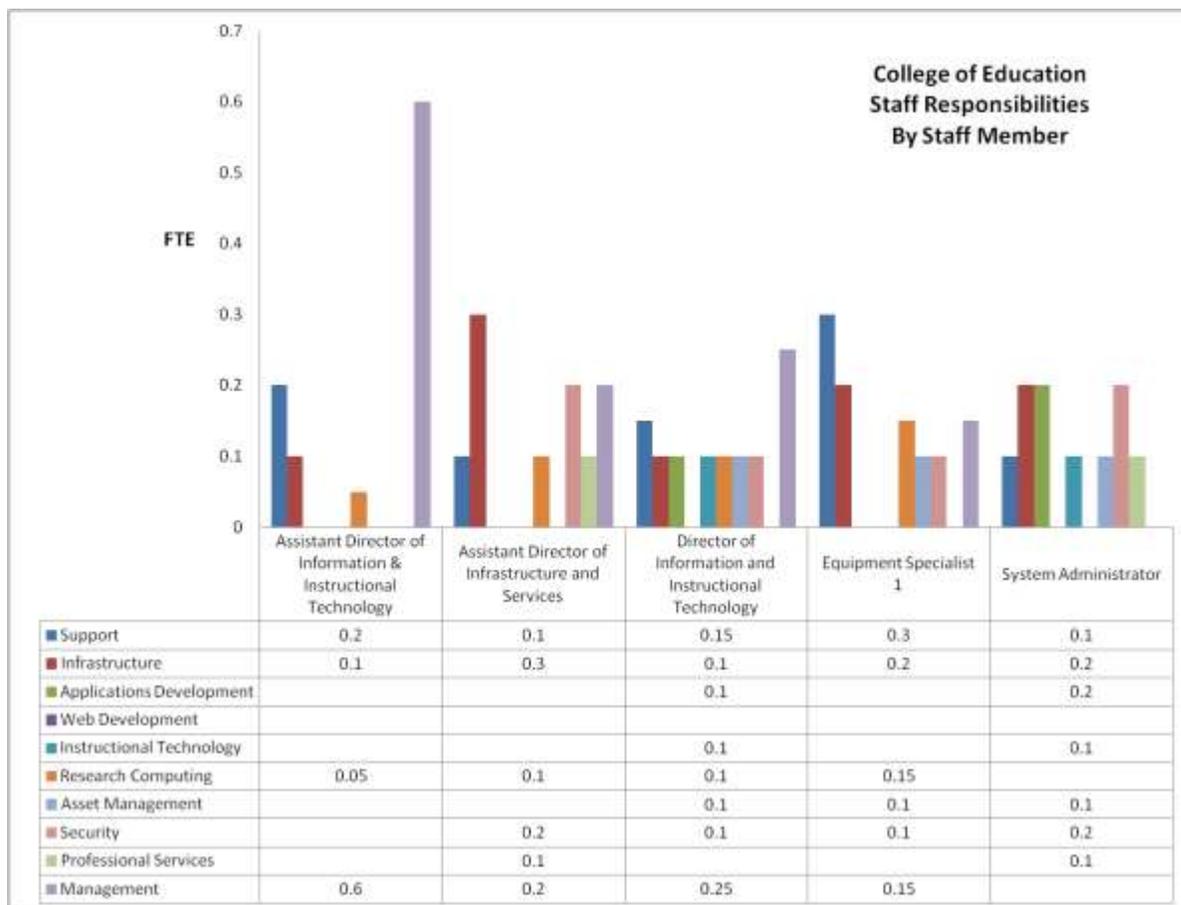
Presently, COEIT provides a range of services to 600 faculty and staff in the academic (but non-research) and administrative units:

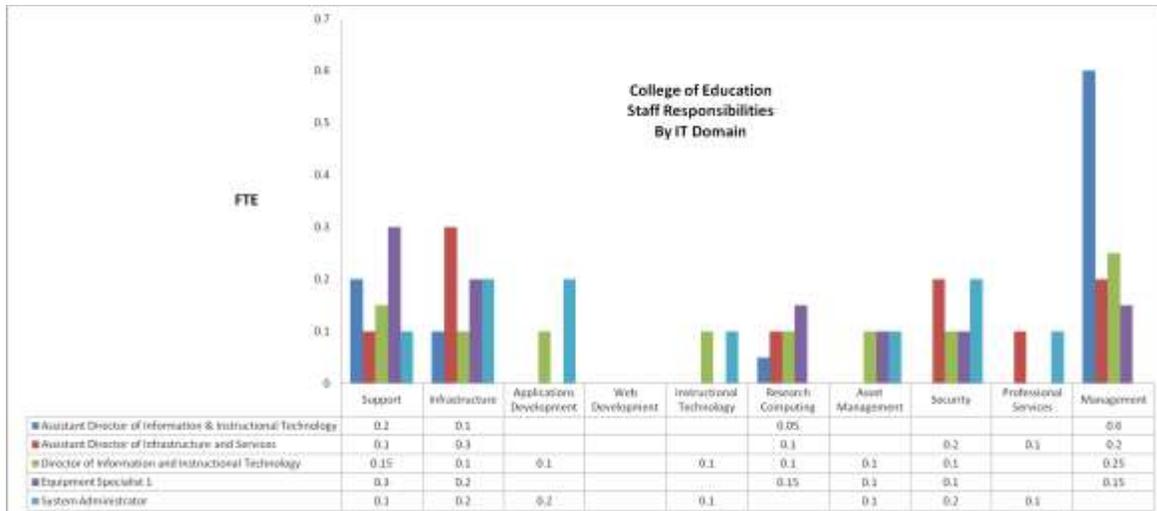
- Desktop/laptop support
- Computer acquisition, configuration and management
- Personal, group, and research file storage

- Laptop back-up
- Blog/WordPress sites
- Device inventory and surplus
- Digital asset management (Duck ID, campus network access)
- IT consulting
- Remote desktop services
- Content capture and playback, broadcast streaming

Rare among the distributed IT organizations, COEIT offers its users a formal desktop support service level agreement. Like other distributed IT units, COE operates multiple systems. Most COE staff are on Exchange, but most faculty are not. Similarly, faculty use two learning management systems: Canvas and ObaVerse, the latter maintained by Global and Online Education (who has the campus' only Chief Technology Officer). COE also boasts the third best server room on campus which over time will be deprovisioned as servers move to the Allen Hall data center.

COEIT works with other IT units, using for example the Pharos printing system from the Library. It also houses servers for other academic units including SOMD.





A Director and two Assistant Directors in a five-person organization seem excessive, as does the 1.2 FTE devoted to management. The merger of the COE and SOMD IT units will provide greater flexibility in role reassignment. Greater capacity in IS may also lighten people’s loads. Some of the tasks associated with SCCM, Casper and security may fade as central resources become more robust. Similarly, the transfer of servers to Allen Hall may diminish the work load of the Assistant Director of Infrastructure and Services. That said, the support duties of the Assistant Director of Information & Instructional Technology should be allocated elsewhere so that he can be reassigned to the Library, remaining at COE to support the Learning Commons but available for other duties the Library may assign.

Lundquist College of Business

The College of Business list of services spans five pages in three major categories:

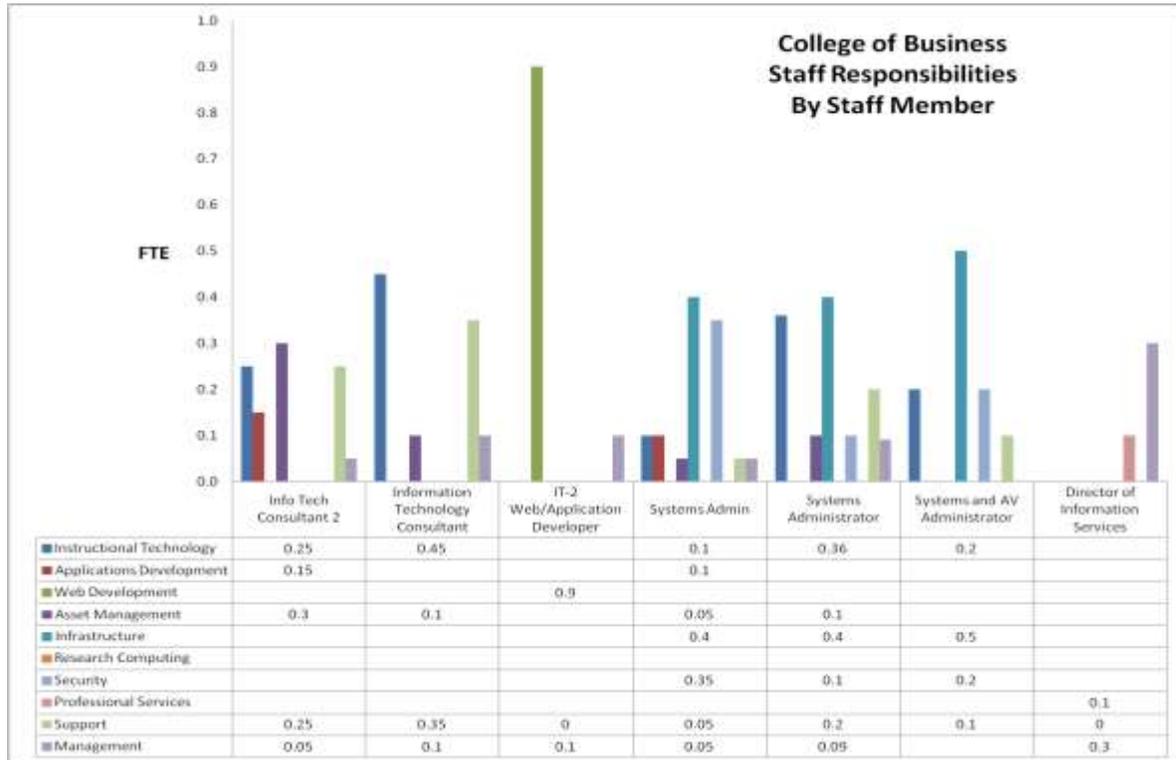
- Help desk and user support, including procurement and inventory, classroom A/V training and tech support, specialized software (e.g., STATA, Mathematica), copy machine and printer support, loaner laptops, videoconference support, digital signage, and lab user support.
- Applications and web services, including support for the LCB internet site, the faculty activity reporting and Assurance of Learning application (for accreditation), intranet design, database management, student-facing web applications (e.g., add/drop minor form, change major form), and faculty/staff web applications (e.g., Job Shadow program, scholarships).
- Systems administration, including file services, back-ups, server management, antivirus management, virtual desktop administration, storage, VMware administration, desktop management, and building security).

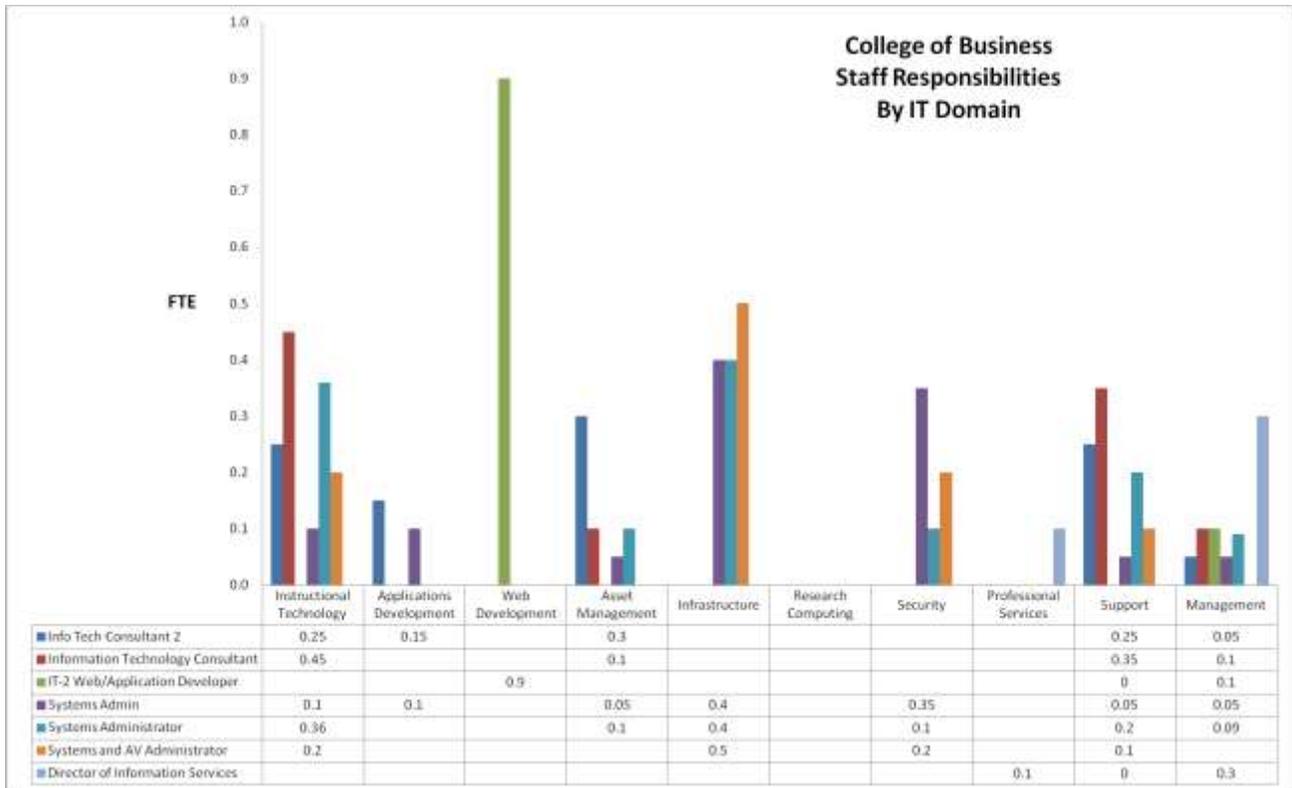
LCB works extensively with other units:

- CMET maintains classrooms, but LCB is the first responder if a faculty member has a problem.

- LCB manages the BlueJeans videoconferencing system that has become the de facto campus standard used by A&AA, CMET, College of Education, SOJC, IS, Academic Extension, and UO Portland.
- LCB manages the Virtual Desktop Infrastructure for both LCB and the Library.

There are currently seven staff plus an open position for a Web/Application Developer.





The Director of Information Services self-reports that he spends 70-80% of his time on IT and the remaining amount on other College business. He should decide whether he wants to remain in his (diminished) role or seek another challenge within IS.

A number of positions combine infrastructure and support roles. Some of the asset management and infrastructure duties (e.g., provisioning, security) might be lessened with greater IS capabilities.

School of Architecture and Allied Arts

The technology environment at A&AA is made complex by the range of its disciplines, its specialized software (e.g., GIS), and the high standards of graphic production and output. A&AA also stands out from other university units as heavy Mac users. There are A&AA facilities at a reported 19 locations on campus.

A&AA IT maintains its own web site (<http://aaa.uoregon.edu/tech>) and its services include:

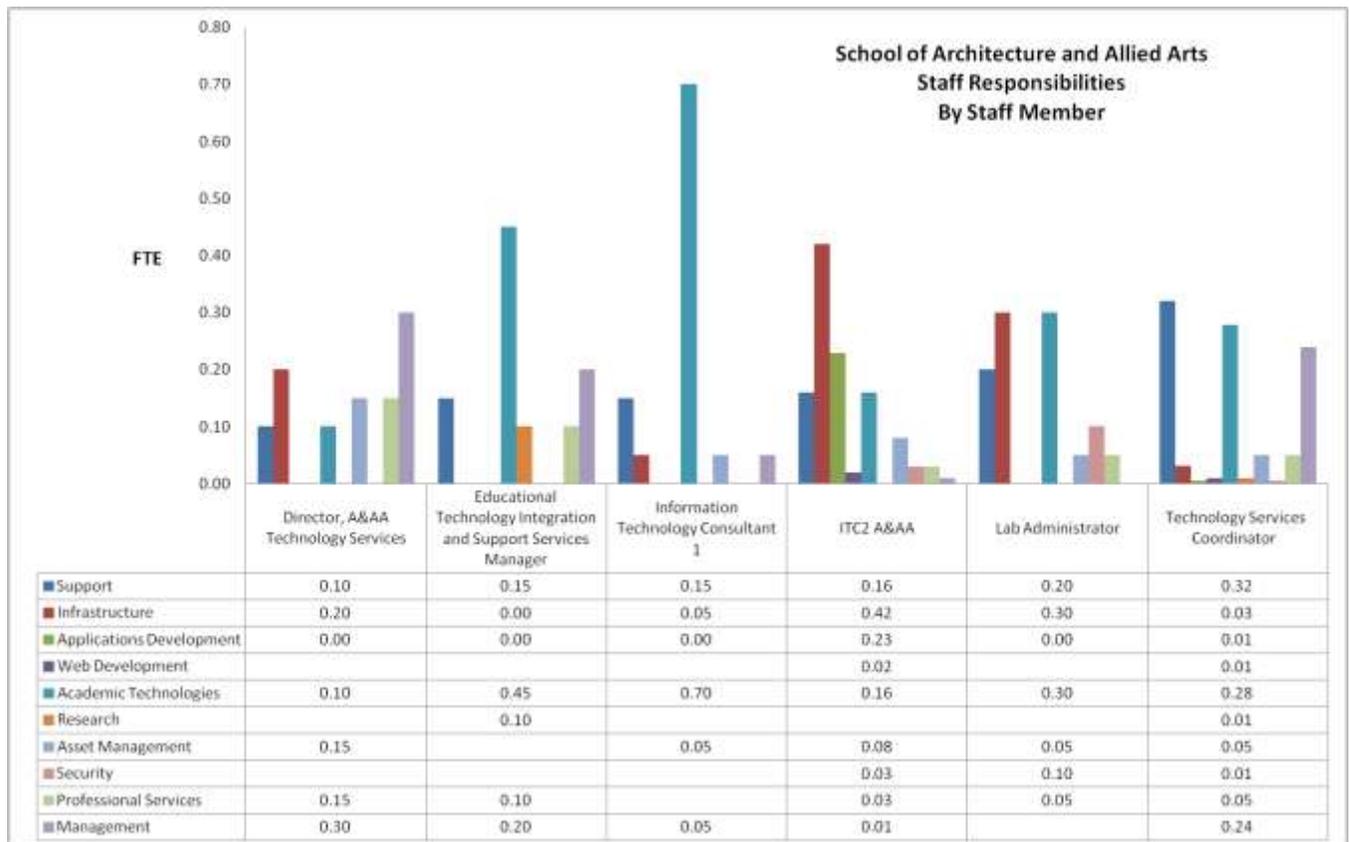
- Help desk, managed by professional staff with five to six student employees.
- Output room, which uses 8 to 10 student employees.
- Lab support for open labs, classroom labs and specialized labs.
- Printing and procurement support for the Department of Art , which pays .5FTE salary.
- Educational technology, primarily helping faculty use technology in the classroom and research initiatives.

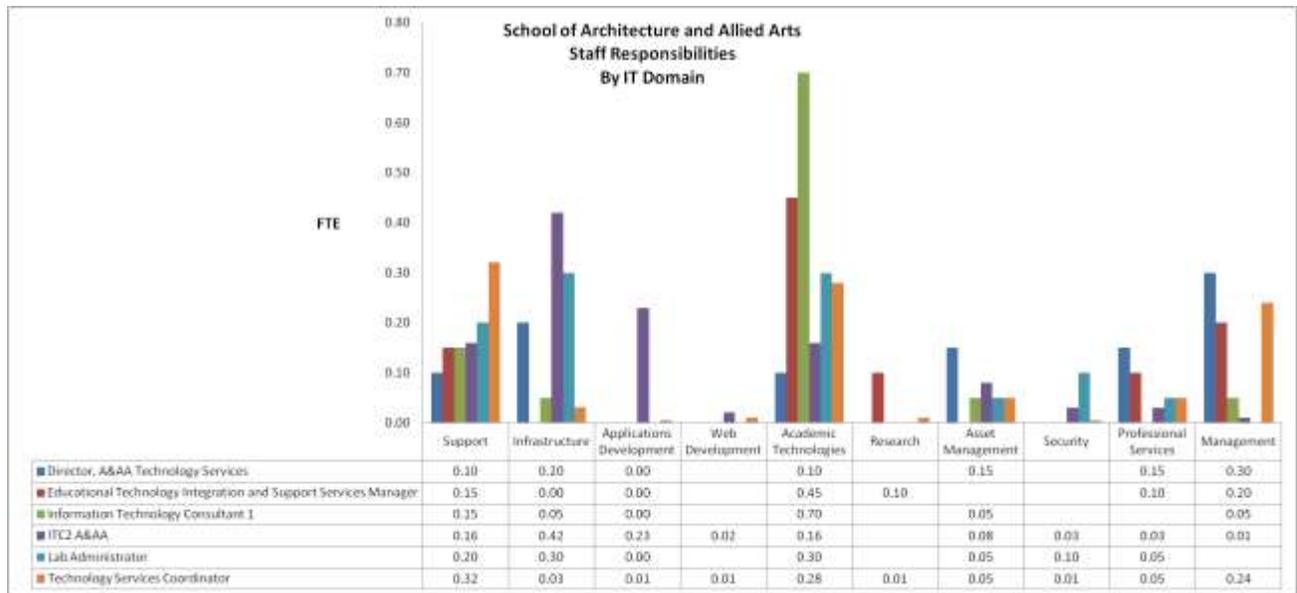
- System Administration for two physical servers and 12+ virtual servers, as well as credentialing and Exchange administration.
- Telecom support.

Since 80% of the students in Portland are A&AA students, Technology Services is also active in the White Stag Building.

A&AA works with other units in a variety of areas:

- The computer and software license inventory system is hosted by CAS IT.
- Equipment is tagged with inventory codes through an arrangement with Business Affairs.
- The Casper Mac management system is licensed through Advancement.
- A&AA Technology Services provides general technical support to Campus, Planning, Design, and Construction.
- A&AA supports six research and institute groups that are not funded through A&AA: Institute for Sustainable Environment, Ecosystem Workforce Program, Community Services Center, Sustainable Cities Initiative, High Performance Environments, and Energy Studies in Business Laboratories.





There are six staff. The Director spends much of his time on Exchange, user support, credentialing, lab scheduling and other non-management tasks. His talents are best used in IS. Because of the technology-intensive nature of an A&AA education, many of the staff are in a support role. Any disruption to that support should be avoided. To represent the Library's interests in A&AA, one of the staff members should be transferred to the Library but remain on site at A&AA. Which individual makes the transfer, and the scope of his/her duties, should be determined with the input of the Library.

School of Law

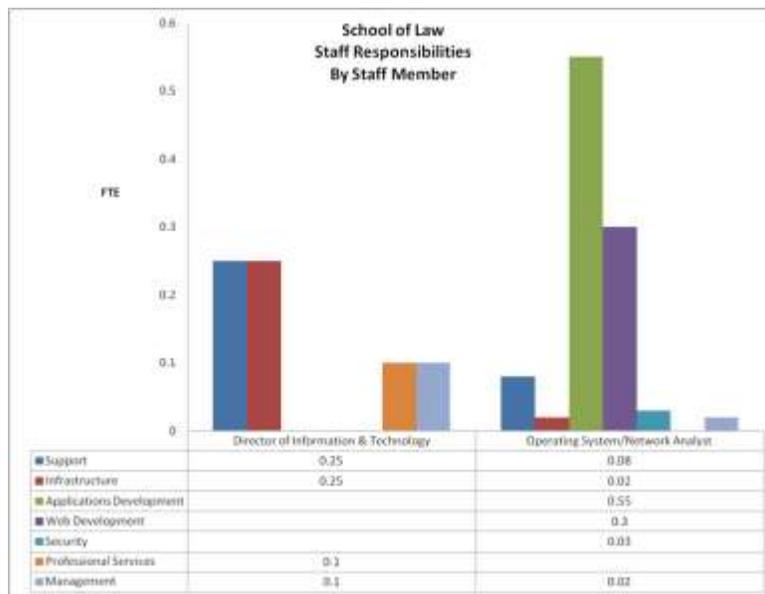
Unlike A&AA, Law is not a technologically sophisticated school. Most classrooms have built-in technology but there are no labs. Law maintains a video link to Portland. Research faculty use off-shelf software such as SPSS and SAS. No one uses big data. There are no in-house servers and no specialized applications.

Much of the IT focus is on students. They are required to buy specific hardware with a prescribed software package. The bookstore maintains a satellite location in the School. The School is also an authorized Apple provider and one staff member does repairs. Students can get loaner computers. For accreditation purposes, the School is judged by spending on students, with a high number being good. Even though personnel costs will be carried by IS, there will need to be some way for the IT support expenses to pass through the Dean's hands so the School can be credited with the cost.

There has been some diminution of support as people have been let go due to budget constraints. Law lost one FTE doing full-time faculty support. Student worker FTE has gone from three to one. Instead of responding personally to a request, they are reportedly more likely to send a .pdf with instructions.

In addition to support, the IT department also provides the range of services one would expect in a stand-alone unit: listserv management, printing services, Exchange/email support, administrative computing support, back-up services, AV support, website development and support.

There are four people in the department, two of whom did not respond to the survey. One, an ITC, reportedly runs the help desk and provides the bulk of user support. The other, a user Support Technician, focuses on web content.



The Law dean has a special issue related to consolidation. For accreditation purposes, the “spending on students” numbers, including those for IT support, must be high. He is concerned that those costs continue to pass, at least momentarily, through his budgetary fingers.

UO Portland

Portland is an area with high growth potential for UO. A&AA, SOJC, Law, and Business have programs in Portland and it is projected that new programs will cause the student population to double to around 600. Several administrative offices – e.g., Advancement, Communications, and Career Services – also have a presence there.

The core of IT staffing in Portland is provided by a Technical Services Manager who supervises an additional .5 FTE and students. Most of the IT equipment and support is provided by other units headquartered in Eugene. The Library has three people who support classroom equipment and a learning commons. Academic Affairs manages the business side of IT. It is run by the Facilities Manager, with two IT reports. One person works for Academic Affairs full-time

while another works half-time for Academic Affairs and is contracted half-time to the College of Business. A&AA has an output room and that is staffed by the Library.

The venture in Portland, from an IT perspective, is an amalgam of staffing and funding sources provided by schools and colleges which have programs there. Some equipment budgets come from budgets allocated in and for Eugene, while others are cooperative ventures by local staff drawing from sources in both Eugene and Portland. Support for LCB programs is managed via MOUs with the Library and Academic Affairs. It is “pass the hat” on a grand scale, with ongoing support dependent on the contributions of interested constituencies.

For some academic units, Portland is apparently an afterthought. When I asked the Interim Vice Provost for Portland Programs the biggest challenge about running that UO outpost, she responded, “Making sure Eugene remembers us.” UO Portland needs its own IT budget that so it can plan for growth and execute those plans.

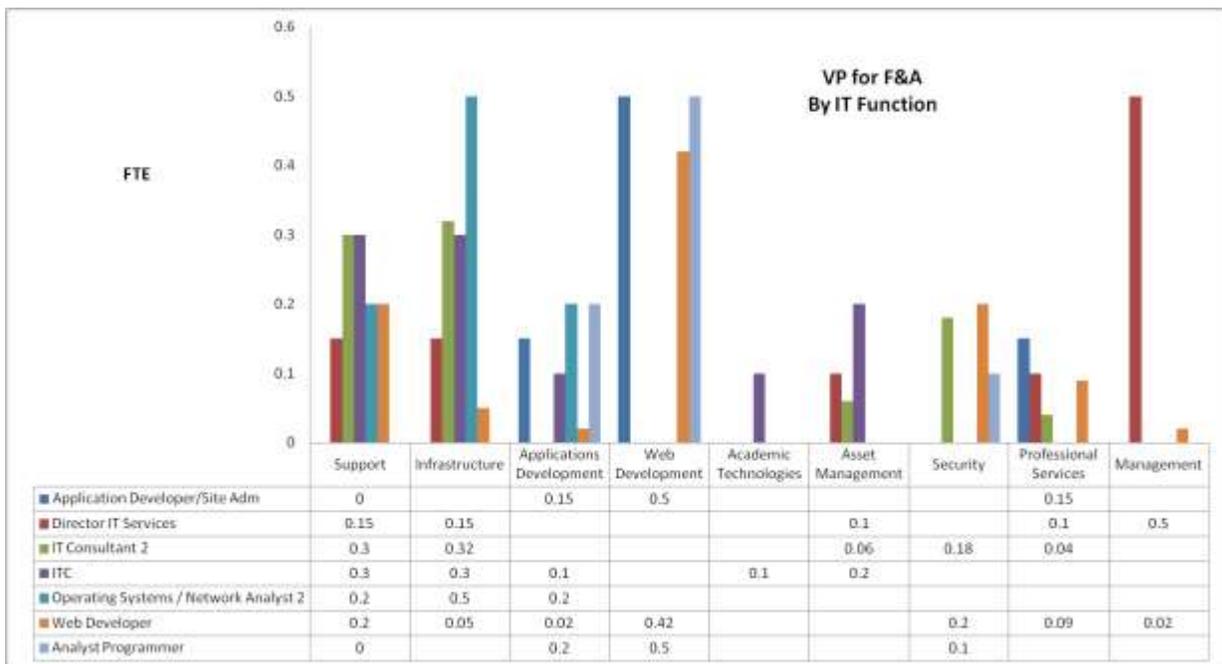
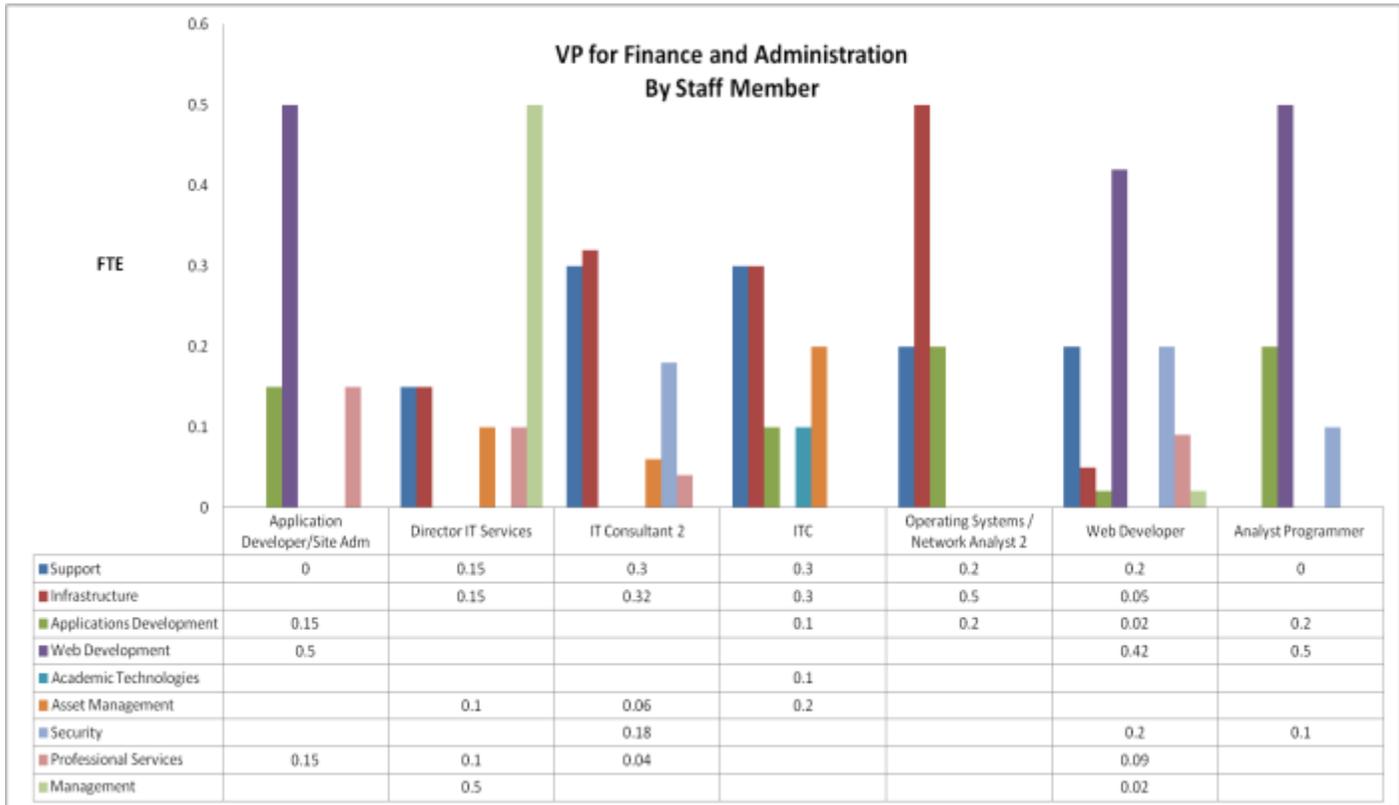
Attachment D

Administrative IT Staff Activities

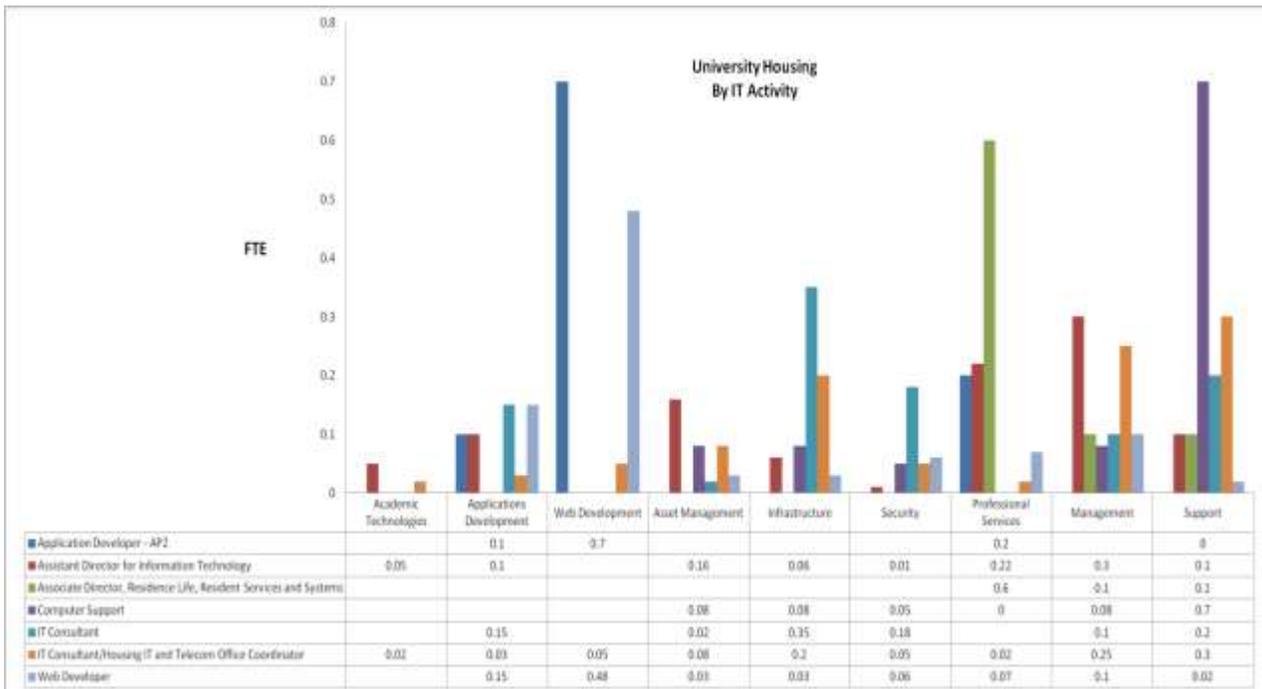
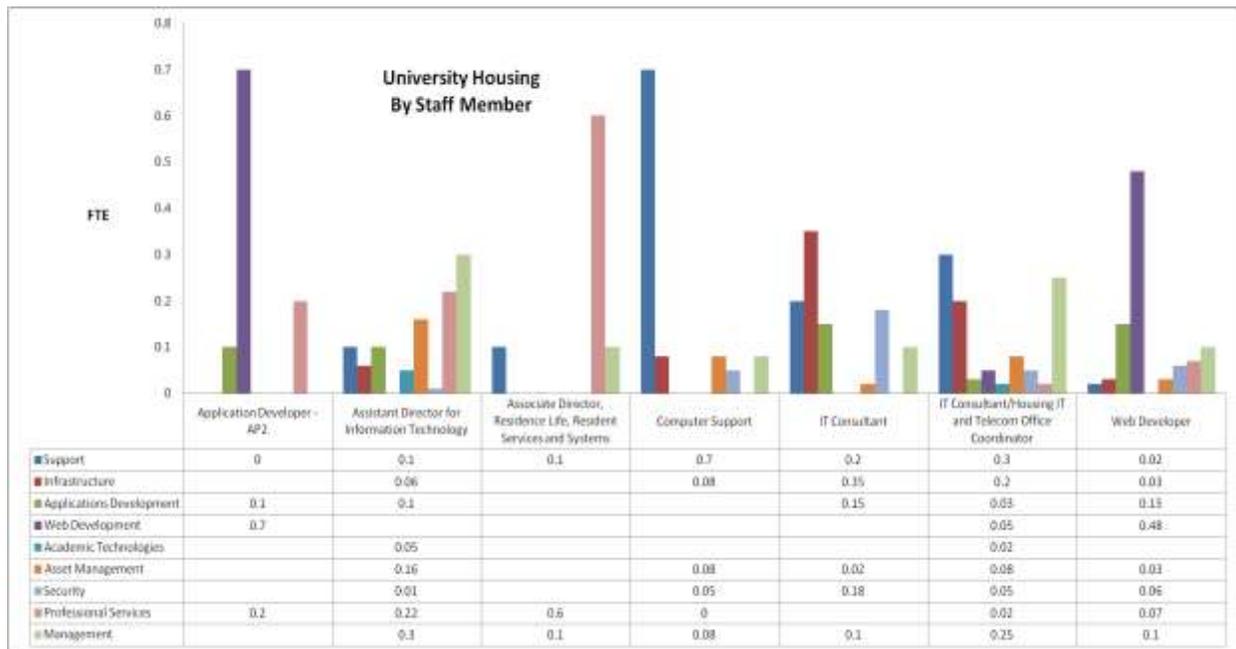
Administrative IT units will remain outside of IS for now, but information on the activities of IT staff may be useful for enabling decisions. If web development and user support staff, for example, are targeted for earlier integration into IS, it is helpful to know who those people are.

For eight units with 4 or more staff responding to the survey, I have developed charts similar to those seen in the discussion of the academic units. For each unit, the first chart will be the activities of each staff member, the second will show the same data but by IT function.

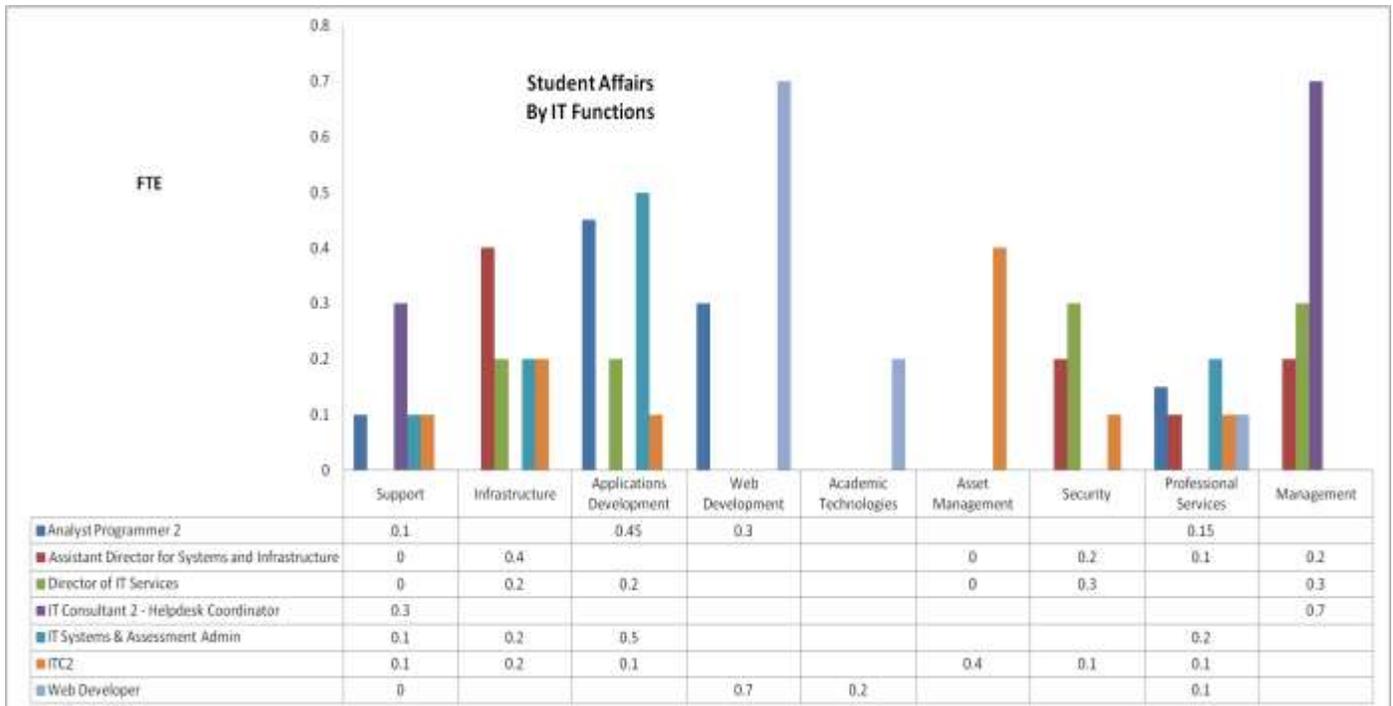
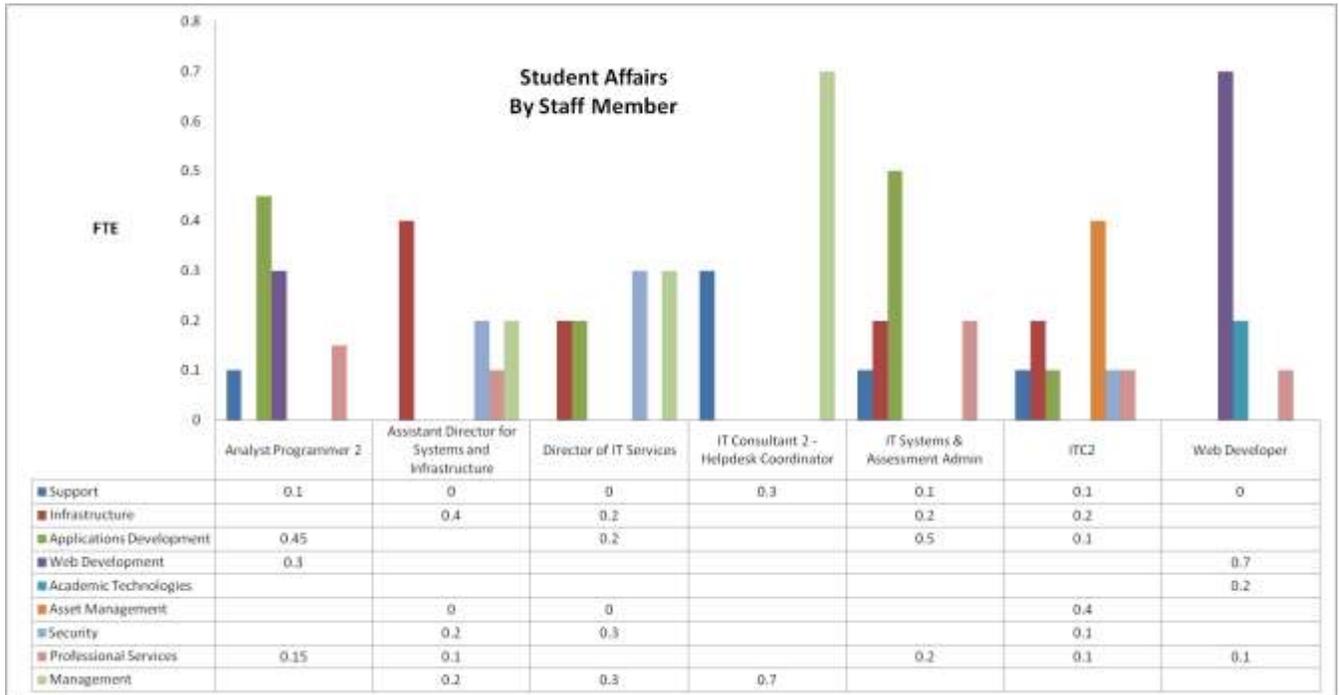
VP for Finance and Administration – 7 FTE plus 1 survey non-respondent



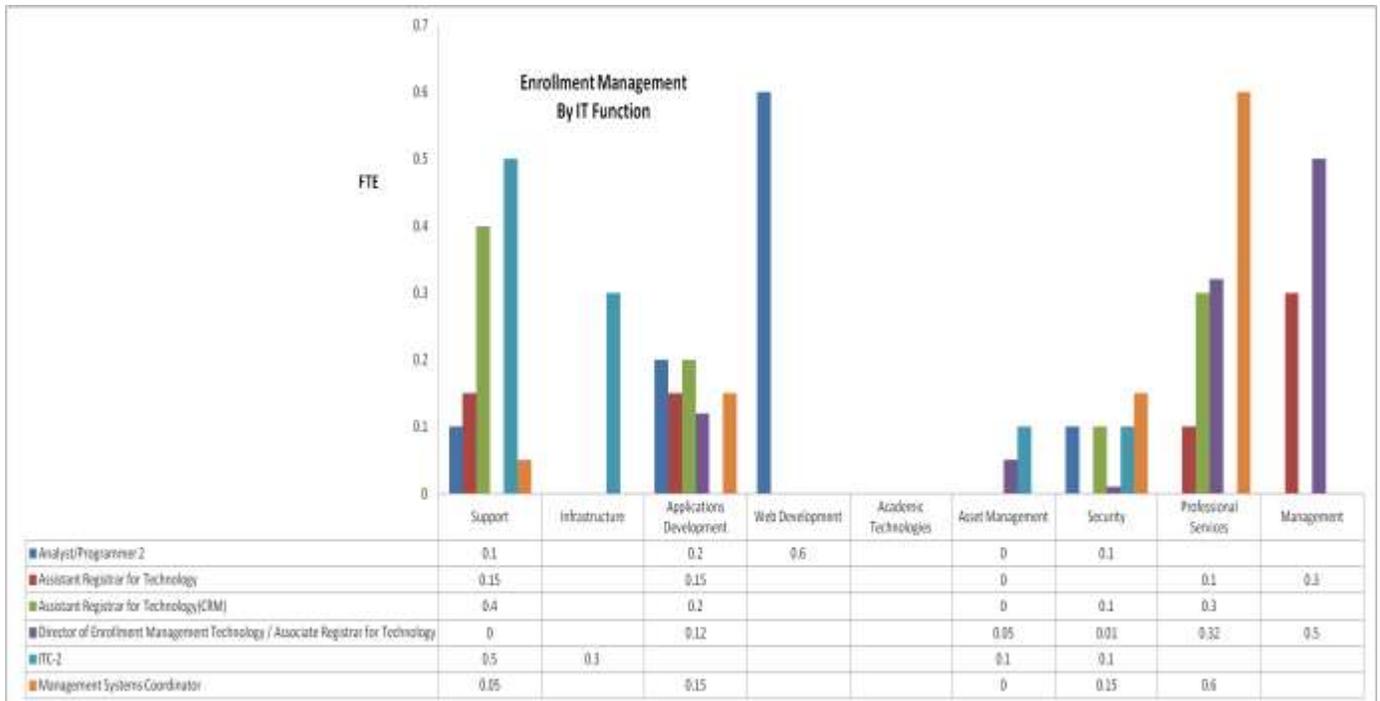
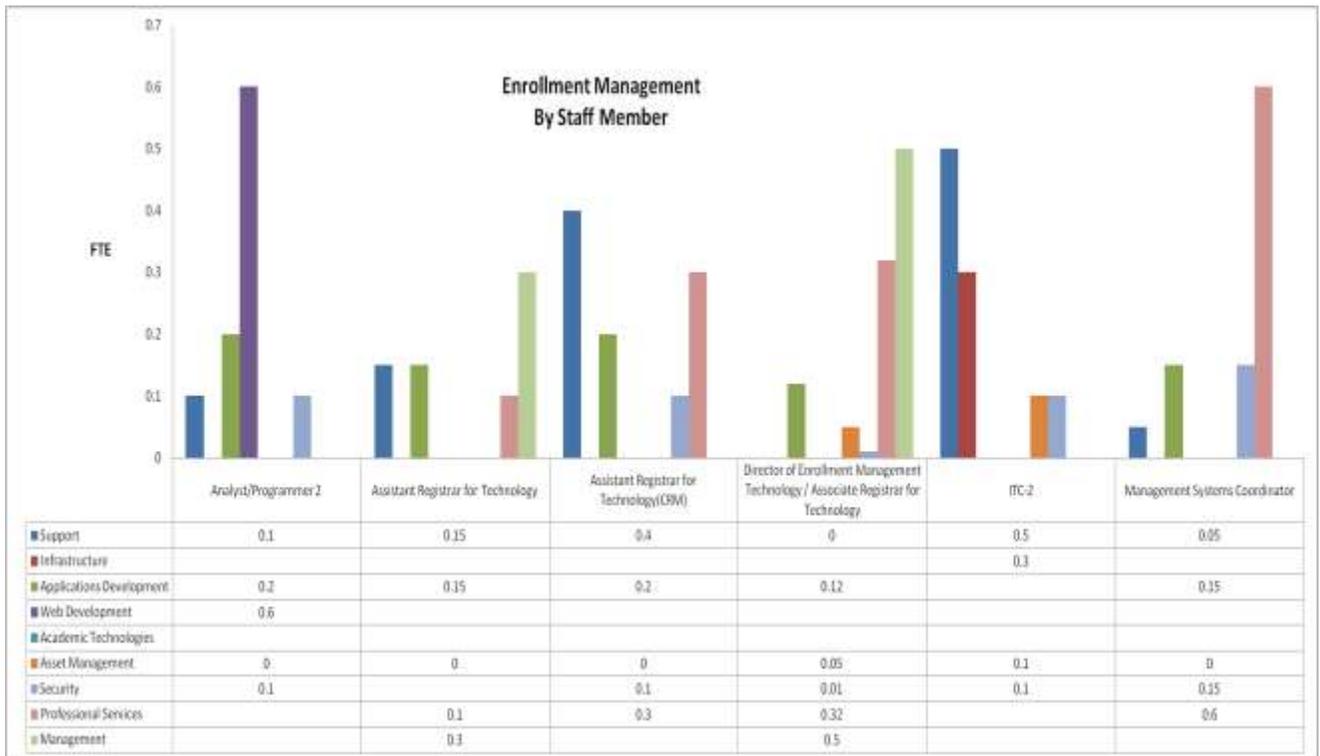
University Housing – 7 FTE



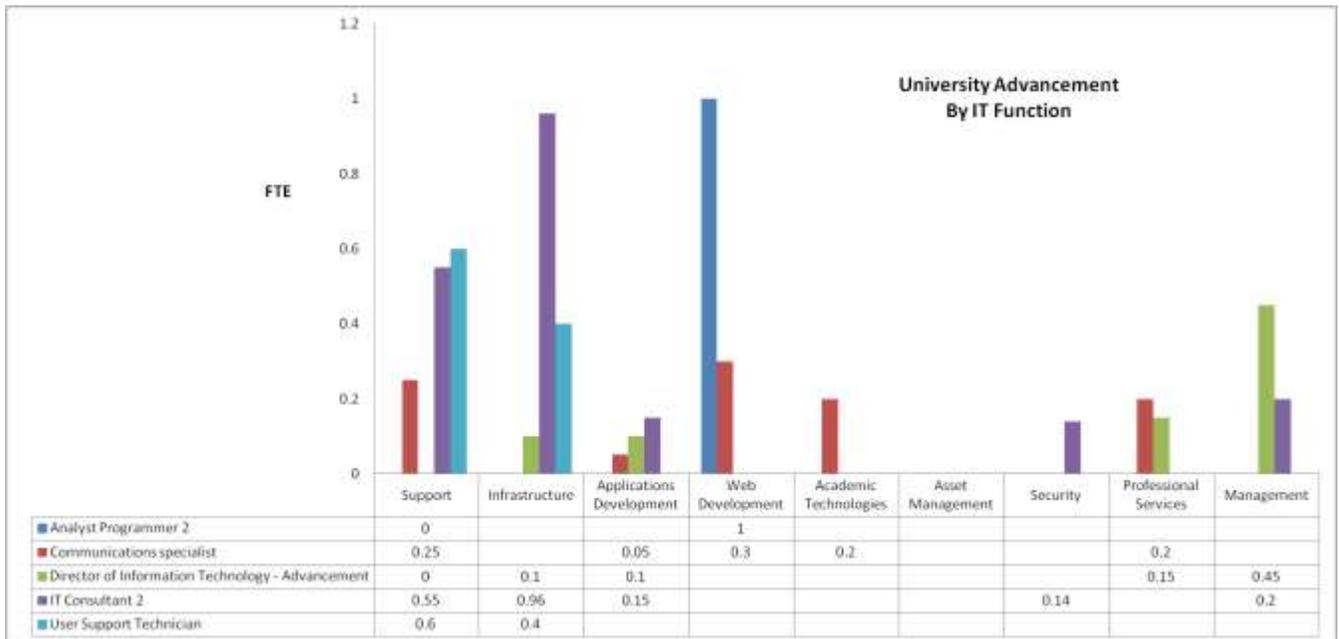
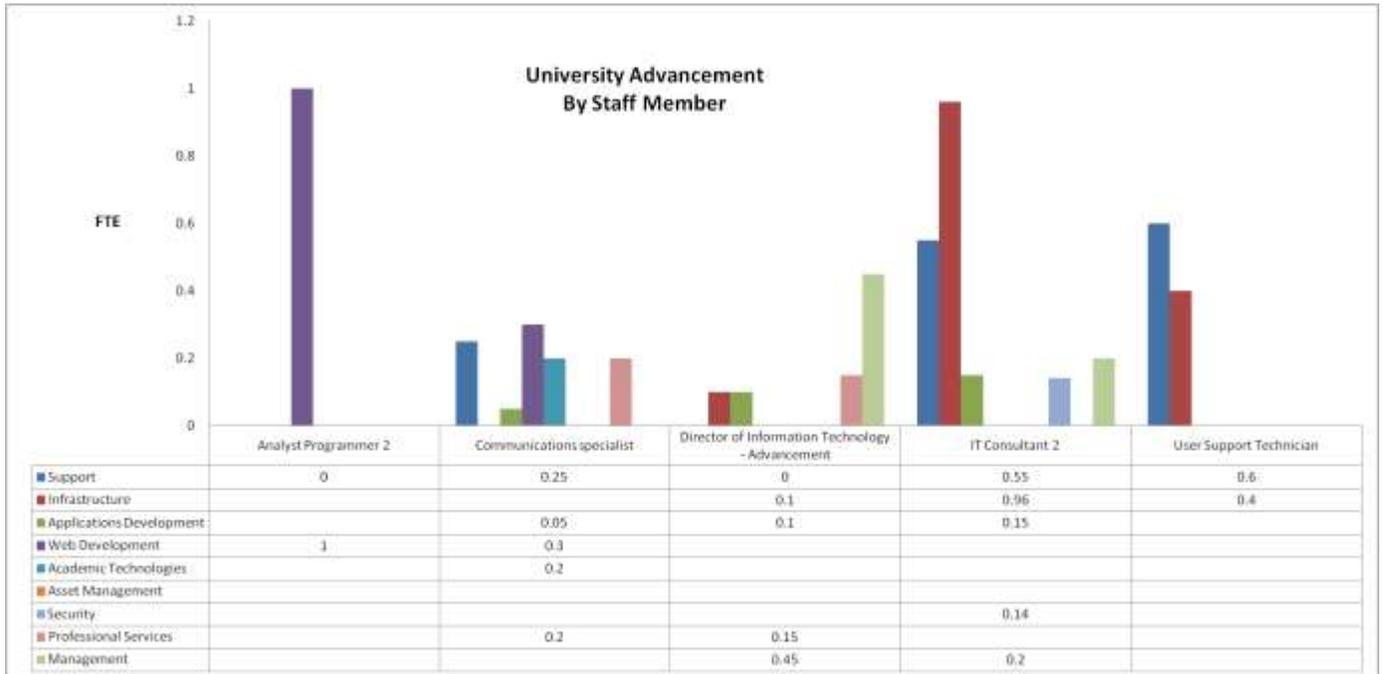
Student Life – 7 FTE



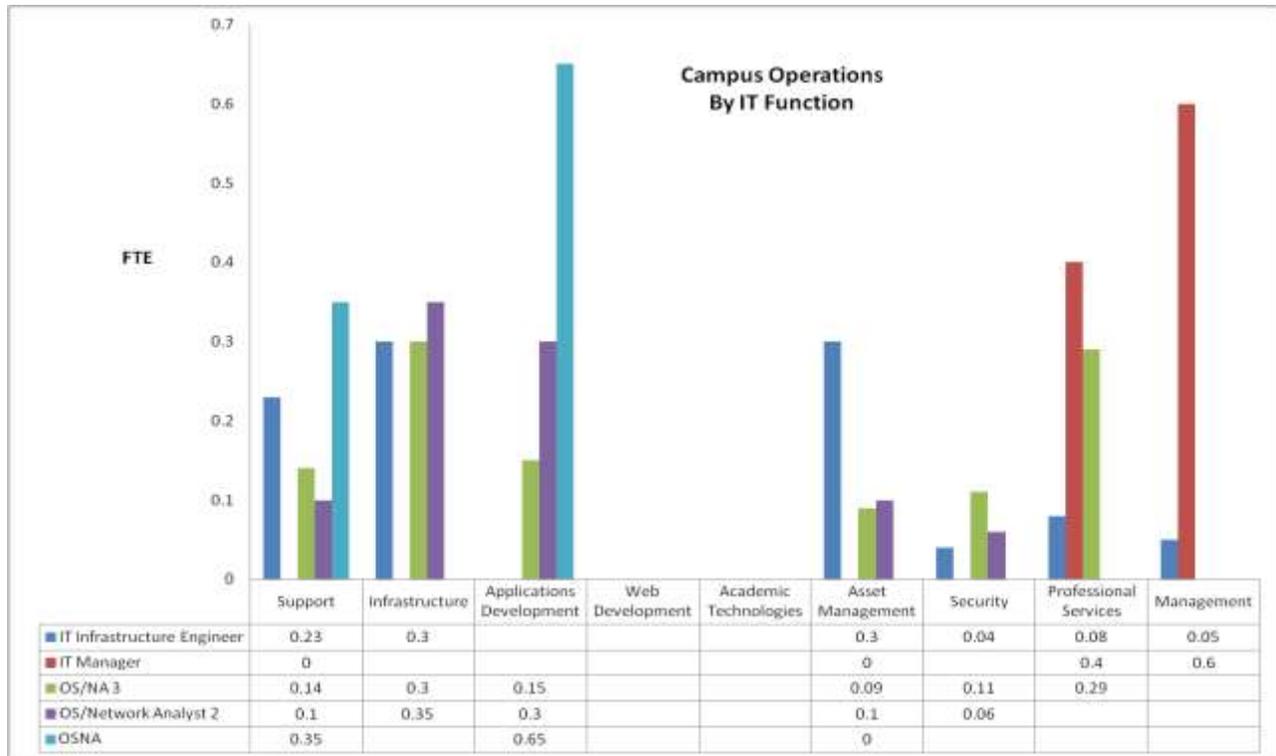
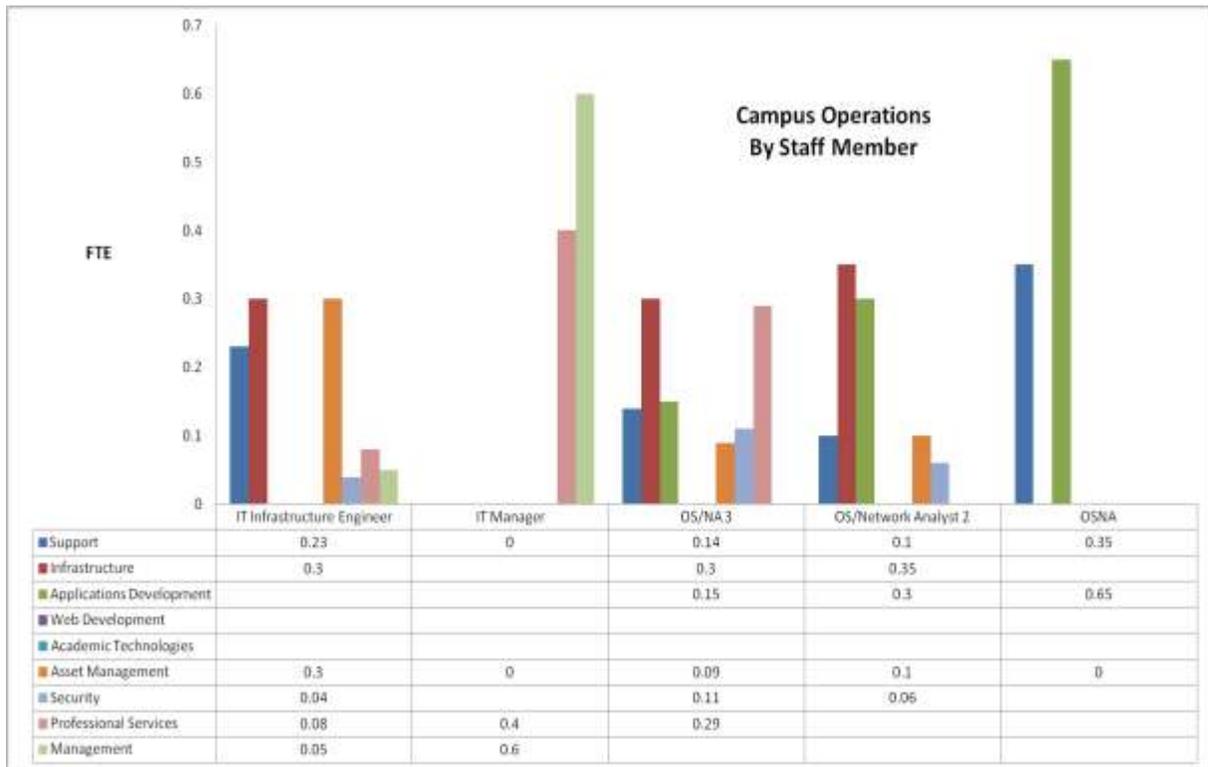
Enrollment Management – 6 FTE



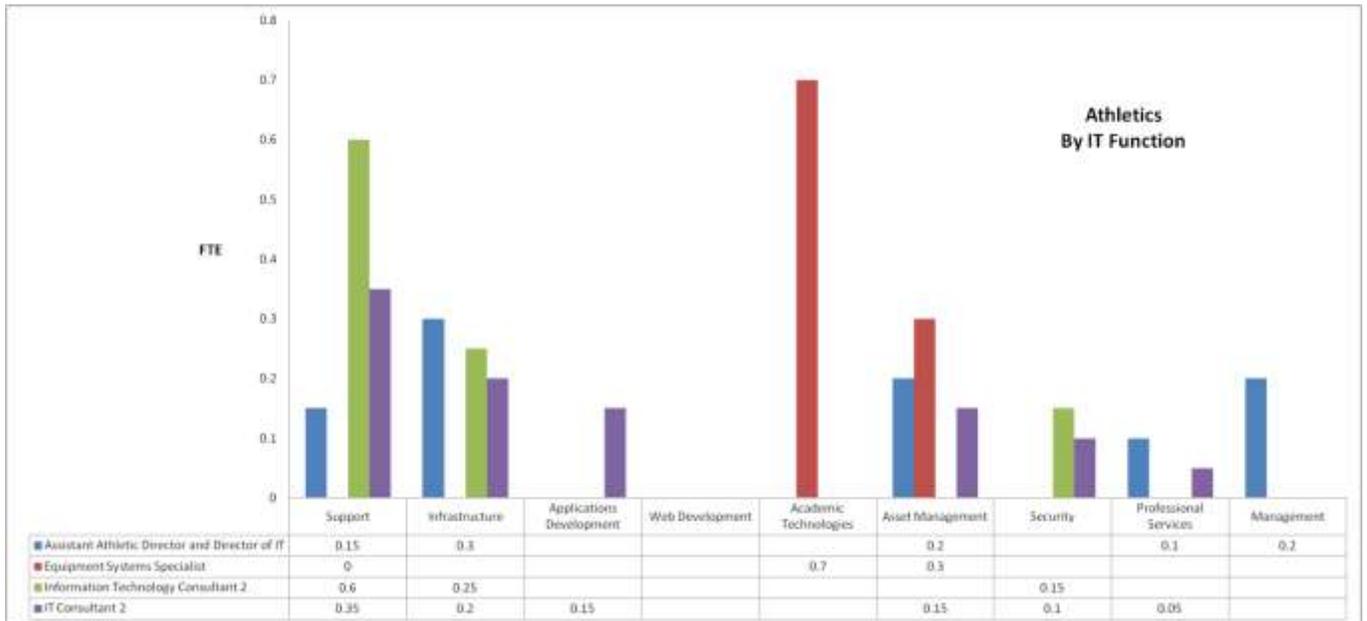
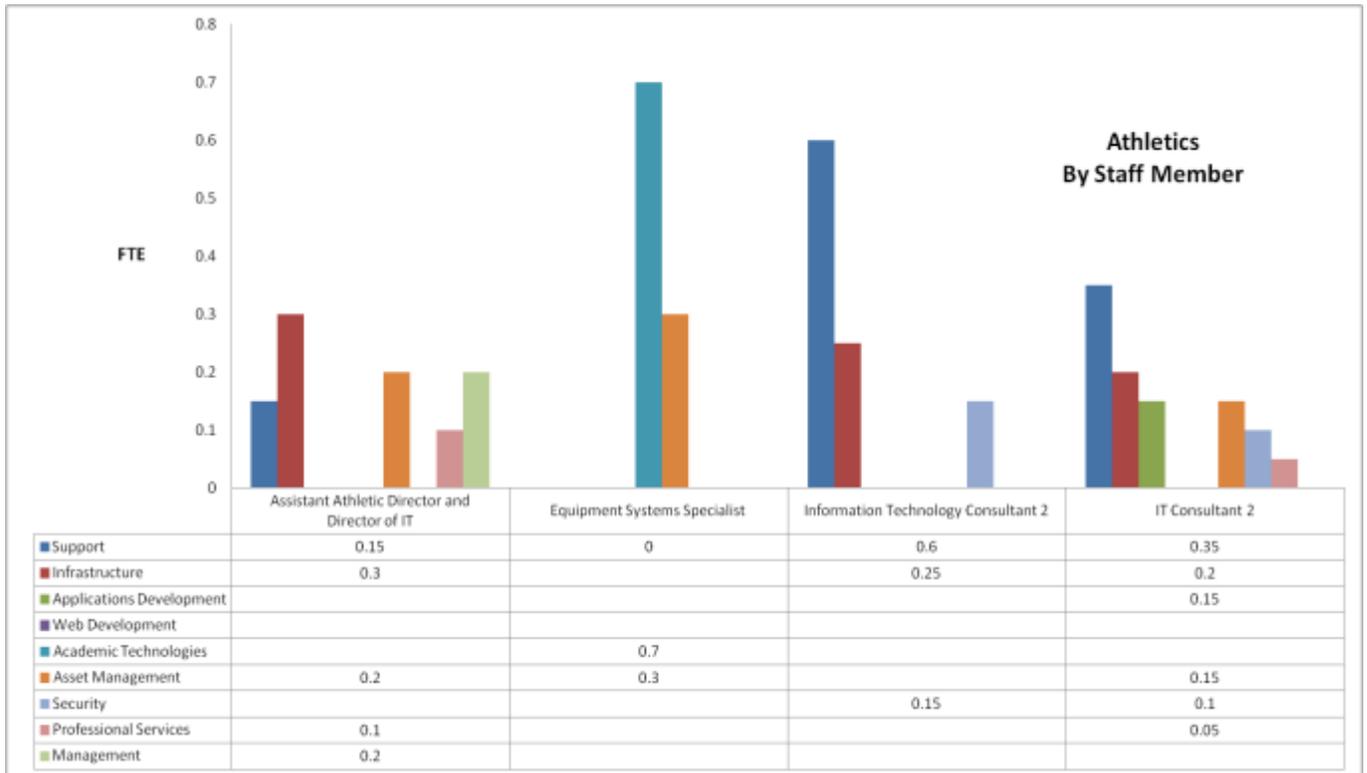
University Advancement – 6 FTE



Campus Operations – 5 FTE



Athletics – 4 FTE plus 1 survey non-respondent



UO Communications – 4 FTE

