Memo

To: Todd McNerney
From: Bob Cape
cc: Mike Duvall
Date: January 19, 2016
Re: IT Responses to Faculty Senate Questions

Faculty Senate Questions:

1. What have been the priorities of your division over the past 10 years?

2. What do you regard as the 3 or 4 most important specific milestones you achieved, and how much did each of these cost?

3. Why are we required to purchase equipment from vendors who charge much more than market rates? How can you work to get these costs back in line?

4. What would you do if you had to cut your budget by 2% or by 4%?

5. How were software licenses paid for before this year? Did you get non-recurring funds transferred to your budget year after year, or did you pay for them out of operating funds?
What have been the priorities of your division over the past 10 years?

Ten years ago President Higdon created the Sr. VP / CIO position and in March, 2006 hired Dr. Bob Cape as the first incumbent. Bob was asked to create a competent, service-oriented, professional Information Technology organization and to add as necessary to position IT to deliver reliable, well-architected services and support to the entire College community.

Added departments over time: IT Support Services, Infrastructure, Finance and Planning, Information Security, Project Management Office, Communications and Customer Advocacy, Enterprise Application Management, and Business Intelligence. TLT has advanced to become the College primary professional development vehicle for the faculty.

The aggregate effect has been to bring coherence and efficiency to the delivery of the contemporary technology capabilities, services and support required by the College to achieve its goals and objectives, and to provide a technology environment to attract the best faculty, students and staff.
What do you regard as the 3 or 4 most important specific milestones you achieved, and how much did each of these cost?

Establishing and nurturing a bottom-to-top governance structure for IT Zero cost
1. Collaborating with the Faculty Educational Technology Committee of the Faculty Senate (FETC); http://fetc.cofc.edu/
2. Collaborating with the Staff Advisory Committee (SAC); http://sac.cofc.edu/
3. Creating the standing Information Technology Advisory Committee (ITSAC) with membership comprising the Speaker of the Senate, Deans, faculty, staff, and students. ITSAC is charged to formulate a rolling three-year strategic plan for Information Technology with emphasis on the next fiscal year plan of work and the budgeting for same. ITSAC has the Speaker of the Senate and 8 faculty members currently. ITSAC has guided IT for three years. ITSAC has at least 4 scheduled meetings annually and its several sub-committees meet separately. See http://it.cofc.edu/strategic-plan/committee.php for their most recent work. An ITSAC-sponsored Open House was held January 14 to solicit and respond to faculty, staff and student input to their work. See http://blogs.cofc.edu/it/ for the invitation.
4. Creating and leading the Executive Steering Committee (ESC) as the top-level IT governance group for Information Technology. Membership comprises all the Executive Vice Presidents, a representative of the Office of the President, and the Sr. VP / CIO. The ESC concentrates on IT strategic direction, decisions and IT policy. Each March the ESC receives and vets the annual IT budget request for inclusion in the overall College budget request.
5. Created in 2006 the Board of Trustees Committee on Information Technology. Initially an ad hoc committee, it was made a permanent, standing Board Committee April, 2013. The Board IT Committee addresses overall programmatic development, delivery of services, institutional risk. See http://trustees.cofc.edu/committees/information-technology.php. Some specific concerns of the Board have been information security and compliance with state information security policies, the upgrade of technology in classrooms and all learning spaces, ensuring that the faculty are well-prepared to use technology deployed in the classrooms, completing the deployment of wireless throughout College facilities and many open spaces, and (years ago) the outsourcing of email for students.

Evolving Teaching, Learning and Technology to become an invaluable contributor to faculty success. Zero cost
Led by very strong Directors, TLT has evolved to be a premier support organization for the faculty. TLT was declared by the Huron consultancy in 2012 to be among the very best faculty support organization they had ever observed. Documentation of the extraordinary accomplishments of TLT in recent years can be found at https://docs.google.com/document/d/1yughLI8RimjFb-Fyf5DKT_wxUhyEpHD3yqlcrumyqF/edit# and https://docs.google.com/document/d/1ZhBLq9yQ_h3jsO0OV55rFQRVug3wne9jXDd9RS6KnKQ/edit#.

Implementing OAKS to replace WebCT. Cost $214K.
A contemporary and full-function learning management system, “OAKS” vendor is Desire-to-Learn, D2L (now Brightspace). OAKS now has integrations with supporting products and resources: Kaltura Mediaspace, Google Apps (docs, mail, youtube), VoiceThread, McGraw-Hill Campus, Cengage Mindtap, Explorance Blue (Course Evals), Films on Demand, and EBSCO
Research Database.

Instructor usage is depicted below. Usage is increased 25% relative to WebCT.

Student user logins are shown below:
Executive Sponsor of the BATTERY Project.
The multi-year BATTERY Project replaced the then-obsolete and about-to-be de-supported SCT
Plus applications with Banner as new ERP and Oracle as the Banner transaction data base. A very
large set of related applications have subsequently been integrated with Banner. A hasty list:

- Academy1 - Daily Load
- Academy1 - Annual Load
- AlcoholEdu and Haven
- ALEKS / ALEKS – SSO
- Appointment Manager
- Asset Works/MyCougarCampus
- Automic/UC4/Appworx
- Axiom - for admissions
- Axiom – webforms
- BDM – Banner
- BDM (AppXtender)
- BDM Reports Management
- Blackboard
- Blackboard Connect - Employee Upload
- Blackboard Connect - Student Upload
- Bookstore System
- CAS
- CofC Mobile
- CSO CougarJobLink
- DegreeWorks
- Desire To Learn (OAKS)
- EDA-SYS Classic
- EDA-SYS Plus *in development
- Ellucian Solution Manager
- Enrollment Management (BRM)
- ePrint – Employee
- ePrint – servers
- ePrint – Student
- Evisions – application
- Evisions – server
- Microsoft Exchange
- Explorance
- Faculty Activity System (Digital Measures)
- Faculty Election System
- Financial Aid VA Registration
- Financial Aid VA Registration Admin
- FSA Atlas / ISSM
- Google Apps
- GradesFirst – CAS
- Kaltura
- Luminis
- Luminis 5
- Mail Services Intra
- Maxient
- Mediasite
- Medicat
- Millenium
- ODS Banner Operational Data Store
- Office 365
- Orientation
- Orientation Registration
- Parchment Docufied
- Parking Assignment Access db
- Parking eBusiness
- Parking System FLEX
- Password Reset Reminder
- People Admin (CAS)
- Provisioning Scripts
- Resource25/Schedule 25
- RoboRegistrar
- SchoolDude
- Sciquist/Eprocurement
- Sciquist/Supply Manager
- SGA Election
- Staff Advisory Voting
- StarRez
- TargetX
- Titanium
- Touchnet
- TouchNet Ebill Bill + Payment
- TouchNet MarketPlace
- TouchNet Upay
- Transparency Report
- TutorTrac
- VisionAir
- Web Directory - Employee upload
- Web Directory - Student upload
- Web Forms Financial/HR
- Web Forms Student
- Workf

In aggregate, these applications are used to support the academy and to conduct the business of
the College.
Why are we required to purchase equipment from vendors who charge much more than market rates? How can you work to get these costs back in line?

IT purchases enterprise-quality products that relate well to the evolving architecture of the College. Purchase criteria include purchase cost, maintenance cost, integration with campus systems, durability, availability of warranty and support as needed, adherence to standards, and adherence to state procurement mandates. Because our financial ability to timely replace the approximately $14M equipment currently deployed across the campus and in all our remote locations (Grice, North Campus, Harbor Walk, Patriot’s Point, Dixie, Goer Drive, and others) is extremely limited, these criteria take on special significance. An increasing fraction of IT electronic equipment is in service beyond the availability of vendor maintenance and far beyond its normal end-of-life. This shortage of equipment replacement funding constitutes a significant institutional risk.

The following are strong indicators that IT makes its purchases very advantageously relative to market rates, and that IT enables College employees to make purchases far below market rates.

In June, 2015 Mr. Lee Mikell, Vice Chair of the Board of Trustees and Chair of the Board Budget and Finance Committee, posed several questions related to IT spending. His questions centered on our control of costs, our pursuit of vendor discounts, leveraging our purchasing power, and our awareness of other universities’ practices. Relevant portions of the Information Technology response are quoted below. Also cited below is the Huron Report.

^^^^^^^^ Start of IT Response to Mr. Mikell ^^^^^^^^^

Beating State Contracts

- IT interprets State contract prices as the starting point for price negotiations. In May, 2014, Bob Cape reported to Mr. Osborne that in the ten-month period from 7/1/2013 to 4/18/2014, IT savings from purchase negotiations as follows:

  - List Price = $3,796,309
  - State Contract Price = $3,105,970
  - CofC Extended Price = $1,934,581
  - $ Off List Price = $1,861,728 or approx. 49%
  - $ Off State Contract = $1,171,389 or approx. 38%

- Negotiated savings of $34K for the Fiber project. This efficiency is actually more significant because Network Engineering was able to include some locations originally designated to be completed in Phase 3 of the project – doing more with less.

- Access Switches (Juniper) . Retail Price $11K; State Contract Price $8K; Negotiated Price $5K or 36% below State Contract and 50% below Retail.

- Distribution Switches (Juniper) Retail Price $20K; State Contract Price $15K; Negotiated Price $10K or 36% below State Contract and 54% below Retail.
Huron Recommendations re Cost Control and IT Fulfillment

In 2012 Huron Consulting provided an audit of IT as the first of what was intended to be a set of three audits to also include Academic Affairs and also ‘non-Academic Affairs.’ The Fall 2012 Huron Report made several recommendations in ten broad categories. Subsequent to receipt of the Huron Report, IT has indeed implemented many of their recommendations.

The Fall 2012 Huron report made four categorical recommendations to effect cost savings. Text below addresses these four recommendations, and more.

Huron recommended PC procurement centralization and inventory reduction. IT recommends a standard small set of Windows and Apple products for purchase by the College community. We negotiate best prices with our suppliers; we provide best support for the computers we recommend. However, the College does not have policies to effectively control such purchases. Despite some Procurement measures now in place, off-standard purchases persist. Needed is more effective collaboration between Procurement and IT to drive even more adherence to campus standards. IT recognizes that faculty, and especially researchers, have bona fide need for special computing capabilities and that standards will never be uniform. While pursuit of standards is our goal, the procurement savings asserted by Huron of up to $820K and the corresponding IT support cost reduction of up to $200K are wildly optimistic.

Huron recommended wireless provider consolidation and plan optimization with anticipated savings of up to $60K per year. In formulating their recommendation, Huron mistakenly combined wireless service and Internet service as if they were interchangeable and the same. They are not. This was conveyed to Huron prior to completion of their report. Even so, now the College has a procurement arrangement with Verizon to provide phone purchase and voice/data service that creates great savings by consolidation. By contrast, IT’s strategy with respect to Internet access is to achieve redundancy and route diversity as well as optimum pathing – and deliberately avoiding single point of failure of Internet service to the campus community. Moreover, this very substantially improves our negotiating leverage with each candidate Internet provider.

Huron recommended that the College convert from physical servers to virtual servers – a technology well-established in 2012. At the time of the report, IT had already virtualized 69% of its servers. Currently we are more than 80% virtual. We capitalize on 100% of opportunities to virtualize: when equipment is due for replacement, we virtualize; all new applications are virtualized.

Additional IT actions subsequent to the Huron report:

- Established aggressive software licensing agreements;
- Improved communications to campus, especially regarding PC standards, procurement of technology, and support;
- Outsourced data modeling, various information security needs, classroom technology upgrades, and more;
- Reduced PC replacement cycle from eight years to six years;
- A May 2015 realignment of IT departments to better align the natural work affinities within IT, to foster a more collaborative working environment, promote the disciplines of our new Project Management Office, and to encourage forward-thinking and leadership;
- Migration to Microsoft Office 365 to assure business continuity for email communications and avoid investment for such functionality in our Greenville remote site;
- Implementing electronic forms with electronic routing for approvals, replacing paper forms;
- Terminate use of Echo360 lecture capture to adopt MediaSite lecture capture throughout the downtown as well as the CofC North Campus, achieving vendor consolidation in the process.

Additional Cost-saving Actions

Savings to students using departmentally-selected software. IT is able to purchase at our expense enterprise licenses for commonly used software, thereby saving School of Business, Physiology, Political Science, Sociology, Education, Health and Human Performance, Science and Mathematics, Biology, and Geology $371K-$755K per year by expanding support contracts to provide Statistical Package for the Social
Sciences (SPSS), Minitab, JMP Genomics software for use by students and faculty – eliminating aggregate costs of comparable purchases by individuals. Clearly while this constitutes an IT expense, this is a valuable service to our constituents.

Adobe has made a radical change to its software pricing model. By initiating a new software license vehicle with Adobe in FY16, IT will incur a new $51K expense to purchase Adobe software for all faculty and staff use. In taking this proactive step, IT avoids what would be a $1M College expense in FY16 under the new Adobe pricing model. This savings recurs for three years.

Aside: IT will continue to identify opportunities to reduce overall College expense, even if doing so increases IT expense. Similarly, IT is exploring opportunities to incur relatively small expense to save students great expense.

Timing of Negotiations

- Negotiations/Fiscal Year Leverage: The original Symantec quote was for $600k to return contract to compliance. After IT negotiations the cost was reduced to $89k. IT used the end of their fiscal year as leverage to reduce the price.
- Negotiations/Fiscal Year Leverage: IT purchased the 3Par unit for $196K from HP. We made that purchase at the end of their fiscal year so they reduced nearly $100k off their first quote.

Joint Procurements with other Universities

- Collaboration with Citadel on Call Experts call answering contract through a State Procurement bid resulting a 52% savings over market price. Current price $55K/yr. vs. $84K/yr.
- IT seeks appointment to the CofC / MUSC Collaboration Council which includes activities directed toward joint procurements and potential to accelerate collaboration with respect to IT.

^^^^^^^^^^ End of IT response to Mr. Mikell ^^^^^^^^^^^

In mid-June, 2015, Mr. Mikell acknowledged receipt of the IT response to his inquiry. He concluded, “Thanks again for all you are doing in the IT area. After reading your report I am very comfortable that this area is responding to the needs of the College in a very fiscally responsive manner.”


IT has concluded its implementation of Huron recommendations, most recently in May, 2015 with the re-organization of Information Technology. Network Engineering was moved to the Infrastructure department. And the the user-oriented Enterprise Application Management department was established to organize the developers (aka analyst/programmers), system administrators, mobile application developers, web developers and data base managers into teams aligned with primary application requirements.
What would you do if you had to cut your budget by 2% or by 4%?

Let’s all agree, budget reductions are difficult to implement. Budget funding is, of course requested with intent and commitment. Reduction of budget carries implications of reduction of scope, quality, quantity, timeliness, or even elimination of services and support for the College community in the case of Information Technology. Fulfillment of commitment can be affected.

For reference, we describe how IT complied with the two budget reductions mandated so far this FY. For the first budget reduction request of $79K, IT defunded a vacant database administrator position from the Enterprise Application Management index. Absent this position, we have had to permanently shift those duties to the current data base administrator staff of three, thereby increasing the workload of a diminished workforce. The second budget reduction of $39,510 partially defunded the vacant Director of Communications and Customer Advocacy position (vacated by the highly regarded Monica Lavin). With the remaining funds from that salary, we have been able to hire a recent College graduate to fill the position on a part-time basis.

Assuming that the hypothetical 4% budget reduction proposed in the Faculty Senate question is levied against the IT total budget ($9.5M) less its contractual obligations ($4.1M) = $5.4M, the required reduction for IT would be $216K.

Defunding vacant personnel lines is a possibility but is not at all strategic; the availability of vacancies is uncontrollable by management, and the particular vacant positions at any point in time are altogether unrelated to the actual programmatic requirements of the budget manager. In the case of Information Technology, we have deliberately kept vacant positions open pending availability of new state job classifications that apply specifically to technology employees. Those new state job classes became available immediately prior to the Christmas holidays and IT is now well into the task of reviewing all our existing classified position descriptions and matching each of them to the new classifications. This must be completed before we are permitted to proceed to recruit to fill our vacant positions.

Information Technology generally will look beyond defunding vacant positions to other operating fund sources to help fulfill a 2-4% mandated budget reduction. Three programmatic budget categories are candidates: Equipment Replacement, PC Replacement, and Classroom Technology Upgrades.

Equipment Replacement is budgeted per year at $1,400K. With an installed base of technology at the College estimated at $14M, we generate on average a ten-year refresh cycle. Hopelessly underfunded relative to the rapid changes in technology and the peril of reliance on electronics far beyond the available vendor support and the reasonable duty cycle of the electronics, Equipment Replacement is a non-starter.

PC Replacement is budgeted per year at $900K. That program provided 721 Dell and Apple computers in FY14 and is projected to deliver 886 computers in the current FY. The replacement cycle has been reduced to approximately 5.5 years from approximately 7.5 years over the past three years. This significant improvement is due in part to the economies of scale derived from bulk purchases and concomitant negotiating leverage. We are also exploring additional means of reducing expense and further shrinking the refresh cycle. Given our goal to further reduce the refresh cycle, we cannot defund the PC Replacement program.
Classroom Technology Upgrades is budgeted per year at $915K. With these funds IT has been able in years past to upgrade approximately 25 – 30 classrooms per year, depending on the particular classrooms being upgraded. It is important to understand that many classrooms being upgraded require additional investment by Physical Plant to upgrade power, lighting, writing surfaces; also to provide new ceilings and paint, as well as asbestos abatement, if needed. This fiscal year, Physical Plant could financially support only 13 of the anticipated 26 classrooms to be upgraded. It is assumed that Physical Plant funding to support the Classroom Technology Upgrade project will not be increased in the foreseeable future. This liberates approximately $300K funding that could be used to satisfy the budget reduction hypothesized by the Faculty Senate question. IT will upgrade all classrooms on the schedule that do not require Physical Plant expense.

The strategies to satisfy any future required budget reduction will depend importantly on the circumstances prevailing at the time.
How were software licenses paid for before this year? Did you get non-recurring funds transferred to your budget year after year, or did you pay for them out of operating funds?

This question is addressed by providing the balance of IT’s response to the Mr. Mikell inquiry referenced above. IT wrote to Mr. Mikell:

----------- Start of IT Response to Mr. Mikell -----------

Inflationary/Required Spending: Annualize IT Maintenance Contracts, Services, etc. ($427K for FY16)

This is a category of IT expense that includes costs predominantly for software licenses and hardware maintenance. Many such expenses for the College are incorporated into the IT budget at the discretion of Business Affairs. Some of these expenses in the IT budget request are initiated by departments in the College other than IT, but the expense shows as IT expense. Table 1 below indicates the categorization of the $427K total request in the IT budget for such expenses, and provides some detail regarding the individual obligations.
<table>
<thead>
<tr>
<th>Description</th>
<th>Item Cost</th>
<th>TOTALS</th>
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<tbody>
<tr>
<td><strong>Externally Determined Obligations</strong></td>
<td></td>
<td>107</td>
</tr>
<tr>
<td>PeopleAdmin - Human Resources - coordinates, approval, recruitment, tracking and performance evaluations</td>
<td>9</td>
<td></td>
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<tr>
<td>Salesforce - Enrollment Mgt - Data Base for Admission</td>
<td>9</td>
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<tr>
<td>Ellucian (Banner &amp; Oracle contracts) - VP Fiscal Svcs - ERP Application &amp; Oracle Data Bases</td>
<td>32</td>
<td></td>
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<tr>
<td>COGNOS (IBM pricing model change) - VP Fiscal Svcs - Reporting Application</td>
<td>57</td>
<td></td>
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<tr>
<td><strong>Description</strong></td>
<td></td>
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<tr>
<td><strong>IT Determined Obligations</strong></td>
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<tr>
<td>Symantec NetBackUp (pricing model changed by vendor)</td>
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<tr>
<td>Riverbend (Network monitoring &amp; analysis) - Cost reduced on 6/3/15 for FY 16 resulting in no increase for FY 16 effective June 3, 2015</td>
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<td></td>
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<tr>
<td>Significant program increases</td>
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<tr>
<td>Multiple smaller increases across several contracts</td>
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<tr>
<td><strong>Total of all Renewal increases in maintenance &amp; licensing costs</strong></td>
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<tr>
<td><strong>New Recurring Obligations (000)</strong></td>
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<tr>
<td>SAN EVA Replacement - BATTERY ERP Storage</td>
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<tr>
<td>Spirit - Metro Link - off site Business Continuity backup</td>
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<td></td>
</tr>
<tr>
<td>InfoBlox DHCP - faster internet access throughout campus</td>
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<tr>
<td>Spirit - Commodity internet bandwidth increase and to provide internet access for redundancy</td>
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<tr>
<td>[Total of New Obligations from Non IT Entities (license increases, unfunded items, BoardEffects, Salesforce, etc.)]</td>
<td>51</td>
<td></td>
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<tr>
<td>Vsphere Update - upgrades virtual server enhancements</td>
<td>57</td>
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<tr>
<td>SPLUNK - reduced security risk</td>
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<td></td>
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<tr>
<td>Fidelis Collector - data achiever for security</td>
<td>4</td>
<td></td>
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<tr>
<td><strong>Total of New Recurring Obligations</strong></td>
<td>177</td>
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<td><strong>Communication Services Increase</strong></td>
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<tr>
<td>Increased Communications costs due to North Campus &amp; Harbor Walk</td>
<td>34</td>
<td></td>
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<tr>
<td><strong>FY 16 Maintenance, License, and Communication Increases</strong></td>
<td>34</td>
<td>412</td>
</tr>
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</table>
IT Measures to Control Maintenance and Licensing Costs

As a result of successful negotiations by Fiscal Affairs and Procurement with IBM, our increase in cost for a substantially increased number of Cognos licenses for FY16 was reduced from an initial IBM demand of approximately $365K to only $57K.

IT negotiated $8K savings in $116K contract for Hewett Packard hardware maintenance. This efficiency allowed zero cost increase in FY16 while maintaining service.

By pitting Internet Providers against one another IT has reduced the cost of broadband by nearly 45% over the last two years.

Significant maintenance costs are incurred to continue operating our legacy hardware and software which were supplanted by the BATTERY project in 2008. Nearly 50% of our $116K HP maintenance agreement is to provide support to those Alpha computers to support continuing access to historical data. IT has implemented less expensive alternatives to perpetuate this support.

It is worth noting that IT is not funded sufficiently to timely replace beyond-end-of-life and/or beyond-warranty electronic equipment. This drives up our cost experience as we keep equipment in service for extended periods of time; in turn this causes more interruptions to service and more inconvenience to our user community resulting from need for remedial rather than preventive maintenance.

~~~~~~~~~~~ End of IT response to Mr. Mikell ~~~~~~~~~~~~
Appendix.

**Informal List of IT Accomplishments over Past 3-5 Years**

Prepared by IT Directors
January 19, 2016

**Support Services**

- Replace and standardized projectors in rooms (brighter than old ones, less down time than older ones)
- Increased Computer speed by cleaning up image and installing Solid State Hard Drives (~$50,000)
- Upgraded classroom switching equipment to Extron (~$225,000)
- Uniform look and feel to rooms (3 standard rooms now: Crestron, Extron, Extron Lite), equipment is in similar location in each classroom for ease of use
- Added document cameras to almost every room.
- Changed support model for classroom problems- Helpdesk receives the calls attempts to troubleshoot over the phone and use tools, radios technician to visit room if needed
- Improved technical skills of technicians via Crestron and Infocomm training
- Helpdesk Second Shift - $25,000 – Helpdesk extended hours until 10:00 PM and added weekend hours to better serve students using distance learning.
- Helpdesk Walk in desk – $13,000 – Helpdesk added walk-in counter to better serve Faculty and Students.
- Apple Training – All technicians received Apple training to better assist Faculty and Staff.
- HDI Training – All technicians received Helpdesk Institute training to improve customer service.
- New employee IT orientation – Implemented new College employee training for the use of MyCharleston, e-mail, etc.
- Double sided printing in the Addlestone lab. no cost - software update
- Added printing from student owned laptops in Addlestone . no cost - software update
- Office 365 for students and employees – no idea how much it cost and the still haven’t told anyone, but it’s there.
- New computers in the lab as part of replacement cycle (23 macs, 77 dells this year and 66 dells last year.)
- Two new printers in the lab (replacements of old ones. Ballpark is 5300 each.)
- Wireless network configuration tool to configure your own computer for wireless. About 5 years ago. Networking purchased it, so don’t know cost.
- Upgraded wireless in the library fixed lots of complaints. Again, network did most of the work, we just let them know the problem areas and how much of a problem it was.

**Information Security**

1. Anti-Virus / Malware detection and remediation – 129K
2. Advanced threat protection – 58K
3. Data loss prevention, malware detection, incident remediation – 721K
4. SIEM – (Security Information and Event Management, log storage, server troubleshooting and incident research) – 601K
5. Email encryption, URL defense – 144K
6. Audit and compliance – 60K
7. Security Awareness Training – 10K

Information Security took new direction in 2013. No budget until 2014. Still have unfunded mandates from the State of South Carolina that the College will need to be in compliance with by
June 30, 2016.

**Infrastructure**

Server Support team offers consulting services to professors when grant monies are being used to purchase servers. The services consist of system design, purchasing advice, help with the actual procurement, help with setup and obtaining firewall port openings. Professors that we have directly worked with in the past couple of years include Paul Anderson, Dan McGlinn, Jim Newhard and Norm Levine.

**Network Engineering**

**Wireless On Campus**

Since 2011, created unified wireless across campus. Created roll-out plan, upgraded campus wireless devices throughout main campus and remote site locations. Cisco to Xirrus, Xirrus XN to Xirrus XRs, and upgrading software features to comply with current wireless standards (802.11.ac), installed necessary/compatible network equipment and low voltage cabling to support new environment.

**Campus Wide Wireless Project**

- Year 1 FY12: 209K project expenditure total
- Year 2 FY13: 1.449M project expenditure total
- Year 3 FY14: 1.035M project expenditure total
- Year 4 FY15: 189K project expenditure total
- FY16 (add'l needs identified): 65K expenditure total

**AV/Low Voltage Cabling/Fiber**

Built a robust indoor fiber backbones, developed detailed needs assessment process/scoping process, developed a remote AV support process to mitigate classroom downtimes, provided IT Engineering services for all Capital Projects and a multitude of departmentally funded initiatives.

**Upgrades in the classrooms**

- Year 1 FY13: 465K project expenditure total
- Year 2 FY14: 776 project expenditure total
- Year 3 FY15: 825K project expenditure total
- Year 4 FY16: Funded 915K, current expenditures totaling 309K

**Fiber Project**

- Year 1 FY14 (inside/outside): 204K expenditure total
- Year 2 FY15-FY16 (inside/outside): Funded 437K, current expenditures totaling 219K
**Network Upgrade and Replacement**

Since 2013, completed upgrade of campus switch infrastructure from Cisco to Juniper. Provided increased bandwidth to end users and aggregated uplinks. Provided modular switch hardware to decrease downtime as a result of hardware failure. Provides POE for eventual voice over IP migration.

Switch Upgrade/Replacement

- FY13: 1.097M project expenditure total
- FY14: 950K project expenditure total
- FY15: 876K project expenditure total
- FY16: Funded 200K, current expenditures totaling 143K

UPS Power Backups Replacement

- FY13: 28K project expenditure total
- FY14: 54K project expenditure total
- FY15: 57K project expenditure total
- FY16: Funded 65K, current expenditures totaling 31K

Add'l Network Upgrade/Replacement

- FY15: 111K project expenditure total (InfoBlox)
- FY16: Funding 850K, current expenditures totaling 542K (Edge Firewalls, F5 Load Balancers, Procera Packet Shaping Devices, VPN Appliances)
  - Edge Firewall: Allows for increased network security through newer methods of blocking and identifying attacks as well as identifying malicious software as it enters or leaves the College.
  - F5 Load Balancers: Continuation of load balancing and presenting a connection for Banner, MyCharleston, and 125 (95%) other web applications/virtual servers at the College. We will now be able to ensure critical security and software patches are applied.
  - Procera Shaping: Continuation of Malware and Peer to Peer traffic blocking as well as network traffic prioritization on newer generation hardware. Eliminates the need to replace the Procera statistics server.

**Teaching Learning Technology**

Please see link for faculty development stats with costs from 2014-2015.

[https://docs.google.com/document/d/1ZhBlq9yQ_h3js0OOVS5rFQRVug3wne9jXDd9RS6KnKQ/edit#heading=h.ps4h2uxf3w6r](https://docs.google.com/document/d/1ZhBlq9yQ_h3js0OOVS5rFQRVug3wne9jXDd9RS6KnKQ/edit#heading=h.ps4h2uxf3w6r)

Additional items related to TLT

- OAKS was implemented about 6 years ago now. We pay approximately 120K a year.
- MediaSite – replacement lecture capture solution for Echo360. We were spending 30+k per year for Echo360 and I know that we are saving money by switching over to
Kaltura Mediaspace – media/video service. The only college managed media service available to students for coursework. Approximately 40k per year.

Poll Everywhere – Cloud based audience response system. Approximately 5k per year.

Other things that come to mind in other areas

- Google Apps for Education
  - Gmail accounts to all students
  - Google Drive access to all faculty, staff and students
- Solid state hard drives in classrooms
- Classroom upgrades project
- Adobe Creative Cloud

**Enterprise Applications – Students/Faculty**

**Students:**
- Banner Student Registration
- Banner Student Accounts Receivable
- Banner Student Financial Aid
- Banner Student Admissions
- Self Service Banner
- TARGETX – Recruiting software
- Degree Works
- ALEX – math placement software
- STARREZ New housing software – Online application
- Erezlife – Checking students in for visits – student security
- Orientation
- Automating putting money on students cougar card
- Students seeing their balances on their cougar card
- Apply students ap credits programmatically – quicker turnaround time for students to see their equivalencies
- Electronic transcripts (about to go live)

**Faculty:**
- Cognos
- Banner Student
- ALEX – math dept
- Webforms
- Workflows
- Upgrading classroom technology
- bdms
- New Faculty Evaluation system
- Local mod to allow academic departments to enter their own course schedules
- Local mod to allow academic departments to override into their courses

**Both Faculty and Students benefited from these**

- Web Forms and Workflows
  - Addition to the Grade Roll
  - Change of Grade
• DegreeWorks Exception Petition
• Deletion to the Grade Roll
• Faculty Advisor Change Request (change an advisor for one student and change all students from one advisor to another)
• Program of Study Management
• School of Education web forms for Clinical Practice (9 web forms)
• Student Employment Hire
• Withdrawal for Excessive Absences

• Implemented Mail Services SC Intra software for mail handling
• Google Apps
• CoFC Mobile App
• Built Multiple Compliance Quizzes for the College
• Designed a Responsive Site
• Emergency Website Notification System Built
• Launch 2 New External Web Servers
• New News and Emergency Site
• Redesign of Entire Website Twice
• Streaming Media Server
• Scaled Blogs Server

Faculty
• Web Forms and Workflows
  o Teaching Effort (3 web forms)

Students
• Web Forms and Workflows
  o Graduation Ceremony Drug and Alcohol Policy Acknowledgement
  o Student Financial Responsibility Acknowledgement
• Implemented Appointment Manager software to handle appointments in various departments
• Implemented Career Center software which included portal for students to search for internships and jobs
• Implemented Medicat software to handle Health Services appointments
• Implemented StarRez software which included a portal for housing applications
• Implemented TargetX software to handle Admissions application processing

A Note about Web Forms and Workflows:
Implementation of web forms and Workflow over the last 5 years has increased accuracy of data, saved time and labor.
We have processed over 145,000 Workflows.
Previously faculty members or students would have to print the form from a web site or go to an office to pick up the form, fill out the form and then return it to a department.
Paper forms which required approvals had to be manually moved from one desk to another or one office to another. It was difficult to track where the form was in the approval process and forms often were lost in the shuffle.
With the electronic web forms and Workflow, the forms don’t get lost and the form owner can easily track where the form is in the approval process.

This list does not include maintenance of over 100 existing systems/processes such as Account
Provisioning, Blogs, Parking, Cougar Card, Faculty Balloting System, MyCharleston, Orientation database, Parking and TouchNet payment gateway.

**Project Management Office** 1.5 years
Adison Jobe put systems into place to create process and procedures for identifying and managing IT projects.

**Enterprise Information Mgt** 4 months
Business Intelligence moved to IT in August 2015.