

The Office of Academic Computing Services
A unit of the College of Behavioral and Social Sciences
University of Maryland College Park

Strategic Technology Plan

October 2013

FINAL DRAFT

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INTRODUCTION

The Office of Academic Computing Services (OACS) provides technology support and services to the faculty, staff, and students of the College of Behavioral and Social Sciences (BSOS) at the University of Maryland College Park. Through significant transformational change in the academic (both teaching and research) and administrative domains within the College, OACS has expanded its breadth of services, such as:

- Enhanced technology support to accommodate increased number of technology classrooms and conference rooms with collaborative technology,
- Instructional computer labs with the latest hardware and social science related software for students and instructors,
- Expanded help desk services for BSOS graduate students, faculty, and staff,
- Increased number of research computing co-lo arrangements, in addition to the availability of a general purpose high performance compute cluster.

This strategic plan will expand upon the core services provided by OACS, as well as those that are needed but not yet implemented. This plan will also address requirements for governance, and increased technology collaboration across BSOS departments and the campus.

For a summary of recommendations, please see Appendix A.

Please note that some of the presented recommendations are placeholders for further discussion.

MISSION STATEMENT

OACS believes that technology can be an enabler for:

- Enhanced and immersive teaching and learning
- Cutting edge research
- Strong college administration.

Therefore OACS states the following:

OACS will provide to BSOS faculty, staff, and students sustainable and innovative technology services and solutions that are supported by (in no particular order):

- A pro-active, metrics driven, customer service infrastructure
- Reliable, up-to-date, and secure computer systems
- Strong governance
- In house subject matter experts who continuously acquire new skills via appropriate training
- Effective and enhanced communication
- A physical environment dedicated to BSOS and free from external influences

VALUES

A set of core values is essential to support OACS' mission.

- *Technology in and of itself is only one aspect of the total IT experience.* Effective customer service through human interaction is a critical success factor for technology deployments.
- *Technology solutions must be practical and add value to the College.* Technology solutions and implementations must be realistic, effective, financially sustainable, and in alignment with the College's administrative, research, and teaching needs.
- *Collaboration is very important.* Building strong partnerships with units such as other colleges and the Division of IT, and even departments within BSOS, allow OACS to offer solutions that may not otherwise be feasible.¹
- *Governance contributes to proper alignment.* There needs to be a strong IT governance structure within OACS that facilitates the construction of technology solutions that are aligned with the technology objectives as laid out by the Dean's Office.
- *Communication should be transparent and frequent.* Communication structures should be in place to give BSOS faculty and staff multiple opportunities to acquire knowledge about:
 - OACS' project portfolio
 - Various solutions developed by the campus to solve campus wide issues, and
 - The College's IT governance framework.
- *It is all about the RIGHT people in the right position within the organization.* "People are not your most important asset. The *right* people are."²

OACS CORE PORTFOLIO OF SERVICES

In general, OACS owns responsibilities for which it has an advantage over other service providers. The following table details the activities that support the responsibilities. It also mentions how to make the delivery of these activities add more value to the College, and notes those responsibilities that may be performed better by another entity.

¹ E.g., Division of IT, OACS, and the Dean's Office working together to build an electronic APT process powered by Sharepoint; OACS, the Dean's Office, and Enrollment Services built an electronic application system for the SRI program; OACS, the Dean's Office, and Stamp IT are working together to design and implement a digital signage system.

² Collins, Jim. Good to Great. 2001. HarperBusiness. Page 13.

Table 1: Core services delivered by OACS (in no particular order)

Category	Activity / service	Comments	Recommendation
Teaching	Instructional computer labs (Lefrak)	-Computer labs open to all students and have software specific to social sciences (mainly statistical programs). -Able to host up to 80 students at one sitting.	-OACS should continue to deliver this very important service. -Staffing level OK.
Teaching	Technology classrooms (BSOS buildings)	-Classroom support is a critical service provided by OACS and Division of IT for BSOS instructors.	-OACS should continue to serve as a model participant in the classroom support project. -OACS should also keep the campus informed of the state of classroom technology within the BSOS domain so that refreshes are done in a timely manner.
Collaboration	Technology enabled conference rooms (BSOS buildings)	-Increased demand for collaboration technologies, like Video Conferencing, Skype, and Adobe Connect.	Look into hiring a multi-skilled A/V technician so that OACS can provide enhanced support for all three modes of virtual collaboration ³ .
IT infrastructure	Data center and associated services	-The OACS data center remains the premier location for BSOS IT equipment. -Unfortunately, space is at a premium in Lefrak. -New Rivertech facility will allow OACS to have the right amount of space. -Appendix B highlights differences between Lefrak machine room and RiverTech data center.	-Core services should remain in Lefrak machine room. -Continue to strengthen the relationship between the Division of IT HPC and data center staff; and OACS staff. -Through prudent space management, an optimal combination of RiverTech and Lefrak should provide BSOS with the appropriate amount of space in a proper data center environment.

³ Memo to Dean's Office from OACS director, April 13, 2012

Category	Activity / service	Comments	Recommendation
Customer service	Help desk services	The OACS help desk has a level of user knowledge that the Division of IT just can't match.	-Possibly add another help desk colleague to increase ability to be pro-active with customers. -Otherwise, maintain current structure. -Judge feasibility of integrating all helpdesk operations across the College into one centralized operation. -Create metrics framework that markets our success. ⁴
Research	Research computing services (including BSWIFT and cluster colos.)	Per the BSOS Technology Review, this competency is not fully developed.	-Hire a research computing consultant resource with knowledge of HPC and social science software. -50% resource would provide one-on-one training / help to researchers, as well as group training opportunities. -The resource would also work hand-in-hand with appropriate members of the OACS team to build up HPC expertise.
Web services	Global branding of BSOS via the web.	OACS web services are tailored to the needs of BSOS, especially those associated with the Drupal messaging effort.	No change to existing arrangement.
Multi-media messaging	Digital signage	OACS partnering with the Stamp Student Union.	-Maintain relationship with Stamp. -Continue to roll-out messaging capabilities to BSOS buildings.

THE HUMAN DIMENSION

The OACS organization has changed significantly over the years in response to a changing responsibility portfolio. Although operations and maintenance of email and network authentication transferred from OACS to Division of IT, new initiatives such as Drupal, high performance computing, research computing, system design consulting, and technology enabled conference rooms have stretched existing human resources to the point where staff augmentation may be needed. Proposed areas requiring additional resources are noted in Appendix C, the OACS org chart.

In the helpdesk area, our model of embedding a member of the OACS team in a department has worked very well. OACS management is discussing the feasibility of posting another helpdesk assistant in one of

⁴ BSOS Technology Review. September 2013. John Romano. Page 7.

the larger departments to further improve response times and to have the ability to work with appropriate parties to develop prudent technology solutions.

The significant increase of technology equipped conference rooms has put a strain on existing resources. As noted in an April 13, 2012 memo referenced earlier in this document, it was “highly recommended that an A/V technician be hired to take the pressure off our existing instructional facilities manager, who is already busy supporting classrooms, labs, and some small conference rooms.”⁵

Finally, as stated in the BSOS Technology Review, an application / research consultant is needed to cultivate and expand the HPC capabilities provided by the College’s general purpose cluster. Although existing staff resources can be used to provide hardware support, the OACS organization lacks the expertise to provide application level and operational training to researchers who want to run jobs on the machine.

The staffing plan as proposed in this strategic plan will require funding. Estimated costs are noted in the table below:

Table 2: Cost implications of hiring additional staff

Job Category	Position	Estimated Yearly Cost (\$)
Research support	HPC Consultant	50k (100k x 50%)
Customer service	IT Support Assistant	40k
Multi-media	A/V Technician	40k
	TOTAL---->	130k

TAKING COMMUNICATION TO THE NEXT LEVEL

While the existing OACS communications infrastructure is functional, it does not provide BSOS constituents with a fully transparent picture of what is happening within OACS, nor does it advertise the services OACS provides to the College. In order to ensure that the various messages are hitting their target, one must utilize different modes of message distribution. The table below presents an improved communications flow.

Table 3: Communication Methods

Transport mechanism	Type of Information Conveyed	Exists today?
Email	System outages, introduction of new services, “need to know” messages.	Yes
OACS website	Catalog of services, system outages, about OACS, policies, performance metrics (future)	Yes, but website needs an overhaul.

⁵ Memo to the Dean’s Office from OACS director, April 13, 2012.

Transport mechanism	Type of Information Conveyed	Exists today?
Digital signage	Information from OACS website (exact same format as website)	In limited form. Expansion project underway to capture remaining departments.
Social media (Twitter)	Critical information (outage, new service, etc.)	No. Will initiate a project to build basic infrastructure.

GOVERNANCE: A REBUILT COMPUTER POLICY ADVISORY COMMITTEE

A governance structure helps to share in technology decisions that affect the entire BSOS College. The Computer Policy Advisory Committee (CPAC) was established to serve as an IT governance structure for BSOS. Although on hiatus for several years, CPAC should be reconvened as the BSOS IT environment has changed significantly since the committee last met.

CPAC should be comprised of one representative from each BSOS academic unit⁶ as well as one person from each College level center, as defined on the BSOS home page. The Dean or designee will appoint a representative from the Dean’s Office to serve on the Committee. The committee’s charge would come from the dean, and would be modified as needed to accommodate change in the compute environment.

CPAC should be reconvened and meet on a regularly scheduled basis. Its responsibilities should be as follows:

- Provide input into BSOS wide technology projects
- Give input to establishing or updating BSOS wide technology policies and procedures
- Distinguish between University vs. BSOS specific technology project initiatives.
- Assess outcomes and establish accountability through pre-defined performance measures and criteria
- Develop communication channels between BSOS departments and CPAC to understand technology decisions, services, and support

OACS recognizes that having this level of accountability and support will improve its ability to communicate change, establish project priorities, and better support BSOS units. It will also help OACS operate within the boundaries of the BSOS strategic vision as enunciated by the Dean.

⁶ Representatives will come from units that are directly supported by OACS, and those that are not.

FACULTY HELPING FACULTY

The College has one of the best faculty in the world, spanning many disciplines within the social sciences. Within the College itself lies strong domain knowledge about applying various forms of computing to social, economic, and geographical issues.

Many faculty use local compute facilities (e.g. office workstations) to perform their research. Some use departmental compute clusters, while others utilize cycles on the Division of IT's high performance computer, DeepThought. BSWIFT is also available to BSOS researchers as a compute environment dedicated to BSOS.

Regardless of where or when a job runs, an opportunity exists to share knowledge about how computing is being used to solve research questions. It is recommended that a series of brief, informal faculty workshops be put together to showcase how computing can be used to benefit a research effort. These events would cover all of the BSOS disciplines so faculty can see the different ways computing can be used. The workshops could also function as a user group, where researchers come together to discuss problems and how to solve them.

As time goes on, it is hoped that the workshops will help break down computing silos and create opportunities for further collaboration and study.

CONCLUSION

OACS continues to evolve as an organization. No longer is it a simple break / fix reactive entity. Rather, it is an organization with colleagues who have diverse skill sets needed to resolve problems of ever increasing complexity. OACS will continue to seek out partnerships, both inside and outside the College, to ensure that technology solutions, whether they are research oriented, focused on a teaching issue, or supporting the business of the College, are well designed and appropriate for the stated needs, and in compliance with the CPAC governance framework.

Appendix A: Recommendation summary

1. **Hire HPC / Research Consultant (50%).** Help researchers become comfortable with general high performance computing. Train appropriate OACS staff on general HPC commands to further strengthen competency. Assist in developing HPC user group.
2. **Discuss possible hire dedicated to supporting collaborative conference rooms.** Such rooms may include Skype, video conferencing, and Adobe Connect.
3. **Maintain dialogue between BSOS IT units and Division of IT about RiverTech.** Continue to work with Division of IT in terms of identifying candidate systems for placement in RiverTech.
4. **Discuss feasibility of hiring an additional help desk resource.** Assign staff resource to the larger departments to facilitate proactive response.
5. **Discuss feasibility of creating a central BSOS helpdesk.** Discuss the use of a robust ticketing system to create a single BSOS help desk entity charged with providing help desk services to all BSOS units.
6. **Improve transparency of the OACS organization.** Post project portfolio to OACS website. Build dashboard with selected performance metrics. Advertise via OACS website and the College's digital signage system.
7. **Re-convene CPAC.** Work with the Dean's Office to build a reconvened CPAC governance committee that would be responsible for commenting on policies and procedures. The group would also give advice on high impact decisions.
8. **Create workshop series and / or a College user group about discipline specific computing.** Workshops could entail the discussion of code issues, or presenting various research efforts.

Appendix B: The Lefrak Data Center compared to RiverTech.

Attribute	BSOS (Lefrak)	Division of IT (RiverTech)
Air conditioning	100% redundant	Constrained (DivIT working on this issue)
Fire suppression	FM-200 (non-water based)	Water based; charged sprinkler heads over the equipment.
Generator	At or near capacity. Flexibility with normal power. Can tap into CHP via manual switching if needed.	Some constraints brought on by HPC (DivIT working on this).
Facility ownership	University of Maryland	Leased
UPS	Floor or rack mounted	Building central
Ultimate policy control	BSOS	Division of IT
Locale	Physically located near most of BSOS buildings	Off-campus

Appendix C: OACS organizational chart including proposed new hires.

Please see attached document.

REFERENCES

- BSOS Technology Review, September 2013
- Promoting Innovation, The University of Maryland Information Technology Strategic Plan, January 2013
- OACS Strategic Plan, October 2005
- Collins, Jim. Good to Great: Why Some Companies Make the Leap and Others Don't. 2001. HarperBusiness.
- Final Report of the OACS Review Committee, August 1998