

IT Service Management Board
Top Five Service Recommendations
February 26, 2013

Executive Summary

The IT Service Management Board (SMB) is one of three IT governance boards established by Vice President for UW Information Technology and Chief Information Officer Kelli Trosvig in autumn 2012. The SMB was charged with creating, by February 2013, a “top five list” of new IT services or changes to existing services that would have significant impact at the University of Washington.

The charge further stated that these service additions or changes could be in any area. The only limiting factor in their selection was that they be “doable,” something UW-IT could reasonably accomplish within its organizational and budgetary constraints.

Given the diverse audiences and IT needs present at the University of Washington, the SMB elected to break the problem into the following four areas and submit one recommendation for each: teaching and learning, research, administration, and technology. The fifth recommendation was reserved for a “wildcard,” something with broad value across multiple areas, or so compelling that it should be advanced as well.

A working group formed for each of the four areas (see Appendix A) and began with an ideation phase that either utilized the knowledge and expertise within the group or interacted with external stakeholders. Time to complete the task was very short, given the SMB’s final report deadline, so extensive research and feedback from stakeholders was not possible.

At the conclusion of the ideation phase, each working group asked the full SMB for feedback, and a process of revision and ranking began. The process continued until each working group had selected one recommendation to bring forward. The recommendations were shared with the UW Computing Directors group at its February 2013 meeting, where additional feedback was solicited, and then they were incorporated into the final report. The recommendations were presented to Kelli Trosvig on February 26, 2013.

The top five service recommendations are:

1. Teaching-focused support for faculty use of technology
2. Consolidated research consulting services
3. Enterprise Data Warehouse expansion, with a focus on analytics
4. Consolidated servers and storage
5. Create a process for managing UW-IT’s collaboration services portfolio

A brief summary of the top five service recommendations follows, with the full text of each presented later in this report.

The Top Five

1. Teaching-focused support for faculty use of technology

In partnership with UW Libraries, the Center for Teaching and Learning, and the academic schools and colleges, UW-IT should extend existing faculty support services, with a long-term goal of providing a “one-stop shop” for faculty and teaching assistants. This faculty support should be holistic in nature, providing not just training in how to use a technology or tool, but how to do so in a way that meets teaching goals. This support would provide faculty with more help when they need it, help that saves them time, help that is itself an exemplar of what the technology can do, and help that allows faculty to best utilize the tools of today while creating even better tools for tomorrow.

2. Consolidated research consulting services

In order to help foster and expand research support at the UW, we recommend adding subsidized, fee-for-service computational research assistance to UW-IT's service catalog. This assistance would be provided in partnership with the eScience Institute, which already provides centralized consulting services to researchers, including "computational knowledge extraction" from large datasets and assistance with domain-specific tool choice and scientific workflows. To complement the work of the eScience Institute, we recommend that UW-IT expand its resources for consulting on basic research cyberinfrastructure capabilities and best practices. We seek to enable broader implementation of scalable computing tools and techniques including: sharing information on available resources and directing researchers to the most appropriate resources for their needs. This UW-IT consulting service would provide an additional place for researchers to find the resources they need, and it would help promote community building--organizing resource sharing, unifying research expertise, attracting new faculty, retaining existing faculty, enabling more UW researchers to apply computational resources to their research, and exploring where future IT resource investments should best be applied. This service would be offered in partnership with the eScience Institute and the Hyak Governance Board.

3. Enterprise Data Warehouse expansion, with a focus on analytics

Expand the Enterprise Data Warehouse (EDW) by creating additional reports; including additional data elements; and providing a credible, consistent, and reliable data environment to allow users flexible methods to access information, with an emphasis on “self-service” and ad-hoc analytics. It is our strong feeling that close attention should be paid to EDW expansion in relation to Strategic Roadmap items. Migrating and expanding information in the EDW is a necessary step in moving to an enterprise system.

4. Consolidated servers and storage

Establish a suite of managed servers and storage services, with options and prices that make them attractive and encourage campus units and researchers to off-load some or all operation and management of servers and storage. Conduct pilot projects to directly involve customers in helping define the services and options, document the benefits, and, working with IT Governance bodies, recommend policies or programs to

encourage adoption and address institutional goals and objectives, such as green initiatives. (i) Establish a “managed server” service, with a range of management options, from minimal to complete. Utilize technologies and sourcing alternatives to optimize the cost-effective delivery of the services to campus customers. (ii) Augment existing storage services to provide a broad “suite of storage services,” including end-user “cloud-style” storage (for any-device access and collaboration), desktop/laptop backup, departmental file service, department file server backup, and archive services. Seek funding to support this effort for project management and other resources, as needed.

5. Create a process for managing UW-IT’s collaboration services portfolio

Currently, the UW has a limited offering of centrally-managed collaborative tools¹ that work well for the University community. With a robust and nimble strategy for analyzing, acquiring, provisioning, and routinely improving collaborative tools, UW-IT and/or other provisioning groups would be able to more effectively meet the needs of the faculty, staff, and students, and do so in a cost-effective manner. This process would be applicable to all four areas: teaching and learning, research, administration, and technology.

Next Steps

These five recommendations were developed by subgroups of the SMB, vetted by the full board, prioritized by their significant impact on the use of services provided by UW-IT, and crafted to be doable. They vary in the degree of effort or cost required to implement. Some might require modest financial investments, while others will require investments of time by people across the institution, through participation in pilot projects. All will require further work to develop implementation plans, specific resource and funding requirements, and project charters. The SMB is ready to form subgroups or action teams to do that work, which may include key individuals from within UW-IT and academic and business units as appropriate.

Each of the subgroups came up with many possible service recommendations, and while the goal was to prioritize and ultimately identify five, we have listed additional recommendations in this report in Appendix A. These can be used by UW-IT, as it goes through its process of continual service improvement, or by the SMB in the future.

Notes

Selecting a “top five list” of IT services for a university as large and diverse as the University of Washington is a daunting task. Ours was particularly challenging given the time constraints for producing the list, which limited the input that could be gathered from members of the various constituencies. Without a full vetting by many more members of the campus community, it isn’t possible for our list to be more than a best effort by a limited number of people. But it is a start.

¹UW-IT Collaborative Tools - <http://depts.washington.edu/uwtscat/svcesincat/18>

While feedback from the greater University was somewhat limited, SMB members represent multiple schools and colleges and multiple units within UW-IT, and they have a variety of perspectives on how UW-IT can have the most positive impact. Kelli Trosvig should be commended for undertaking to make a short list of top priorities, even if they are not perfect.

In the past, IT governance for the campus was unclear, and how UW-IT made decisions was not transparent. Now, with a comprehensive IT governance model in place, many more units will have the opportunity to provide direct feedback and make recommendations.

SMB members greatly appreciate the opportunity to help shape UW-IT services, and they hope these recommendations will prove helpful as UW-IT makes service and investment decisions.

A full list of SMB members and the subgroups they worked on is provided in Appendix B.

Full Text - Top Five Service Recommendations

Teaching and Learning Service Recommendation:

1. Teaching-focused support for faculty use of technology

The University of Washington is recognized worldwide for outstanding teaching and learning. Yet this excellence may be at risk as technology has the potential to disrupt the status-quo. Over the past decade, entire industries have been turned upside-down by technological change, and we are beginning to witness change in academia as well. Increasingly sophisticated tools offer rich opportunities to engage students, to deliver instruction unbounded by physical constraint, and to provide teaching environments that are more individualized and differentiated--improving learning and the overall student experience.

In the past, many of our teaching and learning tools were merely supplements that made a class syllabus available or that offered a way to track and collect assignments. Today's tools offer the potential to become central to the delivery of instruction, allowing us to teach in ways that never before were possible. It is critical that our faculty know not just how to use and incorporate technology into their classes, but how to do so in a sound and effective pedagogical manner. Unfortunately, many of our faculty and teaching assistants lack this knowledge.

To successfully engage the changes that are upon us, our faculty need significant additional training and support, not just in how to use specific technological tools, but in how to efficiently and effectively use those tools to improve student learning. These are very different things, and we need to do both. This help must save faculty time, be available when and where faculty need it (24/7), reflect varying values and practices in academics departments, and capture faculty needs and teaching styles so improvements to tools and practices can be made over time.

Fortunately, the University of Washington is in an excellent position to address these needs. The superb technical capability of UW-IT, coupled with the disciplinary expertise in unit IT organizations; the deep understanding of effective teaching practice in organizations such as the Center for Teaching and Learning; and the ability to provide information, help, and assistance through the UW Libraries all demonstrate that the necessary components are there. We simply lack coordination of effort.

We, therefore, propose that UW-IT invest additional resources and partner with unit computing support organizations, the Center for Teaching and Learning, and UW Libraries to provide more direct, effective, and immediately useful technical and teaching assistance to faculty and teaching assistants. While each of these organizations does great work individually, and all work together to a limited extent, much more can be done.

Specifically, the SMB recommends UW-IT leadership advocate for a one-stop shop, cooperative effort between UW-IT, UW Libraries, the Center for Teaching and Learning, and academic departments that is focused on improving faculty support. That cooperative effort would:

- Use the technology to teach the technology. Efforts to consider include online forums, 24/7 anytime/anywhere help/chat assistance, short videos that explain tools, videos that demonstrate how a particular teaching technique can be combined with a particular tool to improve student learning; train the trainer programs, and school/college outreach programs. Expand the existing UW-IT service that provides faculty support for Canvas, and develop partnerships to incorporate these ideas, with a goal of providing more holistic support to faculty than is provided today. Specific teaching artifacts that are produced should be exemplars of best practice so faculty can see the potential of what is possible while they learn themselves.
- Partner with the Center for Teaching and Learning as well as academic units to invest in added incentives for faculty that step-up and do more. These investments might be small in terms of money required, such as University-wide awards related to teaching and technology. But they might be larger as well, including salary supplements or load reduction for particularly significant faculty efforts. In other words, consider options to do more within the faculty incentive structure to encourage faculty effort in this area.
- Extend existing UW-IT services that facilitate better communication and knowledge transfer between our existing support organizations and the schools and colleges. For example, many staff in UW-IT have deep knowledge of how to use particular tools, but don't have knowledge of how to use those tools most effectively to meet particular learning goals. We need to invest in cross-training between UW-IT, the Center for Teaching and Learning, and units so we are able to provide holistic support that considers both the technology and the teaching goals of our faculty.

Facilitation might be done using a model similar to HUB Seattle: thehubseattle.com, an organization that works to bring people together into a community melting pot, that is creative and inspirational, that seeks to be a center for impact and innovation, and that provides world-class training and mentorship.

- Extend existing UW-IT services that support faculty by investing in special support mechanisms (such as dedicated support staff or access to software development teams) to select faculty wanting to push the envelope. We need to insure that UW faculty are producers, not just consumers of tools and teaching methods that are developed elsewhere. We research, design, and build the tools and teaching practice of the future, we don't just implement what others do. UW-IT is a leading player in the teaching and learning area on campus. But it must work more closely with UW Libraries, the Center for Teaching and Learning, and the academic units to improve the amount and quality of support available to faculty and teaching assistants. Otherwise, our position as an institution that provides a world-class teaching and learning experience to students may be at risk.

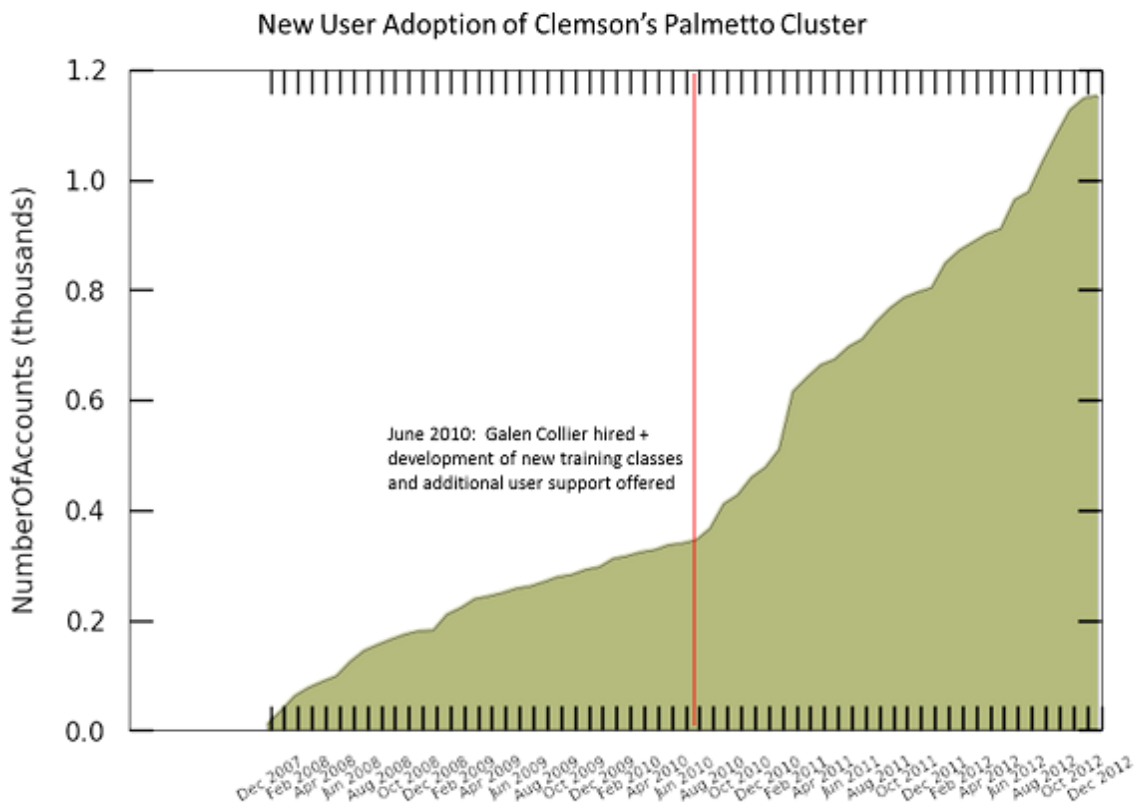
Research Service Recommendation:

2. Consolidated research consulting services

The UW is underinvested in central IT support for research efforts. Organizing and funding more research consultants would improve the efficiency and effectiveness of research efforts. Existing IT experts across the three campuses should be identified and asked to participate.

- a. Justification: According to a [recent ECAR report](#), a large research university such as the UW would typically have 1.5% of IT staff allocated to research IT. UW-IT currently has approximately 2 FTE in this role, which equals 0.4 %. UW’s eScience Institute and Hyak Governance Board both regard increasing research consulting as a top priority to meet the increasing use of computational and data-driven research at the UW. Without strong central support, technology solutions must be replicated and will diverge--making support more expensive to the UW and collaboration and sharing more difficult across disciplines.

Clemson’s research cluster usage dramatically changed after adding 1 FTE of support staff:



- b. Effort/Cost estimate: 1.0 FTE to start, plus additional FTE as service grows.
- c. Considerations:
 - i. Coordinate consulting services with both the eScience Institute and Hyak Governance Board.

- ii. Create a new service in the UW-IT Service Catalog for Research Consulting. Recommend adding 1 FTE in UW-IT to start, and consider expanding only if the service is successful.
- iii. Consulting service engagement would include options for short-term engagement (a few hours) and long-term (months).
- iv. Use service structure to create an enterprise-wide knowledge base of how-to's, common solutions, etc. with contacts and information.
- v. Identify and document expertise across campus units as part of service (student consultants could also be enlisted).
- vi. Individual availability to conduct business outside of their unit would need to be included in a service-level agreement (SLA) with the centrally managed UW-IT consulting team.
- vii. Consider subsidizing the cost of this consulting to encourage use. Recommend initial, small engagements would be at no charge, but any significant use of resource would have a cost.
- viii. Recommend that a percentage of each consultant's time be allocated to incubator projects to learn and deploy new research related technologies. These projects would be defined, prioritized, and managed as part of the overall UW-IT project portfolio.

Administrative Service Recommendation:

3. Enterprise Data Warehouse expansion, with a focus on analytics

Expand the Enterprise Data Warehouse (EDW) in terms of additional reports; including additional data elements; and providing a credible, consistent and reliable data environment to allow users flexible methods to access information, with an emphasis on “self-service” and ad-hoc analytics. *It is our strong feeling that close attention should be paid on EDW expansion in relation to the Strategic Roadmap items. Migrating and expanding information in the EDW is a necessary step in moving to an enterprise system.*

The EDW effort has already provided substantial benefits, and recent investments have been well placed. However, reporting needs are great in virtually every data domain. *This need is intrinsically tied to UW's priorities to replace our key legacy administrative systems, as reporting needs are high for each.* Focusing now on reporting needs will address key gaps prior to the implementation of new systems and will sharpen our focus on reporting requirements for these new systems. Focusing requirements gathering on the needs of academic schools and colleges will help the UW move more successfully into the era of activity-based resource allocation.

The need falls into three categories; ability, cost, and risk:

- Our **ability** to respond to constituents and make informed decisions is compromised by our inability to provide consistent and accurate answers to important questions. For

example, an analyst from Planning and Budgeting recently needed help providing data for a state legislative committee request on student demand. Even answering such a seemingly simple questions on student demand for our academic programs is difficult and time consuming, since admissions data is not yet in the EDW. In the student domain, important metrics missing from the EDW include student completion rates, time to degree, student program assessments, student financial support, and debt levels.

- The **cost** of doing needed reporting and data analysis is too high. Hundreds of administrators, faculty, and staff throughout UW manage separate databases. The reporting done by PIs on NIH training grants is a small subset of the UW reporting need, but nearly 10,000 annual staff hours could be saved for them alone, if there was an accurate central reporting resource. There is also an opportunity cost: some PIs are dissuaded from applying for these important training grants because the reporting burden is so high.
- The **risk** of untimely response to constituents and of making important institutional decisions in the absence of data, or with incorrect data, is too great. There are compliance requirements for many of the reports provided by central offices as well as schools and colleges. If reports are not timely or contain bad or missing data, the risks to accreditation and grant reporting can be high. The risk of making poor decisions with bad data or in the absence of data cannot be understated. The UW must have easily accessible, conformed, high-quality data to make strategic and tactical decisions. The proliferation of shadow reporting databases increases the risk that sensitive data will be compromised, and it increases the risk to the UW's reputation, if offices provide constituents with different answers to the same question.

Specifically, we want to emphasize the following high-priority needs which are either unmet or partially met at present:

- a. Provide a set of reports with consistent data definitions and method to address the basic analytic needs of schools and colleges. The 'top five' effort of several years ago drew on needs identified by school and college deans. Despite this effort there are still no basic reports for many critical measures. In the academic data domain, there are 31 reports. but most provide unit-level detail and are meant to shore up reporting limitations in transactional student systems. Only a handful of aggregate reports are available, and most just have simple graphs--it isn't possible to drill into common demographic or other variables across reports. UW-IT has full responsibility for the EDW technical infrastructure, but report development has largely relied on available resources from central administrative units and schools and colleges that have, for the most part, not committed resources to these efforts. Additional resources are needed.
- b. Provide a way for departmental data to be linked to institutional data in reports and analysis. Many shadow reporting systems could be eliminated by the ability to link local data to institutional data, preferably in real time.

- c. Provide simple analytic browser tools for casual users. We strongly endorse the current activity to pilot the Tableau analytic tool, and Tableau Server may provide this capability.
- d. Focus on standard definitions for “dimensions” that may be used across a variety of reports and cubes. Examples include “underrepresented minority” and “STEM.”
- e. Gather reporting and analysis requirements carefully in the context of administrative system replacements. Partner with school and college users of the administrative systems to fully understand and incorporate their needs. Document needed metrics, definitions, and data validation early in the process, and make sure products can meet reporting and analysis requirements.
- f. Provide for public-facing reporting on key data and metrics. The UW is a public institution with an obligation to provide transparency to the public. The Data Management Committee should provide guidance on security and privacy of aggregate data (e.g., low n’s) but certain reports should be updated on a quarterly and daily basis for access without authentication if security and privacy needs are met.
- g. Foster an analyst community, and communicate effectively (and broadly) on the availability and use of reporting resources.

Technical Service Recommendation:

4. Consolidated servers and storage²

Summary: Establish a suite of managed servers and storage services that can be delivered in a cost-effective and sustainable way, with options and prices that make them attractive and encourage campus units and researchers to off-load some or all operation and management of servers and storage. Conduct pilot projects to directly involve customers in helping define the services and options, document the benefits, and, working with IT Governance bodies, recommend policies or programs to encourage adoption and address institutional goals and objectives, such as green initiatives. (i) Establish a “managed server” service, with a range of management options, from minimal to complete. Utilize technologies and sourcing alternatives to optimize the cost-effective delivery of the services to campus customers. (ii) Augment existing storage services to provide a broad “suite of storage services,” including end-user “cloud-style” storage (for any-device access and collaboration, through Web apps and/or sync tools), desktop/laptop backup, departmental file service, department file server backup, and archive services. Seek funding to support this effort for project management and other resources, as needed.

Description: Establish a consolidated service that offers server management and storage platforms to campus units, with an appropriate range of systems management options and performance characteristics, and with an appropriate breadth of storage services. The services should be easy to order, quick to deploy, and able to expand or shrink as needed. These

² This was the highest priority enterprise-level technical recommendation in the Report of the IT Costing Study, as prioritized by the Core Functional Group (second only to Governance). See: <http://www.washington.edu/uwit/reports/2012.campus.itcosting.report.pdf>

services should utilize virtualization or other technologies and approaches that improve overall cost effectiveness and provide a reasonable amount of flexibility. These services might be provisioned locally, or through cloud services (offered or brokered by UW-IT). Ensure that there is adequate network access to on-premises and/or cloud-sourced facilities.

Establish a full suite of storage services by augmenting existing services, which should include end-user cloud storage, to provide anytime/anywhere/any-device access and group collaboration; desktop/laptop backup; departmental file service, so units can manage storage allocation within their department; department file server backup for units that may operate their own file server(s); and archive service for long-term storage of research and other data. These services should provide support for multiple platforms (Windows, Unix, and Mac).

Conduct pilot projects with a small group of campus units and UW-IT, to validate that the services are appropriately designed and configured to meet the needs of campus units, that they can be delivered in a cost-effective and sustainable fashion, and that they address questions such as the following. (i) For servers: the choice of operating systems in the offering, the types of system management options offered (e.g., none, operating system maintenance and security patches, backups, software installation, etc.), possibly some flexibility for performance (CPU and memory configurations), possibly a range of service levels from non-critical to high-availability. (ii) For storage, the range of services to be offered, for instance: end-user storage (e.g., U-Drive, G-Drive, Box), desktop/laptop backup, departmental file service (delivered using useful protocols, iSCSI, NFS, CIFS, etc.), department file server backup, and archival service. Explore possibilities for addressing specific regulatory compliance requirements, such as HIPAA, FISMA, and EAR.

Pilot projects should operate in an incremental fashion, and shape the service offerings using feedback gained during the pilot. The pilots should document the benefits of server consolidation and virtualization, such as security, flexibility, disaster recovery, and business continuity. As pilots produce viable services, the participants should work with IT governance bodies to recommend an institutional strategy or strategies to encourage and incentivize units to adopt these services, rather than continue to deploy servers within individual campus unit facilities.

Wildcard Recommendation:

5. Develop a process for managing UW's collaboration services portfolio

Currently, the UW has a limited offering of centrally managed collaborative tools that work well for the University community (<http://depts.washington.edu/uwtscat/svcesincat/18>). With a robust and nimble strategy for analyzing, acquiring, provisioning, and routinely improving collaborative tools, UW-IT and/or other provisioning groups could more effectively meet the needs of the faculty, staff, and students, and do so in a cost-effective manner.

- a. Justification: With the never-ending development of new communication and collaborative technologies, faculty, staff, and students in both the education and research settings see the value that these new technologies can provide in advancing the missions of the University of Washington. At the same time, technologies that were

once cost-prohibitive to implement are now reaching an accessible price point. Thus there is increasing demand from our academic and research faculty and staff, and from our administrative and technical staff, to acquire and implement these technologies to facilitate and enable collaborative activity. With the range of technology solutions expanding, potential end users (and those tasked with managing solutions for the end user) find themselves grappling with the complexities of ensuring functionality and security across platforms, while still meeting the need for a robust and facile communication experience.

- b. Effort and Costs: Recommend an initial small working team form to gather input, review priorities; implement a governance model using the new UW IT governance structure; and define initial projects for implementation.
- c. Considerations:
 - i. Collaboration tools are not just research specific--these tools can also be effectively utilized within the educational, administrative, and technical communities, and across all UW campuses, minimizing the need for travel between campuses.
 - ii. Review the Collaboration Tools Strategy Task Force report from 2008 (https://uw.edu/uwit/im/reports/CTSTF_Report_Final_Draft.pdf), and consider the conclusions and recommendations in developing plans.
 - iii. Compliance and risk must be addressed and documented in the UW-IT Service Catalog as part of each service offering, particularly for research use.
 - iv. The review process does not necessarily need to be annual.
 - v. Review the cost model for each service. Consider providing subsidies to encourage use, waive indirect costs (F&A), etc.
 - vi. Maintain lists of who is using which services, to use to help manage a shared knowledge base.
 - vii. Develop and solicit project proposals that would create new and/or change existing services. Prioritize those proposals and inject them through the IT governance structure.
 - viii. Example services to consider:
 - File and document sharing (e.g., Google Docs/Drive, Office 365/Sharepoint, Box.net, Red Cap, etc.)
 - Cloud storage service offerings (Azure, EC2, etc.)
 - Multi-point video conferencing (e.g., Lync, Google+ Hangouts, SeeVogh, Adobe Connect, Cisco Web X Social, Polycom RealPresence Cloud AXIS, LifeSize, Tandberg, Blue Jeans, etc.)

Appendix A

Additional Recommendations

We have included very rough estimates of the impact and the effort or cost to implement these additional recommendations.

Additional Teaching and Learning Recommendations

1. Enhance services to provide appropriate levels of technology in University classrooms and student study rooms
2. Better classroom and resource scheduling systems
3. New service that provides tools to support synchronous learning, including audience response and synchronous video

Additional Research Recommendations

	<u>Impact</u>	<u>Effort/Cost</u>
1. Collaborative research technology service portfolio	High	Low
2. Shared software licenses	Medium	Low

Additional Administrative Recommendations

1. A unified scheduling system
2. Enterprise workflow management
3. Document management system

Additional Technical Recommendations

	<u>Impact</u>	<u>Effort/Cost</u>
1. Strategy for end-user devices	High	Med to High
2. Guidance to Unit IT organizations on best practices	Medium	Med-Low
3. Integrated catalog of services	Medium	Medium
4. Increased adoption of cloud services	High	Low
5. Support to help units adopt basic IT services	Medium	Med-Low
6. Comprehensive Web hosting services	Medium	Med-Low

Appendix B

Subgroup Members

Teaching and Learning

Scott Barker, Director of IT, Chair of Informatics Program, Information School

Mark Baratta, Director of Computing, College of Built Environments

Thomas Sparks, Financial Administrator, College of Engineering

Research

Brad Greer, Director, Computing Infrastructure, UW-IT

Barb Prentiss, Director of Information Technology, School of Medicine

Betsy Tippens, Assistant Vice Chancellor, Information Technologies, UW Bothell

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John Drew, Director, Computing and Information Resources, The Graduate School

Gary Pedersen, Executive Director, Chemistry

Bill Shirey, Director, Enterprise Application Services, UW-IT

Technology

Jean Garber, Assistant Dean, Finance and Administration, School of Dentistry

Erik Lundberg, Assistant Vice President, IT Services & Strategic Sourcing, UW-IT

Roland Rivera, Director, Network Strategy and Telecommunications, UW-IT

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