UW Technology Working Group

Report to President Mark A. Emmert

Root Causes and Recommendations

September 10, 2008

Revised October 14, 2008

Members of the Working Group:

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Paul Jenny	Vice Provost, Planning and Budgeting
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Mary Lidstrom	Vice Provost for Research
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I. EXECUTIVE SUMMARY

CONTEXT

The Office of UW Technology has a long record of achievement that has positioned the UW as a recognized leader in the use of technology for learning, discovery and engagement. As a result of serious financial difficulties, the UW Technology has recently undergone a significant reduction in staff. In response, President Mark Emmert established a Working Group to identify and understand the underlying financial and organizational issues. Leading the Working Group was Senior Vice President for Finance and Facilities, V'Ella Warren. Ms. Warren was joined in this effort by:

- John Coulter, Former Associate Vice President of Medical Affairs and Executive Director for Health Sciences Administration
- Paul Jenny, Vice Provost for Planning & Budgeting
- Edward Lazowska, Bill and Melinda Gates Chair, Computer Science & Engineering
- Mary Lidstrom, Vice Provost for Research
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The Working Group was charged with four goals:

1) Identify the magnitude and root causes of and solutions for the current financial situation, eliminate any ongoing deficit and address the impact of the cumulative deficit;
2) Stabilize UW Technology by clarifying current capabilities, developing strategies to stabilize operations, engaging staff to recommit their efforts, and communicating with the University of Washington (UW) community on service implications;
3) Develop a long-term operational and financial model for the operation; and
4) Assess the University's oversight structure for fiscal management, especially for self-sustaining units.

Three sub-teams were organized to address these goals and develop recommendations for the Working Group to submit to President Emmert.

To immediately stabilize the UW Technology organization, President Emmert appointed Kelli Trosvig as Interim Chief Operating Officer and Bill Ferris as Interim Chief Financial Officer, reporting to V'Ella Warren.

The former Vice President for UW Technology, Ron Johnson, no longer has oversight or management responsibility for the UW Technology organization and has transitioned to the role of Chief Technology Officer, reporting to President Emmert.

SCOPE AND APPROACH

Two central units provide support for information technology at the University of Washington: the Office of Information Management (OIM) and UW Technology. UW Technology provides communications, information technology and infrastructure solutions and services to the campus. It is organized into five units: UW Technology Services, Network Systems, UWTV, Learning & Scholarly Technologies, and Staff Services. The scope of this report is focused on the operations and information technology services as delivered by the UW Technology. OIM was not included in the Working Group's charge, nor is it reviewed within the scope of this report.

Through a combination of internal and external interviews, literature reviews, and data analysis, the sub-teams developed an understanding of UW Technology organization and financials. The resultant synthesis is summarized in this report with recommendations for improvement.

FINANCIAL STATUS

As of June 30, 2008 the accumulated deficit attributed to UW Technology is $38.6 million, net of accrued expenses and receivables and excluding restricted funds[1]. The estimated deficit spending rate after staff reductions is $600,000 a month or $7.2 million annually. The projected deficit for fiscal year 2009, including expenditures resulting from the recent staff reductions (e.g. annual leave payouts), will be largely offset by an accumulated surplus in royalty accounts.

[1] Restricted funds include: grants, contracts, Office of the Chief Information Security Officer, and state appropriations for Gigapop.

The total annual budget for UW Technology is $56.5 million, with $24 million (42%) from GOF/DOF[2], $28.7 million (51%) from self-sustaining revenue, and $3.8 million (7%) in restricted funds.

The accumulated deficit attributed to UW Technology consists of five categories:

1) Recharge Centers ($24.0M) deficits are attributable to past reporting periods and may not be recoverable, and includes infrastructure costs that are transferred monthly from UWTV and Network Services to the Technology Recharge Center.
2) Unit Operations ($4.0M) deficits represents both GOF/DOF and self-sustaining budget expenditures that were not attributable to recharge activities.
3) Investments into campus strategies ($6.0M), includes deficits related to investments, in E-commerce and streaming media, that were not appropriate to allocate to a recharge center.
4) Accumulation of expenses in central Business & Finance ($4.6M) includes amounts attributable to the whole UW Technology organization and includes items such as Nebula support, institutional memberships and an aggregation of GOF/DOF deficit balances at the close of the 2005-07 biennium.
5) There are three royalty accounts that accumulate revenue of $200-300K/year due to licensing agreements for software developed by UW for Unisys (mainframe software). The accumulated balance may be used to offset projected current year over-expenditures.

SUMMARY OF ROOT CAUSES

UW Technology has provided, and continues to provide, the University with reliable, high quality information and communications technology and infrastructure. The staff consists of dedicated professionals with strong technical expertise who have helped to position the UW to be a premier research university. Even with a strong organization, there are a number of root causes attributable to both campus-wide events and practices, and to practices in UW Technology that have led to the current financial crisis.

[2] GOF stands for General Operating Funds and DOF is Designated Operating Funds.

A. Institution-wide events and practices

- **Clear roles and responsibilities for financial oversight are not defined at the institutional level for self-sustaining activities.** Several hundred unique self-sustaining activities, including auxiliary operations, cost centers, and recharge centers, generate approximately $500 million in revenue annually for UW. Units report activity to various individuals for various purposes (i.e., rate proposal purposes, external debt, etc.) without a comprehensive top down review of the unit and without a clear escalation process to report issues. While most units accept the implied responsibility for effective financial management, the University has not created explicit language to define the roles and responsibilities for financial oversight nor has it developed an explicit policy for resolving deficit issues.
- **Vice Provosts, Vice Presidents, Deans and Chancellors with responsibility for the financial management of a unit are not provided adequate and ongoing training and awareness to support this role.** When Vice Provosts, Vice Presidents, Deans and Chancellors assume their leadership roles at the University, it is implied that they have financial responsibility for their units. University and unit finances are addressed in only one of a series of brief orientation sessions. In-depth training is not provided on how to effectively manage complex institutional funding models or how to identify potential operating or financial risks.
- **Campus administrative financial systems do not provide adequate management and financial reporting capabilities for the multiple revenue sources of most units, including their self-sustaining activities.** Current institutional financial systems (i.e., Financial Accounting System (FAS), and Budget System) are not designed to support and integrate the multiple revenue sources of most units, including activities funded with self-sustaining, grant-based and donor revenues. A complex coding system in FAS fails to sufficiently define self-sustaining activities and FAS does not provide standard reports to effectively monitor and manage self-sustaining financial operations.

- **Financial problems were communicated but not elevated to the appropriate levels of management.** Staff in the Office of Planning and Budgeting (OPB) and UW Technology recognized that significant financial problems were emerging within UW Technology. However, the issues were not elevated to campus executive leadership including the Provost and President. As a result, the financial issues continued to develop without any executive oversight or development of a resolution process. Additionally, significant turnover in senior University personnel during the relevant period (President, Provost, Vice Provost for Planning and Budgeting, and Executive Vice President), contributed to the communication challenges.

- **Investment decisions are sometimes based on informal and/or vague commitments between institutional leadership and individual campus units.** The University allocates its resources through the OPB. The annual resource allocation process results in documented allocations to each unit. During the year there may be additional commitments made to Deans and Vice Presidents that are in response to emerging initiatives or other opportunities. Although OPB attempts to document and follow through on these ad hoc institutional decisions, there are instances where meetings and informal discussions imply that funding may be forthcoming. Failure to document ad hoc agreements may result in disputes over funding as well as inappropriate investment decisions by campus units.

B. UW Technology Events and Practices

- **Failing to recover the full cost of needed campus technology services accounts for a significant portion of the deficit attributed to UW Technology.** The deficit in UW Technology increased rapidly as the organization moved to make strategic investments in campus infrastructure and worked to meet customer requests. At times, strategies were implemented without reviewing major investment decisions at the institutional level through a transparent governing structure. At the same time, the recharge model and corresponding rate structure did not keep pace with the increasing complexity of technology developments, technology strategy and deployment. This is best evidenced by the fact that recharge rate proposals were not submitted on a consistent or timely basis. Existing proposals did not fully recover actual costs or past deficits nor were rate proposals fully developed for recharge activities such as Nebula/Exchange and Video Production. This has resulted in an under recovery of legitimate recharge expenses and no funding to subsidize clearly understood gaps in recharge revenue.

- **The Vice President for UW Technology did not take responsibility for UW Technology's fiscal affairs.** The Vice President did not view financial oversight as a responsibility of the position and therefore did not request or receive any financial or managerial reports.

- **Control of UW Technology financial activities and data was limited to the Executive Director for Business and Finance.** During the 2001-03 biennium, control and responsibility for all major funding decisions on personnel, procurements, and expenditures was centralized with the UW Technology Executive Director for Business and Finance. Despite repeated requests, UW Technology unit managers, directors and associate vice presidents did not receive management or financial reports and were not delegated authority to manage their own budgets. Consequently, these individuals made decisions for new hires, procurements, and other expenditures without information about the potential financial impact on the organization.

- **The completion of the organizational development strategy for UW Technology was not aligned with available funding.** Organizational development strategies were advanced without thorough financial analysis, and discussion with relevant stakeholders outside UW Technology. Financial and business plans to support strategies were requested but not consistently submitted to the OPB. Yet, strategies were implemented, including the hiring of personnel.

- **The appropriate levels of management did not respond to financial problems.** Staff and managers within UW Technology recognized that significant financial problems were emerging in the unit. Concerns were communicated to the executive financial

leadership within UW Technology however no action was taken to address and/or resolve the growing crisis. As a result, the financial issues continued to develop and significantly grow without executive oversight or development of a resolution process.

- **Investment decisions were sometimes made with informal and/or vague commitments with institutional leadership.** In addition to the formal resource allocation process, UW Technology occasionally receives requests or is asked by constituents or campus leadership to respond to emerging technology opportunities or to add new services. There are instances where a meeting or informal discussion provided UW Technology with the understanding that central funding would be forthcoming. UW Technology failed to request or submit clarification, confirmation or documentation to support these ad hoc request or opportunities, resulting in significant expenditures on initiatives without funding. Examples include the wireless deployment, civil service reform and DRS projects, and the development of the campus-wide Microsoft Exchange initiative.

Other Considerations:
For complete understanding of the issues specific to the UW Technology organization, it is important to consider two additional issues: 1) The impact related to separating OIM and UW Technology; and 2) Accounting for Benefits in GOF/DOF.

1) When the OIM transitioned out of UW Technology, it transferred $13M in GOF/DOF funding, which represented one third of UW Technology's GOF/DOF base. This resulted in UW Technology no longer having the flexibility to reallocate, as it had done in the past, unspent salary and operational funding in budgets that transitioned to OIM.

2) UW Technology added new staff to their GOF/DOF budgets by offsetting against recharge revenue, which resulted in significant unfunded liabilities related to central benefits and centrally funded merit increase allocations. At the end of fiscal year 2007, the OPB determined that the outstanding liability for the 2003-05 and 2005-07 biennia for UW Technology was $3.2M. Although UW Technology concurred with the 2005-07 biennium resolution, there was a dispute over the retroactivity for the 2003-05 biennium.

IMPLICATIONS AND RISKS FOR THE FUTURE

Given the financial situation in UW Technology, the elimination of 82 UW Technology positions, including the layoff of 66 employees, and the current uncertainty about the future, the organization is facing a number of serious operational issues in the following inter-related areas:

- **There is potential for degradation of current service levels due to reduced staff, low morale and limited financial resources.** The recent layoffs have left key service areas understaffed while the resignations and retirements of an additional ten[3] employees have put increased pressure on remaining staff and managers. The reduced staffing levels have the potential to negatively impact the campus in the following ways:
  - Increased number and length of service outages;
  - Slowdown in projects to maintain and upgrade systems, networks and applications may compromise the reliability of UW Technology services;
  - Negative impact on contractual and Memorandum of Understanding (MOU) activities and relationships with campus and external partners.
- **The inability to make sound investment and organizational decisions will continue until adequate financial and management information is available.** Decisions may be further delayed until the organization completes the design and implementation of consistent effort reporting and cost allocation methodologies and establishes a new funding model.
- **It will be difficult to stabilize UW Technology while simultaneously establishing new service, financial, and governance models.** As UW Technology leadership and staff will be deeply and significantly involved in the evaluation, development and implementation of new

[3] As of September 5, 2008. Layoff numbers and recent resignations do not include the 16 FTE of open positions that were eliminated as part of the staff reductions.

service, financial, and governance models, careful consideration to balancing these efforts with day to day operations and service continuity will be critical. In the short-term additional resources to support these efforts may be necessary.

- **Significant potential exists for a technology "brain drain" from UW Technology.** If loss of confidence in the organization causes resignations of the "best and brightest" staff, the University may lose its ability to undertake leading edge, cost-effective technology initiatives that, in the past, have helped to strategically position the UW to be a premier research university. Additional staff resignations will further contribute to the challenge of stabilizing the organization.
- **Potential to lose sight of the longer-range vision that positions the UW for the future.** The immediate financial and organizational challenges facing UW Technology may distract the organization from focusing on a longer-range vision that positions the UW to be highly competitive research university and positioned for the future.

SUMMARY OF PEER INSTITUTION PRACTICES

The objective of the peer interviews was to understand the overall scope of information technology at the institution, the supporting organization and governance structure and the financial framework for funding information technology centrally. In most cases, the Chief Information Officer, primary business officer for information technology and the University official(s) responsible for recharge center review were interviewed at each institution. Peer institutions[4] included: Duke University, Georgetown University, Massachusetts Institute of Technology, Pennsylvania State University, Stanford University, University of California, Los Angeles. University of California, San Diego, University of Chicago, University of Michigan, University of Minnesota, University of North Carolina, Chapel Hill, University of Virginia, University of Wisconsin, and Yale University.

The following are highlights of these interviews and should be considered when implementing the recommendations outlined in the next section. It is critical to understand that while these institutions are considered "peers" of UW, the environment at each institution differs in ways that may affect the suitability of particular organizational and funding structures for information technology.

- Several models exist to organize information technology resources in a University setting. The "standard" model includes centralized reporting to the Provost, followed second by split reporting to the Administrative Executive and the Provost. Additionally, all institutions report that local support is hosted in large schools and departments.
- The decision-making processes governing information technology priorities and investments should be integrated into the overall University planning, budgeting and decision-making processes.
- To be most effective, the role of technology strategy should be integrated with information technology operations.
- Information technology is a key driver of institutional success and an integral part of institutional strategic planning.
- Dialog on information technology service delivery and funding models is necessarily continual, broad and must be transparent.
- Creating a framework that easily anticipates technology changes and incorporates the breadth of services is complex.
- Peer institutions are revising their approach to cost recovery.
- Recharge rates should be based on real cost drivers combined where appropriate**.**

[4] Some peer interviews are still in process.

RECOMMENDATIONS

Recommendations are provided in three categories: A) Stabilize and Sustain UW Technology; B) Develop a Financial Model for UW Technology; and C) Strengthen Institutional Oversight.

A. Stabilize and Sustain UW Technology

A1. Implement actions to minimize current expenditures and identify appropriate increases in revenue. Several tactical steps have already been taken to control the current financial position of UW Technology including:

- Limiting procurement of equipment, supply and services to only those that are deemed essential to supporting core services;
- Reducing travel; and
- Examining staffing levels required supporting essential services and long-term strategies**.**

Additional ongoing actions include:

- Assessing all projects to validate priority and funding;
- Assessing all cost recovery activities and rates, eliminating services that are not proving to be economically viable, improving cost effectiveness and seeking targeted revenue sources where possible; and
- Identifying new sources of revenue**.**

A2. Implement actions to facilitate oversight and management of the UW Technology budget. The availability of accurate and current financial management data is critical to positioning UW Technology on a solid financial foundation. Specific actions include:

- Development of a forward-looking budget;
- Coordination of efforts to address near-term deficit reduction/resolution;
- Development of a series of organizational-level financial and management reports; and
- Education of unit leaders on good financial management practices and how to best leverage the financial reports.

A3. Implement programs to manage and monitor staff climate and transition issues. Considerable time and attention will be devoted to managing the transition of UW Technology as a unit and the individual staff members. To be effective in this process requires the development of a high-performing leadership team, a clear communications strategy to guide and manage internal and customer expectations and the engagement of a transition team focused on staff retention and development.

A4. Develop a services/operating model for UW Technology. A thorough understanding of UW Technology's capabilities, products and services is essential to the development of a future service/operating model. Specifically, the following actions should be implemented:

- Inventory and document services currently provided by UW Technology;
- Collect additional information on current services including estimates and funding models;
- Develop a preliminary determination of baseline or essential services and review/revise with campus customers;
- Coordinate activities across the financial, governance and service model efforts to determine campus priorities, baseline services, future needs and funding models; and
- Measure, monitor and continually improve service delivery and service levels.

A5. Develop a separate business model for UWTV. UWTV is somewhat unique in UW Technology in terms of both its service and financial models. Although funded partially from GOF/DOF, UWTV passes a substantial part of its engineering costs to the UW Technology Recharge Center and recharges most but not all of its video production costs.

Clarifying the underlying business model will be an important part of developing a long-term operational and financial strategy for UWTV. As such it will be necessary first to assess the business of UWTV (goals, strategies, offerings, competition, technologies, etc.) and then to create a supporting business plan that articulates the financial and organizational structures needed to run and manage UWTV.

B. Develop a Financial Model for UW Technology

B1. Research and implement a new financial framework. Of particular importance is further exploration of the 'user fee' model for certain rechargeable services to recover network infrastructure costs or a broader array of IT services. One such model considers charges for a bundle of defined services based on an FTE, headcount, or "communication user" basis. This approach represents a common practice by many of the UW's peers where costs of certain basic services are recharged to campus users, as referenced in Section VIII, Summary of Peer Information**.** The development of a more robust and comprehensive campus recharge model similar to those of UW's peers, if applied at the UW, could have the effect of increased rate charges.

C. Strengthen Institutional Oversight

C1. Expand the UW Enterprise Risk Management (ERM) framework to include a focus on institutional financial risks. Initial activities will be focused on self-sustaining activities. Central and campus administrators with financial management responsibilities will be included in this work with the sponsors of UW Technology activities positioned as critical stakeholders. Following implementation of improved financial oversight of self-sustaining activities, broader financial risks will be identified and incorporated into the ERM framework.

C2. Establish an institutional review process for the financial resource base of the University. The OPB should have ultimate responsibility for the institutional oversight of the University's self-sustaining activities, regardless of the organization's reporting structure. As such, a process should be designed to emphasize reporting and review of all large self-sustaining and other programs representing the greatest financial risk and opportunity for the UW. The reporting and review process should more clearly identify roles and expectations for the management of all units, regardless of size, and emphasize the need to prevent and reduce/eliminate deficits.

C3. Implement Vice Provost, Vice President, Dean and Chancellor Review and Reporting Process. The Working Group was not charged with review of any other institutional units. However, a high level review of self-sustaining activities indicated no similar financial difficulties[5]. Nonetheless, Vice Provosts, Vice Presidents, Deans and Chancellors will continue to be responsible for review of all self-sustaining activities within their organizations. Thus, to ensure proper oversight of their units, and where not currently incorporated into standardized unit reporting, Vice Provosts, Vice Presidents, Deans and Chancellors should review all self-sustaining activities within their organizations on a quarterly basis. Additionally, a detailed annual report should be provided to the OPB for review and discussion by units with greater than $10M in revenue or expenses.

C4. Institute a review and approval process for new self-sustaining units or fee-based degree programs. The OPB should develop a review and approval process for any new and significant self-sustaining unit or fee-based degree program. The review should ensure new self-sustaining programs or fee-based degree programs are established on a solid financial foundation, that risks have been thoroughly identified and where necessary, mitigated, and that management and oversight roles have been clarified.

C5. Expand the responsibility of Management Accounting and Analysis (MAA) to include a review of all material recharge centers, program income or departmental revenue budgets. This enhanced review should include understanding the methodology and assumptions used to develop rates and evaluating the business model of each center or activity. Issues noted should be shared with the OPB. Ultimately, however, it is the responsibility of senior leadership to ensure that self-sustaining activity, including program income activity, is in compliance with applicable regulatory requirements including strict adherence to the rate setting process.

C6. Strengthen the University Deficit Policy. The UW should review its approach to managing deficits and consider a project to implement either an official deficit policy or a stronger process for identification, review and elimination of deficits. Funding the start-up costs and significant capital purchases critical to the success of many self-sustaining activities should be specifically addressed by this policy.

[5] Rev. October 14, 2008

C7. Provide ongoing financial management training and education programs to individuals with financial oversight and management responsibilities. The University should invest in the development and delivery of training programs to provide senior leaders the tools necessary to effectively manage revenues, liabilities and other commitments and align strategies, operations and finances.

C8. Improve policies and procedures between the OPB and operating units to clearly document funding commitments. The OPB should develop a process to assist units in the development of funding proposals. When ad hoc requests are received, the OPB should provide written responses to funding requests, including specific costs and amounts to be funded. Furthermore, unit requests for institutional funds to support strategies should be appropriately justified and supported by well-defined business plans that outline the unit objective for the funding request and include plans for monitoring effectiveness of institutional investment.

C9. Develop governance and collaboration models for identifying, evaluating and prioritizing major institutional strategic IT investments across administrative, academic and infrastructure technologies. In recent years, the UW has worked to establish a more disciplined and systematic framework for prioritizing and managing incremental information technology projects. Current efforts to revitalize and clarify the Technology Advisory Committees framework must be modified to go beyond incremental funding opportunities to incorporate overall technology strategy. The current issues in UW Technology resulted from a fundamental and profound disconnect between strategies, finances and operations. Only a transparent, structured and comprehensive governance effort will provide the necessary framework for addressing technology needs, opportunities and corresponding resource deployment that spans all technologies, including administrative, academic and overall infrastructure. Critical stakeholders to this process would include individuals from campus units and other structures/committees engaged in technology strategy and deployment.

D. Resources Necessary for Implementation

Implementation of several of the recommendations will require additional resources and may have long-term budget implications. Until detailed recommendations are fully designed it is not possible to project the precise need for additional resources. However in addition to hiring a full-time project manager it is expected that that the following recommendations will have initial implementation and/or ongoing budget implications.

A3. Implement programs to manage and monitor staff climate and transition issues.
A5. Develop a separate business model for UWTV.
B1 Research and implement a new financial framework for UW Technology.
C2. Establish an institutional review process for the financial resource base of the University.
C5. Expand the responsibility of MAA to include a review of all material recharge centers, program income or departmental revenue budgets.
C7. Provide ongoing financial management training and education programs to individuals with financial oversight and management responsibilities.

NEXT STEPS

Upon approval of these recommendations by President Mark Emmert and concurrence by the Provost, implementation resources will be identified and organized into a project team structure. It is anticipated the project structure (see figure 2, page 35) will be confirmed and initiated during Fall Quarter 2008. On or before February 2009, action and communication plans with key milestones for each project team/Working Group recommendation will be submitted to project leadership for approval.

II. CONTEXT

The University of Washington Office of Technology has a long record of achievement that has positioned the UW as a recognized leader in the use of technology for learning, discovery and engagement. As a result of serious financial difficulties, the office has recently undergone a significant reduction in staff. In response, President Mark Emmert established a Working Group to identify and understand the underlying financial and organizational issues. Leading the Working Group was Senior Vice President for Finance and Facilities, V'Ella Warren. Ms. Warren was joined in this effort by:

- John Coulter, Former Associate Vice President of Medical Affairs and Executive Director for Health Sciences Administration
- Paul Jenny, Vice Provost for Planning & Budgeting
- Edward Lazowska, Bill and Melinda Gates Chair, Computer Science & Engineering
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The Working Group was charged with four goals:

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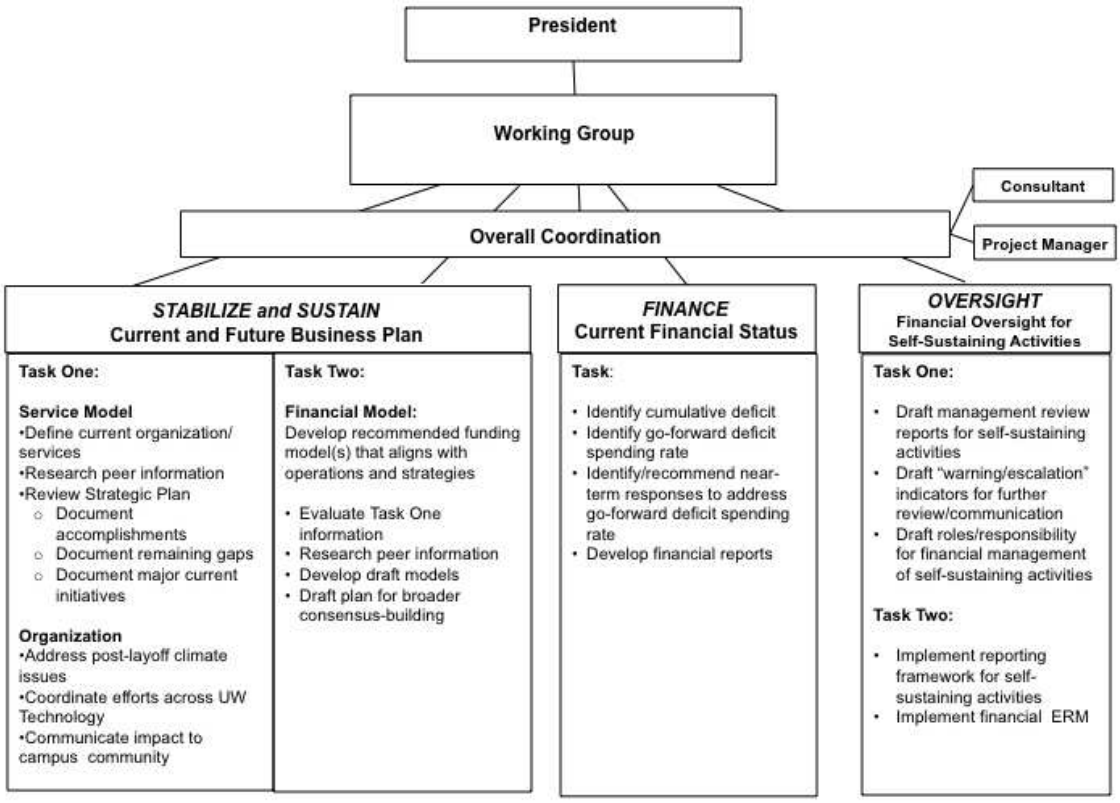
3) Develop a long-term operational and financial model for the operation; and
4) Assess the University's oversight structure for fiscal management, especially for self-sustaining units.

Three sub-teams were organized to address these goals and develop recommendations for the Working Group to submit to President Emmert. The specific project structure is illustrated on page 10, figure 1.

Figure 1: Project Structure



To immediately stabilize the UW Technology organization, President Emmert appointed Kelli Trosvig as Interim Chief Operating Officer (COO) and Bill Ferris as Interim Chief Financial Officer (CFO). Both Ms. Trosvig and Mr. Ferris report to Ms. V'Ella Warren. Ms. Trosvig's role is to stabilize the day-to-day operations of the organization including minimizing the service impact of the recent layoffs and the resulting organizational climate issues. Mr. Ferris' role is to identify the magnitude and root causes of the financial position and to help develop solutions to improve the current financial situation. In collaboration with the implementation structure suggested by the Working Group (refer to Section X. Next Steps), Ms. Trosvig and Mr. Ferris will be integral to the implementation of the recommendations identified in this report.

The former Vice President of UW Technology, Ron Johnson, has transitioned to the role of Chief Technology Officer, reporting to President Emmert. His role will consist of advising the President on technology strategy, including the architecture, direction, and policy for technology at the UW. He will not have oversight or management responsibility for the UW Technology organization.

III. SCOPE

Two central units provide support for information technology at the University of Washington: the Office of Information Management and the Office of UW Technology.

The Office of Information Management (OIM), created in November 2006, directs information management and information systems efforts throughout the University of Washington. OIM provides university-wide leadership in the development and management of information systems and applications, is headed by Vice Provost/Chief Information Officer (CIO) Sara Gomez, and reports directly to the Provost. The scope of this report is focused specifically on the operations and information technology services as delivered by the Office of UW Technology. The Office of Information Management is not part of the Working Group's charge, nor is it reviewed within the scope of this report.

UW Technology, formerly known as Computing & Communications (C&C), provides a wide variety of communications, information technology and infrastructure solutions and services to the campus and is organized into five units: UW Technology Services, Network Systems, UWTV, Learning & Scholarly Technologies, and Staff Services.

- **UW Technology Services** is the primary customer-facing unit for UW Technology. In addition to providing front-line services and advocacy, UW Technology Services provides end-user support for a wide variety of computing services and installs, configures, maintains, and provides system engineering for mission-critical mainframe, distributed computing, backup/storage, telecom, and database systems used by the OIM, UW Medicine IT Services, and others on campus. UW Technology Services also provides software engineering support and development for a variety of applications and 24x7 monitoring and troubleshooting of numerous computer, application, data center, security, and network systems. UW Technology Services has approximately 200 permanent and 40 student staff

- **Network Systems** provides technology evaluation, design, provisioning, operations and maintenance for voice, video, and data networks for the university. The unit also provides, and is reimbursed for, design, engineering, and operations for UW Medicine, the WA State K20 network, the Pacific Northwest Gigapop[6], and national and international research and education networks (e.g. NLR and Internet2). Network Systems has 55 permanent staff.

- **UWTV** provides video production, engineering, and operations for the design, transmission, and distribution of cable and satellite television; digital asset management; development and communications services; and a web of local, national, and international relationships in support of the UW community and its partners. UWTV has 35 permanent and 4 student staff.

- **Learning & Scholarly Technologies** supports UW faculty, researchers, students, staff and clinicians in their exploration and use of technology through initiatives and partnerships that address teaching, learning, and research. The unit has 24 permanent staff, 6 graduate assistants, and 70 student staff.

[6] Pacific Northwest Gigapop is a not-for-profit organization that provides robust, high-speed access to the Internet, next generation Internet services and technology and research and development test beds to a variety of partners in the Pacific Northwest. See www.pnw-gigapop.net

- **Staff Services** are additional services provided by UW Technology. These services, listed below, provide support for UW Technology and the extended UW community.
    - **IT Partnerships** provides assistance and contacts in support of the UW by working regionally, nationally, and internationally to establish and sustain relationships with technology, science, and health clinicians, educators and researchers.
    - **Planning and Facilities Infrastructure** acts as a liaison and facilitator between UW Technology and academic and administrative constituencies on issues pertaining to capital construction and funding, space, facilities and technology planning.
    - **The Compliance and Major Procurement** area ensures compliance with state and university regulations and policy regarding information technology projects, portfolios and acquisitions through communication and guidance of external regulatory requirements to UW staff.
    - **UW Technology Human Resources** provides advice on recruitment, hiring, retention, classification, re-classification and personnel issues relating to information technology, information systems, and information management staff.

UW Technology has provided in the past, and continues to provide, the University of Washington with reliable, high quality information and communications technology and infrastructure. Despite the current financial and organization issues facing UW Technology, the staff is a group of dedicated professionals with strong technical expertise who have helped to position the UW to be a premier research university.

The remainder of this report provides a summary of the underlying organizational and policy issues, and root causes leading to the recent financial situation in the UW Technology organization. The report outlines strategies and recommendations to stabilize and sustain UW Technology into the future.

IV. APPROACH

Through a combination of internal interviews, interviews with peer institutions, literature reviews, data analysis and synthesis, the Working Group and sub-teams developed an understanding of UW Technology organization, financial structure, and status.

The peer institutions interviewed were selected primarily from existing common peer groups: the Global Challenge State Peer Institution group, Washington State Office of Financial Management (OFM) Peer group, and from the Higher Education Coordinating (HEC) Board Peer institutions. In most cases, the Chief Information Officer, primary business officer for information technology and the university official(s) responsible for recharge center review were interviewed at each institution. The objective of these interviews was to understand the overall scope and role of IT on campus, the supporting organization and governance structure and the financial framework for funding IT centrally on campus. Peer institutions[7] included:

- Duke University
- Georgetown University
- Massachusetts Institute of Technology
- Pennsylvania State University
- Stanford University
- University of California, Los Angeles
- University of California, San Diego
- University of Chicago
- University of Michigan
- University of Minnesota
- University of North Carolina, Chapel Hill
- University of Virginia
- University of Wisconsin
- Yale University

[7] Interviews with some peer institutions are still in process.

V. FINANCIAL STATUS

As of June 30, 2008 the accumulated deficit attributed to UW Technology is $38.6 million, net of accrued expenses and receivables and excluding restricted funds[8]. The estimated deficit spending rate after staff reductions is $600,000 a month or $7.2 million annually. The projected deficit for fiscal year 2009, including expenditures resulting from the recent staff reductions (e.g. annual leave payouts), will be largely offset by an accumulated surplus in royalty accounts.

The total annual budget for UW Technology is $56.5 million, with $24 million (42%) from GOF/DOF[9], $28.7 million (51%) from self-sustaining revenue, and $3.8 million (7%) in restricted funds.

Table 1 on page 15 summarizes the details of the accumulated deficit and is organized in the following five categories:

1. **Recharge centers.** These deficit balances are attributable to past reporting periods and may not be recoverable. These expenditures include infrastructure costs that are transferred monthly from UWTV and Network Services to the Technology Recharge Center.
2. **Accumulated deficit from unit operations.** This deficit represents both GOF/DOF and self-sustaining budget expenditures that were not attributable to recharge activities.
3. **Investments into campus strategies.** These deficits include investments into new technologies that were not appropriate to allocate to a recharge center.
4. **Substantial accumulation of expenses in the central UW Technology Business & Finance.** These deficits include expenditures attributable to the entire organization as well as Nebula[10] support, consulting (strategic planning and leadership training) and institutional memberships (e.g., EDUCAUSE and Gartner Group). The total also includes an aggregation of GOF/DOF deficit balances at the close of the 2005-07 biennium.
5. **Royalty Revenue.** There are three royalty accounts that accumulate revenue of $200-300K/year due to licensing agreements for software developed by UW for Unisys (mainframe software). The accumulated balance may be used to offset projected current year over-expenditures.

[8] Restricted funds include: grants, contracts, Office of the Chief Information Security Officer, and sate appropriations for Gigapop.

[9] GOF stands for General Operating Funds and DOF is Designated Operating Funds.

[10] Nebula is a system of networked workstation computers offered as a fee-based service to campus. The charges for all UW Technology are covered in Business & Finance, and not allocated to recharge activity.

Table 1: Summary of Accumulated Deficit Attributed to UW Technology

	Category	(000's)	(000's)
1	**Recharge centers**		
	• Technology Recharge Center[11]	($20,100)	
	• Video Production	(700)	
	• Network Services	(1,600)	
	• Nebula/Exchange	(1,100)	
	• Computer Maintenance Group	(500)	
	TOTAL Recharge Centers		($24,000)
2	**Accumulated deficit from unit operations**		($4,000)
3	**Investments into campus strategies**		
	• E-commerce	(4,400)	
	• Streaming Media	(600)	
	• Multimedia communications infrastructure	(1,000)	
	TOTAL Non-recoverable investments		($6,000)
4	**Substantial accumulation of expenses in the central B&F**		($4,600)
	Total Accumulated Deficit – June 30, 2008		($38,600)
5	**Royalty Revenue (Accumulated)[12]**		$ 6,000

[11] The UW Technology Recharge Center is a self-sustaining entity responsible for providing the UW community with voice, data, and multimedia services, including infrastructure requirements. Revenues are derived from monthly billings to the users of the services available. In addition to direct charges to the Recharge Center budget, there are expenditures which support recharge center activities but incurred on other UW Technology budgets. These costs are transferred monthly to the Recharge Center account. The beginning deficit balance for FY 08 was ($12.1 M), plus a net revenue/expenditure of ($8M) for an ending deficit balance of ($20.1M).

[12] Royalty revenue has been accruing for over ten years. The existing agreements are scheduled for renewal in 2012. As noted above, accumulated royalty revenue may be used to offset projected current year over-expenditures.

VI. SUMMARY OF ROOT CAUSES

There are a number of root causes contributing to the current financial and management situation within UW Technology. If left unaddressed, future operations of UW Technology and the ability to continue providing excellent leadership and support for information technology on campus will be severely impacted. This section organizes these root causes into two categories: A) Institution-wide Events and Practices, and B) UW Technology Events and Practices.

A. Institution-wide Events and Practices

A1. Clear roles and responsibilities for financial oversight are not defined at the institutional level for self-sustaining[13] activities.

There are several hundred unique self-sustaining activities, including auxiliary operations[14], cost centers, and recharge centers most of which operate on campus without centrally structured oversight. Collectively, these units generate approximately $500 million in revenues annually, split equally between external and internal customers. No profit can be generated by sales of goods or services to internal university departments and self-sustaining activity is expected to break even. Units report activity to various individuals for various purposes (i.e., rate proposal purposes, external debt, etc.) without a comprehensive top down review of the unit. A clear escalation process has not been established to report issues nor have the responsibilities been clear for deficit situations and their resolution.

Most units accept the implied responsibility for effective financial management, as self-sustaining activities have grown over the years. However the University has not developed explicit language describing such roles and responsibilities.

A2. Vice Provosts, Vice Presidents, Deans and Chancellors with responsibility for the financial management of a unit are not provided adequate and ongoing training and awareness to support this role.

When Vice Provosts, Vice Presidents, Deans and Chancellors assume their leadership roles at the University, it is implied that they will have financial responsibility for their units. University and unit finances are addressed in only one of a series of brief orientation sessions. In-depth training is not provided on how to effectively manage complex institutional funding models or how to identify emerging and/or potential operating or financial risks.

[13] A self-sustaining unit by definition is:

- An auxiliary enterprise that is completely reliant on generating external revenue to cover costs,
- A recharge center or cost center that resides within a department within a school, college, or administrative office, and whose revenues are primarily from internal customers,
- Program income that is generated as part of a grant, contract, or cooperative agreement; or
- Departmental revenue budgets that can accept revenue but does not have formal revenue-generating activity.

[14] UW Auxiliaries (excluding UWMC) produce approximately $120M in revenues, with six units accounting for 90% of the total. The remaining cost/recharge/general self-sustaining units produce $380M in revenue, the top ten of these accounting for 65% of the total.

A3. Campus administrative financial systems do not provide adequate management and financial reporting capabilities for the multiple revenue sources of most units, including for their self-sustaining activities.

Current institutional financial systems (i.e., Financial Accounting System (FAS), and Budget System) are not designed to support and integrate the multiple revenue sources of most units, including activities funded with self-sustaining, grant-based and donor revenues. Relevant system gaps include:

- **A complex process to define a self-sustaining unit.** Self-sustaining activities can be "funded" from a variety of sources (external revenue only, internal revenue only, a mix of internal and external revenue, grants, etc.) or a mix of funds (gift funds and state funds can often supplement an operation). As a result, describing a unit based on accounting coding in the financial system is complex. In addition, utilizing the organizational code structure in the accounting system can sometimes highlight a unit, but often, it is a collection of various budgets (including state and gift) that only the unit manager can effectively organize and manage.
- **Lack of standard reports to effectively monitor self-sustaining financial operations.** Many units have developed "shadow," or complementary systems, to track accruals and to run local management reports. Such management reports are written without use of commonly understood definitions for critical data elements and are generally not automatically available to central budget and finance offices. Consequently monitoring is performed using only "indicator" information, such as ending balances from FAS.
- **Reporting of balance sheet items such as accounts receivable, equipment, prepaid revenue, other liabilities, etc. is below the institutional level.** Consequently, review of the current financial system balances and activities may not fully reflect the financial health of a complex unit.

A4. Financial problems were communicated but not elevated to the appropriate levels of management.

Staff within the Office of Planning & Budgeting (OPB) and staff within UW Technology recognized that significant financial problems were emerging within UW Technology. However, the issues were not elevated to campus executive leadership including the Provost and President. As a result, the financial issues continued to develop without any executive oversight or development of a resolution process. Additionally, significant turnover in senior University personnel (President, Provost, Vice Provost for Planning and Budgeting, and Executive Vice President), contributed to these communication challenges.

A5. Investment decisions are sometimes based on informal and/or vague commitments between institutional leadership and individual campus units.

The University allocates its resources through the OPB. The annual resource allocation process results in documented allocations to each unit. During the year there may be additional commitments made to units in response to emerging initiatives or opportunities. Although the OPB attempts to document and follow through on these ad hoc institutional decisions, there are instances in which meetings and informal discussions imply that funding may be forthcoming. Failure to document ad hoc agreements may result in disputes over funding as well as inappropriate investment decisions by campus units.

B. UW Technology Events and Practices

B1. Failing to recover the full cost of needed campus technology services accounts for a significant portion of the deficit attributed to UW Technology.

The deficit in UW Technology increased rapidly as the organization moved to make strategic investments in the campus infrastructure and worked to meet customer requests. At times, strategies were implemented without reviewing major investment decisions at the institutional level with consensus through a transparent governing structure. At the same time, the recharge model and corresponding rate structure did not keep pace with the increasing complexity of technology developments, technology strategy and deployment. This is best evidenced by the fact that recharge rate proposals were not submitted on a consistent or timely basis. Existing proposals did not fully recover actual costs or past deficits nor were rate proposals fully developed for recharge activities such as Nebula/Exchange and Video Production. This has resulted in an under recovery of legitimate recharge expenses and no funding to subsidize clearly understood gaps in recharge revenue.

B2. The Vice President of UW Technology did not take responsibility for UW Technology's fiscal affairs.

The Vice President of UW Technology did not view financial oversight as a responsibility of the position and therefore did not request or receive any financial or managerial reports. When the serious financial situation was finally brought to the attention of the VP, drastic and significantly disruptive measures were required, leading to the elimination of 82 UW Technology positions, including the layoff of 66 current employees.

B3. Control of UW Technology financial activities and data was limited to the Executive Director for Business and Finance.

During the 2001-03 biennium, control and responsibility for all major funding decisions on personnel, procurements and expenditures were centralized with the UW Technology Executive Director for Business and Finance. Despite repeated requests, unit managers, directors and associate vice presidents no longer received management or financial reports and no longer had delegated authority to manage their own budgets. Consequently, these individuals made recommendations and/or decisions for new hires, procurement, and other expenditures without information about the potential financial impact on the organization.

B4. The completion of the organizational development strategy for UW Technology was not aligned with available funding.

Organizational development strategies were considered and advanced without thorough financial analysis, communication and confirmation with relevant stakeholders outside UW Technology. Financial and business plans to support strategies were requested by, but not consistently submitted to, the OPB. Yet, strategies were implemented, including the hiring of personnel.

B5. The appropriate levels of management did not respond to financial problems.

Staff and managers within UW Technology recognized that significant financial problems were emerging in the unit. However, while concerns were communicated to the executive financial

leadership within UW Technology, no action was taken to address and/or resolve the growing crisis. As a result, the financial issues continued to develop and significantly grow without executive oversight or development of a resolution process.

B6. Investment decisions were sometimes made with informal and/or vague commitments with institutional leadership.

In addition to the formal resource allocation process, UW Technology occasionally receives requests or is asked by constituents or campus leadership to respond to emerging technology opportunities or to add new services. There are instances where a meeting or informal discussion provided UW Technology with the understanding that central funding would be forthcoming. UW Technology failed to request or submit clarification, confirmation or documentation to support these ad hoc requests or opportunities, resulting in significant expenditures on initiatives without funding. Examples include:

- **Wireless Deployment:** Included in the deficit amount for UW Technology Recharge Center is $1.7M in unrecovered expenditures related to wireless deployment. Of the $7.5M UW Technology thought was committed to this initiative, only $3.75M (from the OPB) and $1.25M (from Student Tech Fee) have been recovered. The completion of remaining projects in the original plan has been postponed.
- **Civil Service Reform and DRS Projects:** UW Technology hired new staff to address mandates related to Civil Service Reform and changes with reporting to the Department of Retirement System. There were disagreements with OPB over whether the funding commitments were permanent or temporary.
- **Microsoft Exchange:** As a result of an interest by University leadership, UW Technology proceeded with the development of a campus-wide Microsoft Exchange initiative, without a business plan or any clear financial commitment for this project.

Other Considerations:

For complete understanding of the issues specific to the UW Technology organization, it is also important to consider two issues: 1) The impact related to separating OIM and UW Technology; and 2) Accounting for Benefits in GOF/DOF.

- When OIM transitioned out of UW Technology, it transferred $13M in GOF/DOF funding, which represented one third of UW Technology's GOF/DOF base. This resulted in UW Technology no longer having the flexibility to reallocate, as it had done in the past, unspent salary and operational funding in budgets that transitioned to OIM.
- UW Technology added new staff to their GOF/DOF budgets by offsetting against recharge revenue, which resulted in significant unfunded liabilities related to central benefits and centrally funded merit increase allocations. At the end of fiscal year 2007, the OPB determined that the outstanding liability for the 2003-05 and 2005-07 biennia for UW Technology was $3.2M. Although UW Technology concurred with the 2005-07 biennium resolution, there was a dispute over the retroactivity for the 2003-05 biennium.

VII. Implications and Risks for the Future

Given the financial situation in UW Technology, the elimination of 82 UW Technology positions, including the layoff of 66 employees, and the current uncertainty about the future, the organization is facing a number of serious operational issues in the following inter-related areas:

A1. There is potential for degradation of current service levels due to reduced staff, low morale and limited financial resources.

The recent layoffs have left key service areas understaffed while the resignations and retirements of an additional twelve[15] staff have put increased pressure on remaining staff and managers. Individuals are worried about both the future of UW Technology and their own futures. Staff question whether or not investments will continue in areas to build organizational capacity to develop and implement new technology services. In addition, some UW Technology employees have been asked to take on significantly increased workloads and others have been asked to change work schedules, both of which have further affected morale and stress. The reduced staffing levels (and related loss of expertise) has the potential to negatively impact the campus in the following ways:

- Increased number and length of service outages;
- Slowdown in projects to maintain and upgrade systems, networks and applications which may compromise the reliability of UW Technology services;
- Reduced level of service and responsiveness; and
- Negative impact on contractual and MOU[16] activities and relationships with campus and external partners.

A2. The inability to make sound investment and organizational decisions will continue until adequate financial and management information is available.

Until UW Technology has financial management reports that include accurate budget, revenue and expenditure levels, decisions may be delayed regarding strategic implementations, ongoing maintenance and additional service investments. Decisions may be further delayed until the organization completes the implementation of consistent effort reporting and cost allocation methodologies and establishes a new funding model.

A3. It will be difficult to stabilize UW Technology while simultaneously establishing new service, financial and governance models.

UW Technology customers are concerned about the impact of the layoffs to their services and would like to discuss how and which services will be impacted. Similarly, UW Technology employees expect frequent, useful communications about the organization's strategic direction and operational priorities so as to inform their day-to-day decisions. This dialog and engagement, along with assessing input and feedback from the campus on service needs and priorities, will require substantial effort from all levels of the UW Technology organization. UW Technology leadership will also need to be involved in the evaluation, development and

[15] As of September 5, 2008. Layoff numbers and recent resignations do not include the 16 FTE of open positions that were eliminated as part of the staff reductions.
[16] MOU stands for Memorandum of Understanding

implementation of new service, financial and governance models as recommended by the Working Group. While these are all critically important efforts, they will be time-consuming and may serve to further impact organizational workload and morale.

A4. Significant potential exists for a technology "brain drain" from UW Technology.

If loss of confidence in the organization causes resignations of the "best and brightest" staff, the University may lose its ability to undertake leading edge, cost-effective technology initiatives that, in the past, have helped to strategically position the UW to be a premier research university. Additional staff resignations will further contribute to the challenge of stabilizing the organization.

A5. Potential to lose sight of longer-range vision that positions the UW for the future.

The immediate financial and organizational challenges facing UW Technology may distract the organization from focusing on a longer-range vision that positions the UW for the future. One of the most important responsibilities of UW Technology has been to ensure that the UW has the technology to remain a highly competitive research university.

VIII. SUMMARY OF PEER INSTITUTION PRACTICES

This section contains a summary of key lessons learned based on a high-level environmental scan of IT in higher education and from conversations with individuals at peer institutions. These interviews revealed a number of common themes, approaches, and interesting ideas. It is critical to understand that while these institutions are considered "peers" of UW, the environment at each institution differs in ways that may affect the suitability of particular organizational and funding structures for information technology. For example, a number of the peer institutions do not have medical schools, and of those that do, few exhibit the degree of integration of campus computing with medical school and medical centers computing that is found at UW. This section is organized in two parts: A) Organizational Models, and B) Financial Models.

A. Organizational Models

A1. Several different models exist to organize information technology resources in a university setting.

Based on interviews with peer institutions it is clear that there is no single best practice model to organize a university's resources for information technology. Roughly half of the institutions interviewed have centralized academic, administrative, research and infrastructure services in one unit that reports to the Provost. Others have created two (or in one case, three) distinct units where one unit is responsible for instructional and research technology services that reports to the Provost while the other unit is responsible for enterprise administrative applications and network infrastructure and reports to the Business and Administration division of the university. Even with a centralized information technology (IT) unit, all of the peer institution campuses report that most of their large schools and colleges run their own IT organizations and work in collaboration with the central IT unit(s) to support the current and emerging technology needs of faculty and researchers. As such, there is a critical need for the University to define the core, essential or "common good" services that will be provided by the central IT unit(s) and the services that are to be delivered by the local units, in addition to those services that may actually be shared between traditional central and local units. It should also be noted that the medical centers of the peer institutions generally have their own independent IT units.

A2. The decision-making processes governing IT priorities and investments should be integrated into the overall University planning, budgeting and decision-making processes.

Information technology must be viewed by institutional executive leadership as a strategic asset and be well integrated into the University strategic planning, budgeting and decision-making processes. While each University has developed (or is in the process of developing) its own model for decision-making and information technology governance, there are some clear attributes emerging as best practices. These include[17]:

- The governance teams should have cross-functional representation from the campus including academic, research and administration;

[17] Principles referenced have been adapted from "Beyond the False Dichotomy of Central and Decentralized Deployment" by Jim Davis, Associate Vice Chancellor and CIO, University of California, Los Angeles.

- Acceptance and support by the administration and the academic senate;
- Establishment of a clear, neutral and transparent decision making structure that does not make decisions based solely on available or emerging technologies but is driven by campus strategies, priorities and functional needs;
- Creation and acceptance of a decision-making matrix that clarifies which decisions the information technology governance body has the authority to make versus decisions that can be made outside the formal governance structure;
- Creation of a structure and process that is not simply a collection of committees but functions like a board of trustees;
- Willingness of the campus CIO/leader to invest considerable time cultivating relationships with local level IT directors to develop their trust and understand their unique needs; and
- Willingness for university executive leadership to invest in the resources to develop an effective decision-making model and to support the resultant governance model.

A3. To be most effective the role of technology strategy should be integrated with information technology operations.

In all cases, the role of developing, coordinating and implementing the University strategy for technology is a key component of information technology organizations. In many cases the campus information technology leadership assumes responsibility for developing the technology strategy and solicits the input of a formal advisory team comprised of faculty and local technology directors. In other cases, the role of technology strategy is not formally structured and occurs naturally as part of operations. Whether a formal or informal process, most CIOs felt that if the development of technology strategy occurred outside technology operations (without a formal process for integration) then the organization would quickly lose sight of institutional needs and priorities.

B. Financial Models

The Financial Model Team discussed issues and challenges involved in creating a sustainable financial framework for central IT services with various peer institutions. Fundamental to this framework is effectively balancing campus-wide needs of students, faculty, staff, researchers and clinicians with ongoing operations and the evaluation and integration of emerging technologies.

B1. Information technology is a key driver of institutional success and an integral part of institutional strategic planning.

Information technology has been a fundamental element of success for leading research universities, and as a result, determining how to fund IT services is a key part of any long-term institutional strategic planning process. A key concern is how to fund new and emerging technologies, especially technologies that ultimately will benefit large portions of the overall campus community. As new technologies emerge, early discussions about how to prioritize and pay for those technologies are critical. The same dialogue is true for existing technologies. Like other decision-making processes, broad campus input is needed, and any discussion about the direction of future technology on campus and how to pay for it should coincide with overall institutional goals, information technology governance and budgeting decisions. Continuing

discussions across campus about the relative priority and funding of new and existing technology, as well as for the termination of services, is necessary for making strategic investments.

B2. Dialogue on IT service delivery and funding models is necessarily continual, broad and must be transparent.

Another critical component to a sound and sustainable central IT funding framework is a shared vision for all IT developed in partnership with technology managers and a broad base of campus leaders and users. This includes discussions about comprehensive service delivery models, determination of which IT organizations (e.g., local unit or UW Technology) are responsible for which kinds of services, and defining the appropriate mix of services. Ongoing discussions and input by campus customers over time is key, since technological changes will impact the level, nature and cost of offered services.

Ongoing discussions about the overall financial framework for UW Technology and recharge methods are also important, since there is a direct financial impact to campus users. Campus customers need to understand the consequences if certain recovery mechanisms are not implemented. Before implementing new recharge approaches, comparative modeling and dialogue with customers about the array of services included and the basis for billing can help allay customer concerns about unfair charges or lack of transparency.

B3. Creating a framework that easily anticipates technology changes and incorporates the breadth of services is complex.

Anticipating technology changes and corresponding resource needs requires robust strategic planning by the campus and IT groups, ongoing dialogue between academic, administrative and IT units and transparent, informed decision making about priorities and funding. Developing and maintaining a robust, comprehensive financial framework that aligns with service delivery and governance models is also critical. Such a framework should be stable over time yet flexible enough to incorporate new technologies and other changes in the overall campus environment.

It is important to recognize a 'one-sized-fits-all' framework to funding IT services is not realistic. Instead, a comprehensive financial framework is a combination of many different individual financial models. The basis for each component should be communicated to and understood by key campus stakeholders. In addition, the individual financial components should be flexible and able to adapt quickly to continuous change. For instance, one financial model could involve passing costs through to end-users while another could involve centrally funding certain services or types of activities. Specifically:

- Some services may be best charged out and recovered based on 'usage fees' (fee-for-service activities such as long distance or high bandwidth Internet usage);
- Other services may be best recovered by including them in a 'user fee' based on FTE or headcount statistics; and
- Finally, some services involving the research of early emerging technologies, may be best paid for with central university funds, gifts or grants.

An annual in-depth review of the overall framework may not be reasonable or appropriate. However, components of the overall framework, especially those involving funding or recharging of ongoing services, upgrading existing services, and introducing new products and services, should be reviewed at least annually. It is important to establish a plan for how

reviews will be conducted, by whom and how to handle recommendations. An underlying assumption is that these processes will be proactive and designed to identify any possible financial challenges

B4. Peer institutions are revising their approach to cost recovery.

A vast majority of the universities interviewed have moved away from using telephone charges to build out and support data networks and other baseline services. Instead many universities have implemented some version of a communications 'user fee' structure to help pay for networking costs, at a minimum. Regardless of the services included, many of the universities who have adopted a 'user fee' model allocate the costs to departments based on headcount, FTE or related number, that is conceptually based on individuals who have access to the campus network. Strong campus leadership and/or academic advocates are critical to the successful transition to a new model.

B5. Recharge rates should be based on real cost drivers and combined where appropriate.

Services that are recharged back to campus users through either 'user' or 'usage' fees should be based ultimately on the costs that drive the services. Cost and billing bases that are static will eventually become obsolete. Thus, care should be taken to ensure these drivers are regularly reviewed and updated as necessary.

At the same time, to the extent possible, bundling of common related services into one rate should be encouraged. This helps simplify both the cost accounting for those services and the administrative cost associated with billing the services to campus users. It also encourages some level of future flexibility if the composition of the rates must be changed over time.

IX. RECOMMENDATIONS

This section describes recommendations in three categories: A) Stabilize and Sustain UW Technology; B) Develop a Financial Model for UW Technology; and C) Strengthen Institutional Oversight.

A. Stabilize and Sustain UW Technology

A1. Implement actions to minimize current expenditures and identify appropriate increases in revenue.

Several tactical steps have been taken to control the current financial position of UW Technology. These actions should remain in effect until a going-forward budget has been developed for the unit.

Completed actions:

- Limiting the purchase of equipment, supplies and services to those that are critically essential to supporting "core" services, or that are funded by units outside of UW Technology;
- Reducing travel significantly, requiring prior approval from both the unit director and interim COO for all travel; and
- Examined staffing levels and skill sets necessary to support essential services and long-term strategies, addressing all new vacancies on a case-by-case basis.

Ongoing actions:

- Continue to assess all projects to validate priority and funding;
- Continue to assess all cost recovery activities and rates, eliminating services that are not proving to be economically viable, improving cost effectiveness and seeking targeted revenue sources where possible; and
- Identify new strategic sources of revenue.

A2. Implement actions to facilitate oversight and management of the UW Technology budget.

The availability of accurate and current financial management data is critical to positioning UW Technology on a solid financial foundation. As soon as feasible the following actions should be implemented:

- Build a forward-looking budget, establishing demonstrated needs as a basis;
- Coordinate efforts to address near term deficit reduction/resolution;
- Develop a series of organization-level financial and management reports to enable unit leaders to make informed decisions and to ensure accountability for their units. Fundamental principles and elements of such management reporting include links to unit financial statements, timeliness, completeness, projections, variance and variance analysis; and

- Educate and train unit leaders on good financial management practices and how to best leverage the financial reports.

A3. Implement programs to manage and monitor staff climate and transition issues.

Considerable time and attention will be devoted to managing the transition of the UW Technology organization as a whole as well as the individual staff members. To be effective in this process requires the development of a high-performing leadership team, a clear communications strategy to guide and manage internal and client expectations and the support and engagement of a transition team focused on staff retention and development. Specifically, the leadership of UW Technology should:

- Actively work with the UW Technology associate vice presidents and directors to create a collaborative leadership team that is equipped to manage the transition of UW Technology over the next two years and beyond.
- Develop a comprehensive communications plan that identifies a clear program and process for routine and ad-hoc communications with internal UW Technology staff and campus customers. Examples include regular updates on organizational changes, progress on implementing of Working Group recommendations and mechanisms to obtain regular staff feedback on concerns.
- Establish a Transition Monitoring Team comprised of a cross section of UW Technology service staff to help monitor the "pulse" of the organization and provide feedback to the interim COO and CFO. Specific actions might include efforts for recruitment, development and retention of staff.

A4. Develop a services/operating model for UW Technology.

A thorough understanding of UW Technology's capabilities, products and services is essential to the development of a future service/operating model. Efforts to identify and describe the products and services provided by UW Technology have been underway and are included in the fiscal year 2009 goals for the organization. However, considerable work is necessary to describe the service offerings in a format useful for broader campus discussion and consensus. Specifically, the following actions should be implemented:

- Inventory and document services currently provided by UW Technology;
- Collect additional information on current services including:
    - Preliminary estimate of cost to provide each service, and
    - How each service is currently funded;
- Develop a preliminary determination of baseline or essential services that should be provided to campus by UW Technology;
- Engage with campus customers to review and refine the determination of baseline services and to understand priorities;

- Coordinate activities across the financial, governance and service model efforts to determine:
    - Campus priorities,
    - Baseline services UW Technology should provide,
    - Services to be phased out,
    - Future information and technology needs for campus, and
    - Funding sources for services.

- Establish on-going monitoring and continuous improvement mechanisms by:
    - Working with campus to continually evaluate services delivery and levels,
    - Implementing mechanisms to monitor, measure, evaluate and report on service levels, and
    - Formulating appropriate continual service improvement mechanisms.

A5. Develop a separate business model for UWTV.

UWTV provides video production services, digital asset management and engineering and operations for the design, transmission and distribution of cable and satellite television. By distributing original, non-commercial educational programs to cable television viewers across Washington State and to satellite television subscribers nationwide, as well as around the world via streaming video and video on demand, UWTV showcases the university's research, programs, faculty, and visiting speakers.

UWTV is somewhat unique in UW Technology in terms of both its service and financial models. Although funded partially from GOF/DOF, UWTV passes a substantial part of its engineering costs to the UW Technology Recharge Center and recharges most but not all of its video production costs.

Clarifying the underlying business model will be an important part of developing a long-term operational and financial strategy for UWTV. As such it will be necessary first to assess the business of UWTV (goals, strategies, offerings, competition, technologies, etc.) and then to create a supporting business plan that articulates the financial and organizational structures needed to run and manage UWTV.

B. Develop a Financial Model for UW Technology

B1. Research and implement a new financial framework.

Exploration and analysis of an overall financial framework for UW Technology is critical. Of particular importance is further exploration of the "user fee" model for certain rechargeable services to recover network infrastructure costs or a broader array of IT services (i.e., a model that charges for a bundle of defined services based on an FTE, headcount, or "communication user" basis). This approach represents a common practice by many of the UW's peers where costs of certain basic services are recharged to campus users, as referenced in Section VIII, Summary of Peer Information**.**

A series of "design" principles have been adapted from Smallen and McCredie ("Guiding Principles for Creating a Sustainable Financia**l** Framework", EDUCAUSE, March/April 2003) that may be helpful when developing a sustainable information technology financial framework. These principles include:

- Funding strategies should align with overall institutional and technology priorities;
- Efficient use of resources, behaviors, and common technical standards across the institution should be promoted;
- All potential funding sources (e.g., tech fees, etc.) should be included and used as appropriate;
- Ongoing dialog with campus and technology managers should be built into the framework and used in decision making and for building shared knowledge and understanding; and
- Fair and equitable share of cost allocation should be the goal.

The development of a more robust and comprehensive campus recharge model similar to those of UW's peers, if applied at the UW, could have the effect of increased rate charges.

C. Strengthen Institutional Oversight

C1. Expand the UW Enterprise Risk Management (ERM) framework to incorporate a focus on institutional financial risks.

The University's Enterprise Risk Management (ERM) program was created in part to respond to compliance issues of the early 2000's, and thus an important feature of the initial program was the creation of the Compliance Council[18]. This group has met frequently to discuss methods for assessing and comparing compliance-related risks and to explore mitigation techniques that have succeeded or are needed for the University to reduce its risk profile to an acceptable level. In fall quarter 2008, the Council will expand its scope to include a methodical and comprehensive examination of all risk types, including financial, operational, and strategic.

Initial activities will be focused on implementing the Working Group's recommendations for stronger financial oversight of self-sustaining activities. Central and campus administrators with financial management responsibilities will be included in this work with the sponsors of UW Technology activities positioned as critical stakeholders. Following implementation of improved financial oversight of self-sustaining activities (as described below), broader financial risks will be identified and incorporated into the ERM framework.

C2. Establish an institutional review process for the financial resource base of the University.

The OPB should have ultimate responsibility for institutional oversight of the University's self-sustaining activities, regardless of the organization's reporting structure. As such, a reporting and review process should be designed to incorporate oversight of all large self-sustaining programs and other activities that represent the greatest financial risk and opportunity for the UW. The process should more clearly identify roles and expectations for the management of all units, regardless of size, and emphasize the need to prevent and reduce/eliminate deficits. The following elements should be considered in the development of an enhanced reporting and review process:

- Submission of an annual report to the OPB for all units and/or activities with significant annual revenue or expenses (e.g., greater than $10M). The report should include elements such as beginning fund balance, variance and variance analysis, future projections, and an executive outline summarizing the objectives and current financial and operating status of the activity or program.
- Establishment of periodic meetings between members of the OPB and University's Financial Management office to ensure that issues are identified and financial criteria reviewed such as:
    - Significant headcount changes (should be reflected in the expenses, if not the projections);
    - Turnover of critical unit staff (e.g., Director of Self-sustaining unit or key personnel in Dean/VPs office);
    - Billing issues (timeliness); and
    - Significant intra-fund transfers.

[18] Compliance Council is comprised of 30 leaders in various compliance and risk management functional areas of the University.

C3. Implement Vice Provost, Vice President, Dean and Chancellor Review and Reporting Process.

The Working Group was not charged with review of any other institutional units. However, a high level review of self-sustaining activities indicated no similar financial difficulties. Nonetheless, Vice Provosts, Vice Presidents, Deans and Chancellors will continue to be responsible for review of all self-sustaining activities within their organizations[19]. Thus, to ensure proper oversight of their units, and where not currently incorporated into standardized unit reporting, Vice Provosts, Vice Presidents, Deans and Chancellors should review all self-sustaining programs/units within their organizations at least quarterly Summary reports should be prepared by their staff (or centrally generated if units are resource constrained) and include the following elements:

- Beginning fund balance/surplus;
- Revenues (amount and source);
- Expenses and transfers out; and
- Ending fund balance/surplus.

C4. Institute a review and approval process for new self-sustaining units or fee-based degree programs.

The OPB should develop a review and approval process for any new and significant self-sustaining activity or fee-based degree programs. The review should ensure that new self-sustaining units or fee-based degree programs are established on a solid financial foundation, that risks are thoroughly identified and where necessary, mitigated, and that management and oversight roles are clear.

C5. Expand the responsibility of Management Accounting and Analysis (MAA) to include a review of all material recharge centers, program income or departmental revenue budgets.

Currently, MAA reviews and approves rates for recharge centers. The primary goal of the review has been compliance-based and focused primarily on adherence to OMB Circular A-21 and the University's Recharge and Cost Center Rate Policy. This review ensures recharge centers are not generating unallowable, inappropriate surpluses. The role of MAA should be expanded to include all material recharge, program income and departmental revenue budgets or activities.

This enhanced review would include understanding the methodology and assumptions used to develop rates and should include evaluating the business model of each center or activity. Issues noted should be shared with the OPB. Ultimately, it is the Vice Provosts'/Vice Presidents'/Deans'/Chancellors' responsibility to ensure the self-sustaining activity, including program income activity, is in compliance with all applicable regulatory requirements including strict adherence to the rate setting process.

C6. Strengthen the University deficit policy.

Currently, all Vice Provosts, Vice Presidents, Deans and Chancellors are responsible for budget deficits within their respective organizations. In terms of self-sustaining programs, the lack of a

[19] Rev. October 14, 2008

centralized review of the budgets has resulted in an environment where deficits are not identified, addressed or resolved in a timely manner. The UW should review its approach to managing deficits and consider a project to implement either an official deficit policy or a stronger process for review and elimination of deficits. Issues such as funding start-up costs and significant capital purchases for self- sustaining activities should be specifically addressed in this policy.

C7. Provide ongoing financial management training and education programs to individuals with financial oversight and management responsibilities.

Unit and institutional funding models have become increasingly sophisticated in the last several years and the management of these models is more complex than ever. Adequate training, awareness and guidance on how to identify indicators of emerging and/or potential financial risk is not currently available for Vice Provosts, Vice Presidents, Deans and Chancellors and others with implied responsibility for monitoring unit finances. The University should invest in the development and delivery of training programs to provide senior leaders the tools necessary to effectively manage revenues, liabilities and other commitments and align strategies, operations and finances.

C8. Improve policies and procedures between the OPB and operating units to clearly document funding commitments.

The OPB should develop a process to assist units in the development of funding proposals. When ad hoc requests are received, the OPB should provide written responses to funding requests, including specific costs and amounts to be funded. Unit requests for institutional funds to support strategies should be appropriately justified and supported by well-defined business plans that outline the unit objective for the funding request and include plans for monitoring the effectiveness of institutional investments.

C9. Develop governance and collaboration models for identifying, evaluating and prioritizing major and strategic campus IT investments across administrative, academic and infrastructure technologies.

In recent years, the UW has worked to establish a more disciplined and systematic framework for prioritizing and managing incremental information technology projects. Current efforts to revitalize and clarify the Technology Advisory Committees framework should be modified to go beyond incremental funding opportunities and incorporate overall technology strategy. The current issues in UW Technology resulted from a fundamental and profound disconnect between strategies, finances and operations. Only a transparent, structured and comprehensive governance effort will provide the necessary framework for addressing technology needs, opportunities and corresponding resource deployment that spans all technologies, including administrative, academic and overall infrastructure. Critical stakeholders to this process should include individuals from campus units and other structures/committees engaged in technology strategy and deployment. When developing a governance model for information technology the campus should consider the best practice attributes summarized on page 23.

D. Resources Necessary for Implementation

Implementation of several of these recommendations will require additional resources and may have long-term budget implications. Until detailed recommendations are fully designed it is not possible to project the precise need for additional resources. For planning purposes it should be noted that the recommendations in table 2 would have initial implementation and/or ongoing budget implications.

Table 2: Recommendations with potential resource requirements

Recommendation Number	Recommendation Title	Potential Resource Requirements
Overall Implementation	Engage a project manager to assist with implementation.	Project manager
A3	Implement programs to manage and monitor staff climate and transition issues.	Organizational development consulting support.
A5	Develop a separate business model for UWTV.	Funding to sustain the new business model.
B1	Research and implement a new financial framework.	Completion of a new model in a short timeframe will require a project manager, external expert with directly applicable experience, and may require additional fiscal support.
C2	Establish an institutional review process for the financial resource base of the University.	Additional fiscal support.
C5	Expand the responsibility of MAA to include a review of all material recharge centers, program income or departmental revenue budgets.	Additional fiscal support.
C7	Provide ongoing financial management training and education programs to individuals with financial oversight and management responsibilities.	Additional fiscal support.

X. NEXT STEPS

Upon approval of these recommendations by President Mark Emmert and concurrence by Provost Phyllis Wise, implementation resources will be identified and organized into a project team structure. The proposed structure (figure 2 below) has been designed to ensure coordination and integration across recommendation teams through a Steering Committee and integration with existing campus information technology leadership groups, the Technology Advisory Committees (TACs) and PACERM. A full-time project manager will be required to lead this effort and be responsible for the development, coordination and oversight of detailed project plans and the recommendations developed by sub-teams. It is expected that sub-teams will be comprised of a cross-section of staff from UW Technology, campus customers and key stakeholders.

It is anticipated the project structure will be confirmed and initiated during fall quarter 2008. On or before February 2009, action and communication plans with key milestones for each project team/Working Group recommendation will be submitted for sponsor approval.