Report from the
Chancellor's Study Group on
Information Technology

Due June 30, 2015

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Introduction

In December 2014 Anne Milkovich was hired as the new CIO and began a review of the central IT organization. This is a common undertaking for new CIOs, who need to assess their resources and organizational ability to meet institutional needs. The IT world changes rapidly and organizations typically can't keep pace so an incoming CIO can usually find overdue changes needed. Anne began information gathering and assessment and started making changes within central IT Spring 2015. The ongoing changes within central IT are focused on:

- Creating a governance framework for prioritization and transparency (Appendix A)

- Organizing teams for better efficiency and coverage (Appendix B illustrates the prior organization; Appendix C describes the risks associated with the organization of IT, both central and distributed)

- Expanding services to students

- Moving instructional design to the Provost

- Creating career paths for IT staff

- Implementing best practices such as portfolio management and Total Cost of Ownership.

The changes are described in more detail in the following section, with illustrations in the appendices. Having been initiated in the last few months the changes have not yet become evident to campus constituents.

Chancellor Leavitt then asked Anne to lead a study group in reviewing the distributed IT organization as well, to assess the organizational effectiveness between distributed and central IT and present options for improving efficiency and effectiveness of IT across campus. The goal of this study, as charged by the Chancellor, is to optimize the competing needs for strategic alignment, operational efficiency, constituent satisfaction and risk management—a set of Key Performance Indicators (KPIs) that can be used to evaluate IT performance. In other words, our purpose is to find the balance between increased efficiency while remaining responsive to institutional demand. The KPIs are elaborated as:

- **Strategic Alignment.** How well are our resources aligned with the priorities and mission objectives of the institution?

- **Operational Efficiency.** How well are we maximizing throughput with available resources?

- **Constituent Satisfaction.** How satisfied are our students, faculty, and staff with their academic and workplace experience?

- **Risk Management.** How well are we assuring service quality and reliability, information protection, and investment performance?

Note that constituent satisfaction is often in conflict with the other KPIs: that which improves institutional efficiency, alignment, or risk management is often dissatisfying to constituents who have legitimate local needs in their own service to the institutional mission.

Method

To develop this report, the study group gathered information from multiple sources before drafting the models and the initial set of pro's and con's. One of those sources was the external review of the IT organization on campus conducted by Janz and Dumke in June of 2013. Appendix D provides a list of their recommendations and the status of each. The study group also reviewed published articles for current best practices in IT organization in higher education and interviewed stakeholders from other campuses on the effectiveness of their IT organizations and lessons learned from recent reorganizations. Appendix E provides a summary of that information. Appendix G provides the specific sources cited in the research review and bibliography of sources germane to this study. The study group also reflected on the intended outcomes and critical success factors to guide the study, described below.

The study group then developed the initial models and elicited campus feedback through three open forums and several small-group sessions upon request. The study group incorporated the feedback by revising the models, updating the pro's and con's to reflect corrections and additions, and including specific feedback in Appendix F. Descriptions of the campus conversations and feedback are provided below.

Intended Outcomes

Success looks like:

- IT investments are prioritized across the institution.

- The process for requesting a project and the status of the request is transparent.

- Resources (funding, space, time and effort) are aligned with institutional priorities.

- Operational efficiency is maintained or improved.

- Constituent satisfaction among students, faculty, and staff is maintained or improved.

- The institution has an acceptable level of risk exposure.

Disaster looks like:

- Institutional objectives are not treated as priorities.

- Constituents do not know how to request a project or what its status is.

- High-value resources are expended on non-essential activities.

- Operational efficiency declines.

- Constituents are dissatisfied with the organizational changes for reducing their level of service.

- The institution has an unacceptable level of risk exposure.

Critical Success Factors

Critical Success Factors (CSFs) are the things that MUST HAPPEN, by whatever means, to achieve success and prevent disaster. Successful achievement of the goals is dependent on three CSFs: campus-wide agreement on Prioritization, Accountability, and Cooperation.

- **Prioritization:** IT investments must be continually prioritized across campus, including new and existing projects and services, to align limited resources with institutional priorities and to make sure mission-critical objectives are not held hostage by less essential activity.

- **Accountability:** IT resources must be authorized and accountable for performing in accordance with IT investment priorities and plans.

- **Cooperation:** ALL constituents must accept IT investment plans and risk management requirements that impact them.

Framing the Campus Conversation

As the study group progressed, certain questions and challenges recurred as themes underlying the study. We presented these themes in the feedback sessions to help frame the conversation.

Fundamental questions

- What is the scope and authority of the CIO?

  In the current organization, the CIO has authority over the central IT division and a high level of voluntary collaboration from distributed IT staff outside the central division but no defined authority. If the CIO is accountable for IT outside the central IT division, some degree of authority must be present. Any changes to the current organizational structure would effectively broaden the authority of the CIO over IT resources across campus; the question became a matter of degree, and with what impacts to the KPIs both within central IT and units across campus.

- Where does IT end when everything runs on IT?

  Very few functions exist on campus that are not integrated with information technology. We do not know of a clear way to draw the line. For example, the Nursing simulation lab has computerized human manikins that could be considered IT endpoints similar to any other computing device. Would the institution gain any benefit by centralizing responsibility for human manikins and all other highly specialized research devices? Where do we draw the line between running the devices and running the research?

Fundamental challenge

- Increasing central efficiency could decrease local efficiency.

  Most distributed IT roles perform other functions for their unit in addition to their IT responsibilities. Those units have created efficiencies around those roles by leveraging their available time. While centralizing those resources could increase central IT efficiency in some services, it might be at the expense of local efficiency, where units would have no one else to perform the remaining workload. It could also create local inefficiency where units might need to go through a central prioritized process to obtain IT support instead of quickly juggling workload according to their own priorities.

Fundamental understanding

- One size does not fit all across the complexity of IT services.

  Infrastructure services have become commodity services that do not need customization for individual units. The network and the data centers serve all units, even with varied requirements, without requiring customized networks or data centers. This is where we have opportunities to achieve economies of scale and improved risk management without adversely affecting constituent experience. Whereas, different units might require different levels or different types of support services. Centralizing infrastructure thus will have different KPI effects than will centralizing support services.

- One size does not fit all across the complexity of the institution.

  Residence Life is heavily dependent on 24-hour availability of infrastructure services such as card access, whether managed as a commodity or not. Administrative units need flexibility and responsiveness of information reporting and application administration. Academic units are concerned about rapid response times for classroom support and having nearby support technicians who understand their needs. With different needs, an organizational solution that works for one unit might not be workable for another.

Each model is a trade-off among the KPIs and the desired balance of central and local efficiency and effectiveness, with varying degrees of CIO authority and accountability across the institution.

Summarizing Campus Feedback

The study group held three open forums with approximately 50 total in attendance. The study group also held separate sessions with library staff, a faculty representative, three deans, the registrar's office, and Reeve union. Appendix F contains a full detailing of the feedback.

Feedback that resulted in revising the models:

- Institutional Research is an information function (reporting and analysis) that should be included in that layer.

- Residence Life and Reeve Union should not be lumped together—needs and impacts are different.

- Dotted-line boxes in model 3 would better illustrate that although reporting lines will change to central IT, those resources will still concentrate on serving other units.

- Enterprise-wide portfolio management of IT investments would provide CIO insight and oversight of IT investments without the disruption of changes in reporting lines.

General themes that emerged from the feedback:

- Some services require technician proximity for rapid response, such as AV support for large events.

- Some local services are mission critical and can't be compromised.

- Some local services are already optimized for efficiency and effectiveness.

- Some local services are highly specialized. Specialized services can't achieve economies of scale.

- IT is everywhere in everything we do; it can't be extracted from the work we do.

- Funding model needs to be addressed, e.g. where resource ownership might change that is funded by one department and now transferred to another, and where the central IT budget is inadequate to meet need.

- If reporting lines move, well managed Service Level Agreements will be key to success.

- Central IT has historically lacked the staff and budget to serve institutional needs.

- Details need to be worked out in conversation over time to ensure success. Too rapid of a change would necessarily be drastic and unlikely to succeed.

- The distinction between enterprise applications and specialized applications needs to be better understood and articulated.

- Matrixed or dual reporting lines are stressful on employees.

- A lot of good collaboration already exists and is working well.

- Faculty are heavily reliant on IT to teach, advise, and research. IT is a strategic asset that enables the institutional mission and must be treated as such.

- Constituents need transparency in the prioritization process and decision making.

- Constituents asked for specific service improvements such as expanded helpdesk hours, software packages, better computer life cycle management (new computers issued more frequently), a data warehouse, better training, and information security practices.

Central IT Organizational Changes

Following is a summary of realized and ongoing changes within central IT that are creating a new baseline of comparison.

1. **IT Governance framework:** A new IT governance framework has been designed, vetted, and implemented, whereby the IT Executive Council (Vice Chancellors) informs the CIO of priorities and the CIO informs the IT Executive Council of costs, risks, requirements, and feasibility. New constituent advisory groups are being formed to engage in the governance process. See Appendix B.

2. **Total Cost of Ownership (TCO):** A TCO model of investment management is in place where all investments are evaluated for both upfront and ongoing costs, including staffing. Investments are initiated once full funding is identified for the life cycle of the investment.

3. **Investment prioritization:** Within the governance framework, competing demands that cannot be met with existing funds and resources are escalated to the IT Executive Council for prioritization. See Appendix B.

4. **Enterprise PMO:** A PMO (varyingly defined as a Project Management Office or Portfolio Management Office) is a best practice in IT investment management that we are beginning to implement on campus as a virtual office with existing staff and resources. The functions of the PMO are to provide transparency into and oversight of IT investments by intaking requests, evaluating the cost/benefit/risk/alignment, shepherding the request through a prioritization process, monitoring and reporting on the investment through its life cycle. The PMO will encompass IT-only investments as well as IT-facilities investments. It will also be responsible for consulting, informing and including stakeholders who have an interest in the deployment or use of the investment so they can leverage or provide input into it. See Appendix B.

5. **Architectural organization:** Central IT is reorganizing into an architectural model of technology layers, with a new Director of IT Infrastructure position. Consolidating services that were formerly bifurcated across multiple director roles will break down barriers of communication, reduce single points of failure, increase coverage and load balancing for better continuity of service, and reduce institutional risk.

6. **Divested instructional design:** As part of the architectural organization, two instructional designers formerly housed in IT will be moved into the Center for Excellence in Teaching and Learning where they can more appropriately serve faculty, while maintaining a liaison relationship with IT.

7. **Constituent Experience Program (CX):** As a result of the architectural organization, a new User Services group is being formed under Director Laura Knaapen. The mission of the User Services group is to "raise the dial" on the Constituent Experience across campus. Elements of the initiative include:

   a) **Expanded student helpdesk:** A student-centric helpdesk will be relocated to Polk Library basement, closer to student activity and more easily located. Helpdesk "outposts" will be created around campus to improve accessibility to students and faculty. Hours will be expanded to better serve students and IT tutoring service will be created to help students learn and make better use of available tools for their academic assignments, career preparation, and overall success.

   b) **Faculty/staff customer segmentation:** "Customer segmentation" is a marketing practice that customizes services according to the varying needs of different constituent profiles, e.g. new employees have different needs from experienced employees; executives have different needs from faculty, etc. Understanding the different needs of different constituents facilitates more customized support for better user experience.

   c) **Account manager model:** Most departments want an IT technician in close proximity, who knows them and understands their department. Some departments have invested in funding such positions (distributed IT), where users know they have a "go-to" person who has their interests at heart. Many units have not been able to create such positions and are underserved. Central IT is implementing an "account manager" model, as used by many vendors, where an individual is assigned to each underserved unit as the person who learns their needs, documents their systems, ensures staff are trained to serve them, maintains close contact, monitors service performance and resolves escalated problems. Multiple

technicians will be trained to serve that unit to provide coverage when the account manager is not available, assuring continuity when a technician separates from the university.

d) **Expanded field service:** In conjunction with Account Managers, the student intern program will be expanded to create field technician roles. Field technicians will be trained and supervised by central IT and either permanently co-located in departments or available on an as-needed basis. This will allow us to expand service to the underserved and push local support out to the user endpoints. It also creates more entry-level IT positions for student career development.

e) **Service level agreements:** Service level agreements are written documents codifying the expected services delivered and their level of quality, such as response time and resolution time. As part of managing field service, user services will work with constituents to develop service level agreements, which may vary depending on constituent needs. For example, card access to the dorms requires an immediate response time where a digital signage outage may not.

f) **Ongoing measurement:** Service metrics will be developed and used to measure and monitor service performance and constituent satisfaction for continuous improvement, according to institutional priorities.

8. **Business Intelligence Program (BI):** As a result of the architectural organization, a new Information Services group is being formed under Director Mark Clements. To become a data-driven culture, UW Oshkosh needs a business intelligence platform where valid information is readily available to inform and support decisions. The mission of the Information Services unit is to create capacity for, plan and implement a BI platform, a multi-year endeavor with significant investment required. Elements of the initiative include:

a) **Outsourcing:** To build capacity within our existing workforce to support and develop a BI program we are investigating outsourcing of routine operations such as server or database administration.

b) **Data governance:** Valid information reported in a BI program requires consistent use of data elements and definitions and a process to govern their use and development across the institution and functional areas.

c) **Data warehouse:** A data warehouse stores snapshots of information, as opposed to a transaction database where information continuously changes. A data warehouse enables storage of information for valid comparisons and consistent reporting.

d) **Enrollment Decision Support:** This project will streamline reporting of enrollment information and create consistent views and reports for consumers to more easily read. It is dependent on a BI platform to accomplish.

e) **Student Success Collaborative:** Implementing this project will provide predictive analytics for student pathways to academic success.

f) **Future projects:** With a BI platform and program in place, additional projects in predictive analytics and decision support will continue to supplement these initial projects.

9. **Internal career paths:** As a result of the architectural organization, formerly fragmented units within central IT will be organized in larger workgroups enabling us to form management roles along with senior technical roles. In the past structure, a single central director managed 12-16 direct reports, with no means of developing management skills within the unit and with only rare opportunities to move up to a director role, which staff couldn't qualify for without management experience. To advance, IT staff had to leave the university. Creating defined career paths within the existing HR system is a tool to retain our top IT talent and reduce churn in the organization.

10. **Funding model:** A new central IT funding model (independent of campus-wide budget model changes) is underway that will consolidate central budgets and request process.

a) New account codes will facilitate tracking of the cost of service delivery and operations.

b) The disparate funds of Lab Mod, Classroom Mod, and GCA Mod will be consolidated with a single request process and committee with campus-wide representation. This plan is still being developed and will be vetted with governance groups before implementing.

c) Working with central purchasing we are piloting a process to simplify hardware purchasing for campus constituents.

d) Developing a service catalog of defined services and service levels with associated costs to deliver, maintain or increase quality and scope of service.

e) Defining funding models to support desired services and quality levels.

11. **Outsourcing exploration:** In order to increase capacity for innovation with reduced resources, central IT is exploring or already implementing options for outsourcing routine operations, such as print management, equipment leasing, lab imaging, and server administration.

Conclusion

There is no single ideal solution; we as a campus will implement a problem set best suited to meet our institutional objectives for the present and future. No matter what conceptual model the institution chooses, how we implement it will be key to our success. Based on the expertise of the study group and the input of our constituents, some key notes on implementation include:

▪ The solutions lie on a continuum with no one-size-fits-all option.

▪ While the study group has presented models, they are snapshots on the continuum of possibilities. The optimal solutions lie somewhere on the continuum, albeit not necessarily exactly on a model as presented.

▪ Implementation will require planning and evolution to work through the details and collectively find the best solutions.

▪ Units and constituents need to be involved in the planning and details, as each unit solution will be different from another.

▪ The CIO will spend the next several months working with constituents to articulate needs and implement best-fit solutions within the conceptual model chosen.

▪ Communication and collaboration will continue to be core values and guiding principles in our work to achieve the institutional mission.

**We all have the interests of UW Oshkosh at heart;
where we might disagree is only in how to achieve them.**

Overview of Models

Below is a summary of the resulting models presented on subsequent pages of this report. Each model is presented with a high-level illustration, descriptive summary, list of pro's and con's, and a synopsis of the expected impacts to the KPIs.

Higher education IT organizations are complex to illustrate or describe. While generalizations can be made, every campus unit has different missions and pressures requiring different IT solutions, all contributing to the greater good of the institutional mission. Readers are cautioned that many nuances exist that cannot be adequately portrayed.

▪ **Model 0: Status Quo**

This is a comparative representation of the current organization, with the new central IT organizational changes incorporated. Central IT establishes standards with input from distributed IT, that distributed IT in turn comply with. The model is working well because of the goodwill and mutual respect of the individuals involved. Central IT will continue to supplement and expand local support for students and academic units.

▪ **Model 1: Standardized Cooperation**

Proposed Model 1 more formally structures the practices of the status quo. Documenting procedures and creating more structured procedures, such as a change management board, would formalize practices in a way that would be harder for difficult personalities or reluctant participants to contravene. Central IT will continue to supplement and expand local support for students and academic units.

▪ **Model 2: Authority by Policy**

Proposed Model 2 establishes the CIO as the institutional authority over IT regardless of division, but by policy rather than reporting lines. Given the authority, the CIO would then centralize commodity services (hardware infrastructure and PeopleSoft development) but leave distributed support services embedded in local units while supplementing and expanding local support for students and academic units.

▪ **Model 3: Centralized Reporting Lines**

Proposed Model 3 centralizes the reporting lines of all IT roles into central IT. Commodity services (hardware infrastructure and PeopleSoft development) are centralized as in Model 2. Distributed support services report to central IT but remain co-located in local units. They may be called upon to support other underserved units.

Model 0: Status Quo

This model is not presented as an option but as a comparison point.

The enterprise architectural approach to information technology views technology in layers, where infrastructure services (networks and hardware) are on the bottom layer, information applications are in the middle, and support services are on the top layer, closest to the business practices of the organization (Ross et al, 2006). The lowest parts of the architecture are the commodity services that have the greatest potential to achieve economies of scale. The higher up in the architecture the services are, the more likely they are to be customized to the unique needs of the operating units.
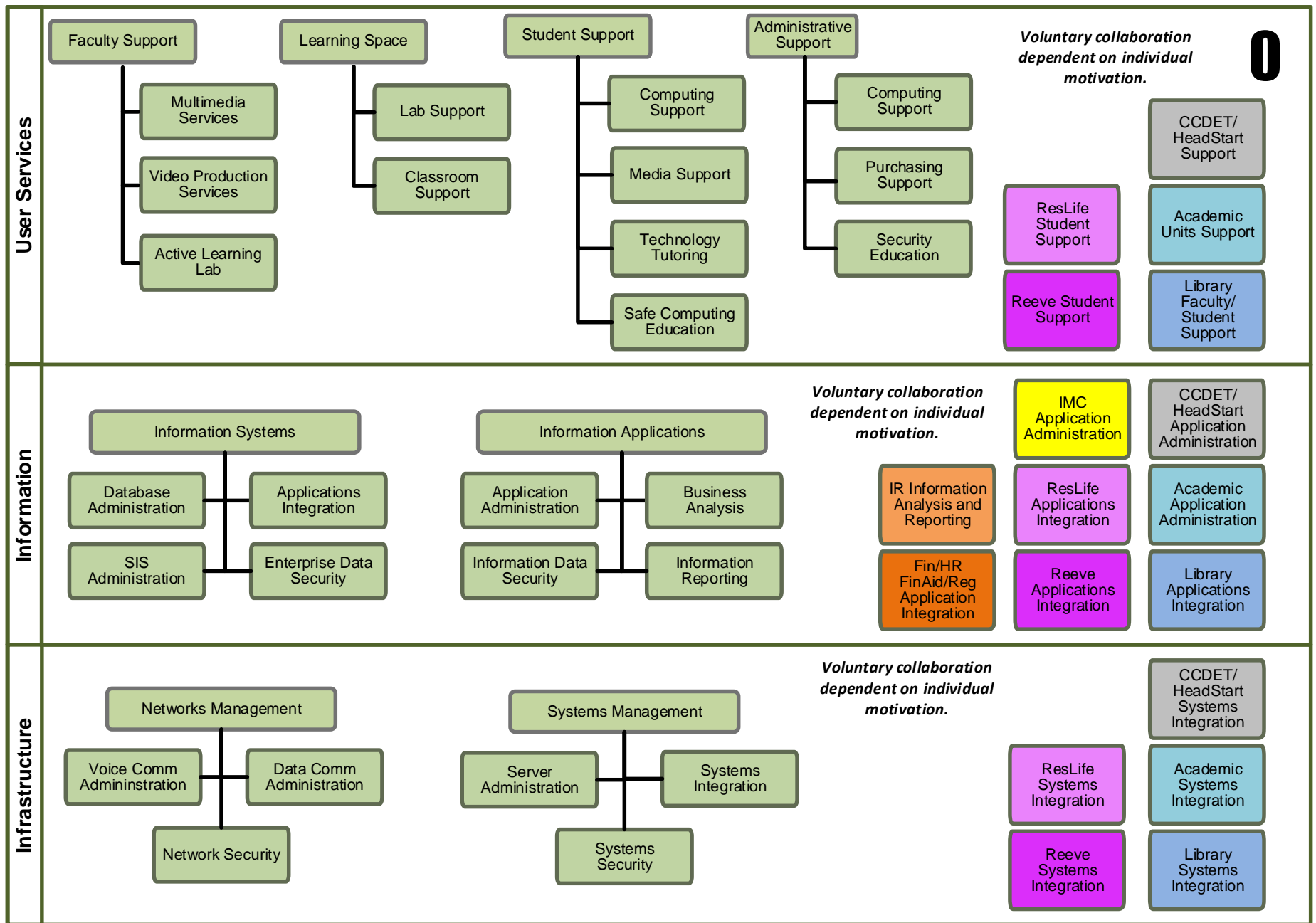
Using this approach to illustrate institutional IT at UW Oshkosh shows the central IT operations in the new organization (green) as well as the distributed IT functions that operate in the same architectural layers, i.e. that are delivering comparable services in units outside central IT. In the current model, central IT and distributed IT collaborate on a voluntary basis, contingent on the goodwill and motivation of the players involved. Central IT informally defines standards, which distributed units comply with.

Currently there is a high degree of voluntary collaboration, resource sharing, and compliance with central IT standards and policies.

Model 0 Descriptors

The current organization and the new changes underway in central IT can be summarized as:

- **Existing:** Some but not all academic units have distributed IT support roles.

- **Existing:** Different distributed units have different types of IT staff, e.g. academic units have primarily desktop support roles while others such as ResLife have desktop support roles as well as infrastructure and development roles.

- **Existing:** Administrative units primarily have enterprise applications, such as PeopleSoft and programs that integrate with it.

- **New:** Central IT is piloting an account manager model, where units will be assigned an individual to "own" their customer experience, make sure their systems are well supported and their needs are met to the extent possible with existing resources.

- **New:** Central IT hopes to build out its fleet of support staff using centrally trained student "field technicians" who will be located in the departments and centrally supervised.

- **New:** Central IT is implementing investment management best practices:
    o Governance framework for transparent decision making.
    o More transparent and updated funding model for tracking and reporting IT spend.
    o Total Cost of Ownership (TCO) model to better manage long-term financial investment.
    o Improved IT asset life cycle management.
    o Portfolio and project management office for dynamic and structured project intake, selection, prioritization, monitoring, and reporting.

User Services

Faculty Support
- Multimedia Services
- Video Production Services
- Active Learning Lab

Learning Space
- Lab Support
- Classroom Support

Student Support
- Computing Support
- Media Support
- Technology Tutoring
- Safe Computing Education

Administrative Support
- Computing Support
- Purchasing Support
- Security Education

Voluntary collaboration dependent on individual motivation. **0**

- ResLife Student Support
- Reeve Student Support
- CCDET/HeadStart Support
- Academic Units Support
- Library Faculty/Student Support

Information

Information Systems
- Database Administration
- Applications Integration
- SIS Administration
- Enterprise Data Security

Information Applications
- Application Administration
- Business Analysis
- Information Data Security
- Information Reporting

Voluntary collaboration dependent on individual motivation.

- IMC Application Administration
- IR Information Analysis and Reporting
- ResLife Applications Integration
- Fin/HR FinAid/Reg Application Integration
- Reeve Applications Integration
- CCDET/HeadStart Application Administration
- Academic Application Administration
- Library Applications Integration

Infrastructure

Networks Management
- Voice Comm Admininstration
- Data Comm Administration
- Network Security

Systems Management
- Server Administration
- Systems Integration
- Systems Security

Voluntary collaboration dependent on individual motivation.

- ResLife Systems Integration
- Reeve Systems Integration
- CCDET/HeadStart Systems Integration
- Academic Systems Integration
- Library Systems Integration

Model 0 Status Quo Pro's

1. Departments can meet their own needs by hiring local IT staff.
2. Departments can easily assign local IT staff to non-IT related tasks in the department in order to make efficient use of an individual's time and skill.
3. No disruption for existing distributed IT departments.
4. Departments that currently own IT resources can quickly evolve and update their IT services/systems based on feedback from student and department staff constituents.
5. Departments that have the funding to purchase IT staff/systems can be certain that they can deliver on constituent demand.
6. For departments that can provide IT staff to maintain their distributed IT systems, service level for those systems remains high.
7. Leverages the budget flexibility inherent to revenue generating departments, which is often used to meet unexpected demands for funding to upgrade, update or repair their IT systems.
8. Both IT staff and systems remain in the location where demand has dictated their existence, and where funding has been provided to support them.
9. IT staff can be used flexibly by their owner department to support important business processes that are technical in nature, and in direct support of the system/service not traditionally considered to be in the domain of an IT person, as a central IT department would understand the role of IT.
10. A distributed department that owns a system is able to place a relatively (relative to the many systems in central IT) high priority of funding and support on the relatively few systems (critical to them) which they maintain.

Model 0 Status Quo Con's

1. Cooperation and coordination depends on the goodwill of individual actors leading to potential for departments establishing services/systems that are difficult for central IT to support
2. Duplication of efforts among distributed departments
3. Different levels of support across campus depending on willingness/ability to spend own budget on IT
4. CIO lacks formal ownership of IT resources
5. Can be difficult to obtain consistent compliance with strong standards, when central IT has no means of enforcement.
6. Effort expended by central IT to get and keep distributed departments up to speed and compliant with central IT standards/policies might be better spent on service delivery.
7. A department typically can't afford to fund both a primary and backup IT person to service their IT systems, leaving most non-central IT systems without backup techs. (this issue also exists in central IT)
8. Decentralized IT staff will find it more difficult to participate in the proposed central IT career paths currently being developed.
9. Central IT acquires no additional resources with which to carry out its duties.
10. Essentially, no increased oversight of non-central IT systems by Office of CIO.
11. Funding model is still decentralized.

Model 0 Status Quo KPI Effects

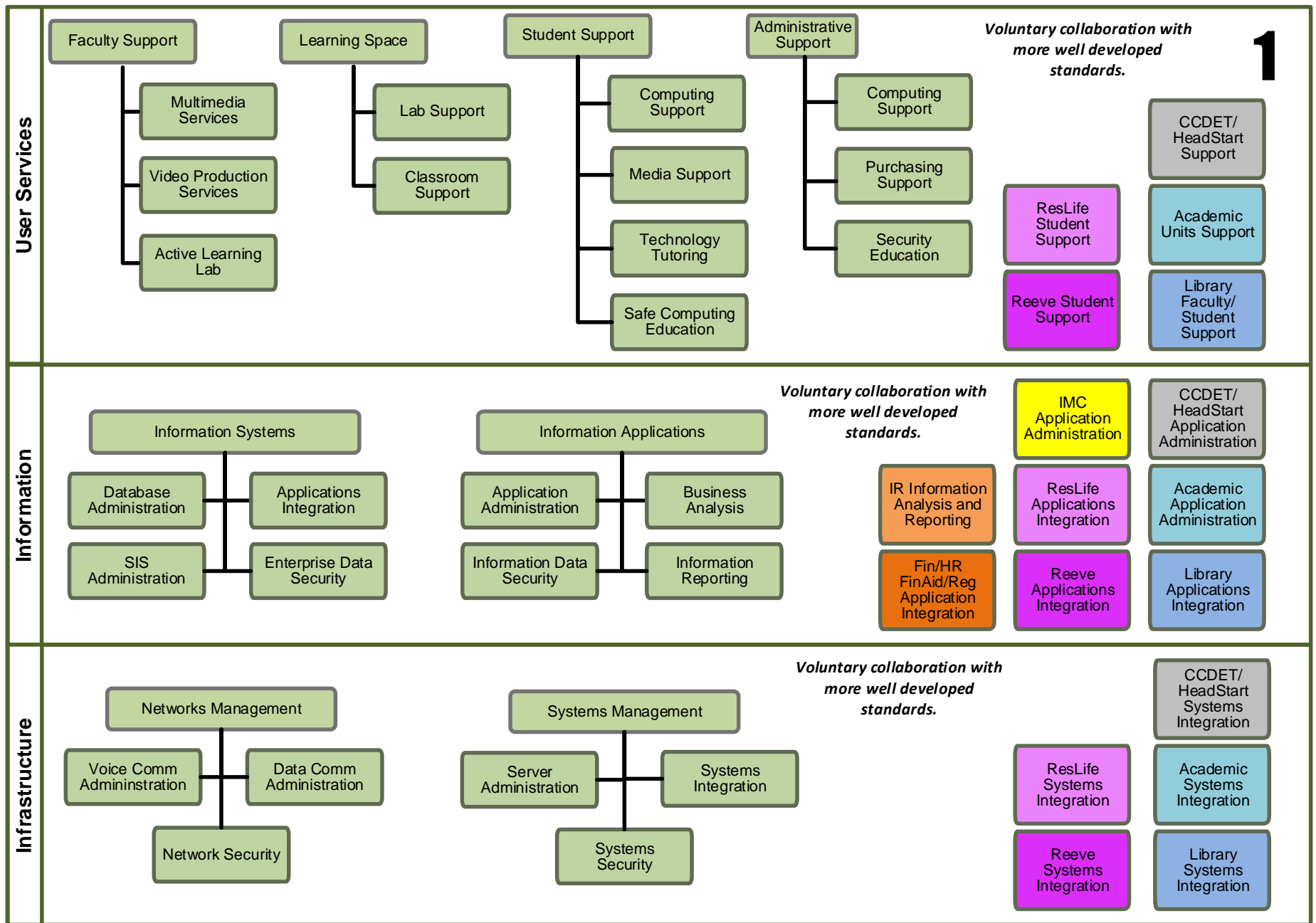|	
Strategic Alignment:	No change.
Constituent Satisfaction:	No change.
Operational Efficiency:	No change.
Risk Management:	No change.

Model 1: Standardized Collaboration

Standards would be more formally defined and expanded across a wider range of IT functions, e.g. location of servers, software deployed, etc. All distributed IT roles remain in place as is. Model 0 descriptors still apply; Model 1 descriptors are added to illustrate what remains and what changes.

Model 0 Descriptors Still Apply

- **Existing:** Some but not all academic units have distributed IT support roles.

- **Existing:** Distributed units are collaborating, sharing resources, and voluntarily complying with central IT standards and policies.

- **Existing:** Different distributed units have different types of IT staff, e.g. academic units have primarily desktop support roles while others such as ResLife have desktop support roles as well as infrastructure and development roles.

- **Existing:** Administrative units primarily have enterprise applications, such as PeopleSoft and programs that integrate with it.

- **New:** Central IT is piloting an account manager model, where units will be assigned an individual to "own" their customer experience, make sure their systems are well supported and their needs are met to the extent possible with existing resources.

- **New:** Central IT hopes to build out its fleet of support staff using centrally trained student "field technicians" who will be located in the departments and centrally supervised.

- **New:** Central IT is implementing investment management best practices:
  - Governance framework for transparent decision making.
  - More transparent and updated funding model for tracking and reporting IT spend.
  - Total Cost of Ownership (TCO) model to better manage long-term financial investment.
  - Improved IT asset life cycle management.
  - Portfolio and project management office for dynamic and structured project intake, selection, prioritization, monitoring, and reporting.

Model 1 Descriptors Added

- **Same:** All distributed roles remain distributed in their current locations and functions.

- **Same:** Central and distributed IT continue to collaborate voluntarily.

- **Change:** Central IT establishes a wider array of standards of practices that are more structured and publicized.

User Services

Faculty Support
- Multimedia Services
- Video Production Services
- Active Learning Lab

Learning Space
- Lab Support
- Classroom Support

Student Support
- Computing Support
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- Technology Tutoring
- Safe Computing Education

Administrative Support
- Computing Support
- Purchasing Support
- Security Education

Voluntary collaboration with more well developed standards.

ResLife Student Support

Reeve Student Support

CCDET/ HeadStart Support

Academic Units Support

Library Faculty/ Student Support

1

Information

Information Systems
- Database Administration
- Applications Integration
- SIS Administration
- Enterprise Data Security

Information Applications
- Application Administration
- Business Analysis
- Information Data Security
- Information Reporting

Voluntary collaboration with more well developed standards.

IR Information Analysis and Reporting

Fin/HR FinAid/Reg Application Integration

IMC Application Administration

ResLife Applications Integration

Reeve Applications Integration

CCDET/ HeadStart Application Administration

Academic Application Administration

Library Applications Integration

Infrastructure

Networks Management
- Voice Comm Admininstration
- Data Comm Administration
- Network Security

Systems Management
- Server Administration
- Systems Integration
- Systems Security

Voluntary collaboration with more well developed standards.

ResLife Systems Integration

Reeve Systems Integration

CCDET/ HeadStart Systems Integration

Academic Systems Integration

Library Systems Integration

Model 1 Standardized Collaboration Pro's

1. Formalized standards for all campus IT systems and practices should result in a more uniform delivery of services.
2. Low disruption to IT staff and systems in distributed units make it easier for stakeholders to adapt to changes.
3. Distributed departments that own IT resources can quickly evolve and update the IT services/systems that they own based on feedback from student and department staff constituents.
4. Departments that have the funding to purchase IT staff/systems are better able to deliver on constituent demand.
5. For departments that can provide IT staff to maintain their distributed IT systems, service level for those systems remains high.
6. Leverages the budget flexibility inherent to revenue generating departments, which is often used to meet unexpected demands for funding to upgrade, update or repair their IT systems.
7. Increased transparency and better policy direction from central IT will provide a better understanding of roles and responsibilities between central IT and distributed IT, thus generating efficiencies by making it clear what central IT does and does not provide to departments so that departments can stop doing some things central IT can do for them.
8. Both IT staff and system remain in the location where demand has dictated their existence, and where funding has been provided to support them.
9. IT staff can be used flexibly by department to assist and support important business processes that are technical in nature, and in direct support of the system/service but may not be traditionally considered to be in the domain of an IT person, as a central IT department would understand the role of IT.
10. A distributed department that owns a system is able to place a relatively (relative to the many systems in central IT) high priority of funding and support on the relatively few systems (critical to them) which they maintain.

Model 1 Standardized Collaboration Con's

1. CIO lacks formal ownership of IT resources.
2. Without formal authority over distributed IT, the CIO could still find it difficult to manage institutional IT investments, policies and resources.
3. Less efficient delivery of IT services to campus as a whole.
4. Effort expended by central IT to get and keep distributed departments up to speed and compliant with central IT standards/policies might be better spent on service delivery.
5. A department typically can't afford to fund both a primary and backup IT person to service their IT systems, leading to coverage gaps during absences or departures.
6. Decentralized IT staff will find it more difficult to participate in the proposed central IT career paths currently being developed.
7. Distributed IT still funded in decentralized fashion.
8. Central IT acquires no additional resources with which to carry out its duties.
9. Essentially, no increased oversight of non-central IT systems by Office of CIO.

Model 1 Standardized Collaboration KPI Effects

Strategic Alignment: Low improvement. Governance, enterprise portfolio management, and execution of planned best practices will improve effectiveness through more comprehensive prioritization, insight, and transparency into proposed and existing IT investments across campus.

Constituent Satisfaction: Neutral. Stakeholders with IT resources will find this arrangement least uprooting and therefore most satisfying. Stakeholders without IT resources will not realize any improvement.

Operational Efficiency: Low improvement in central efficiency; same level of efficiency in distributed units.

Risk Management: Low improvement. Risks in central IT can be mitigated and managed; risks across campus are not necessarily managed according to best practice and the institution may not have insight into all risks. Vulnerabilities across campus that pose institutional risk can be addressed, with voluntary cooperation.
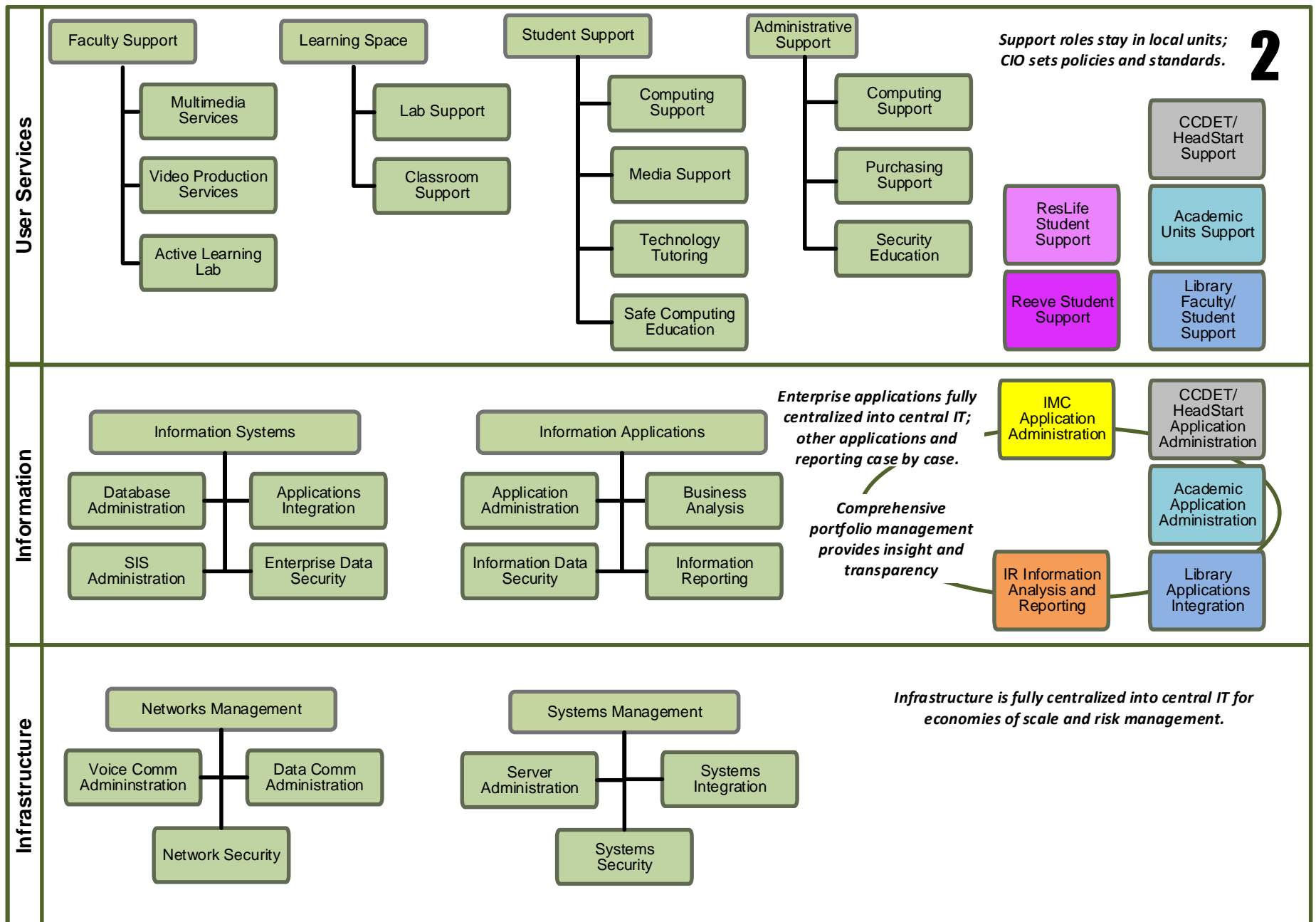
Model 2: Authority by Policy

The CIO is formally established as the accountable authority over all institutional IT regardless of division, through formal policy and/or cabinet-level appointment, with continual reinforcement by the Chancellor. The CIO would centralize responsibility for all commodity services, i.e. those that serve the common good and can be operated more efficiently through economies of scale, primarily ResLife services and PeopleSoft support. User support services would remain distributed in their units while we push out more support to underserved units. Application administration would be managed centrally or locally on a case-by-case basis. Enterprise portfolio management of IT investments would encompass all institutional IT investments, providing transparency and insight.

Model 0 Descriptors Still Apply

- **Existing:** Some but not all academic units have distributed IT support roles.

- **Existing:** Distributed units are collaborating, sharing resources, and voluntarily complying with central IT standards and policies.

- **Existing:** Different distributed units have different types of IT staff, e.g. academic units have primarily desktop support roles while others such as ResLife have desktop support roles as well as infrastructure and development roles.

- **Existing:** Administrative units primarily have enterprise applications, such as PeopleSoft and programs that integrate with it.

- **New:** Central IT is piloting an account manager model, where units will be assigned an individual to "own" their customer experience, make sure their systems are well supported and their needs are met to the extent possible with existing resources.

- **New:** Central IT hopes to build out its fleet of support staff using centrally trained student "field technicians" who will be located in the departments and centrally supervised.

- **New:** Central IT is implementing investment management best practices:
  - Governance framework for transparent decision making.
  - More transparent and updated funding model for tracking and reporting IT spend.
  - Total Cost of Ownership (TCO) model to better manage long-term financial investment.
  - Improved IT asset life cycle management.
  - Portfolio and project management office for dynamic and structured project intake, selection, prioritization, monitoring, and reporting.

Model 2 Descriptors Added

- **Same:** All distributed *support* roles remain distributed in their current locations, reporting lines and functions.

- **Same:** Central and distributed IT support roles continue to collaborate voluntarily.

- **Change:** Central IT establishes a wider array of service management agreements that are more structured and publicized.

- **Change:** Given the authority (by policy), the CIO would centralize all infrastructure (e.g. networking, data centers, card access systems, campus signage) and enterprise applications (e.g. PeopleSoft and its integrations). IT roles from ResLife, Reeve, Finance, HR, and Registrar would report to central IT, as primary support for their units but also assigned to projects according to institutional priorities. Enterprise portfolio management of IT investments would encompass all institutional IT investments, providing transparency and insight.

User Services

- Faculty Support
  - Multimedia Services
  - Video Production Services
  - Active Learning Lab
- Learning Space
  - Lab Support
  - Classroom Support
- Student Support
  - Computing Support
  - Media Support
  - Technology Tutoring
  - Safe Computing Education
- Administrative Support
  - Computing Support
  - Purchasing Support
  - Security Education

Support roles stay in local units; CIO sets policies and standards.

2

- CCDET/ HeadStart Support
- ResLife Student Support
- Academic Units Support
- Reeve Student Support
- Library Faculty/ Student Support

Information

- Information Systems
  - Database Administration
  - Applications Integration
  - SIS Administration
  - Enterprise Data Security
- Information Applications
  - Application Administration
  - Business Analysis
  - Information Data Security
  - Information Reporting

Enterprise applications fully centralized into central IT; other applications and reporting case by case.

Comprehensive portfolio management provides insight and transparency

- IMC Application Administration
- CCDET/ HeadStart Application Administration
- Academic Application Administration
- IR Information Analysis and Reporting
- Library Applications Integration

Infrastructure

- Networks Management
  - Voice Comm Admininstration
  - Data Comm Administration
  - Network Security
- Systems Management
  - Server Administration
  - Systems Integration
  - Systems Security

Infrastructure is fully centralized into central IT for economies of scale and risk management.

Model 2 Authority by Policy Pro's

1. Leverages existing collaboration and resource-sharing.
2. Codifies compliance with central IT standards and policies for better risk management.
3. The majority of departments do not experience any major change.
4. Centralization of commodity services and infrastructure is achieved in order to realize the associated efficiency and risk management gains.
5. Unmanaged servers, and other IT systems which are found to be a potential vulnerability will be moved to central support for greater protection at little to no disruption to local control.
6. Leverages some of the existing distributed IT programming innovations and management practices to apply centrally in Applications Management,
7. Leverages better utilization of student workforce and engaging students in programs that improve their academic success, by using some of the student employment models currently employed in distributed IT departments.
8. Some distributed IT departments have developed service assessment practices which we may be able to apply across the institution.
9. Some of the innovations which have been produced by decentralized IT departments in the past may help control rising IT costs in the long term.
10. Leveraging some of the existing distributed IT infrastructure, in service of the whole campus may provide a boost in short term capabilities and capacity to the central IT data center.
11. Provides a clearly defined authority (CIO office) over technology policy and resource allocation.
12. Increased transparency and better direction on policy and standards from central IT will provide a better understanding of roles and responsibilities between central IT and distributed IT, thus generating efficiencies by making it clear what central IT does and does not provide to departments so that departments can stop doing some things central IT can do for them.

Model 2 Authority by Policy Con's

1. Even policy doesn't always assure compliance; Chancellor would need to strongly and persistently reinforce the model to make it effective.
2. Campus departments that lose IT resources and realize a reduction in their service levels will be dissatisfied.
3. Funding model issues are not addressed. How is it determined who pays for what, and how, especially where departments funded positions which the CIO now wants to centralize.
4. The pro bono work/services provided by decentralized technical experts would cease (examples include ResLife SysAdmin that contributes door card access support to the whole campus with no chargeback, Reeve SysAdmin that contributes digital signage support to whole campus with no charge back, Library WebDev that contributes Plone CMS support to whole campus at no charge back).
5. Some staff members who formerly reported in distributed departments will find themselves with a formal supervisor (Office of CIO), and a 'shadow supervisor' which is their former supervisor at the department level (and probably their assigned customer group). This is a de-facto dual reporting line.
6. IT still funded in a decentralized fashion across the institution.
7. The leveraging of existing decentralized technical assets would diminish over time as decentralized funding could predictably decrease as contributing departments would see less direct return on their IT investments.

Model 2 Authority by Policy KPI Effects

Strategic Alignment:	High improvement. Governance, portfolio management, and execution of planned best practices will improve effectiveness through prioritization and central insight into proposed and existing IT investments. Central insight into the larger pool of campus IT resources could enable better collaboration to meet demand of highest institutional priorities.
Constituent Satisfaction:	Mixed improvement. Stakeholders who feel they are losing their resources, even though for the greater good, will still feel their needs diminished. Stakeholders who retain assets will feel neutral; stakeholders without assets will not gain. Any unit could see increased satisfaction if they can leverage additional resources from across campus.
Operational Efficiency:	High improvement in infrastructure management efficiency. By integrating infrastructure and enterprise information systems, combined workgroups can run the systems more efficiently. Central oversight and standards can monitor and manage efficiency over time.
Risk Management:	Moderate improvement. Infrastructure and information system risks can be comprehensively managed and mitigated across the institution. Better policies and standards allow for local management within an appropriate framework, leading to lower risk overall.

Model 3: Centralized Reporting Lines

Move all IT role reporting lines into central IT. Commodity infrastructure and information services (ResLife and PeopleSoft) are centralized. Application integration and administration is managed centrally or locally case by case; some applications from any unit will continue to be administered in that unit because of the custom knowledge required, or skillsets available. Distributed IT support roles report to central IT but remain concentrated in their units as account managers. Units who have funded a fulltime position retain near-fulltime use of that position; the individual may be called on to support other units but is also covered during absences. Other units are supported with account managers and student field technicians as needed. Distributed IT staff are incorporated into central IT's professional development and career path programs. Enterprise portfolio management of IT investments would encompass all institutional IT investments, providing transparency and insight.

Model 0 Descriptors Still Apply

- **Existing:** Some but not all academic units have distributed IT support roles.

- **Existing:** Distributed units are collaborating, sharing resources, and voluntarily complying with central IT standards and policies.

- **Existing:** Different distributed units have different types of IT staff, e.g. academic units have primarily desktop support roles while others such as ResLife have desktop support roles as well as infrastructure and development roles.

- **Existing:** Administrative units primarily have enterprise applications, such as PeopleSoft and programs that integrate with it.

- **New:** Central IT is piloting an account manager model, where units will be assigned an individual to "own" their customer experience, make sure their systems are well supported and their needs are met to the extent possible with existing resources.

- **New:** Central IT hopes to build out its fleet of support staff using centrally trained student "field technicians" who will be located in the departments and centrally supervised.

- **New:** Central IT is implementing investment management best practices:
  - Governance framework for transparent decision making.
  - More transparent and updated funding model for tracking and reporting IT spend.
  - Total Cost of Ownership (TCO) model to better manage long-term financial investment.
  - Improved IT asset life cycle management.
  - Portfolio and project management office for dynamic and structured project intake, selection, prioritization, monitoring, and reporting.

Model 3 Descriptors Added

- **Change:** Central IT establishes a wider array of service management agreements that are more structured and publicized.

- **Change:** Distributed support roles report to central IT. Units have options for support based on best fit: 1) dedicated, co-located support staff funded by the unit, who function as account managers, but who might be assigned to help other units on a minimal basis; 2) part-time assigned support staff closely located, functioning as account managers but shared with other mid-size units; 3) account manager assigned to multiple smaller units with regionally located field technicians dispatched as needed.

- **Change:** All infrastructure (e.g. networking, data centers, card access systems, campus signage) and enterprise applications (e.g. PeopleSoft and its integrations) are centralized as in Model 2. Specialized applications are centrally managed on a case by case basis depending on needs.

User Services

Faculty Support
- Multimedia Services
- Video Production Services
- Active Learning Lab

Learning Space
- Lab Support
- Classroom Support

Student Support
- Computing Support
- Media Support
- Technology Tutoring
- Safe Computing Education

Administrative Support
- Computing Support
- Purchasing Support
- Security Education

Support roles report to central IT; assigned and co-located with units depending on volume.

3

- CCDET/ HeadStart Support
- ResLife Student Support
- Academic Units Support
- Reeve Student Support
- Library Faculty/ Student Support

Information

Information Systems
- Database Administration
- Applications Integration
- SIS Administration
- Enterprise Data Security

Information Applications
- Application Administration
- Business Analysis
- Information Data Security
- Information Reporting

Enterprise applications and reporting fully centralized into central IT; assigned to units depending on volume.

Comprehensive portfolio management provides insight and transparency

- IMC Application Administration
- CCDET/ HeadStart Application Administration
- Academic Application Administration
- IR Information Analysis and Reporting
- Library Applications Integration

Infrastructure

Networks Management
- Voice Comm Admininstration
- Data Comm Administration
- Network Security

Systems Management
- Server Administration
- Systems Integration
- Systems Security

Infrastructure is fully centralized into central IT for economies of scale and risk management.

Model 3 Centralized Reporting Lines Pro's

1. As staff leave their positions, IT can reallocate positions to the greatest needs for technology support across campus.
2. Where distributed staff have overlapping responsibilities, with either a central IT role or another distributed IT role, efficiencies can be gained from knowledge sharing or from reallocating some staff to different responsibilities.
3. Key IT services can be improved or expanded through a greater number of staff resources devoted to them.
4. Authority of the CIO is greatest, leading to the fewest roadblocks on the way to key IT initiatives, and the greatest potential for IT success.
5. Local departments can take advantage of backup resources - each distributed IT person can support multiple different departments as needed.
6. More advanced IT specialization potential is possible for distributed IT people who become part of central IT
7. Instead of multiple support generalists serving departments, centralized staff could develop expertise in one IT specialty or another, which can then be applied across any and all departments where needed, increasing the overall depth of IT expertise for the institution.
8. Centralization of commodity services and infrastructure is achieved in order to realize the associated efficiency and risk management gains.
9. Unmanaged servers, and other IT systems which are found to be a potential vulnerability will be moved to central support for greater protection at little to no disruption to local control.
10. Leverages some of the existing distributed IT programming innovations and management practices to apply centrally in Applications Management,
11. Leverages better utilization of student workforce and engaging students in programs that improve their academic success, by using some of the student employment models currently employed in distributed IT departments.
12. Some distributed IT departments have developed service assessment practices which we may be able to apply across the institution.
13. Some of the innovations which have been produced by decentralized IT departments in the past may help control rising IT costs in the long term.
14. Leveraging some of the existing distributed IT infrastructure, in service of the whole campus may provide a boost in short term capabilities and capacity to the central IT data center.
15. Provides a clearly defined authority (CIO office) over technology policy and resource allocation.

Model 3 Centralized Reporting Lines Con's

1. Many departments lose direct reporting authority over staff members whose roles include IT responsibilities: College of Business, College of Nursing, College of Education and Human Services, "LS-ART"(?), Polk Library, Head Start, Equity & Diversity, Residence Life, Reeve Union, Financial Aid, FIN(?), Registrar, IMC and CCDET.
2. As staff leave their positions, their original functional departments lose the ability to re-purpose the budget and staff lines associated with that position for other strategic needs.
3. Staff members who now report to IT but embed in their original departments effectively have two perceived reporting lines (or one line plus one dotted line), leading to increased workload and reduced morale.
4. Alternatively, if centralized staff truly only report to IT, then the functional departments lose efficiencies and perhaps even core capabilities from assigning non-IT tasks to these staff members. It is typical for the staff members affected by this reorganization to have multiple roles in their department.
5. Staff departures occur among both centralized staff and "original" IT staff due to culture changes and reduced morale following a reorganization.
6. Where overlapping staff are reallocated to different responsibilities, the level of support (both real and perceived) and resulting customer satisfaction may decrease.
7. Where the departmental IT staff who are to be centralized staff have unique responsibilities -- for example managing systems or services unique to their department -- few efficiencies are gained from centralization.
8. Departments will lose high-value IT person resources from the larger pool of their departments' staff members.
9. Service levels are reduced in departments which lose staff to central IT through losing the ability to assign tasks the IT staff person affected by the centralization.
10. Efficiencies gained from centralization may take time (our UWS colleagues said "years") to materialize, whereas the reduction of customer satisfaction, particularly at the User Services layer, occurs quickly.
11. By centralizing distributed staff immediately after or during an internal IT reorganization, improvements in IT services may not be clearly attributable to one change or the other, making it difficult to attribute which reorganization caused a particular outcome..

12. Disincentive for functional departments to develop their staff's IT expertise through targeted hiring or training, as those lines may be removed from that department's control. Similarly, an incentive for functional departments to hide technical positions under business analyst or similar roles.
13. Funding model is not addressed. Unclear as to who will pay for the staff and the systems that become part of central IT.
14. There will almost certainly be a perceived decrease in responsiveness of support for departments that "lose" IT staff that now report in to central IT.

Model 3 Centralized Reporting Lines KPI Effects

The KPI effects of Model 3 are very similar to the effects of Model 2. The difference is that reporting lines are a more reliable and less ambiguous way of managing and achieving the desired effects. Moving reporting lines is disruptive and controversial but eventually reduces the us-versus-them culture of IT on campus.

Strategic Alignment:	High improvement. Governance, portfolio management, and execution of planned best practices will improve effectiveness through prioritization and central insight into proposed and existing IT investments. Central insight into the larger pool of campus IT resources could enable better collaboration to meet demand of highest institutional priorities.
Constituent Satisfaction:	Mixed improvement. Stakeholders who feel they are losing their resources, even though for the greater good, will still feel their needs diminished. Stakeholders who retain assets will feel neutral; stakeholders without assets will not gain. Any unit could see increased satisfaction if they can leverage additional resources from across campus.
Operational Efficiency:	High improvement in infrastructure management efficiency. By integrating infrastructure and enterprise information systems, combined workgroups can run the systems more efficiently. Central oversight and standards can monitor and manage efficiency over time.
Risk Management:	High improvement. Infrastructure and information system risks can be comprehensively managed and mitigated across the institution. Clear reporting lines lead to lower risk overall, with less ambiguity.

Appendices Overview

The findings of this evaluation are summarized in the following sections:

- **Appendix A: IT Governance Framework**

  A new governance framework has been implemented at UW Oshkosh based on the COBIT 5 standard for governance of enterprise IT published by ISACA (Information Systems Audit and Control Association). The framework defines an executive council with as many advisory groups to the council as there is need and interest.

- **Appendix B: Silo Organization of Central IT (as of December 2014)**

  The central organization inherited by the CIO in December 2014 was very silo'd in three departments (Administrative Computing, Academic Computing, and Learning Technologies) that worked largely independently of each other but with functions duplicated in multiple places. This was an organizational design commonly used in the 1990's when ERPs (large comprehensive software systems) were implemented. That organization is illustrated here as a point of reference to understand the need for change within central IT.

- **Appendix C: Organizational Risks (Central and Distributed)**

  Weaknesses or problems in the organization create risks for the institution. This section assesses the risks inherent in the IT organization across the institution, both central and distributed.

- **Appendix D: External Review Follow-up Assessment**

  In 2013 an external review of the IT organization was conducted, with recommendations for change. Those recommendations are provided in this report with current status noted.

- **Appendix E: Research Review**

  As background to the study, current literature on the organization and governance of enterprise IT in higher education was summarized. The study group also interviewed staff and leadership on other campuses to gather lessons learned from recent reorganizations. The bibliography provides an extensive list of material from which general professional knowledge on the subject has been acquired.

- **Appendix F: Campus Feedback**

  This appendix contains the a synopsis of the feedback from the open forums and the small-group sessions with the Library, Registrar's office, Reeve Union, the Provost's office, technicians meeting, and the Deans.

- **Appendix G: Bibliography and Sources**

  This appendix contains the sources cited in the research review as well as a bibliography of sources that provided general background expertise on relevant topics such as IT governance, portfolio management, organization of enterprise IT, etc.

Appendix A: IT Governance Framework

The governance of enterprise information technology has evolved to a globally recognized framework published by ISACA (Information Systems Audit and Control Association) with certified practitioners. The "COBIT 5" framework is considered by IT auditors to be the standard for evaluating the emerging field of IT investment management. As ISACA notes:

> *IT investments represent a profound conundrum within many enterprises. There are no other investments… that occupy such a large and growing expenditure, yet lack disciplined management, processes and performance measurements.* [1]

COBIT 5 defines best-practice functions for the effective governance of information technology to establish disciplined management:

Strategic Alignment	balanced portfolio management and prioritization of investments to enable strategic objectives
Value Delivery	program management and project support to ensure investments are effectively executed and intended benefits are realized
Risk Management	monitoring, evaluating and mitigating investment risks; realizing opportunities
Resource Optimization	allocation of resources (financial, human, and tangible) in alignment with priorities
Stakeholder Transparency	communicating with constituents to provide insight and clarity into decision making processes, investment status, and outcomes

Modeling on the COBIT 5 standard, effective governance in higher education can be achieved through:

- Executive leadership giving direction and priorities
- Constituent input informing leadership of functional needs
- Policies and defined processes to guide behavior
- Administrative execution of governance functions

Following is a proposed governance structure for UW Oshkosh based on the COBIT 5 standard and adapted from a similar governance structure successfully exercised at Montana State University.

Narrative Overview

- **Executive direction** is provided by the Information Technology Executive Council (ITEC). The ITEC sets strategic priorities and resolves conflicts among competing constituent demands that cannot be resolved at lower levels.
- **Constituent input** is presented to the ITEC through standardized business cases that summarize cost, benefit, risk, and alignment with institutional strategic objectives. The Office of the CIO assists in developing each business case in a consistent format.
- **Policies and processes** are established and maintained in order to assure compliance with governance decisions and guide human activity.
- **Administrative execution** of governance functions is provided by the Office of the CIO, assuring strategic alignment, value delivery, risk management, resource optimization, and stakeholder transparency.

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[1] ISACA, 2011. CGEIT Review Manual.

Governance Structural Overview
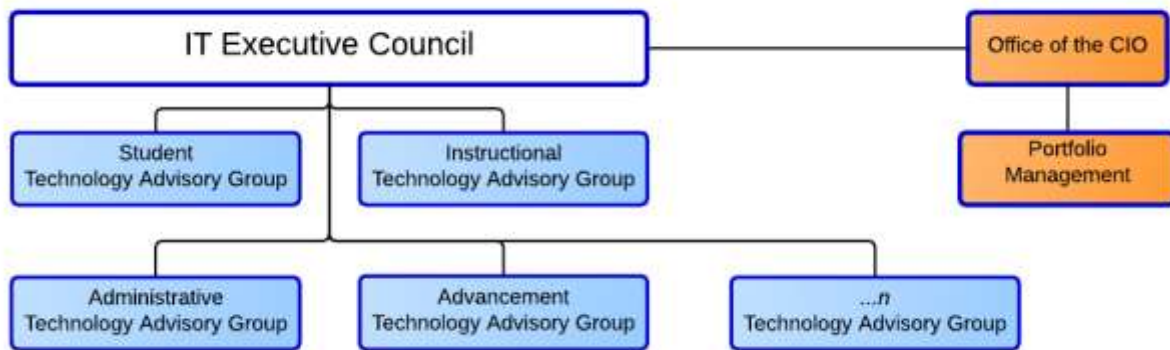
Roles and Responsibilities

IT Executive Council Vice Chancellors, voting, ex-officio

- Represent institutional strategic direction.
- Hear constituent needs and requests for investment.
- Understand costs, benefits, and implications of IT investments.
- Synthesize strategic direction and constituent needs into institutional priorities.
- Resolve escalated conflicting demands for resource allocation through prioritization.
- Authorize and fund investments.

Technology Advisory Groups (TAG teams) Functional area advisors to the IT Executive Council

- Explore and discuss opportunities for IT innovations and future investments.
- Understand and represent constituency needs to governance council and executives.
- Advise the CIO office and governance council.
- Support IT governance process and decisions.
- Assist in information gathering of investment requests and inform council and CIO office of findings.
- Communicate process and outcomes to constituencies.

Office of the CIO CIO, with support from directors and staff, non-voting, ex-officio

- Chair the IT Executive Council, as steward of the governance process and execution.
- Chair or support TAG teams as needed.
- Lead, facilitate, and assure effective IT governance.
- Scan environment for opportunities and risks.
- Inform council of costs, benefits, and implications of IT investments.
- Manage stewardship of IT assets.
- Assure value delivery of IT investments.
- Evaluate, measure, and continuously improve performance of IT services.

Portfolio Management Support function reporting to the CIO

- Intake constituent requests for projects and services.
- Work with requestor to develop the investment business case (cost, benefits, risk, alignment).
- Monitor the IT investment portfolio for strategic balance, performance, and risk.
- Provide transparency into IT governance and the investment portfolio.
- Report results to stakeholders.

Process Overview
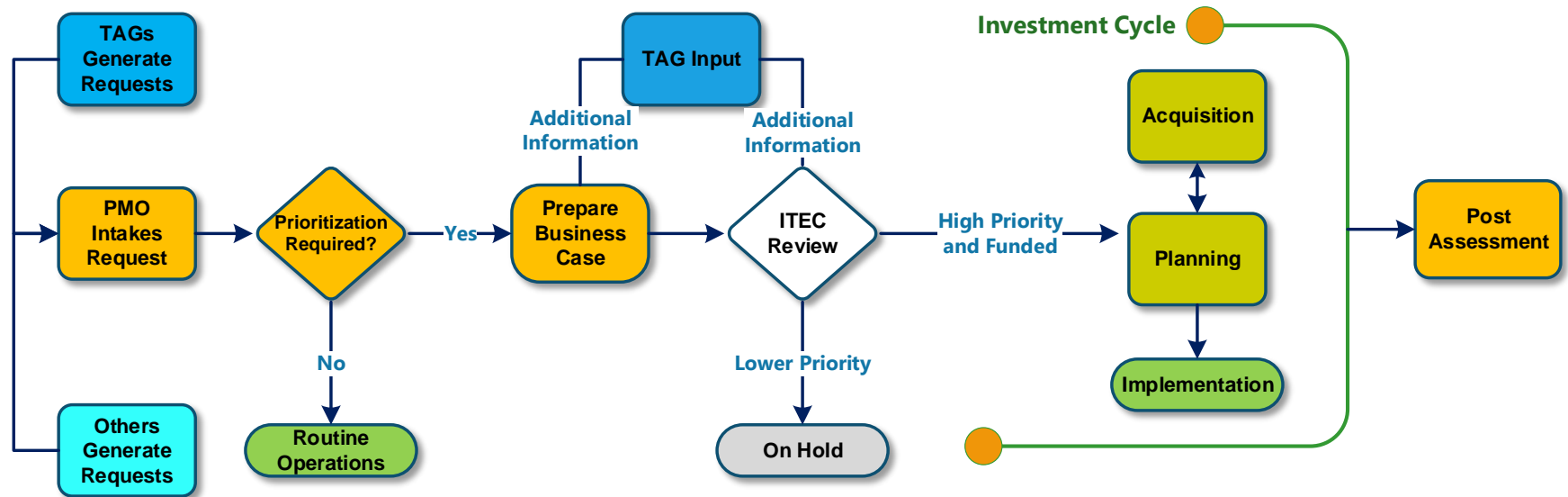
1. Requests for investment come into the Portfolio Management Office (PMO)—a function reporting to the CIO.

   Examples of investment requests include PeopleSoft enhancements, software integrations for new products, classroom modernizations, or new support services.

2. Relying on knowledge of institutional strategic objectives and priorities, the PMO prioritizes and processes the majority of requests without consultation.

   Any request that can be delivered within a reasonable timeframe and existing budget does not need prioritization. Requests that require additional resources or funding, or requests that can only be delivered at the expense of other investments, or that have risk implications of significant concern, are sent to ITEC for review.

3. The PMO prepares requests for ITEC review.

   The PMO works with requestors to write a one-page business case summarizing the cost, benefit, risk and alignment of the investment at a high level, requiring about two hours of time to develop.

   The PMO works with the appropriate TAG team for Subject Matter Expert (SME) input to inform the business case.

4. The PMO presents investment business cases to ITEC.

   The PMO explains the costs, tradeoffs, and risk implications of individual investments and the IT capacity to complete them. Requestors may attend the ITC meeting to supplement the written business case with personal narrative explaining the need.

5. ITEC reviews requests for investment of time or funding and decides investment strategy by:

   a. Consulting with TAG team or otherwise requesting additional information.

   b. Determining high priority and authorizing funding to proceed with investment.

   c. Determining low priority and holding until capacity and higher priorities allow.

6. Solutions that have been authorized and funded enter the investment cycle of planning, acquisition if appropriate, and implementation.

   Investments can be suspended or halted in favor of higher priorities.

7. Following implementation a post assessment is conducted to evaluate performance and results.

Appendix B: Silo Organization of Central IT (as of December 2014)

The silo organization of central IT prior to the new organizational design illustrates the overlapping functions between units. This resulted in confusion for constituents who had to understand the organization to obtain services. It also fostered inefficiency, communication barriers, and single points of failure.

	Administrative Computing	Academic Computing	Learning Technologies	NOTES ON ORGANIZATON
User Services		Administrative Computing Support Faculty Computing Support Faculty Printing Support Student Computing Support Student Printing Support Classroom Support Lab Support	Instructional Design Faculty Technology Support Faculty Custom Printing Support Student Technology Support Student Custom Printing Support Classroom Support Lab Support	Instructional Design does not belong in IT. Infrastructure functions are divided between Academic and Administrative Computing, under directors without expertise in those functions. Learning Technologies includes administrative information services, application development, and server administration. Many support services are contained in both Academic Computing and Learning Technologies. Academic Computing does not manage all academic services. Administrative Computing serves both administrative and academic missions.
Information	Academic Information Services Administrative Information Services Application Development		Academic Information Services Administrative Information Services Application Development	
Infrastructure	Administrative Server Administration Network Management	Academic Server Administration Administrative Server Administration	Digital Signage Management Academic Server Administration	

Appendix C: Organizational Risks (Central and Distributed)

Combining the observations noted by the previous consultant and our own assessment, the risks of the IT organization are listed below, both central and distributed, as of December 2014 when the new CIO arrived. The root cause underlying all the risks was the historical lack of a fulltime CIO authorized to oversee and direct the information technology organization across the institution. Since the new CIO has come on board, some of these risks have been addressed as is noted in the appendix on central IT organizational changes.

1. **Single points of failure:** In the current organization, several services are staffed by a single individual, with no one trained or available to step in if required. This causes:

    a. **Lack of coverage:** One absence could cause a service or system outage due to lack of coverage. Staff are not organized, cross-trained, or available to provide sufficient backup.

    b. **Lack of load-balancing:** As demand fluctuates, staff working on lower priorities or off-peak services cannot shift to augment overloaded staff.

2. **Lack of clearly defined central roles and responsibilities:** Individuals at staff and director levels in central IT do not have a clear understanding of what they are responsible for or what their priorities should be. This leads to inefficiency and ineffectiveness through lack of focus, lack of alignment to goals, and lack of disciplined management.

3. **Distributed management of information systems:** Distributed IT is not necessarily a risk in itself; IT can function well in an appropriately designed combination of centralized and distributed staff. However, management of information systems (PeopleSoft and its tightly coupled components) is not appropriate to distribute: it fragments resources out of alignment with objectives and undermines accountability for information security and system performance. This is an unacceptable level of risk to the health and welfare of the information system.

4. **Lack of career paths:** Lack of career paths threatens retention of high-value assets and succession planning for both central and distributed IT. IT professionals are attracted to growth, challenge, and opportunity. In the current flat organization, 12-18 staff members report to a director. Staff have no technical or managerial layers to advance through. UWO has been more successful "growing their own" than hiring from the outside but without career paths the progression stops at the point of entry. Higher performers are highly marketable and tend to be ambitious toward career advancement. They are the ones you don't want to lose and the ones most likely to leave.

    Lack of career paths also contributes to sub-optimal organization. In attempts to retain high-value assets, directors have creatively found ways to change individual duties to justify more pay. That leads to randomized organization of duties rather than optimally planned organization.

5. **Lack of expert depth:** In central IT, directors supervise front-line workers leaving no time for research and development, setting goals, directing outcomes, or developing staff. They oversee technically unrelated units some of which are outside their area of expertise. Those units function with less direction and accountability. In distributed IT, staff wear many different hats and have little opportunity to develop depth in any particular area.

6. **Lack of prioritization of IT investments:** Strategic governance of IT investments and prioritization does not exist. IT implements selected solutions in reaction to demand and informs stakeholders and governance of its decisions. The squeaky-wheel method leads to dissatisfied constituents and fragmented use of resources not aligned with strategic objectives. Institutionally articulated priorities and resolution of competing demands would better align resources with strategic objectives and help manage customer satisfaction.

7. **Limited investment in learning technologies:** Teaching and learning is the mission of the university and the unit enabling the future direction of teaching practices and student learning is under-resourced. Valuable teaching and learning services are available that have not been marketed to faculty or students for fear of failing to meet a flood of demand.

Resources have not been committed to developing expertise in emerging innovations that could better support faculty or improve student success, retention, and time-to-graduate.

8. **Lack of tools and practices to assure value delivery:** Individuals in the central organization have initiated practices to manage IT execution but limitations exist. Project and operational management practices are available but dependent on individual interest and performance rather than systematic planning with defined procedures that are repeatable and sustainable. The same is true to varying degrees among the distributed IT roles.

   Data is not available to measure effectiveness, efficiency, customer satisfaction or risk management; key performance indicators were not defined and are still not reported on. Neither the IT organization nor its constituents could say whether IT is successful or not—success was not defined and performance was not evaluated. Central IT and distributed IT do not share a common set of performance measures or definition of success.

9. **Lack of tools and practices to assure transparency:** The central IT department does not utilize best practices in assuring transparency to constituents. Stakeholders, including Vice Chancellors and Chancellor, have no view into existing or proposed IT investments or the effectiveness of operations. Constituents have no view into if, when, or how, their needs will be met. Constituents do not have an easy or well-understood mechanism to request projects or solutions. Investments in distributed units are also not transparent; the institution cannot identify comprehensive IT spend at the university.

10. **Unevenly distributed service resources:** As departments have struggled to meet their IT needs with limited central resources available, they have independently invested funding into their own locally-controlled service resources. Not all departments had funding to invest, leaving some departments better supported than others. Any distributed IT services, and especially under-supported departments, pose a security risk to the institution if they are not following good practices, of which there is evidence to support that case here. Furthermore, those resources are not necessarily strategically distributed or aligned but randomly according to availability of funding. Funding wealth might be an indicator of strategic alignment in itself, but it might not be.

11. **Undefined CIO role:** The current span and level of authority for the CIO is ambiguous, leaving it open to preferred interpretation. Constituents are not familiar with the model of a CIO with campus-level authority. Many perceive the role as a department head of central IT and an administrative service center. The CIO cannot direct risk mitigation, prioritize or align resources across campus.

12. **Constituent dissatisfaction with central IT:** The central IT organization has many knowledgeable, high-performing, dedicated individuals but has lacked experienced CIO leadership for several years, while continually losing resources. Constituents have experienced lack of support or negative interactions during those years. While most are sympathetic to the state of the division, they have still lost trust in the capacity of central IT to serve their needs.

Appendix D: External Review Follow-up Assessment

Below are the recommendations of the external review conducted by Janz and Dumke in June 2013, found on pages 14-15. Post-review actions and status are noted for each. Numbers in parentheses refer to the numbered recommendation from the external review report.

RECOMMENDATIONS	POST-REVIEW ACTIONS AND STATUS
Hire a fulltime CIO to provide strategic leadership (1, 5)	Done.
Establish CIO at the cabinet level (1, 5)	The CIO does not sit at the cabinet level.
Involve CIO in campus-wide planning efforts (1, 5)	The CIO is involved in most campus-wide planning.
Establish IT as a strategic resource (5)	The CIO is not established as a strategic resource.
Institute service performance metrics and planning (1)	In progress.
Educate constituents on the role of IT and CIO (5)	Constituents are not educated on the strategic role of IT and the CIO.
Communicate and market IT services (5)	Service catalog in progress. Marketing to follow. Communication practices to be implemented.
Centralize and fund distributed IT assets (5)	To follow organization optimization.
Share central and distributed staff resources (5)	Solution proposed in optimization recommendations.
Create User Services group (2)	In progress.
Combine networks, server, systems units (2)	In progress.
Focus ERP management with less distractions (2)	In progress.
Create request process for IT investment (3)	In progress.
Create process for IT investment prioritization (3)	In progress.
Communicate project status and process (3)	In progress.
Create project oversight approach (3)	In progress.
Create comprehensive data security plan (4)	Will conduct security assessment followed by comprehensive plan. Working with UW-Madison and UWS on data governance program.
Conduct campus-wide audit to locate sensitive data (4)	Do not have means or authority to complete.
Create comprehensive IT security awareness program (4)	Planned for FY15-16.
Develop change management procedures (4)	Planned for FY15-16.
Create a data mart or warehouse (4)	To be evaluated following organization optimization.
Enhance data center physical security (4)	Done.
Develop campus-wide strategic IT plan and priorities (5)	Near-term plan drafted, to be aligned with campus strategic plan.

Appendix E: Research Review

Expertise informing this evaluation are drawn from published articles and studies of information technology organizations in institutions of higher education; graduate and doctoral education in higher education administration; dissertation research in the study of higher education administration and institutional performance; professional certifications in governance of enterprise information technology, project management, and human resource management. A list of sources is provided in the bibliography.

Summary of Best Practices in Higher Education Organizations

The information in this section is a compilation of best practices sourced from literature and the study group's professional experience.

A higher education institution is a complex organism similar to a global corporation that has multiple business units with different missions and customers (Davis, 2008). Large corporations organize their support functions accordingly, striking a balance between centralized and distributed structures to best enable the competitive advantage and strategies of the corporation. Predominantly distributed structures better enable customer experience as the leading competitive advantage, while centralized structures achieve greater efficiency and economies of scale (Schermerhorn, 2012; Noe et al, 2007; Treacy & Wiersema, 1997).

Most institutions of higher education have some combination of central and distributed IT structures. Hybrid models can be very effective when commodity solutions are centralized to achieve economies of scale and efficiency while truly unique local requirements are better met with custom local support. Friction results when services are poorly defined, roles and responsibilities are unclear, and decision making lacks transparency (Voloudakis, 2010).

A centralized structure fosters better professional development for IT staff and enables better sharing of lessons learned and professional expertise across the institution. However, a one-size-fits-all approach doesn't meet the needs of all departments. A decentralized structure allows more tailoring of support to meet departmental needs but at a cost to efficiency and collaboration (Miller, 2002).

The legacy model of IT organization in higher education that separates academic computing and administrative computing is outdated and should be replaced with a layered model, where networking is the bottom layer, through servers and endpoint management, up to user access at the top. Library, academics, and administration all have overlapping needs that are better served by this layered approach (Battin and Hawkins, [MIRAGE OF CONTINUITY] 1998; Davis, 2008).

Jim Davis (2008) of UCLA writes of the "false dichotomy of centralized and decentralized IT deployment" (p. 118). Davis advocates for service layering with strong governance, central management of the IT investment portfolio, centrally provisioned infrastructure with locally deployed support services. Davis also notes that central IT must operate from a position of credibility and neutrality.

When creating a hybrid model of centralized and decentralized IT, roles and accountability must be clearly defined (Davis, 2008; Voloudakis, 2010).

Models of IT support organizational structures can be summarized as the following, with many variations and combinations possible:

- Fully centralized: Reporting and located centrally, dispatched as needed. Typically used where efficiency is a priority over constituent satisfaction. Workers tend to bond to the unit they sit with, in this case the central department, leaving constituent units without a sense of support from someone who understands their needs. Constituents may receive adequate service but lose a sense of personal touch and understanding of their unique needs (Schermerhorn, 2012; Noe et al, 2007; Treacy & Wiersema, 1997).

- Shared services: Reporting and located centrally, assigned to cover multiple constituent units. Achieves closer connection to assigned constituents while still maintaining operational efficiency. Works well for

mid-sized constituent units who do not need fulltime support but do need more than occasional support (Schermerhorn, 2012; Noe et al, 2007).

- Hybrid centralized: Reporting centrally, fulltime assigned and co-located with constituent unit. Increases constituent satisfaction while still preserving central control. Works well for constituent units that have high enough volume for fulltime support. Workers can develop conflicted loyalties between local constituents and central control (Schermerhorn, 2012; Noe et al, 2007).

- Matrix reporting: Dual reporting lines to both central IT and constituent unit. This model formalizes reporting lines between central IT and constituent units using fulltime or near-fulltime support. While intended to address the bonding problem by formalizing dual lines, workers find it difficult to navigate unless it is widely used and customary in the organization (Schermerhorn, 2012; Noe et al, 2007).

In January of 2013, Matthew Pelish of the Educational Advisory Board prepared a report for UW Oshkosh on best practices in IT service functions, including organizational design considerations. Excerpted recommendations to improve IT services related to organizational structure:

1. Achieve economies of scale in infrastructure.

   - "Large schools' biggest savings opportunities come from moving toward a more centralized IT approach with common infrastructure." (p. 13)

   - Use a common-good service bundle charged per headcount regardless of consumption to create a stable revenue stream for IT without transactional chargeback burden. "Obsolete chargeback models obscure IT costs" (p. 16) when, to cover unfunded costs, IT units use chargebacks from one service to subsidize another service. Not charging or undercharging for a service results in unmanageable demand (if it's free or low cost, there will be high demand) while overcharging can lead to bad behavior, such as non-compliance (p 39-43).

   - Create a campus-wide portfolio of hardware assets, centralized purchasing and replacement schedules to manage risk and achieve cost savings.

2. Simplify information applications.

   - Academic units lack visibility into total IT cost, making well-intended local choices at the expense of institutional costs, such as hiring a student to develop a custom system that can't be maintained when the student leaves (p. 19).

   - Customizations cost money that is hidden from IT spend unless charged. Charge for customizations, not central common services (p 79).

3. Deploy staff to best use.

   - Use fractional and shared IT staff pools across the university.

   - Turn generalists serving a unit into specialists serving multiple units to increase depth and breadth of expertise and create career paths for retention (p. 84-85).

4. Align the project portfolio.

   - The total cost of an IT investment is split between 20% for upfront investment and 80% for ongoing maintenance but typically only upfront is funded with no source for ongoing (p 20).

   - Implement portfolio management to discover, select, and prioritize IT investments using business cases and dynamic reprioritization (p. 99-108). *See Appendix B for the recently implemented portfolio management and governance framework.*

Summary of Lessons Learned from CIOs of Organizational Changes

Chief Information Officers from three campus IT reorganizations, both within the system and without, report the strategies, outcomes, and lessons learned listed below. All three reorganizations involved a new CIO arriving; two of the three additionally were the result of an external review. Two of the campuses fully centralized previously distributed IT resources, while one campus reorganized the central IT department by eliminating the leadership positions below the CIO. All three CIOs reported positive outcomes. Informal conversations were also held with multiple CIO colleagues on their experiences with IT organizations on their campuses.

- The catalysts for reorganization on all campuses were a combination of campus dissatisfaction with IT services, budget reductions, and arrival of a new CIO who identified problems.

- All CIOs agreed that commodity services (enterprise infrastructure and information systems) should be centralized to achieve economies of scale, while support services can be either centralized or distributed and still be optimal if managed correctly.

- CIOs agreed that external reviews can help identify problems from a more neutral position.

- CIOs agreed that service level agreements are needed to manage centrally supported services.

- Multiple campuses reported that implementing IT service management (e.g. ITIL framework) improved services.

- Three CIOs reported that centralizing IT purchasing and life cycle management resulted in an improvement on three campuses for both efficiency and constituent satisfaction.

- Three CIOs reported that the reorganizations had some degree of contentiousness across campus, which subsided over time.

- One campus reported that centralizing the reporting lines of distributed IT, while leaving the support roles embedded in the units, did not change service levels but gave the distributed IT roles better professional development and career paths by reporting into central IT.

- One campus reported that centralizing distributed IT reporting lines, along with implementing service management, enabled the organization to deliver improved services with a reduced headcount.

- One CIO advised to clean up central IT before reorganizing distributed IT.

- One CIO reflected that reorganization outcomes are influenced by relationships and culture more than logic and fact.

Summary of Lessons Learned from Constituents of Organizational Changes

The following are the findings from discussions with multiple constituents at UWS campuses that have gone through recent reorganizations.

Successful IT structures presented many of these factors:

- Responsive to local needs (satellite technicians)

- Standardized delivery of services

- Units willing to devote limited resources to local technology-trained staff to advance their own priorities were allowed to do so.

- Partnering with other campus units on joint projects to improve both units' services to campus, rather than mandated changes from either side.

Unsuccessful IT structures presented many of these factors:

- The perception that a unit's ability to achieve its mission was stymied by technological restrictions from central IT, or by delays in getting the units' projects implemented.

- Reduced direct communication between distributed and central IT staff, especially when new procedures required support tickets or clearing calls through student staff.

- A widely used IT service was managed by a single distributed unit, leading to diminished prioritization of other units needing the same service.

- Central IT (or distributed units) were unable to keep up with demand from other units for a core infrastructure service, leading those units to find commercial or other off-campus solutions.

Successful reorganizations presented many of these factors:

- Strong communication between CIO (Central IT staff) and prior IT resource owners.

- Strong communication with the entire campus, with the understanding that IT is a universally used resource.

- A CIO with a strong commitment to relationship building during and after the reorganization.

- Clearly identified service level metrics during the reorganization.

- Opportunities were developed for strong service level agreements with clear and flexible funding allocations.

- Strong attention to a balanced approach to resource management. No clear winners or losers during the transitions.

- Ongoing communication during the reorganization with opportunity to modify expectations as conditions changed.

- Successful UW reorganizations had strong project management capabilities. People have a clear understanding of organizational priorities, expectations, capacity and costs.

- Some UW support models recommended the creation of a hybrid model with embedded technical staff providing IT services with standardized tools.

Unsuccessful reorganizations included the following influences:

- Had a rapid acquisition of all decentralized assets with no intent to maintain decentralized effectiveness (level of service).

- Centralized efforts with a heavy expectation on efficiency saw a diminished level of service and decentralized buy-in. The service level continued to decrease as centralized positions were not replaced following staff departures.

- An unintended loss of existing IT talent and process keepers who exited the organization due to changes in culture and environmental conditions.

- After an extended period of centralized unresponsiveness, decentralized units recreated shadow IT support models disguised in non-IT job titles, such as IT Business Analysts to manage software and business process. This phenomenon was frequently observed in sister institutions' reorganizations.

- A rapid loss of talent from all units due to frequent change in strategic direction.

- A loss in talent occurred following many reorganizations, among staff from both previously central and distributed IT units. The loss was most frequently attributed to merging disparate cultures between previously separate units, or to attempting to fix a dysfunctional team by merging with a more successful one.

- Centralization had various levels of perceived impact within the organization: Some units experienced dramatic change and loss of IT know-how and staffing, while others suffered no major impact.

- A perception that those units aligned with Central IT (HR, SIS, library services) received the benefits of a resource load favoring central control.

- Poor communication with constituents about reorganization outcomes during and after strategic planning. Lack of transparency with campus stakeholders; taking input on alternative approaches without a clear willingness to consider them.

- There were unclear, or multiple, goals and purpose of IT realignment. Many unsuccessful reorganizations were the byproduct of upper administrators' perceptions of unit effectiveness. Where units perceived that the true motivation was cost savings, they accepted that need but faulted the reorganization for failing to meet the other, explicitly stated goals.

- Continuous reorganizations were seen as signs of dysfunction rather than as a cycle of continuous improvement.

Appendix F: Campus Feedback

Feedback from Faculty, as represented by Karl Loewenstein

- Primarily want transparency into process and decision making.
- Faculty heavily reliant on IT to teach, advise, and research.
- IT is a strategic asset that enables the institutional mission.
- Believe the CIO must report to the Chancellor to be strategic.

Feedback from First Open Forum

- Requests to expand the hours of helpdesk support, place a high level of priority on tech support in the classroom, and to keep the IDEA Lab in Polk in-tact in any eventual org model.

- There are areas in Student Affairs that have IT needs 24/7 such as Police, Reeve Union and Residence Life. Please make sure the need for 24/7 support for critical infrastructure and public safety systems is provided for in any IT support model.

- We often don't get the full benefit of our current IT systems due to lack of adequate training. Systems go under-utilized because training wasn't part of the project implementation plan. We do a lot of 'train the trainer', but when the trainer leaves campus, the expertise leaves with them. IT should address training to IT systems in the models presented.

- Model 2 and 3 may create some dual reporting lines, or matrixed reporting. It should be recognized that this can often be stressful for staff put in this reporting situation, and can cause job satisfaction and personnel retention to decline.

- We need a data warehouse. Some units need longitudinal data and some need point in time data.

- Some departments are providing very good support to their constituents at this time. Care should be taken to examine where support currently works, and where constituents are pleased with it, before changing the model and dismantling what works.

Feedback from Second Open Forum

- Desktop computer budgets and lifecycle management are inadequate. IT would like to assist all departments to better manage their equipment lifecycles, but departments will continue to budget and pay for their desktops and monitors.

- A concern was raised about the fate of the ResLife MIO office. Anne stated that student support will continue to be a high priority regardless of model, and that MIO's innovations may be an asset from which the campus as a whole could benefit.

- A question about how quickly any resulting changes as a result of this study would be implemented. Anne stated that any change would be on a case-by-case basis, as no firm timelines are established.

- A question was raised as to whether the models presented represent 'best practice'. Anne stated that the sources cited in the report generally point to a hybrid approach to IT structure, which is what the suggested models represent.

- A question about the cost of each model was raised. Anne replied that the assumption is we will continue to operate with the budget constraints we are currently working under.

Feedback from the Third Open Forum

- A question of who will make a decision based on this report was raised. The answer given is that this report will inform any decisions made by the Chancellor in discussion with his cabinet.

- A question about what study of other campus structures was made was raised. The answer given is that the study group organized conference calls with several other campuses which have experienced IT reorganizations over the past few years. The perspectives of the interviewees' is included in an appendix to this report.

- Reeve Union commented that the level of service they can provide with their IT systems, is directly impacted by the IT support staff embedded in the department. Any model should reflect the need to have these IT staff in-house.

- Polk Library staff commented that library IT systems require a high level of specialist knowledge, and it is difficult to imagine a Central IT department that can provide the level of specialist knowledge required to implement some of the systems which library technical staff currently maintain.

- Polk Library Staff commented that library technical staff provide a high level of efficiency by collaborating with all the other UW System libraries to stand up systems which allow students to search and borrow from any system library. Without the in-house expertise of library technicians, Polk would not be able to not only achieve these integrations, and realize those benefits for our students and instructors, but also to provide a leadership role in UW System library IT projects which Polk staff has done in the past.

Feedback from Reeve Union

- Regarding 'Intended Outcomes' section, page 4, it was pointed out that what is considered mission-critical for the University as a whole, can often obscure or lose site of what is mission-critical for individual departments. For instance, services and conveniences that are provided for students and staff by Student Affairs departments, directly impact student satisfaction and retention.

- Reeve Union and University Dining would advocate that no harm should be done to the department's budget, in the case where in Model 3 reporting lines of current Reeve-Dining IT staff may change to report into Central IT, and that level of service to the department would not diminish as a result of reporting line changes.

- It is critical that any IT Governance framework include Directors and other staff with expertise and high level of IT need from Student Affairs departments such as Reeve Union and Residence Life.

- Regarding 'Formalized Portfolio and Project Management' on page 5, it should be noted that any change imposed by any formalized project management process should not happen so quickly as to negatively impact the development of systems and projects already implemented, or currently in progress. For instance the development of IT systems such as CampusVision, 25Live Room Scheduling, CollegiateLink and KwikBoost Phone Charging stations were developed because of demonstrated constituent (student and staff) demand, and in consultation with governance groups such as Reeve Union Advisory Council and Student Technology Fee. The implementation of such systems would not have been within the scope of central IT as it was formerly organized, and would not have been prioritized for completion. Reeve Union, given its mission, was able to place a high level of priority on these types of projects and respond to constituent demand.

- Regarding 'Expanded Field Service' on page 6, please note that units in Student Affairs such as Reeve Union and Residence Life have long prioritized student development and learning and its assessment through workplace experience. This expertise and model is something the Student Affairs area is happy to see called out in this report, and would advocate that Central IT work to expand its employment and development of a student workforce.

- Regarding 'Funding Model' on page 10, it was noted that funding models for Central IT needs to be addressed. Student Tech Fee has often been used to fill in the gaps where the Central IT budget could not meet needs, for both positions and infrastructure.

- Reeve Union, Dining and TitanCard maintain three closely inter-related systems (Card Production, Cbord, Micros). Regardless of the model chosen based on this report, support for these systems must be structured in such a way that the staff person supporting the systems maintain the ability to work across all three systems in order to have the ability to provide a high level of responsiveness in support.

- In the past, units such as Reeve Union have taken on the lion's share of implementation support for critical IT systems on which not only Reeve Union, but other campus departments depend, such as the Resource25 now 25Live room scheduling system. Reeve Union would welcome an IT organizational model which provides a Central IT department that has the capacity to support the implementation of critical IT systems such as 25Live.

- Regarding the eventual choice of an organizational model, Reeve Union would advocate for a model in which a high level of support is provided to auxiliary services. At this time, Reeve Union provides its own IT staff to power growth and forward movement of IT services such Tapingo (mobile food ordering), Cbord, Micros, CampusVision, CollegiateLink and 25Live. In any model, auxiliaries such as Reeve, who currently pay for IT staff and assets need to be prioritized highly, and would advocate for keeping their current support staff in-house to achieve those outcomes.

- Regarding 'Model 2 Authority by Policy Cons', #2, Reeve Union has IT staff resources and systems which have been sought and supported by student groups such as Reeve Advisory Council, OSA, and Student Technology Fee. Care should be taken to include these student groups in the discussion of future funding models, and any discussions about how the currently funded resources are managed in any eventual model chosen.

- Reeve Union would advocate an examination of department mission when it comes to the IT systems that departments such as Reeve have been asked to, or have come to manage, due to the lack of resources or narrow scope of central IT. Systems such as 25Live, Daktronics outdoor digital signs, CampusVision and KwikBoost charging stations have grown to be utilized across the campus and as such the support model for those services could be discussed as part of this discussion of models.

- Regarding Model 3 on page 18, Reeve Union would like to go on the record as stating that it would be difficult to imagine maintaining the current level of service and programs without the AV Technical Services Coordinator and ID Card Systems Administrator positions staying located in Reeve Union.

- Regarding Model 3, page 18, Reeve Union advocates that if this model is chosen that strongly constructed, regularly reviewed Service Level Agreements with departments such as Reeve would be key making this model work well. This model of strong agreements with regular review works well in current practice for contractor relationships such as Pepsi, Canteen and Sodexo.

- Regarding Model 3, page 18, caution should be applied when centralizing infrastructure. A case-by-case benefit analysis of each piece of infrastructure should be completed. Planning for this must be thorough and deliberate, as it is likely to take significant amounts of time to accomplish.

- There are currently some positions, such as ID Card Systems Administrator which provide service across all three service layers. It should be recognized that there is an efficiency benefit to one technician being able to troubleshoot, and implement with knowledge of how multiple systems work together from user services to information to infrastructure. It would be challenging to divide the support duties up into the individual service layers, and split the duties across multiple individuals. Support outcomes may suffer.

- There are systems on campus which must function 24/7/365 with little or no downtime. In any model, support for these critical systems must be flexible and responsive, even during non-business hours. 'I'm done at 4:30', isn't an acceptable support staff response for systems such as point-of-sale, meal plan and door access.

Feedback from MIO

- The student-oriented development culture of MIO is highly effective and should be preserved.

- Adding fulltime staff to the student workgroup has not worked well in the past, it shuts down student contribution.

Feedback from UWO Technicians Meeting on 6/17

- Some of the pro/cons from Model 1 also apply to Model 2, so please duplicate those items under each model.

- Please continue to work toward describing the human impact on staff that may be affected by any level of org change. Focus on reporting lines, effective teams and collaborations that already exist, and physical location of technicians and service points.

- To the reader, it appears that more consideration and focus was placed on Model 3 due to the larger number of pro/con statements listed under that model.

Feedback from the Provost's office

- Institutional Research should be represented in the Information layer as it involves reporting and analysis.

- There could probably be a model 2.5; model 2 looks closest to the best option of the three.

Feedback from Deans

- Local control is preferred.

- As long as college needs are met, funding source is irrelevant.

- The necessity of prioritization is understood.

- Deans should have insight into prioritization and decision making.

- Information security requirements surprisingly lack emphasis and visibility.

- The models present a continuum of optimization; the solution will lie somewhere on the continuum, not necessarily exactly landing on one model or another.

- There could probably be a model 2.5.

- Model 3 balances needs across institution at the expense of units who currently have good support.

- If local resources continue to report locally, there is a willingness to share resources with other units as long as it doesn't compromise mission-critical local needs.

Feedback from Polk Library Staff

See also Pat Wilkinson's formal response on the following pages.

- A close relationship with Central IT is highly beneficial and necessary to Polk Library

- There is no library system that doesn't involve information technology, however the IT in the library is not a duplicative system of other campus functions, nor is it an enterprise system as Central IT would traditionally define it.

- IT in the library is part of practically everything the library provides. It would be impossible to imagine a library that could function without an in-house technical staff.

- The impression that the report from the study group provides is that decentralized IT is inherently inefficient. Polk Library would disagree with that view. IT in the library is highly efficient to the purpose of delivering on the mission of the library.

- It would be impossible to imagine the integration of UW System-wide library IT systems such as Primo and Alma without Polk's own in-house technical staff to carry out the work.

- From the view of Polk, in the past IT on campus is usually ignored by administration, which resulted in some of the past service and organizational issues Central IT has faced.

- Better definition of what constitutes an 'Enterprise System' is needed in the report. Library systems such as Primo and Alma are not enterprise systems in the same way that email, Active Directory, network or shared storage systems are defined.

To: Chancellor's Study Group on Information Technology,
    Chair Anne Milkovich
From: Patrick Wilkinson, Polk Library
Subject: Feedback on Draft Report
Date: June 26, 2015

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Thank you for the opportunity to meet with Brandon Heise, Jakob Iversen and you.[1] Sarah Neises, Crystal Buss, Ron Hardy and I appreciated the thoughtful discussion that we had about the organization of information technology on campus. I will review how Polk Library can best serve students, faculty and staff on campus and in remote locations around the state, country and world. Also, I will highlight the unique role that UWS libraries play with our "One System, One Library" vision to bring the resources of a great university system to all students, faculty and staff members in UWS. Consequently, what is important for the library to serve its diverse patrons?

1. **Responsibility for the strategic development of library technologies (control) and a mutually beneficial relationship with Central IT.**
    - Information technologies have matured in academic libraries in the past 40 years. In the mid-1970s, information technologies held only a niche role in academic libraries. They were employed in only special areas and were seen as separate from the heart of library services.
    - In the mid-1990s, academic libraries started to mainstream information technologies into more and more basic library functions and services as the Internet became more publically accessible with the Web.
    - Presently any good academic library needs to provide an online equivalent for almost any service or collection that it has both traditional and new.
    - The need is to have the custom (library) skills and knowledge to make this all work together as a coherent whole, follow best academic library practices and identify electronic collections and services that are emerging in the academic library world.
2. **Maintain and improve its efficient and effective library services that serve the campus well. Decentralized academic library IT units are not inefficient and do not duplicate central IT services.**
    - Academic libraries in general and Polk Library in particular have a proven track record of following national/international standards and engaging in international, national, statewide cooperation.
    - In the mid-70s, libraries adopted a standard bibliographic computer record (MARC) and established national and international cooperative cataloging (OCLC). This allowed libraries to easily share computer records (metadata) for all types of library materials. Savings were realized as libraries needed fewer professional catalogers who cataloged items from starch and permitted them to "copy" catalog.
    - This innovation created a WorldCat of records that encouraged robust resource sharing among libraries.
    - These advances allowed libraries to leverage their resources with other libraries to dramatically enhance finding, locating and sharing information that benefitted teaching, learning and research at UW Oshkosh and around the developed areas of the world.

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[1] The following is a revised version of my notes from the meeting. This I not intended as a complete discussion of the relationship of information technology in library services. There is a vast literature on this topic.

- Polk Library also retires technologies when they are no longer useful or duplicate services provided by Central IT. A good example of this is the discontinuation of Polk's electronic reserve system and integrating our resources for specific classes into D2L.

3. **Maintain and enhance the advantages of UWS libraries' "One System, One Library" vision.**
    - For the past 15 – 20 years, the libraries of UWS have worked effectively to bring the resources of a truly great university system to students, faculty, staff and public.
    - This cooperation has greatly benefited UW Oshkosh. It has increased service and saved money in the areas of technology, electronic collections, staffing (sharing expertise), and more.
    - In regard to the libraries' major systems, UW libraries have moved from running different library systems (catalogs and management operations) to all libraries owning the same system. (This increased resource sharing among libraries).
    - The most recent step in this process is that all libraries are running the same library service platforms & discovery systems as a single, integrated unit. This step opens the possibility for more sharing of staff expertise across UWS libraries.
    - Within UWS administration, these library projects are often referred as the "gold standard" of multi-campus cooperation on common systems projects because they are done on schedule, on (or under) budget and work.
    - For Polk Library to bring the benefits of these types of projects to campus and contribute to the success of these endeavors, it needs staff that have both technology skills and custom knowledge and skills about library operations, records and services.

4. **All library staff with technology skills and some library staff with expert technology skills.**
    - To provide great library services and collections to campus, Polk Library needs staff who have custom library skills and knowledge in combination with IT skills, These IT skills range from sophisticated user skills to staff with expert skills.
    - The technical sophistication the library has currently did not come from getting or having extra money to create IT positions. It has come from hard decisions that balanced many high priority needs that campus has for our services.

Conclusion
I will share just a few thoughts about the options:
Model 1: Standardized Cooperation
- Polk Library follows this model now. It abides by campus standards and procedures. It consults with IT regarding things that may be unclear.
- The library shares staff time when available and shares web services developed for library use freely with Central IT if wanted.

Model 2: Authority by Policy
- Depending on how this model was implemented and how certain terms were defined, this model could work.
- Some hybrid of Models 1 & 2 might make the most sense.

Model 3: Centralized Reporting Lines
- It would be very difficult for Polk Library to function as a modern and innovative academic library under this model.
- It would also be very difficult to recruit a highly qualified library director with this model.

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