Campus IT Planning Committee - Governance Subcommittee Report

Conditions Leading to the Review

The IT enterprise at the University finds its origins in growth that was both organic and distributed across campus. The structure resulted from expanding demands and specialized needs found in diverse groups at the institution. These needs were met through the formation of local IT groups at the College, School, Department and Program levels.

Over the last several years it has become apparent that a comprehensive IT review is warranted. The current economic circumstances have further necessitated a review of campus IT governance. Consequently, campus IT leaders from the academic units have formed an academic IT leadership (AITL) group that has met periodically on operational and strategic issues. Similarly, the IT support professionals for campus business process units have met in a group called departmental computing managers (DCM). In turn, DCM and AITL have met jointly to try to facilitate the sharing of best practices and encourage necessary integration.

Representatives of both AITL, DCM, along with staff from the central organization ITAP have worked together on new initiatives including a strategic sourcing and management initiative called SMART Computing, and an initiative seeking synergy across the units called Building IT Synergy (BITS). All of these initiatives were voluntary, with all the benefits and challenges carried with that approach. All the while, various IT units were seeking alternative solutions to "common good" needs, and seeking to build areas of expertise around new core technologies such as server virtualization, storage, etc.

Despite these efforts, anecdotal information and subsequent evaluation confirms that unnecessary IT duplication and under-resourced efforts, unnecessary expenditures, poor coordination and limited integration developed and continue to exist. These grass roots efforts and ongoing issues suggest a fresh look and new governance was warranted.

Lack of a coordinated, campus-wide IT structure makes it difficult to evaluate the efficiency of IT services delivered by these groups. Any new model must place emphasis on communication and collaborative teamwork that will ensure that IT services meet critical success factors of each functional unit while also ensuring a high degree of institutional effectiveness.

To this end the CITP Governance Committee reviewed the MORT (Management Operations Review Team) recommendation, weighed the pros and reviewed the concerns, and compared these with the organizational structures of IT at other universities. The Committee believes the MORT recommendation, with clarified lines and added units, is a necessary change to enable the governance model to lead to improved efficiency and effectiveness. The Committee endorses the organizational structure previously recommended by the MORT IT Organizational Structure Tiger Team. An expanded version of the Organizational Chart proposed in the MORT report can be found in Appendix A.
1. In reviewing utilization of Information Technology on campus, the committee agreed on the following categorization of four broad “domains” of use shown in Figure 1 below. Service areas include the units that are responsible for the underlying business processes of the University (i.e. financial, housing, student services). Colleges/Schools include the units that house our faculty and are responsible for instruction and research. Common Good Services refers to those services that currently are, or could eventually be, scalable and provided centrally. It is important to note some of these services are shared by all (e.g. networking) and some are utilized more by the service areas (e.g. SAP) or the Colleges (e.g. Blackboard). The committee also recognized Interdisciplinary Center Computing, which is both a targeted service for the common good of the Schools and Colleges and an active focus for complex interdisciplinary IT research occurring within and across Colleges, . Finally, a service area that has been emerging rapidly with the growth of large scale interdisciplinary research through research centers is recognized as a major area requiring special attention to unique sets of needs and priorities (e.g. Discovery Park and the Rosen Center in ITaP). In each of these areas, there may be a need to restructure and purposefully coordinate responsibilities heretofore structured differently.

2. A core principle held by the committee as it crafted the governance plan was that, first and foremost, the provisioning of information technology should be focused on the client’s perspective. Consequently, client input, direction, and feedback must be critical aspects of the governance structure. Therefore, within the four domains of information technology on campus, we anticipate a robust set of advisory and/or governance groups (n = as needed) guiding the various process owners (deans, VPs, directors, and department heads) on the performance, utility, and desired future attributes of the information technology function. This is represented by Figure 2 below.
3. It is expected that many issues can be addressed and decisions made within each domain at the lowest effective level. However, many IT issues cut across the domains. A key goal sought by a revised governance process is to expect improved coordination and communication across the various domains of computing. While there are likely several tactics that need to be implemented to improve coordination and communication, another primary recommendation of this committee is the formation of an operational oversight committee shown in Figure 3.

We suggest that this operational oversight committee, chaired by the CIO, be comprised of a mix of knowledgeable IT professionals and business process owners (clients) from the four domains. The charge for the operational oversight committee will be to ensure ongoing efficient and effective integration across the four IT domains. The committee would inform decisions regarding the utilization of common good services and monitor the performance of those services. The committee would also ensure that the actions of IT in all the domains were accretive where possible and not unnecessarily redundant. The committee will also be responsible for identifying best practices and centers of excellence within and across domains and assessing the transference of these best practices across campus. Some of the recent examples of this type of integration on a focused level include BITS and SMART Computing.

In the process of monitoring performance metrics across the domains, adjudicating common good “opt outs”, and monitoring new service needs it is anticipated that gaps or shortfalls will be identified. In these situations, the operational committee will call together process owners with the appropriate information technology domains to engage in a process that leads to resolution.
4. Beyond the operational oversight committee, we recommend the formulation of a high-level Strategic Governance Committee shown in Figure 4. This committee of limited size (10 or less) will have representation from the University Senior Executive Leadership along with the CIO and representatives of the client groups. The committee’s purpose will be to provide strategic guidance to ensure that information technology investments and operations align with institutional priorities, ratify policy decisions, and approve broad spanning budgetary allocations in the area of IT. Representatives to the operational oversight committee may serve ex officio on the strategic oversight committee. This level of the governance structure is represented by Figure 4.
Proposed IT Governance Structure

Senior Executive Leadership

Launching Tomorrow's Leaders - Student Success - Discovery with Delivery - Meeting Global Challenges

Strategic Governance Committee

Operational Governance Committee

Operational Advice & Governance (i.e. BITS / SMARTcomputing)

VP / AVP Representation & Communication

ITAP AVP/Director Representation & Communication

Director/Divisional Head Representation & Communication

ACESS Governance Board Representation & Communication

Client Advisory / Governance Groups

Service Areas/ Business Processes

Common Good

College/ School Focus

Colleges / Schools

Interdisciplinary Center Computing

Rosen, Cyber Center, CRI
Governance Improvements

These recommendations above build on the premise that there is a distinction between reporting relationships, governance, and service provision. They are interrelated, but can be designed independently to obtain the optimization desired. This model seeks to create a collaborative approach to IT management which would offer a value-added framework that is dedicated to the creation of quality IT services that are both technically and administratively sound. This model places emphasis on communication and collaborative teamwork that will ensure that IT services meet critical success factors of the functional unit while also ensuring a high degree of institutional effectiveness. It facilitates management of the overall IT effort towards institutional priorities, provision of quality services, utilization of shared expertise, process optimization, and continual improvement.

The addition of High-level Strategic Governance would be attentive to input by cross section executive roles to ensure strategic alignment and set institutional priorities and effectiveness metrics. It will establish accountability and authority to ensure that the necessary organizational and governance models are in place to provide an integrated view into the campus IT enterprise for ensuring both local and institutional effectiveness. High-level Strategic Governance will establish and facilitate mission clarity for an integrated IT organization under the Office of Vice President for IT.

Shared Operational Governance will organize a cross-representative team of campus IT leadership charged to govern the creation and ongoing evolution of IT common good services. It would further develop a framework of processes and best practices for building and governing IT services within the integrated IT community. This could be an evolution of the Building IT Synergy (BITS) Program.

The Shared Operational Governance Committee would also be expected to consider and evolve the concept encompassed in the campus SMARTcomputing Program which facilitates ongoing management, governance and continued improvement of these services after they have gone into production.

In the end, collaboratively governed IT operations will foster and facilitate new and strategically aligned services under the auspices of distributed IT leadership and will insure that appropriate expertise is leveraged.
Appendices

Appendix A – Proposed IT Organizational Structure

Appendix B – Core Principles

As a first step, the committee spent time discussing the critical attributes we hoped that our information technology governance recommendation would allow the university to experience.

First, we believe the IT organization should have clear goals, objectives, and expectations that tie the IT function to the University strategic plan. The processes, outcomes and metrics for the organization should clearly reflect the tenets of the Sustaining New Synergies plan – launching tomorrow’s leaders – discovery with delivery - meeting global challenges.

Second, we believe the IT organization must be focused on the needs of our clients; our faculty, staff and students. Attentiveness to these clients and the services and processes they need to conduct their work are critical to an effective, integrated IT organization. The organization must be inclusive in seeking input and responsive and accountable to the clients; communication with all clients and across
the IT organization is critical. Effective practices should be recognized, communicated, and fostered across the enterprise.

**Third, we believe the IT organization must exhibit clarity in structure, responsibility, effectiveness and efficiency.** Reporting lines and accountability must be clear and the functioning of the IT units must be transparent to both clients and IT professional across the organization. Performance of the units, their effectiveness and their efficiency must be incentivized, objectively measured and reported. Continuous improvement should be a hallmark of the organization.

**Finally, we believe the IT organization must practice an informed intelligence about the processes and services their work supports.** The IT organization must anticipate needs and required changes in service and be adaptive and agile in its response to altered requirements. The IT organization must support innovation, reasonable experimentation and diversity of approaches that lead to the creation of quality IT services that are administratively sound. To remain transformative and resilient, the IT organization will also be expected to understand when reasonable exceptions might need to be made.

**Appendix C – Governance Committee**

**Committee membership:**

Co-Chairs are Logan Jordan, Associate Dean of Administration-Krannert School of Management; Pat Smoker, Department Head-Agriculture IT; and members as follows: Emily Arentson, Graduate Student, Foods & Nutrition; Melissa Dark, Associate Dean of Research and Strategic Planning; Eckhard Groll, Professor of Mechanical Engineering; Ellen Gruenbaum, Department Head, Anthropology; Sandra Monroe, Assistant Vice President for Student Services; Rab Mukerjea, Executive Director of Strategic Planning & Assessment-President’s Office; Alan Rebar, Senior Associate Vice President for Research and Executive Director of Discovery Park; and Terry Schroeder, Assistant Director for Business Services Computing.

**Committee Charge**

The following guidance was provided to the committee members as they considered the IT governance review: 1) utilize of the MORT report on IT Organization Structure, 2) include all IT personnel and units on the West Lafayette campus, 3) develop a process and criteria for recognizing IT units outside of ITaP, 4) benchmark against IT governance at Big Ten and peer universities, and 5) focus on efficiencies while maintaining effectiveness in meeting strategic goals.

**Appendix D - Review Process**

Members read the MORT report on structural IT governance along with current journal articles on improving IT governance in higher education. Based on the findings from Educause’s Center for Applied Research (ECAR), it was clear that governance, organization and leadership consistently stand among the top 10 issues of strategic importance facing IT management at other colleges and universities.
Repeated themes throughout the readings were statements that effective IT strategic planning and governance are critical factors as institutions look for ways to collaborate, innovate, control costs and establish external partnerships.

Committee members reviewed either a Big Ten or Peer University and gave brief a presentations on the institutions shared principles and governance, describing who participates in the governance and what decisions are made at each level of the governance structure. Web searches revealed every major peer is reviewing their IT governance for decision making and also reviewing resource allocations for IT. Not surprisingly there are a variety of ways in which governance can work, having both distributed and centralized organizations. However, robust mechanisms for client’s input are considered very important in all instances.

Reviewing Purdue’s current governance structure resulted in highlighting examples of integration across the campus units, BITS and SMARTcomputing. Extended discussions evolved as distinctions were made between reporting relationships, service provisions, and governance structures. Information was shared indicating some best practices exist in the Purdue enterprise but are not always widely known about or utilized. As the subcommittee formulated a model most appropriate for Purdue, conversations focused on enhanced communications, increasing effectiveness and efficiencies, implementing performance accountability, and streamlining/shared services.

Combining the knowledge gleaned from peer reviews, and reviews of some of Purdue’s current IT practices, the subcommittee set about expanding the model proposed in the MORT report and created a modified organizational structure as well as a proposed new governance structure.

Appendix E - Purpose and Goals of Governance

Information technology (IT) is an enterprise utility spanning all missions of the university and engaging nearly every stakeholder. Information technology is becoming increasingly more complex and organizations are becoming more reliant on information technology. As information technology becomes more ubiquitous, complex, and embedded into the institution, the need to properly govern information technology resources becomes more imperative. The purposes of information technology governance are to:

- articulate accountability throughout the enterprise, aligning information technology with mission-critical institutional priorities and strategic goals,
- improve communication and collaboration towards leveraging information technology assets to advance the institution’s competitiveness in mission critical areas, and
- reduce redundancy to ensure effective and efficient management and adequate resourcing of integrated campus-wide information technology services in support of the above.

Information technology governance focuses on the governance principles, priorities, and processes for making decisions, while actual decision making and day-to-day operations are the purview of
management. In fulfilling these purposes, an Information technology governance framework explicates the decision rights and accountability framework, i.e., a governance model conveys who makes what decisions, who provides input and analyzes issues, who sets priorities, and who settles disputes when there is no clear consensus. An effective Information technology governance framework:

- can revolutionize how information assets are leveraged as an enterprise asset,
- aims toward timely, informed decisions, and balancing institutional and local-departmental needs, and
- recognizes that governance of information technology is a shared responsibility – purposefully integrated into the academic, administrative, and operational aspects of the institution to ensure policy outcomes and business solutions that advance the state of information technology in synchrony with mission-critical priorities and strategic goals of the institution.

Appendix F - Glossary of Terms & Acronyms

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<tr>
<th>Acronym</th>
<th>Definition</th>
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<tr>
<td>OVPIT</td>
<td>Office of Vice President of Information Technology - provides leadership for planning and coordinating central IT resources and is responsible for further developing the computing and telecommunications systems on the West Lafayette campus.</td>
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<tr>
<td>Distributed IT</td>
<td>Referring to those IT groups, not directly connected to OVPIT, which are housed, budgeted and managed within individual administrative and academic units on the West Lafayette Campus.</td>
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<td>DCM (Administrative IT)</td>
<td>Each of the University's administrative vice presidents has a manager or director who is responsible for IT within their organization. Historically these individuals have been referred to as &quot;Departmental Computing Managers&quot; although that is not indicative of position titles. The &quot;Departmental Computing Managers&quot; meet as a group monthly to share information, discuss common problems, generate ideas for future technology solutions, identify issues with current, planned and needed services, initiate and provide resources to plan and execute multi-department projects, and forward recommendations to appropriate senior staff.</td>
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<tr>
<td>AITL (Academic IT)</td>
<td>A forum made up of Academic IT Leaders to provide communication, collaboration and a unified vision for the advancement of information technology unique to Purdue’s academic units.</td>
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<td>ITAP</td>
<td>Information Technology at Purdue – The IT group historically reporting directly to the Office of Vice President of Information Technology.</td>
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<td>IT (Information Technology)</td>
<td>As defined by the Information Technology Association of America (ITAA), is &quot;the study, design, development, implementation, support or management of computer-based information systems, particularly software applications and computer hardware.&quot;</td>
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<td><strong>BITS (Building IT Synergy)</strong></td>
<td>A framework of templates, processes and best practices for building and governing IT services within the integrated IT community. It is designed to foster and facilitate new and strategically aligned services, and improve existing services under the auspices of the distributed leadership.</td>
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<tr>
<td><strong>SMARTcomputing</strong></td>
<td>The implementation model for shared IT services that develop out of BITS. It facilitates ongoing management, governance and continued improvement of these services after they have gone into production.</td>
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<td><strong>IT Community</strong></td>
<td>Client Groups formed by the IT governance model.</td>
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<td><strong>IT Organizational Structure</strong></td>
<td>Formal framework within which the institution’s IT organization arranges its lines of accountability, authority and communications, and allocates responsibilities and duties.</td>
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<td><strong>IT Governance</strong></td>
<td>IT Governance is a subset discipline of Institutional Governance focused on information technology (IT) systems and its performance, risk management and decision making processes.</td>
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<td><strong>IT Service Provisioning</strong></td>
<td>The process of preparing and equipping IT-based services to allow it to initiate (new) services to its clients and includes altering the state of an existing service or capability.</td>
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<tr>
<td><strong>Common-good IT Services</strong></td>
<td>Those IT services that are generally defined as common, or otherwise used by a broad majority of the clients located on the West Lafayette campus.</td>
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<tr>
<td><strong>Domain</strong></td>
<td>Used in this document to describe the service areas (DCM, AITL, ITaP, Interdisciplinary Centers Computing).</td>
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