A STRATEGIC PLAN FOR THE ADMINISTRATIVE INFORMATION TECHNOLOGY DEPARTMENT

INTRODUCTION AND OVERVIEW

Reporting to both the Vice President for Administration and the Vice President for Academic Affairs, Administrative Information Technology Services (AITS) delivers information technology solutions and services to support the administrative processes of the University of Illinois. As it strives to enable best in class technology services, AITS also collaborates with the campus-based computing organizations on policies and standards that optimize and secure the University's information technology infrastructure as a whole.

The AITS plan focuses on strategies to support the objectives articulated for the University of Illinois and its support organizations. This plan was developed through a series of meetings involving technical leads and management staff in AITS, from October, 2005 through May, 2006. The various contributions were coordinated by a designated strategic plan development team. Consistent with the overall University strategic planning framework, the AITS plan includes four sections:

- Section 1: Purpose (e.g., mission, vision, values, mandates)
- Section 2: Strategy (e.g., SWOT analysis, strategic issues, strategic goals and thrusts)
- Section 3: Resource Plan for achieving strategic goals
- Section 4: Monitoring/evaluation of plan implementation and results

SECTION I: THE PURPOSE OF ADMINISTRATIVE INFORMATION TECHNOLOGY SERVICES (AITS)

Responsibilities of the Administrative Information Technology Division of the Vice President for Administration: AITS delivers information technology solutions and services to support the administrative processes of the University of Illinois.

This includes partnering with the University to understand what it needs to serve its constituents, and then identifying, providing and supporting the most effective, efficient and sustainable solutions.

Most recently, this resulted in AITS leading the charge to successfully implement a fully integrated, enterprise-wide application that integrates the ability to admit students and register them for classes; recruit, pay and retain faculty and supporting staff personnel; procure resources needed to operate a major University; and pay bills, collect fees, process thousands of financial transactions, close the books and publish financial reports.

On a day-to-day basis, AITS services are broad and varied. Each day, hundreds of customer calls get answered. Thousands of production jobs get scheduled, processed and completed – on time and accurately. Operating systems are kept current and properly secured. Systems and databases are continually monitored, tuned and properly serviced. Scarce and valuable disk storage space gets allocated among competing demands. The administrative network provides reliable access to critical data, firewalls keep out intruders. Thousands of files are backed up each evening to secure the University's information assets. In addition, AITS supports the workstation environment for a number of administrative units: desktops are upgraded and updated, software is distributed, desktop operating systems are kept current, anti-virus and anti-spam capabilities are installed.

Each of these critical tasks requires effort and attention to details. Careful engineering, planning and execution by AITS staff guide these important operations each day. The success of AITS is directly attributable to the efforts of a talented, dedicated, well-trained and highly focused team working at all levels, often on weekends, sometimes at night, and consistently with the best interests of the University center stage. And they undertake their duties under the governance of established practices that have proven to be effective in the most difficult and challenging of circumstances.

Mission

AITS will provide the high quality information technology solutions necessary to support the administrative processes of the University and enable new initiatives through:

- *Use of best practices*
- *Creative design*
- *Efficient development*
- *Effective delivery*

AITS will work as both a partner and leader, in concert with University campuses, academic units, and related organizations to ensure that the technology resources necessary for brilliance are efficiently obtained, effectively deployed, and properly used.

Vision

By providing innovative, cost-effective and reliable information technology solutions and strategies in support of the University of Illinois's brilliant future, AITS will be recognized as a source of competitive advantage.

As the University of Illinois strives to realize its vision of creating a brilliant future, it will require technology solutions that are not only stable, but innovative, cost-effective and sustainable. It must have an infrastructure and systems that are responsive to the unique data, processing and communication needs of a complex institution. In a rapidly changing environment, the University will need increasing flexibility and levels of service from its information technology organizations. With this in mind, AITS aims to be the University of Illinois's administrative information technology partner of choice by excelling in all areas of its mission. AITS will lead administrative information technology strategy development for the University of Illinois and deliver the highest levels of service and information technology solutions available today.

Guiding Values

As a support organization, AITS values are identical to those of the institution it serves. The guiding values of the University, Vice President for Administration and AITS include a commitment to: people, customer satisfaction, excellence, integrity, accountability, safety, and balance. AITS will:

- *Aim high:* we will aspire to be an information technology leader and provide best practice technology solutions and services.
- *Strive to control our destiny:* we will anticipate customer needs, provide innovative, cost-effective and sustainable solutions, and deliver reliable systems and infrastructure.
- *Be accountable for our actions and exercise responsible stewardship:* we will honor our commitments, learn from our successes and failures, ensure our prioritization processes and project statuses are transparent, use cost-effective and efficient approaches, manage our hardware and software assets

with care, and ensure our procurement procedures and vendor relationships conform to University of Illinois best practices.

- *Foster diversity, be inclusive, treat each other with dignity and respect, and promote citizenship:* we recognize that our people are our most important asset. We will recruit, develop, and retain highly skilled and professional staff at all levels in our organization.
- *Value excellence, quality, and service:* we strive to achieve exceptional quality through ongoing improvement in all that we do, and exceptional service through collaboration, open communication and mutual respect in all interactions with the customers we serve.
- *Foster innovation and creativity*: we will reward innovation, support continuous learning and encourage collaboration.
- *Balance leadership/risk taking with considerations for University needs and longer-term impact:* we will carefully evaluate new technology and information technology services, understand the total cost of ownership to the University, and balance the critical need for operational stability with innovation and enhancement

Mandates

University operations are impacted and shaped by many legal and regulatory mandates at the University, local, state and federal levels. As a partner and leader in the acquisition, management, and stewardship of the University's information resources, AITS must often interpret, practice, and enforce the many laws, regulations, and rules applicable to these resources, while ensuring enterprise applications are updated to enable the University to meet current regulatory requirements. Balancing this multi-faceted compliance role with the goal of maximum operating flexibility for the University is a major responsibility and challenge for AITS.

As an entity of the State of Illinois, the University is subject to state oversight and regulations and must abide by the state constitution and statutes. Key statutory and regulatory requirements guide and impact the work of AITS on behalf of the University.

In addition, the work of the University (and AITS) is subject to regulations established and enforced by federal agencies such as the Department of Defense, Department of Energy, Environmental Protection Agency, Department of Health and Human Services, and Department of Labor.

Finally, the work of AITS is also governed internally by Board of Trustees policies (primarily through the *University Statutes* and *General Rules Concerning University Organization and Procedure*), and informal customs and norms which place high value on shared governance, consultation, and operational autonomy for University campuses and units.

SECTION II: AITS STRATEGY

The development of AITS' strategy begins with a statement of strategic intent and the recognition and assessment of the opportunities and threats facing the organization. Also included is a review of the organization's current and potential capacity and its weaknesses. This assessment helps to frame the strategic issues facing AITS which ultimately leads to a set of strategic goals and thrusts for the organization.

Statement of Strategic Intent.

The University of Illinois relies upon critical information assets that enable its response to the evolving needs of students and other stakeholders. As the University strives to achieve its ambitious strategies and goals, already steep demand for information technology services will surely increase.

Our strategic intention is to establish the direction, implement the technology and processes, advance the skills and capabilities of our staff, and entrench a culture that seeks to provide this institution with world class support for its information needs. AITS professionalism, combined with the commitment at every level of the organization to quality, customer service, and innovation, will provide the University campuses and related organizations with the information solutions and services needed to attain their strategic objectives and guide this institution through the challenges of the next decade and beyond.

To do this, AITS Strategic Goals propose initiatives that target essential priorities for the University. First, we propose to target improvements in our own processes and technologies that are necessary to ensure improvements in the responsive capabilities of AITS. These improvements target internal operating practices as well as architectural frameworks. AITS plans significant improvements in our ability to develop and deliver new information solutions, and in our ability to deliver key executives and administrative personnel the information they need with improvements in relevance, timeliness, accessibility, reliability and integrity.

Environmental Assessment & Competitive Benchmarks

As explained in the strategic planning process guidelines, a key component of the University's overall strategy development to achieve a brilliant future is understanding and analyzing the competitive environment in which it operates.

Like many other departments in University Administration, AITS services represent a cost to the University. In the case of AITS, these costs can be compared to information technology investment that large enterprises (educational institutions, government and private sector) make in the technologies and automated processes that provide and support the information

necessary for critical operations. AITS provides and supports the technologies that automate recruiting, admissions, registration, class assignments, billing and collections for our student population. These technologies also provide the basis for our general ledger, accounts payable and accounts receivable processes, procurement, human resources and payroll processing. AITS has an important role to play in ensuring the business processes that provide the foundational basis for the functioning of the University are effective, responsive to changing requirements, reliable and secure. AITS is charged with realizing the University's vision of premier administrative support for our students and for the faculty and staff that teach and support our students. In addition, and importantly, AITS has an obligation to ensure that services are delivered in a cost effective manner – as compared to other large enterprises, and as compared to alternative solutions providers.

Understandably, the University of Illinois is often compared with other academic institutions to gain an appreciation of our standing among peer educational providers. As a provider of Information Technology services, AITS is best able to make an external comparison by examining information technology departments in large organizations generally (including academic, government, and private sector). That is the approach that AITS has undertaken.

Arguably, it makes sense. The delivery of Information Systems (IS) services presents very similar challenges and opportunities – irrespective of the enterprise being served. To be sure, there are differences in business functions from one enterprise to the next. And sensitivities to the unique demands of an academic institution require an effective orientation to its particular needs. But the underlying best practices that make an information technology unit an effective partner of the enterprise it serves are constant across sectors. Also, meaningful comparative data is more easily obtained by examining information technology providers across all sectors – as opposed to examining only those providers serving institutions of academia. In keeping with strategic planning process guidelines that direct administrative units to use common methodologies for conducting "best of class benchmarking" and "competitive positioning," AITS has attempted to utilize independently developed quantitative benchmarks to address two key questions.

1. How do AITS spending levels compare with similarly positioned Information Systems service units in large organizations?
2. How does AITS' manner of spending compare to these same organizations?

Computer Economics (www.computereconomics.com) is an organization that collects, analyzes and publishes various statistics regarding the operating and spending characteristics of Information Systems organizations. From the Computer Economics study published in 2005 a profile of Information Systems spending in large organizations (over $750m annual revenue – or, in the case of

government units, over $750m operating budget) can be obtained. From this study, an objective perspective on information technology spending levels can be obtained. One note of caution, as with any comparison to statistical averages, errors can be introduced. While AITS compares very favorably in the comparative categories, the reader is encouraged to view each of the points of comparison as "indicators" of AITS performance. No single indicator is definitive. However, taken collectively, the comparisons do offer evaluative insight into the answers of the two key questions stated earlier.

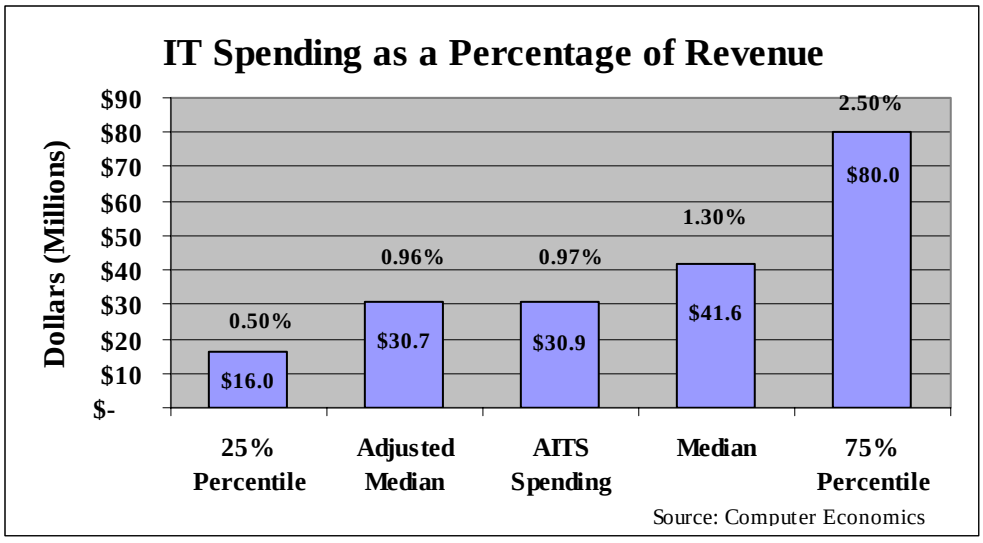
How do AITS spending levels compare with other similarly positioned Information Services units in large organizations?

In order to answer this question, Computer Economics provides two important measures: Information Systems budget as a percentage of the Organizations Revenue (or as indicated in the study – for government units – as a percentage of overall operating budget); and Information Systems spending on a per employee basis.

The AITS budget is approximately $17.5m annually. However, to get a true picture of AITS costs, the $17.5m should be incremented by

- the funds necessary to acquire, refresh, and grow the equipment base supported by AITS
- the portion of the Information Technology Priority Committee (ITPC) project costs that are managed by AITS
- the cost of personnel fringe benefits paid by the University and State but not part of the AITS budget

Collectively, this amounts to just under $30.9m. This is a more realistic portrayal of the budget of AITS. Given that the University of Illinois overall annual budget is $3.2b annually, the following measure is a relevant indicator of AITS spending as compared with other centralized administrative Information Systems organizations.



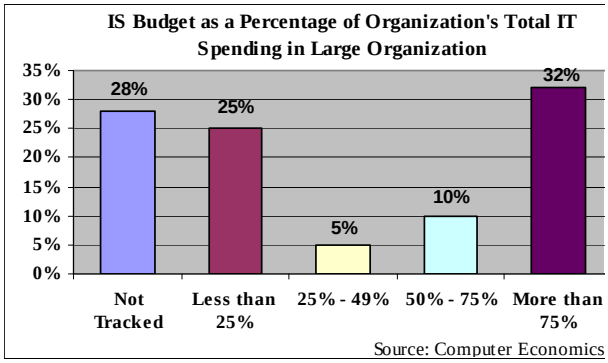
The adjusted median spending level in the preceding chart is a downward adjustment, based on the advice of Computer Economics. This adjustment was made in order to submit the most accurate (and conservative) assessment of AITS spending levels. Virtually all large organizations divide Information Systems spending among decentralized (often key departmental) organizational units and the central administrative Information Systems service unit. According to Computer Economics, our institution has vested below median spending levels (as a percentage of overall information technology spending) with AITS as its central administrative Information Systems unit as compared to other similar large organizations. Therefore, a comparison to average spending as a percentage of revenue could produce a misleading (overly optimistic) result. In order to adjust for this variance, Computer Economics has provided us with a statistical adjustment that allows us to adjust the published median spending.

The following tables provide the baseline profile information used in the preceding spending analysis. The numerical profile of the University's employee base and operating budgets are derived from official University publications. AITS (and other information technology units) spending levels were derived from forecast documents submitted to University officials during the previous budget cycle. The external comparative numbers were obtained from Computer Economics and represent spending characteristics of information technology in large organizations.

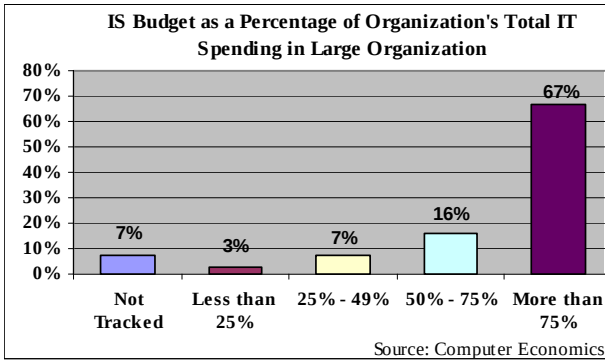
University of Illinois

	($ million)
Operating Budget	$3,200
AITS Spending (45% - Total) * based on 2005 analysis	$17.5
UIC/IS Spending	$5.5
UIS/IS Spending	$1.5
UIUC/IS Spending	$14.4
Total IS Spending	$38.9

2003 Report



2005/2006 Report

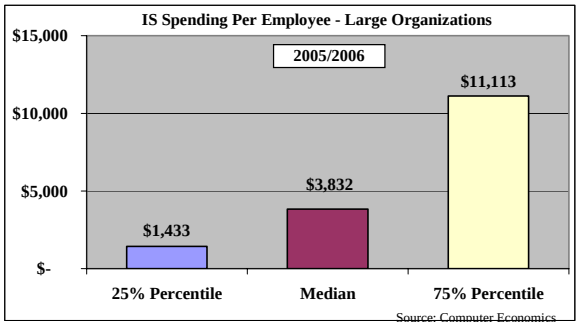


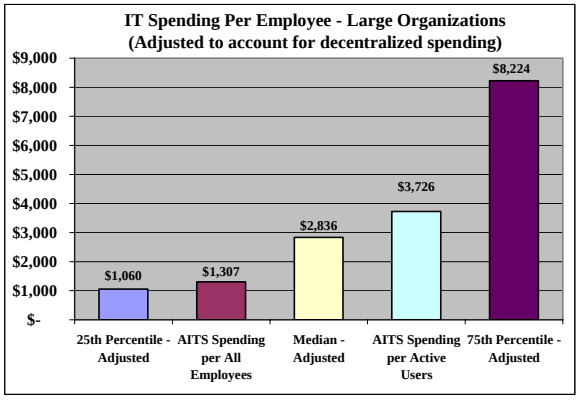
Similarly, based on advice provided by Computer Economics, the per employee amounts in the following table were reduced by 26% to adjust per employee spending levels so that an AITS comparison would be representative of our performance when compared to organizations whose median spending per employee by the central administrative Information Systems organization represented a higher percentage of total information technology spending.

University of Illinois	
Total On-Campus Enrollment	**68,325**
Employees	
Faculty	5,576
AP	7,573
Support Staff	10,511
Total FTE	**23,660**
Employees Actively Supported by AITS (Banner Forms ID)	**8,300**

AITS Spending per Employee

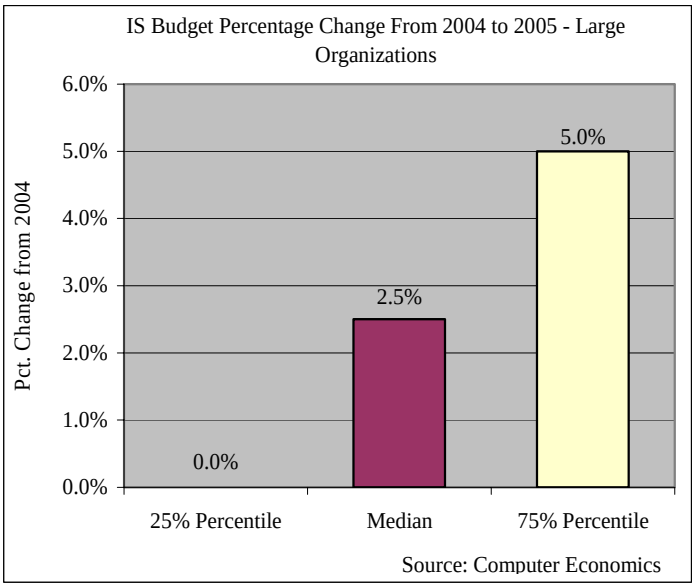
	75th Percentile	Median	25th Percentile
Large Organizations IS Spending per employee	$ 11,113	$ 3,832	$ 1,433
Adjusted by -26% to account for decentralized spending	$ 8,224	$ 2,836	$ 1,060
AITS Results - Based on the number of employees who are active users of IT services (i.e. Banner Forms).		$ 3,726	
AITS Results - Based on all employees (23,660) but not including Student Accesses.		$ 1,307	





The following table provides a view of the changing support environment at the University of Illinois. It is interesting to note that on a year to year basis, AITS headcount (adjusted for the effect of the UI Integrate project - as an indicator of unit costs) has been steadily declining over the past decade. At the same time University employee headcounts have been on the increase. The steady decrease in AITS FTE costs over an extended period of time, while demand for new services from a steadily growing user base is consistent with the previous indicators that AITS spending levels – as a percentage of overall University operating budget and per-employee fall within the lower spending percentiles and suggest that spending levels are an indication of good value.

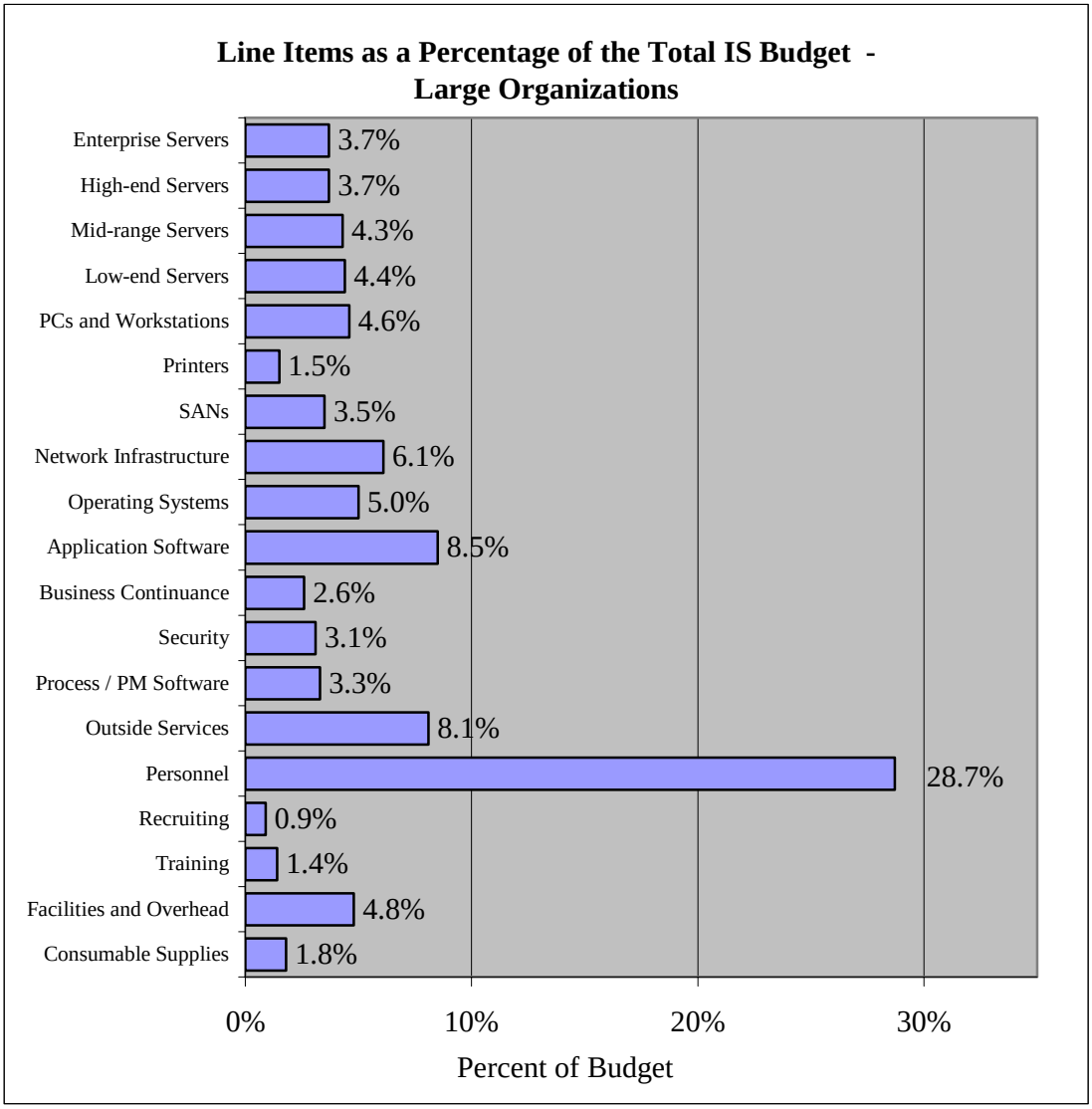
Year	AITS Headcount	University Employees (w/o CES, UIH)	
1992	287	20,822	
1993	271	20,740	
1994	265	20,963	
1995	254	20,874	
1996	254	21,815	
1997	261	22,156	
1998	248	22,275	
1999	229	22,756	
2000	202	23,119	
2001	193	24,081	
2002	186	24,352	
2003	178	24,145	
2004	177	24,064	
	(110)	3,242	Increase / (Decrease) in headcount between 1992 and 2004
	-38%	16%	Percentage Increase / (Decrease) in headcount between 1992 and 2004



How does AITS' manner of spending compare to these same organizations?

There are two elements to this comparative analysis. The first is to examine the way in which AITS allocates spending across its functional deliverables – i.e. spending on organizational units. The second is to examine the manner in which AITS spends on technology and related items.

The following table demonstrates median spending by line item budget category in large centralized administrative information systems organizations.



Organizational Units

It is noteworthy that according to the survey results published by Computer Economics, on average, centralized administrative Information Systems departments in large organizations allocate 28.7% of their budgets to personnel costs; while at AITS 57% of total spending is identified as personnel costs. This variance from the median is best understood by examining the overall composition of AITS budget and the relative amounts of spending in other categories. For example, the following table demonstrates the relative level of spending (stated as a % of overall budget) in each of several budget categories and the budgeted allocations in the AITS budget.

	Median Based on Computer Economics Data	AITS Budgeted Amounts	Δ Amount in Cash
Business Continuity / Security	5.70%	0.00%	$1,762,820
Consumables	1.80%	0.12%	$521,277
Facilities	4.80%	4.17%	$217,791
Training	1.40%	0.31%	$340,353
Recruiting	0.90%	0.04%	$265,066

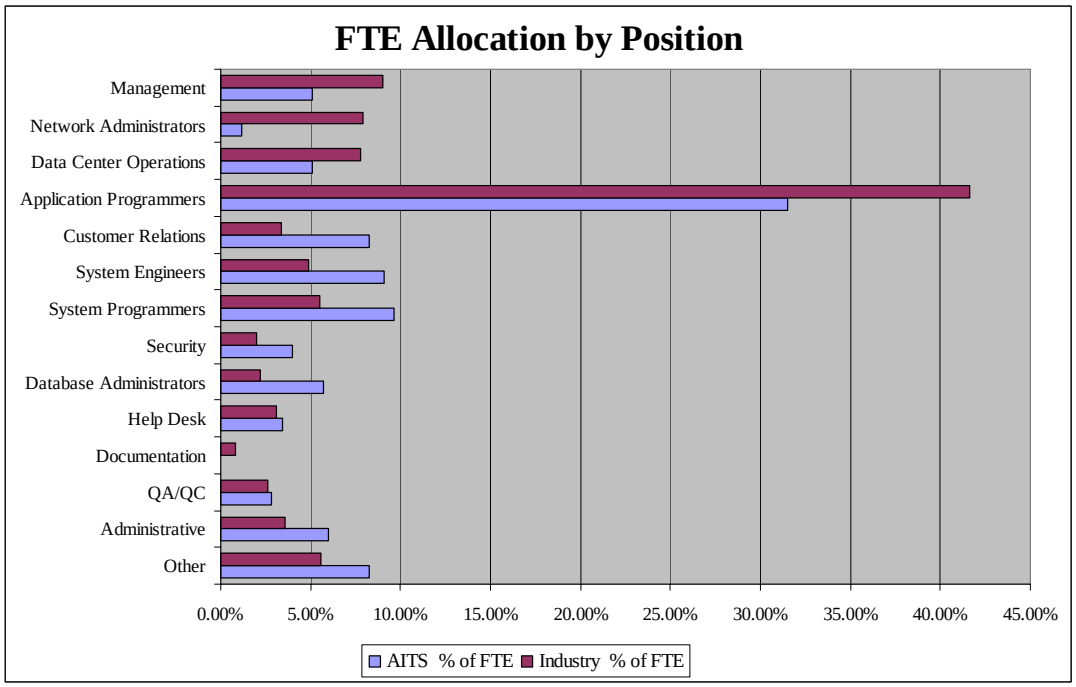
These differences are due to a variety of factors. For example, the University's allocation of facilities costs appears relatively low as compared to the cost of facilities in a commercial setting, as these expenses are assigned at a campus level rather than to the individual department or unit. Also, the University provides (included in the facilities costs) suitable facilities for a Disaster Recovery site – which other commercial institutions would be required to fund directly. The highly experienced employee base, accompanied by a very low turnover rate has a direct bearing on recruiting costs. Also, in response to imperative budget constraints over the past four years AITS has been required to reduce training budgets. While the experience of the workforce made those reductions possible, AITS expects to resume required developmental activities in support of these proposed strategic undertakings.

In addition to the differences in the preceding table, AITS technology costs are projected to be significantly less – both in hardware and software – than other organizations as represented in the Computer Economics study group. The differences in technology costs are a combination of: this University's willingness to leverage open source software as opposed to commercially acquired software whenever practical; significantly lower acquisition costs that are available to large educational institutions for commercially acquired software; and generally longer replacement cycles for hardware. The difference in technology spending when comparing AITS to other organizations represented in the Computer Economics study group amounts to another $3m.

If these additional budgetary anomalies are taken into consideration, AITS spending for internal information technology personnel falls within the normal range.

Information Systems Staffing Mix in Large Organizations

The following chart provides a comparison of AITS labor distribution among work units as compared to similar organizations providing centralized administrative information systems services to large organizations:



CATEGORY	Industry % of FTE	AITS % of FTE	AITS FTE
Other	5.60%	8.24%	14.50
Administrative	3.60%	5.96%	10.50
QA/QC	2.60%	2.84%	5.00
Documentation	0.80%	0.00%	-
Help Desk	3.10%	3.41%	6.00
Database Administrators	2.20%	5.68%	10.00
Security	2.00%	3.98%	7.00
System Programmers	5.50%	9.66%	17.00
System Engineers	4.90%	9.09%	16.00
Customer Relations	3.40%	8.26%	14.55
Application Programmers	41.60%	31.53%	55.50
Data Center Operations	7.80%	5.11%	9.00
Network Administrators	7.90%	1.14%	2.00
Management	9.00%	5.11%	9.00
	100.00%	100.00%	176.05

**Comparison of Large Organization Information Systems Staffing and AITS Staffing*

AITS has attempted to place its entire staff in the comparative groups to encourage a high level reasonability check as to the allocation of staff. While in most cases a direct parallel could be found, some differences were noted and will be annotated as appropriate.

<u>Other (AITS – Desktop Services)</u>

According to the composite survey responses for Information Systems staff in large organizations, on average there are 5.6% placed in the "other" category. In this area, the specific categories from the survey did not include "desk top support" as a distinct unit as such; they are assigned to the "other" category allowing us to make the most accurate comparison for purposes of analysis. AITS has 14.5 FTE providing direct support to our clients (and our own staff) in the form of desktop support services. This represents 8.2% of the AITS organization. In addition to these 14.5 FTE there are 2 students providing part time assistance.

Administrative Personnel

According to the composite survey, administrative personnel comprise 3.6% of the Information Systems staff in large organizations. AITS has 9.5 FTE employees in the HR and Finance support organization, and 1 FTE as an executive assistant. Collectively, this represents 6.0% of the AITS staff. In addition to these 10.5 FTE there are 6 students providing part time administrative support across all areas of the organization.

QA Personnel

According to the composite survey, documentation specialists take up 0.8%, and QA personnel represent 1.8% of the staffing mix. AITS does not staff any positions which are devoted to documentation. The preparation of documentation is assigned as part of other development and support duties. AITS Quality Assurance Personnel of 5 FTE represent 2.8% of the staff.

Help Desk

According to the composite survey, help desk personnel account for 3.1% of the Information Systems staffing mix in large organizations. AITS has 6 FTE assigned to the help desk representing 3.4% of the staff.

Database Administration

According to the composite survey, Database Administrators account for 2.2% of the Information Systems staff. AITS has 10 FTE assigned as Database Administrators which represent 5.7% of the staff.

Security Administration

According to the composite survey, Security Technicians and Administrators represent 2.0% of the staff. AITS has 7 FTE focused on security administration representing 4.0% of the staff. This is attributable to the high number of security accounts that require set-up and servicing in order to provide account services to a large number of students.

Systems Programmers

According to the composite survey, System Programmers represent 5.5% of the staff. AITS has 17 FTE assigned as Systems Programmers representing 9.7% of the organization.

Systems Engineers
According to the composite survey, System Engineers and Performance Specialists account for 4.9% of the staff. AITS has 16 FTE focused on performance management and security engineering representing 9.1% of the staff.

Customer Relations
According to the composite survey, Customer Relationship Managers and Business Analysts comprise 3.4% of the staff. AITS has 14.5 FTE focused on customer relationships and business analysis, representing 8.3% of the staff.

Application Programmers
According to the composite survey, Application Programmers and System Analysts account for 42.0% of the staff and, this category represents the largest single group in Information Systems in large organizations. AITS has 55.5 FTE assigned to Application Development, representing approximately 31.5% of the staff.

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Data Center Operations
According to the composite survey, Information Systems Data Center Operations personnel in large organizations represent 7.8% of the staff. AITS has 9 FTE assigned to Data Center Operations representing 5.1% of the organization.

Network Administration
According to the composite survey, Network Administrators account for 9.0% of the staff. AITS has 2 FTE assigned as Network Administrators, representing 1.1% of the staff.

Senior Management
According to the composite survey, senior managers comprise a high 9.0% of the total Information Systems staff in large organizations. AITS has a Senior Management Team consisting of 6 members, and has 3 Director level positions. Collectively, these 9 individuals account for approximately 5.1% of the workforce. These 9 managers include a Chief Security Officer, an Enterprise Architect, and a Director of Administration and Financial Management; all of which serve important advisory functions – but are not acting in direct management of the AITS operating unit.

Strengths, Weaknesses, Opportunities, and Threats (SWOT) Analysis:

Participants in the AITS planning process conducted a SWOT analysis, identifying both actual and perceived strengths, weaknesses, opportunities, and threats for consideration in the AITS planning process. The SWOT analysis provides an analytical framework within which AITS assessed its internal (strengths and weaknesses) and external (opportunities and threats)

environment and the related implications for strategy development and execution. Strengths and weaknesses refer to specific organizations conditions or attributes (both actual and perceived) identified by faculty, staff, and other stakeholders while opportunities and threats are typically derived from the analysis of demographic, economic/fiscal, educational. The summary below provides insight into the key SWOT items that were identified. (The full analysis can be found in Appendix A.)

STRENGTHS – internal attributes of organization which contribute to organizations success

Knowledgeable and dedicated staff with proven track record, flexibility and accountability; strong working relationships with vendors and user community; transparency; simplified server architectures; current vendor software; current equipment; high system redundancy; simplified and extensible software environment due to ERP; strong internal processes; adherence to standards; sound security; model site for system back up and disaster recovery

WEAKNESSES – Internal factors which diminish the organizations ability to deliver

Lack of a mature Service Level Agreement (SLA) process for services; need for continuous process improvement and development such as Systems Development Life Cycle, prioritization mechanisms and system testing requirements; inconsistency in practices and processes across AITS and other University information technology organizations; more staff development and training necessary; work occurring in technology based centers of competency (silos) sometimes inhibits professional collaboration; culture does not celebrate success; multiple sometimes inconsistent approaches to building common application features.

OPPORTUNITIES – external conditions that could help the organization grow

The University of Illinois's position as a recognized higher education leader; positive vendor and user community relationships; industry trends support current technology choices; demand for OpenEAI and open source experience and expertise; demand for operational data reporting; demand for project management expertise; demand to continue to enhance enterprise systems; demand for additional enterprise systems.

THREATS – external factors that may be harmful to the organization

Reduced funding; aging facilities; staffing risks due to funding models based on cost recovery; changing market and economic forces; outsourcing.

Strategic Issues

The following list of strategic issues reflects the results of the SWOT analysis described previously:

1. How can AITS meet rising demand for information technology solutions while operating in an environment of fiscal restraint?

2. How can AITS partner with the Vice President for Administration area, University leadership and other customers to:
    a. Determine and prioritize critical needs to jointly target capabilities and resources to best meet these needs?
    b. Balance the need to enhance system features and functionality while maintaining optimum performance and responsiveness?
    c. Balance discretionary with non-discretionary spending?
    d. Balance regulatory and customer requirements?
    e. Provide solutions that meet a variety of inter and intra campus requirements?

3. How can AITS partner with the Vice President for Administration area, and University leadership to ensure adequate funding of for technology renewal and replacement?

4. What is required for AITS to build and improve its reputation and establish itself as a provider of high value, cost effective and modern information technology services? How can AITS ensure it has the necessary talent to achieve this?

5. How can AITS leverage its experience and provide, in collaboration with the Vice President for Administration area and other University units, strong internal processes, common information technology standards and a simplified and extensible software environment across the enterprise?

6. What can AITS do to augment the relationship with departments with which it has entered into Service Level Agreements; how can the associated value-proposition best be quantified and issues that emerge during the course of the agreement be resolved and communicated to ensure mutual understanding and acceptance?

7. What approaches or strategies can be followed to achieve the benefits of decentralization without incurring the problems? The University follows a distributed approach to providing information technology to be more responsive to the diverse needs of end-users. However, this can lead to diseconomies of scale, conflicting and/or incompatible technologies and standards and inconsistent information technology support and “look and feel” from an end-user perspective.

Strategic Goals and Thrusts

The following strategic goals and related thrusts, reflect and support the purpose of AITS, and set the expectations for continued excellence.

Strategic Goal #1: AITS will identify opportunities to implement best practices to ensure high value, cost effective information technology services to University administrative and academic units.

Overview:
In recent years, AITS has introduced several important new information technology solutions to the University of Illinois. A broad assortment of mainframe based application systems have been replaced with a modern ERP system. The mainframe itself has been de-commissioned. New development techniques, authentication processes and infrastructure components have all been assembled.

As might be expected, the shift from legacy mainframe computing to newer technology has tested the strength and flexibility of former information technology business processes, technology standards and operating practices. Many of those processes continue to serve the needs of the department. However, the de-commissioning of the mainframe brings to final closure a former highly successful computing era, resulting in changes and improvements to the underlying technology that impose new demands for engineering, provisioning, maintenance and operation of technology elements.

And there is more on the way. There is a rising demand for AITS support in developing and deploying new software solutions for the University, such as document imaging linked to enterprise data, a standard application entry portal and new services to extend ERP functionality. The magnitude of demand for AITS services can be seen in an examination of ITPC approved initiatives. The backlog of approved ITPC initiatives has increased significantly in the past year. The number of ITPC initiatives under review will bring even greater focus on AITS' ability to respond.

Solution:
AITS will use the Information Technology Infrastructure Library (ITIL) as a framework for best practices in information technology operations and the Capability Maturity Model® Integration (CMMI) as the framework for systems development process improvement. ITIL is a collection of best practices for information technology operations first developed by the British government and CMMI is a product of the Carnegie Mellon Software Engineering Institute.

1.1 Implement ITIL Processes to address operations in the following critical areas of Information Technology Service Delivery:
   a. Availability Management

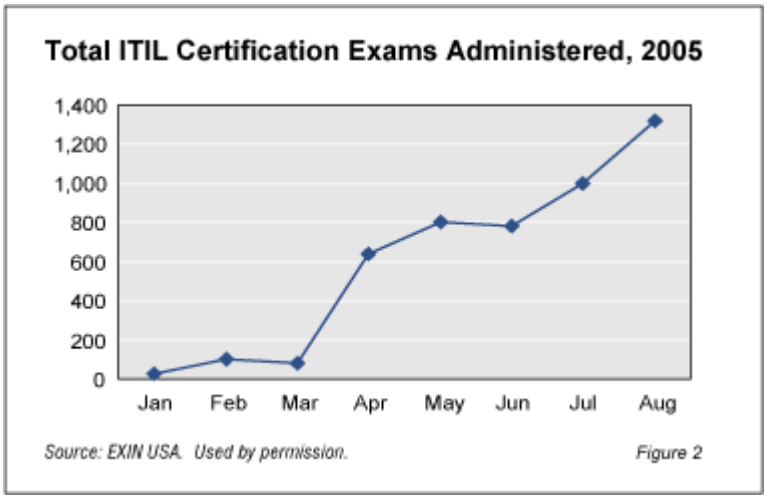
b. Capacity Management
c. Financial Management (for information technology services)
d. Service Level Management
e. Incident Management
f. Problem Management
g. Configuration Management
h. Change Management
i. Release Management
j. Continuity Management (information technology services)
k. Information Security
l. Service Desk

According to the Office of Government Commerce UK, "ITIL (the Information Technology Infrastructure Library) is the most widely accepted approach to information technology service management in the world" – (2005) ITIL Adoption: 2006 Could Be Watershed Year in US [Electronic Version]. *Computer Economics* Retrieved February, 2006 from (http://www.computereconomics.com/article.cfm?id=1068).

ITIL is a set of best practices for managing key information technology service management support and delivery processes. AITS, like other mature information technology service delivery organizations, has worked hard to develop and maintain sound business processes. However, ITIL provides the opportunity to better close the loop with other management best practices such as CMMI, and can be adapted to the technology platforms that provide the underpinnings of AITS delivery capability.

ITIL has broad acceptance worldwide. It has been well-entrenched in Europe for many years. Additionally, many Asian countries are adopting ITIL best practices, with India and Japan leading the charge. According to EXIN International, ITIL's leading international certification organization, ITIL growth in Asia this year has increased by 300% over 2004.

The illustration below (provided by Computer Economics) provides insight on the ramp-up of ITIL usage occurring in the U.S.



According to the Computer Economics article, EDS – a leading outsourcing company – adopted ITIL in 1999 and has implemented ITIL best practices across all of its major data centers. Also, other major outsourcers and providers of managed services are moving in this direction as well.

(Source: (2005) ITIL Adoption: 2006 Could Be Watershed Year in US [Electronic Version]. *Computer Economics* Retrieved February, 2006 from (http://www.computereconomics.com/article.cfm?id=1068).

Part of the ITIL framework includes efforts to develop transparent, accessible and integrated enterprise systems performance monitoring, and will guide AITS in implementing best practices in information technology infrastructure "service level agreement" management.

1.2 Implement the Capability Maturity Model Integration (CMMI) as a process improvement approach that provides organizations like AITS with the essential elements of effective software development and integration processes.

CMMI is used to guide process improvement across projects, divisions, or entire organizations. CMMI helps integrate traditionally separate organizational functions, set process improvement goals and priorities, provide guidance for quality processes, and provide a point of reference for appraising current processes. Source: (2006) What is CMMI? [Electronic Version] *Carnegie Mellon Software Engineering Institute*. Retrieved February 2006 from (http://www.sei.cmu.edu/cmmi/general/general.html)

The CMMI approach recognizes the importance of process as a complement to a focus on people and technology for organizations to effectively develop, acquire, integrate and deploy high quality and cost effective information systems. As organizations adopt improved processes, they move to higher

levels of maturity and discipline in their software and systems development capability.

The CMMI Product Suite places proven practices into a structure that helps an organization appraise its organizational maturity and process capability, establish priorities for improvement, and guide the implementation of these improvements. By integrating software engineering and systems engineering into "solutions" engineering, CMMI shifts energy, attention and focus to the end product and its targeted business processes.

Benefits:
While there is an upfront investment in implementing ITIL and CMMI practices, we can expect a number of benefits to be realized. And given the growing demand, AITS must act now to maintain its position as a fiscally responsible and responsive service unit capable of addressing the administrative information technology needs of the University of Illinois.

Primarily, by moving forward with both ITIL and CMMI, AITS best practices will be implemented for project management, development, data management and operations engineering to ensure that the technology services rendered to administrative units and campus departments exceed the service expectations of our users. AITS will enhance mechanisms for delivery management to adhere to published standards and guidelines recognized by world class information technology service providers from academia and industry. AITS will partner with others to jointly implement commodity services that leverage economies of scale and economies of scope.

Strategic Goal #2: Develop and expand our information technology system infrastructure to facilitate and improve access to enterprise data through the use of Operational Data Stores.

Overview:
The University of Illinois is entering an age of anticipation and challenge. The need to provide educational services is extending and requires a global reach. In turn, the challenges of administrative support in a global environment are significant. For example, the capability to recruit, admit, register, grant financial aid and bill students becomes increasingly important. And all of this is occurring in an era where government budgets are stretched to the limit, taxes are peaked and tuition rates are becoming more important. Analysis of operational results tied to key performance indicators will drive many of the decisions that the University must render. As these demands increase, so does the need for critical operational data, which is timely, relevant, easy to access and sustainable.

Currently, operational data produced by the UI-Integrate system is primarily accessed through a copy of the ERP database which produced on a daily basis

for a set of standardized reports. This architecture was developed mid-term in the UI-Integrate project, in response to an immediate need for data. Because of the large number of specialized requests and the growing amount of data, there is a risk of being unable to refresh that reporting database (REPTPROD) by the next morning – rendering critical information needed for important decisions in an evolving new environment unavailable.

Solution:
Develop and deploy Operational Data Stores.

AITS proposes to provide a common framework that can be used by key University executives and administrators to access the critical enterprise data needed to bridge this institution from its traditional boundaries into an age of extended services. AITS will expand the development of data and infrastructure standards to build Operational Data Stores (ODS) that can be used for operational reports and applications. An ODS integrates subject-oriented and time sensitive data from different data sources into a single store without extensive transformation of data. The ODS will be updated through the course of business operations as needed and will be designed to quickly perform relatively simple queries on smaller amounts of data rather than complex (ad hoc queries) against extensively transformed data. Documentation and reusable data access points will be provided for university and departmental systems to interact with enterprise data.

Benefits:
Operational Data Stores offer a state of the art alternative. This technology will be more efficient, provide a more stable environment for operational reports and applications and allow users more secure access of data. This approach will also allow AITS to provide data when it is needed, on a real time basis, with the reliability and integrity required to guide senior executives in their important decisions.

Operational Data Stores can be used to provide important up-to-date information on items like:

- The amount of outstanding student payments.
- The number of turns on our accounts receivables.
- Large payables that are coming due.
- Treasury related information on cash and debt status.
- Constituent communications based on up-to-date information.
- Open seats in courses during peak registration times
- Production data needed for department specific applications such as Course Scheduling tools
- Payroll data for adjustments and deductions

Developing this critical alternative to enable access to important operational data can be expected to deliver the following benefits:

- Accommodate a variety of data sources (Grants Management System, DARwin, etc.)
- Improve reliability of operational reporting.
- Provide simplified access to real-time data for operational reports and applications
- Reduce the load on the existing ERP system which is currently supporting some of the operational reporting functions during high volume periods – thus improving transactional services (class registration, bill payments, etc.) for students and other critical users of Banner.
- Allow for EDW updates to be sourced from the ODS rather than the production instance.

Strategic Goal #3: Develop and expand our information technology system infrastructure to facilitate and improve access to enterprise data and administrative functions.

Overview:
The information assets acquired and deployed by large institutions over the last few decades have essentially become silos of information that are difficult to maintain and costly to integrate. It has been estimated by Gartner, Inc. that the implementation and integration of these systems can cost six times more than the original price of the system.

As organizations build information technology systems, they rely upon their own skill sets, resident legacy system technology, or vendor partnerships to build systems that are best suited for their own needs. As the business environment changes or grows, organizations realize that their systems need to communicate with other systems and, as a result, devise elaborate and error-prone interfaces and methods of exchanging data. These systems often don't speak the same language and many times perform nearly the same business functions out of necessity. As system upgrades occur, all of the systems that are communicating via these complex interfaces must also go through involved and costly integration analysis and testing.

The various departments of the University face a very similar situation today. In spite of the substantial investment in independently developed or acquired information systems, individual departments are often unable to exchange information because of incompatible interfaces. Because of the practical inability for many systems to interface with others, information sharing is encumbered – and consequently, the information is replicated in multiple forms across the University. Each representation of the data is on different update cycles, different states of currency, different states of integrity, etc. At best this creates unnecessary confusion; at worst, it impairs security and invites errors. It also creates enormous overhead by increasing the effort required to update and reconcile data and requires increased investment in storage hardware and

capacity to accommodate multiple instances of data. Add to this that it makes the maintenance of applications far more difficult, increasing complexity and can even effect the integrity of information we provide to our various stakeholders.

Solution:
Concepts of standardized approaches to information systems interaction, such as messaging (such as implemented via OpenEAI) and reusable services (such as implemented via a Service Oriented Architecture) allow a common framework to be established where systems of varying size, complexity, and composition can communicate with each other in a well defined and consistent a manner. By using a language that nearly all systems and platforms speak, and not inherent to any single system, these systems can communicate without worry about compatibilities and conversions. These types of architectures also provides the delivery mechanism and fault tolerance that will make sure that data and services are completely transferred even if system problems do occur. In essence, each system no longer has to be programmed to handle the quirks or nuances of partner systems. Furthermore, this architecture supports the concept of authoritative source for the information systems that truly is the business owner of specific data, as well as allowing standardization of business logic by accessing the authoritative source of the service. This keeps the business logic where it needs to be – in the authoritative system.

3.1 Enhance the AITS Enterprise Application Integration site to provide broader and more complete documentation of reusable business message objects and system services.
3.2 Develop standards and criteria for applications that will offer functions via web services

These initiatives focus on the continuing development of the current AITS system infrastructure in a manner that is consistent with emerging concepts. This initiative will facilitate and improve access to enterprise data and business processes by extending this architecture throughout the University. The current OpenEAI architecture provides a framework that can be built upon to expand access to the enterprise data and processes via well defined services built in compliance with accepted industry standards defined by organizations such as OASIS (Organization for the Advancement of Structured Information Standards).

Benefits:
Through this framework, departmental applications, enterprise applications, and business partner systems using disparate technologies will be able to effectively communicate with university systems with higher degrees of reliability and reduced development and ongoing support costs. This allows for the separation of the development and support of applications by departments within the University while providing a common mechanism for these systems to share data. Departments can build applications using platforms and technologies that best suit their needs while still allowing access to other enterprise systems.

There are enterprise systems currently written in languages such as Cold Fusion, ASP, Java, Oracle that all can be upgraded, enhanced, or migrated to a new technology without direct impact on other enterprise applications.

Activities such as upgrades become less threatening to the University since applications are separated from each other through the service layer and can be upgraded independently. Examples of where these benefits are already being realized are as follows:

- Systems which are utilizing the current messaging infrastructure required minimal regression testing for the recent Banner 7 upgrades. Systems such as MediEase, Nessie, and I-Card were able to perform the regression testing with minimal resource requirements.

  I-Card performed a server migration and database upgrade with minimal testing required by other enterprise systems support groups. The upgrade was able to be performed without any outage of other enterprise applications.

  As new services become available, enterprise systems can begin to utilize the service with minimal development efforts. For example, the eProcurement product for Banner being implemented will provide automatic Vendor and FOAPAL message updates to the enterprise. Systems such as FAMIS could begin receiving real time updates of this information and eliminate current legacy batch interfaces which provide data that is 24 to 48 hours old.

Overall development costs can be reduced through the implementation of common business logic and interfaces. It has been reported by Forrester Research that case studies have shown a reduction in integration, project development, and maintenance costs of systems by 30% or more. Gartner, Inc. research has also shown that the implementation and integration costs of software can be reduced from six times to just double the original software cost.

Strategic Goal #4: AITS shall improve service delivery capabilities, enhance service delivery management, implement improved metrics to demonstrate results, and create new and effective forums for client communications in order to become widely recognized as an information technology service provider of world class excellence.

Overview:

During the past five years, the University has faced funding challenges that has led to efforts within University Administrative units to streamline their efforts and realize a 25 percent reduction in costs.

AITS met that target. However, demand for services has not abated as demonstrated by the ITPC demand. So, as in many other industries, the question is how to maintain and even improve service delivery when working with fewer resources?

Solution:
One answer is to collaborate with other units to find opportunities to consolidate services, find common solutions and take advantage of economies of scale.

The University's distributed, decentralized environment presents many such opportunities, and in its mission to provide cost effective, efficient information technology services, AITS will seek to explore and activate those opportunities.

4.1 Improve service delivery by working with Campus units to extend access to innovative solutions developed by individual departments.

The University of Illinois includes many diverse units with information technology resources that develop solutions to meet their operational and business needs. Often, these solutions address problems that may be common to other units. AITS proposes to work with these units to develop basic standards and frameworks that would make it possible for AITS to work with other units to extend a solution developed for a single unit to other units.

For example,

- Long term maintenance and support become increasingly important when the use of a local application expands from a single unit to multiple units. Similarly, documentation must often be upgraded in order to make the application supportable for the long term.
- As the client base expands, and more departments across a wider geographic base begin to rely upon the solution, it becomes critical to move from less formal "user assistance" mechanisms to formal "help desk" capabilities. This places further emphasis on documentation, and also increases requirements for training of those rendering assistance.
- The computing, data base and networking environments that are required to support a "special purpose" solution that is targeted for a small user group are less formal than that required for an enterprise based user community. As a result, the requirement for engineering appropriate information technology platforms, monitoring utilization of these platforms and managing available capacity are often elevated.
- Lastly, the administration of security, as it is built into the application and administered (adding, changing and deleting access to privileged information based on need) must be implemented formally when the application's users extend beyond a single unit.

By working with the campuses, many of the creative solutions developed by individual units can be extended to a wider audience, allowing more users to benefit and increasing the value of the original investment directed at the development of the solution.

4.2 Improve operational capabilities by enhancing Service Desk Capabilities and Service Delivery Management and by improving metrics

AITS will improve the availability of its cross-functional help desk to provide a consistent point of contact and assistance for clients who require assistance with AITS supported technology. Service Desk processes will be established based on ITIL guidelines, and will include initiatives to improve the skill level of service desk attendants as well as the "knowledge base" tools that improve the effectiveness of service desk response.

Related to this initiative, AITS will work with other units to explore requirements for and the possibility of implementing a single consistent help desk/call center for University Administration.

In the area of service delivery improvements, AITS will focus on establishing improved communications between AITS and its many constituents – on both a formal and an informal basis. As part of this initiative, AITS will:

- Create an effective AITS communication strategy, both internally and externally.
- Develop and implement initiatives intended to align AITS with its constituents and to advance opportunities for strategic partnerships.
- Institute town hall meetings and brown bag lunches.
- Sponsor participation in targeted external organizations and consortiums that advance the reputation and awareness of AITS services.
- Institute client satisfaction surveys.
- Supplement the existing metrics that address service services levels by developing new measurements that invite user comments on AITS performance levels

4.3 Identify opportunities for University Administration and campus information technology infrastructure and service collaboration

To provide the University with efficient, cost effective and sustainable solutions, AITS must partner with Campus computing organizations to leverage opportunities to realize economies of scale, extensible solutions and to reduce duplication in meeting needs. Using the University Technology Management Committee as a forum, AITS will seek to actively collaborate with these organizations to adopt common architectures and development standards where possible to facilitate efficient use of University technology resources and quality solutions.

In the infrastructure arena, AITS will seek to create a state-of-the-art, co-located data center and backup disaster recovery and development data center on the UIUC and UIC campuses which will provide integrated server, data storage and service hosting.

And in the interests of improving service, AITS will continue to collaborate with appropriate units to implement a centralized identifier management approach in which services are linked together based on identifier usage.

Benefits:
The University has a philosophy of distributing information technology processes to multiple administrative, campus and college units. This provides the various units with a high level of custom service and support. However, opportunities for economies of scale and repeatability of processes due to common standards are often lost. The theme of this strategic goal is for AITS to collaborate closely with the various distributed information technology units to gain some of the benefits that come from a more centralized approach without losing the benefits of a distributed approach.

Specific benefits include:

- Broader functionality offered to users because useful applications developed by one unit will be "hardened" and offered to other applicable units
- Better customer service by presenting a high quality and consistent help desk experience to the user community
- Longer help desk hours of service for cases where a single unit formerly provided support but where that support could be moved to a consolidated help desk
- Lower per unit costs of data center operations where economies of scale will allow fewer personnel and larger pools of servers and storage capacity to serve central administration, campus and college unit needs
- More reliable security administration that consistently follows University security policies due to common standards and support for security

Strategic Goal #5: AITS will leverage talent and develop pools of synergy in order to increase workplace productivity and enhance its ability to deliver high quality solutions to address the administrative computing needs of the University of Illinois.

Overview:
In the past five years, AITS has moved from supporting mainframe technologies to implementing and maintaining an Enterprise Resource Planning system in a server-based environment. This has required a shift in both infrastructure and operational management practices, as well as in system architecture approaches.

In addition, staff have been reduced and reallocated, while demand for new projects has increased.

As AITS moves to increase efficiency and effectiveness through the use of best practices and collaborative approaches, it must ensure its workforce has the competencies required to perform at its peak in a constantly changing environment.

Solution:
AITS will leverage talent and develop pools of synergy to increase workplace productivity and enhance its ability to assign the appropriate resources and deliver high quality solutions. Implementing a focused and systematic approach to talent management, knowledge management, and continuous improvement is critical to ensuring AITS employees are aligned with its business strategy.

Today, AITS does an acceptable job of aligning its resources with projects. However, to be fully responsive and able to adapt to our clients' emerging information technology business needs, AITS needs to augment its capabilities in this arena and consider not only the human capital resources available but also the organizational systems (processes and procedures) in place. With a view to streamlining knowledge sharing and continuous improvement initiatives, AITS will be better positioned to ensure its workforce holds the competencies required to be productive and successful and that these resources are most effectively allocated to projects in support of information technology solution delivery.

Also, according to studies conducted by Harvard researchers Brian E. Becker, Mark A. Huselid and Dave Ulrich, documented in "The HR Scorecard", "*firms with the most effective HR management systems exhibited dramatically higher performance".* Becker, B., Huselid, M. & Ulrich, D. (2001). *The HR Scorecard.* Boston, Mass: Harvard Business School Press. AITS will enhance productivity and its ability to plan its activities around available resources by using a systematic approach to recruitment, development, retention and succession planning.

Specific initiatives in support of this goal include the following:

5.1 Assess the base resources required to achieve identified strategic goals.

5.2 Based on financial plans and required competencies, examine the relationship between objectives and available staff. Develop staffing and professional development plans to meet both current and future business needs by translating organizational goals into appropriate resources.

5.3 Develop and implement a talent management business model to optimize attraction, retention, development of key talents, career

progression, and succession planning – to ensure continued availability of the right person, for the right project, at the right time.

5.4 Explore opportunities to collaborate with other University Administration units, and identify where common approaches to talent management and potential cost- and resource-sharing may exist.

Benefits:

Anticipated benefits associated with a systematic approach to talent management, knowledge management and continuous improvement include:

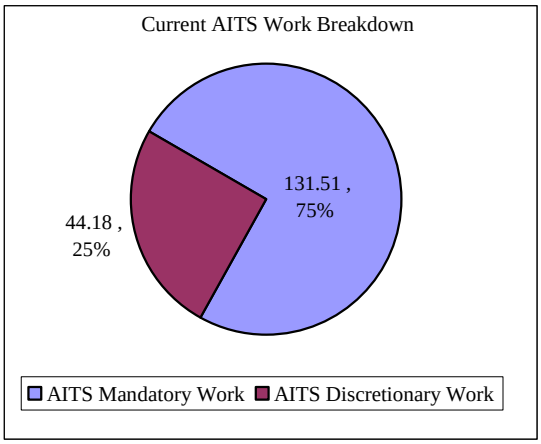
- Cost savings:
  - Improvements in cycle time, leading to reduced cost per initiative
  - Reduced turnover and improved employee satisfaction, resulting in reduced human resource administration costs and higher productivity levels.
- Service Improvement:
  - Provides a means for ensuring quality and consistency in available resources through targeted development
  - Understanding and addressing gaps in competency levels offers retention and expertise in multiple roles, resulting in a deeper reservoir of successors at every level
- Renewal:
  - Prescribed method for knowledge management improves AITS' ability to maintain and apply knowledge even with staff departures – quality and consistency are available at all levels of the organization
  - Documented competencies make AITS more efficient and flexible - staff with particular competencies can be targeted for specific projects or shared across initiatives
- Infrastructure:
  - Alignment of organizational functions into talent management process results in less duplication of initiatives and efforts, leaving capacity for additional new projects.

SECTION III: RESOURCES NEEDED

SECTION 3: RESOURCE PLAN FOR ACHIEVING STRATEGIC GOALS

This section of the AITS strategic plan outlines the resources necessary to achieve the strategic goals and thrusts within the plan. The primary assumptions underlying this resource plan are: (1) any new, incremental resources available in the coming years will be very limited; and (2) the first draw on these new resources will be to support strategic initiatives directly related to the University's primary mission of teaching, research, and service. Incremental base funding for administrative programs and services will be the exception rather than the rule, and will require tangible justification in the form of added direct benefit for the University's primary mission. As such, it is expected that funding for the strategic initiatives outlined in the AITS plan will come primarily from existing resources through internal reallocation and efficiency savings (generated from many of these initiatives).

The chart below presents a high level breakdown of how AITS currently expends its labor resources in service to the University. The majority of AITS resources are dedicated to mandatory technology infrastructure, support and maintenance activities. These activities are commonly termed continuous 'keep the lights on' efforts to maintain the administrative information systems at the University. The other high level component of AITS labor resources are dedicated to discretionary activities such as new ITPC projects, work requests and other strategic initiatives to provide enhanced computing services to the University. There is a constant and increasing demand of this nature from throughout the University.



The charts below quantify this increasing demand. The charts represent the increased backlog of ITPC projects, as expressed in requested resources, and the increasing quantity of other work requests that consume AITS' 'discretionary' capacity.

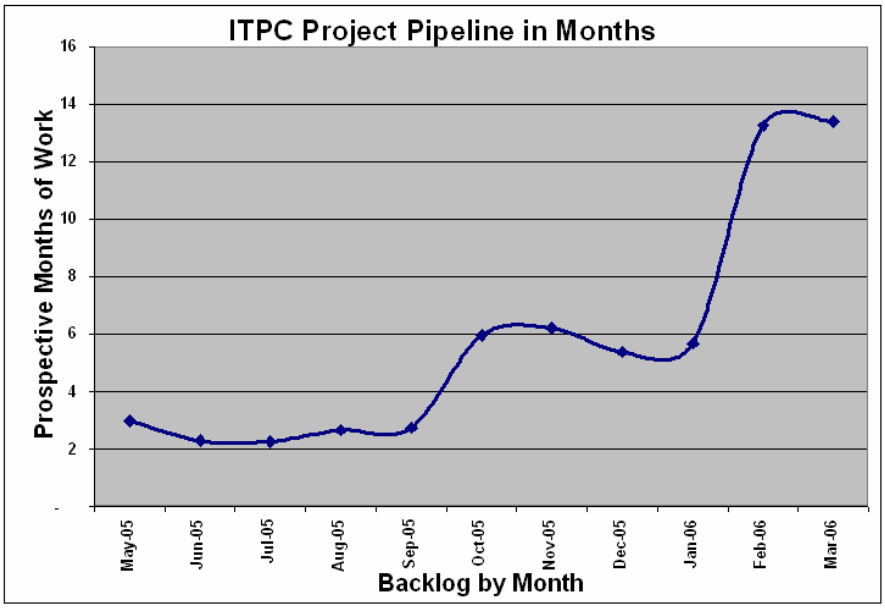


***Figure X**: Based on current staffing levels, utilizing all available resources, it would take AITS over 13 months to complete the approved ITPC projects currently under way or awaiting execution. In reality, the current backlog of ITPC projects will be scheduled over the next two years as new projects are continuously added on a quarterly basis.*

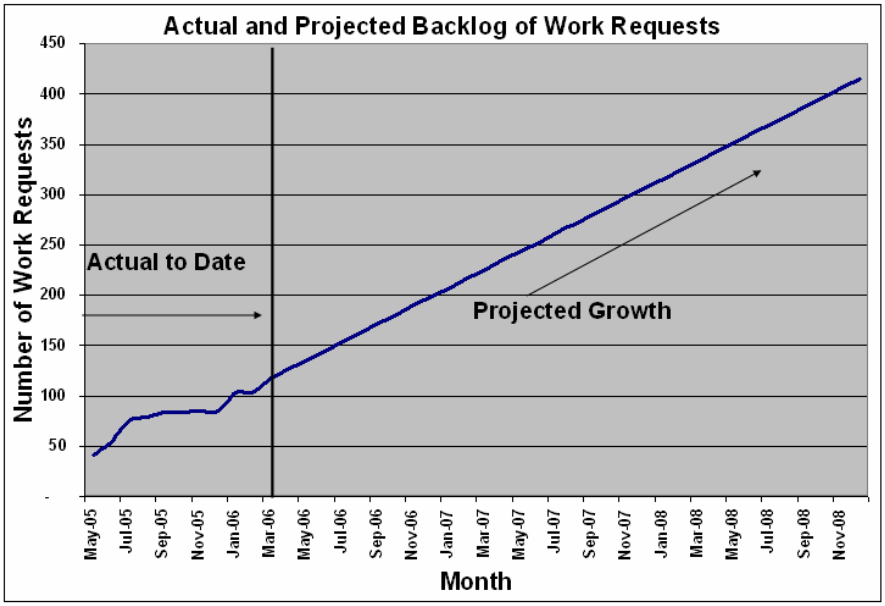


***Figure Y**: AITS receives approximately 400 non-ITPC, non-mandatory work requests per year. These are work requests beyond normal production support, or 'keep the lights on' activities. Without an increase*

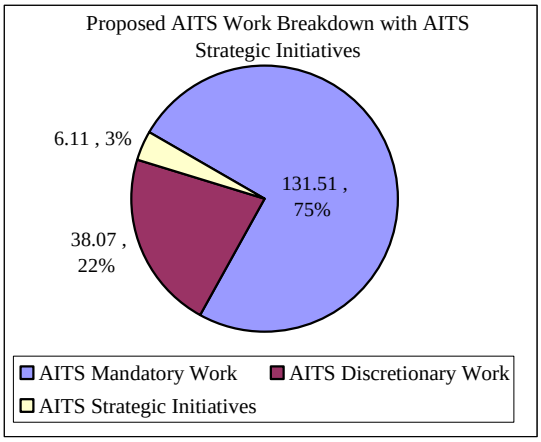
in the efficiency of work or the addition of resources, it is expected that the unfulfilled work request demand will continue to grow.

An additional component of increasing demand is the incremental maintenance and support that accompanies new information technology development and initiatives. In other words, as the base of new software and enhancements increases, the resources dedicated to 'keep the lights on' activities will also incrementally increase, thus reducing the capacity to work on strategic 'discretionary' work.

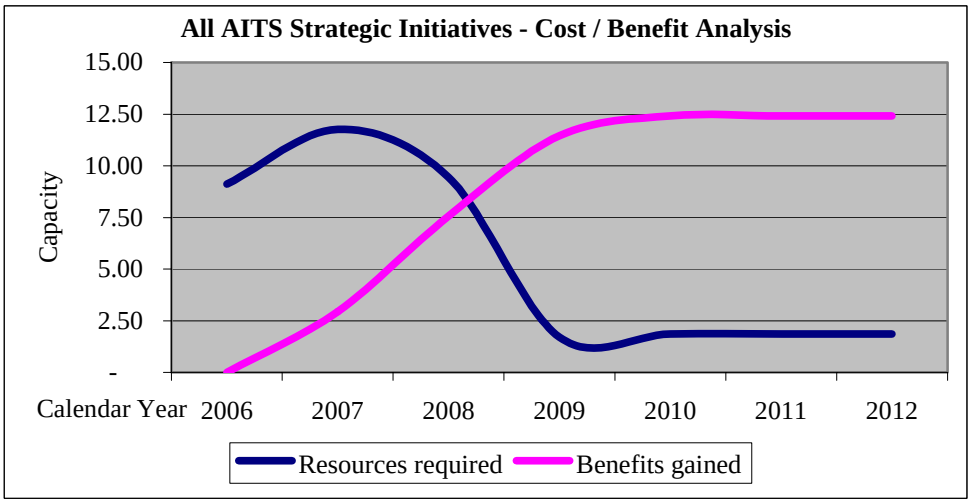
In order to address this gap between the University's demand for services from AITS and AITS' resource capacity to meet these demands, a combination of a number of potential solutions must be employed. Among the contributing solutions are:

- Increased funding to directly increase the resources available to meet the increasing demand from the University. While this solution is not being proposed due to the financial constraints facing the University, it merits mentioning in the context of the significantly reduced headcount that AITS has experienced over the past decade. By other means, the Academic Affairs Management Team is already employing the use of incremental funding to support strategic information technology initiatives through recurring ITPC funding.
- Delaying or denying new requests deemed a low priority. This is one of the tenants of the ITPC process in that new information technology work is evaluated by a cross-functional group of University executives to strategically employ the resources available toward the highest valued new work.
- Increase the productivity and efficiency of the AITS' resources through the initiatives discussed in this strategic plan. In order to do this AITS will need to divert, in the short term, resources that would be available to pursue the discretionary demand on the organization. This is an investment that AITS believes will provide benefits in the long term that far outweigh the initial costs. By investing in these initiatives AITS believes that benefits such as:
    - reduced expected maintenance and support for new development
    - reduced cycle time and effort for new development
    - the elimination of redundant effort in certain areas
    - free up capacity to be able to make inroads toward satisfying the projected demand levels against the organization.

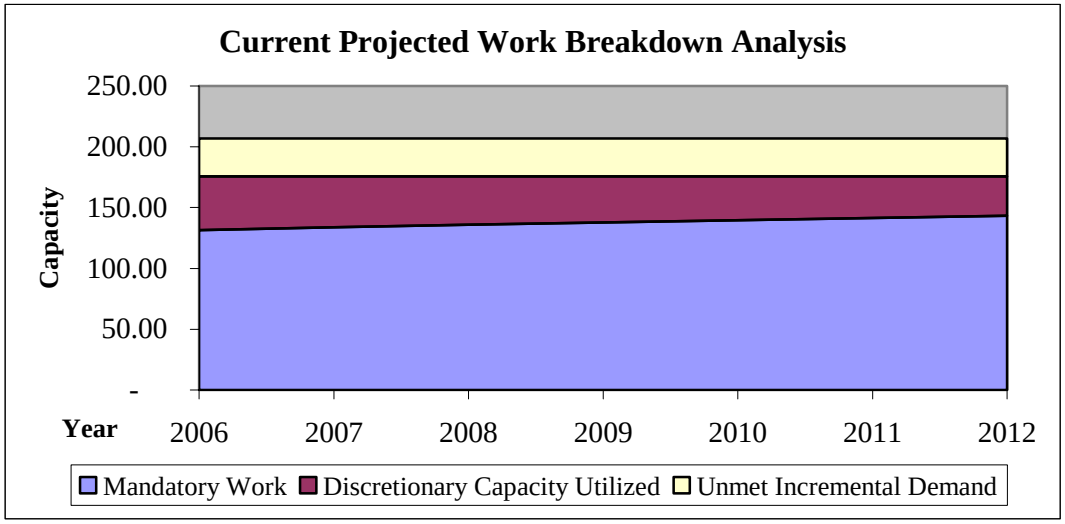
  The following chart reflects how this investment would affect AITS resources (net) in the next 2-3 year period.



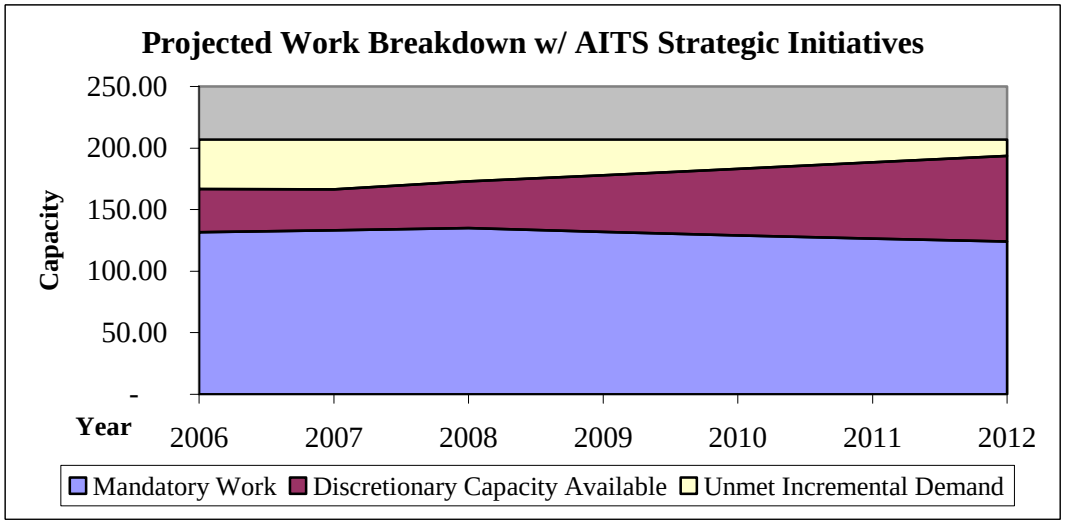
The chart below shows the specific projected resource requirements and benefits expected from employing the AITS Strategic Initiatives.



The chart below represents a current projection of how AITS would dedicate its resources to serve the University in its current state in absence of pursuing the strategic initiatives. It can be seen in this representation that the expected demand for 'keep the lights on activities' is expected to increase in a linear relationship to the ongoing new development completed. This in turn reduces the available capacity to commit to the strategic 'discretionary' demand that continues to increase. Above and beyond this capacity is the unmet demand on the organization that remains unmet, increasing the timeframe from request to completion and grows on a cumulative basis.



With the employment of the AITS strategic initiatives, the organization believes that we can over time incrementally reduce maintenance and support levels, increase the effort devoted to strategic 'discretionary' projects, and make significant progress against reducing the backlog of work awaiting completion.



As noted in its mission and throughout this plan, AITS sees itself as working in close partnership with other leaders and colleagues throughout the University community to provide administrative programs and services that further the effectiveness and competitiveness of the institution. This partnership also extends to the refinement and implementation of this resource plan, particularly given the currently unknown scope and content of University campus plans. In short, while this plan sets forth a set of broad parameters reflecting AITS' initial consideration of required operating and capital resources, the specific details regarding resource needs, priority, and timing will be finalized in

consultation with other University leaders during refinement and implementation of the overall University plan.

Exhibits 1 through 5 provide a preliminary, high-level outline of the resource plan for each of the four strategic goals and underlying thrusts within the plan using the following framework:

- Operating Resources Required
  - Staff (e.g., academic professionals, classified, temporary)
  - Technology (e.g., hardware, software)
  - Training and Education (e.g., conferences, short courses)
  - Other Operating Costs (e.g., supplies, equipment)

- Capital Resources Required (e.g., facilities)

- Timeframe for Resource Needs
  - Non-recurring (i.e., resources needs are one-time or other finite time period)
  - Recurring (i.e., resource needs will be ongoing)

- Resource Acquisition Strategy
  - Current Base (i.e., funded from within existing resource base through reallocation and/or efficiency savings)
  - Requires New Resources (i.e., funded through incremental new resources – e.g., state, tuition, private, self-generated)

With regard to the operating and capital resources required, an "X" is placed in the column when there is an identified need for new or re-deployed resources above current levels. With regard to the last component – the resource acquisition strategy – it should be emphasized that for strategic initiatives requiring new resources, the timeframe for initial funding of these initiatives would be viewed as "non-recurring" until results justified permanent funding.

Below the high-level summary for each initiative is a preliminary estimate of the costs and benefits of the initiative. These estimates will be refined in the planning stages of implementing each initiative, but in their current state based on the best available estimates provide a quantification of value which supports pursuing the initiatives.

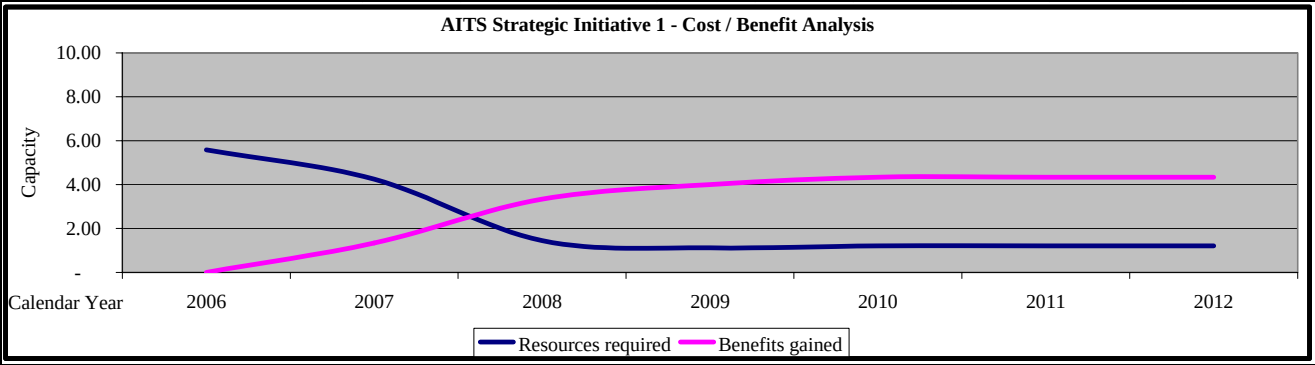
Below this resource summary for each initiative is a listing of tangible and strategic/intangible benefits respective to each initiative. It is important to note that the benefits of the initiatives are in some instances difficult to quantify due to the nature of the benefits derived. For instance, a reduction in cycle time or effort for software development or maintenance is a somewhat objective measure to

quantify, whereas improved customer service to the University, while a very important benefit, is difficult to determine an objective quantifiable value.

EXHIBIT 1
RESOURCE PLAN OUTLINE FOR AITS STRATEGIC GOAL #1

AITS will identify opportunities to implement best practices to ensure high value, cost effective information technology services to University administrative and academic units.

Strategic Thrusts	Operating Resources Required				Capital Resources Required	Timeframe		Resource Acquisition Strategy	
	Staff	Technology	Training & Education	Other Operating		Non Recurring	Recurring	Funded Through Current Base	Requires New Resources
1.1 AITS will implement the Information Technology Infrastructure Library (ITIL) as a framework for best practices in IT operations	X	X	X				X	X	
1.2 Implement the Capability Maturity Model Integration (CMMI) as a process improvement approach that provides organizations like AITS with the essential elements of effective software development and integration processes.	X	X	X				X	X	

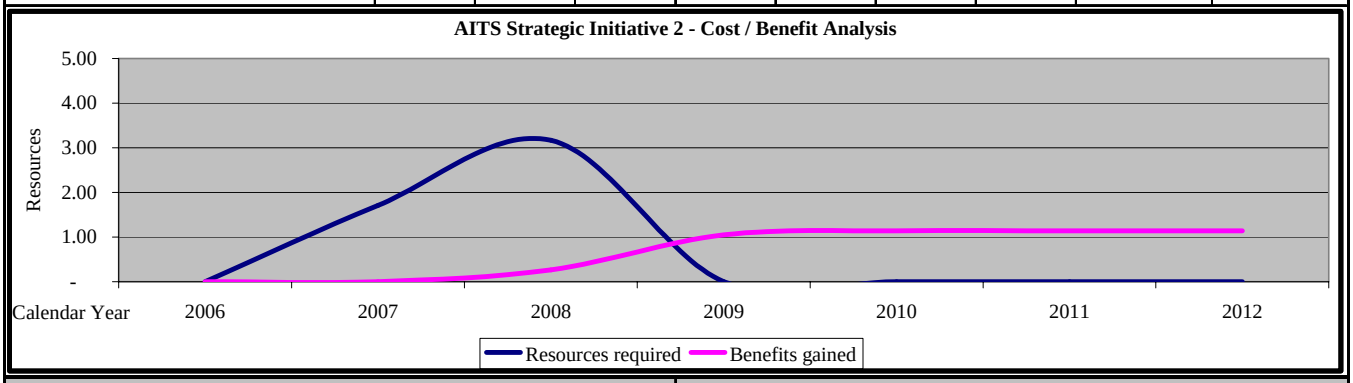


Tangible Benefits for Strategic Initiative 1	Strategic/Intangible Benefits for Strategic Initiative 1
• Increased reliability and availability of services • Reduced deployment, maintenance and integration costs • Increased re-use of IT software components which will shorten development cycles • More effective and efficient utilization of infrastructure • Permits and motivates competitive analysis and year over year trending • Minimize or eliminate unnecessary shifts in technology • Reduction in data tracking redundancy by utilizing a single system of record for all project work. • Improved prioritization of work reducing the opportunity cost of not focusing on the most strategic or valuable use of resources.	• Enables expectation fulfillment and accountability from a client centric point of view • Provides speed, flexibility and control over provisioning, making changes and resource scaling • Enables rapid response to changing service needs derived from light weight overhead • Enhanced security, risk mitigation and business continuity • Greater interdependence and cross campus cooperation • Avoided risk associated with outgrowing of existing facilities, obsolescence and deferred maintenance

EXHIBIT 2
RESOURCE PLAN OUTLINE FOR AITS STRATEGIC GOAL #2

Develop and expand our IT system infrastructure to facilitate and improve access to enterprise data through the use of Operational Data Stores.

Strategic Thrusts	Operating Resources Required				Capital Resources Required	Timeframe		Resource Acquisition Strategy	
	Staff	Technology	Training & Education	Other Operating		Non Recurring	Recurring	Funded Through Current Base	Requires New Resources
2.1 Develop the data and infrastructure standards, the implementation plan, and build Operational Data Stores.	X	X	X			X		X	

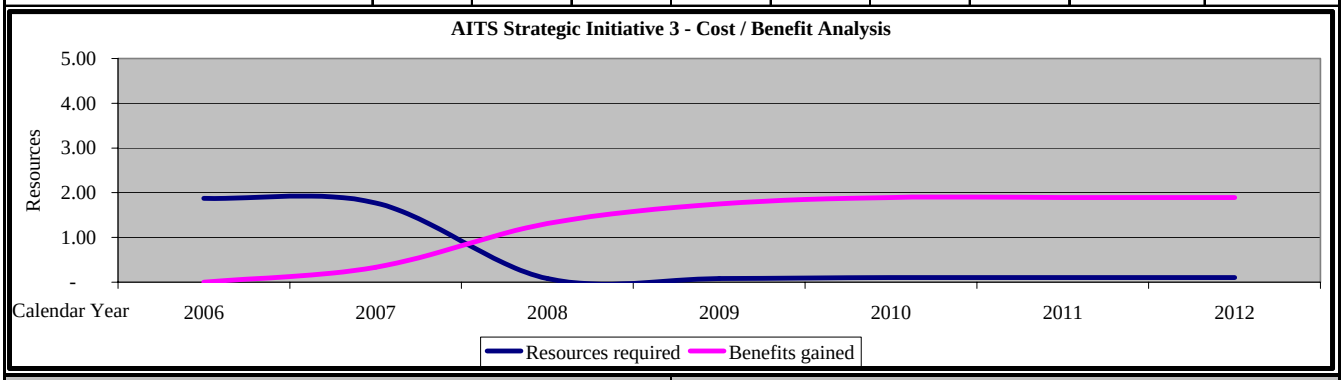


Tangible Benefits for Strategic Initiative 2	Strategic/Intangible Benefits for Strategic Initiative 2
• Reduce data redundancy and duplication of data services • Allow for the capability of real-time operational reporting which currently isn't available for all functions • Shorter development cycle for enterprise reports. • Reduction in maintenance effort for reports due to the separation of the reporting layer from the transactional layer. • Risk avoidance of the potentail disruption of reports and batch processes that run against REPTPROD	• Improved operational reporting through the use of operational data stores specifically designed for reports • Reduce the load on existing ERP system which is currently supporting some of the operational reporting functions during high volume periods

EXHIBIT 3
RESOURCE PLAN OUTLINE FOR AITS STRATEGIC GOAL #3

Develop and expand our IT system infrastructure to facilitate and improve access to enterprise data and administrative functions.

Strategic Thrusts	Operating Resources Required				Capital Resources Required	Timeframe		Resource Acquisition Strategy	
	Staff	Technology	Training & Education	Other Operating		Non Recurring	Recurring	Funded Through Current Base	Requires New Resources
3.1 Enhance the AITS Enterprise Application Integration site to provide broader and more complete documentation of reusable business message objects and system services.	X	X	X			X		X	
3.2 Develop standards and criteria for applications that will offer functions via web services.	X	X	X			X		X	



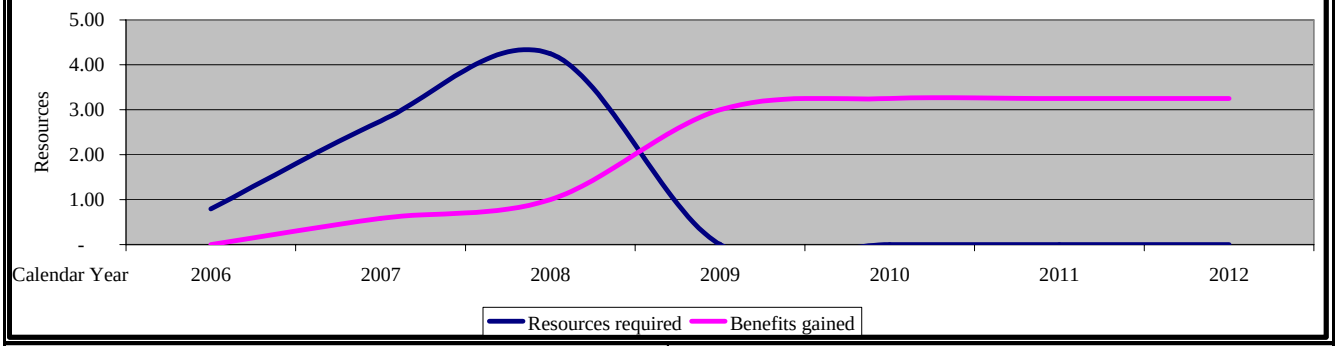
Tangible Benefits for Strategic Initiative 3	Strategic/Intangible Benefits for Strategic Initiative 3
• Reduce data redundancy and duplication of data services • Use mechanisms to quickly provide new data access or system services with reduced development costs • Allow for reuse of services to the university community as new services are developed • Reduce the impact of upgrades due to the loosely coupling of systems and services in the enterprise	• Allow departments to readily see descriptions of data and services are available and how to incorporate them into their systems • Architecture will provide technology independence which will allow systems using a variety of technologies to use the services through common protocols • Increase the ability for departments to access data stored in ERP system • Reduced security risk due to separations of services and independence of systems.

EXHIBIT 4
RESOURCE PLAN OUTLINE FOR AITS STRATEGIC GOAL #4

AITS shall improve service delivery capabilities, enhance service delivery management, implement improved metrics to demonstrate results, and create new and effective forums for client communications in order to become widely recognized as an IT service provider of world class excellence.

Strategic Thrusts	Operating Resources Required				Capital Resources Required	Timeframe		Resource Acquisition Strategy	
	Staff	Technology	Training & Education	Other Operating		Non Recurring	Recurring	Funded Through Current Base	Requires New Resources
4.1 Improving Service Delivery Capabilities - Working with Campus units to extend access to innovative solutions developed by individual departments.	X	X					X	X	
4.2 Improving Operational Capabilities - Improved Service Desk Capabilities and Enhancing Service Delivery Management & Improved Metrics	X	X					X	X	
4.3 Identify opportunities for UA and campus IT infrastructure and service collaboration	X	X			X		X	X	X

AITS Strategic Initiative 4 - Cost / Benefit Analysis



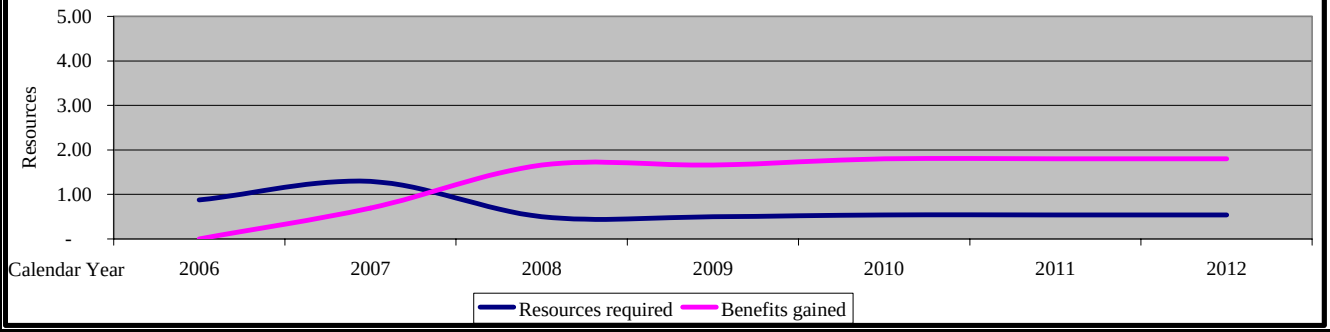
Tangible Benefits for Strategic Initiative 4	Strategic/Intangible Benefits for Strategic Initiative 4
- Lower per unit costs of data center operations where economies of scale will allow fewer personnel and larger pools of servers and storage capacity to serve central administration, campus and college unit needs - Lower per unit help desk cost due to increased merging of help desks - Lower cost of system development and integration due to increased use of common standards and technologies	- More reliable security administration that consistently follows University security policies due to common standards and support for security - Better customer help desk service due to fewer desks to contact and capability of being open more hours - Better measurement of quality of service levels due to collection and reporting of metrics and regular customer surveys

EXHIBIT 5
RESOURCE PLAN OUTLINE FOR AITS STRATEGIC GOAL #5

AITS will work in partnership with University campuses, units, and related organizations to ensure the resources required to meet the administrative information needs of the University are available.

Strategic Thrusts	Operating Resources Required				Capital Resources Required	Timeframe		Resource Acquisition Strategy	
	Staff	Technology	Training & Education	Other Operating		Non Recurring	Recurring	Funded Through Current Base	Requires New Resources
5.1 Assess the base resources required to achieve identified strategic goals.	X					X		X	
5.2 Based on financial plans and required competencies, examine the relationship between objectives and available staff. Develop staffing and professional development plans to meet both current and future business needs (translate organizational goals into appropriate resources).	X		X			X		X	
5.3 Develop and implement a talent management business model to optimize attraction, retention, development of key talents, career progression, and succession planning – to ensure continued available of the right person, for the right project, at the right time.	X	X	X		X		X	X	
5.4 Explore opportunities to collaborate with other VPA units, and identify where common approaches to talent management and potential cost- and resource-sharing may exist.	X		X				X	X	

AITS Strategic Initiative 5 - Cost / Benefit Analysis



Tangible Benefits for Strategic Initiative 5	Strategic/Intangible Benefits for Strategic Initiative 5
- Improvements in cycle time, leading to reduced cost per initiative. - Reduced turnover and, therefore, HR administration costs. - Improved service, leading to reduced customer support costs. - Increased employee satisfaction, leading to higher productivity levels. - Increased knowledge and skills base, leading to higher quality solutions. - Aligning how company functions tie into talent management ensure there is no duplication of initiatives and efforts.	- A more holistic approach within the organization – integrating recruiting, orientation/training, performance management, leadership development, & succession planning provides continuity to processes and allows the organization to identify gaps, determine what other resources and tools are needed, and validate continuity and consistency. - Means for ensuring quality and consistency in available resources (addresses gaps in competency levels); offers a deeper reservoir of successors at every level. - Employees are supported in maximizing their full potential as well as the organization's intellectual capital.

SECTION 4: MONITORING AND EVALUATION OF UNIVERSITY PLAN IMPLEMENTATION AND RESULTS

A strategic plan can only be viewed as excellent if it is executed effectively and achieves the desired results set forth in the plan. AITS will be extraordinarily vigilant in monitoring implementation efforts related to this strategic plan, reporting results, and taking corrective actions as necessary to ensure success. Monitoring, evaluation, and feedback will be regular and ongoing in concert with the University's overall plan implementation.

An important part of this effort is the development of relevant, meaningful metrics of progress toward AITS' strategic plan execution. While this is a complex endeavor for colleges and universities generally given higher education's often diffuse and less tangible outcomes, it is especially so for administrative service providers within these institutions. There are multiple dimensions of administrative performance (e.g., service levels, cost, customer satisfaction) and data to benchmark performance levels and effectiveness are very limited. At the same time, AITS believes that this complexity and lack of established data sources should not be viewed as an insurmountable barrier to the development of performance metrics.

Exhibits 6 through 10 outline an initial set of performance metrics proposed to monitor and evaluate AITS' progress in executing this plan. The metrics selected are directly linked to each of the four AITS strategic goals and related thrusts and are primarily output- or outcome-focused. These metrics also reflect the themes of cost-effectiveness, customer service, and customer satisfaction central to AITS' mission. In a few instances, no performance metrics are yet identified.

Initially, AITS' performance measurement activities will focus on internal benchmarking given the lack of established comparative data sources in these areas. However, AITS will also work with University peer institutions and national associations (e.g., CIC, AAUDE) to explore appropriate opportunities for the development and refinement of meaningful, externally-focused benchmarks (e.g., customer satisfaction, administrative productivity ratios) for the purpose of enhancing the University's competitive position.

EXHIBIT 6
PERFORMANCE METRICS TO ASSESS PROGRESS TOWARD AITS STRATEGIC GOAL #1

AITS will identify opportunities to implement best practices to ensure high value, cost effective information technology services to University administrative and academic units.

Strategic Thrusts	Performance Metrics	Metric Type
1.1 AITS will implement the Information Technology Infrastructure Library (ITIL) as a framework for best practices in IT operations	Count of process developed and implemented. Implementation of metric monitoring processes.	Outcome Outcome
1.2 Implement the Capability Maturity Model Integration (CMMI) as a process improvement approach that provides organizations like AITS with the essential elements of effective software development and integration processes.	Progress toward fully developed system development lifecycle Implementation of PAPM tool Count of processes developed and implemented	Outcome Outcome Outcome

EXHIBIT 7
PERFORMANCE METRICS TO ASSESS PROGRESS TOWARD AITS STRATEGIC GOAL #2

Develop and expand our information technology system infrastructure to facilitate and improve access to enterprise data through the use of Operational Data Stores.

Strategic Thrusts	Performance Metrics	Metric Type
2.1 Develop the data and infrastructure standards, the implementation plan, and build Operational Data Stores.	Data and infrastructure standards developed. Operational data store project implemented. Actual vs. planned completion time. Actual vs. planned budget.	Outcome Outcome Outcome Outcome

EXHIBIT 8
PERFORMANCE METRICS TO ASSESS PROGRESS TOWARD AITS STRATEGIC GOAL #3

Develop and expand our information technology system infrastructure to facilitate and improve access to enterprise data.

Strategic Thrusts	Performance Metrics	Metric Type
3.1 Enhance the AITS Enterprise Application Integration site to provide broader and more complete documentation of reusable business message objects and system services.	EAI site improvements identified to provide better documentation of message objects and services. Employee satisfaction survey. Effectiveness	Outcome Process Process
3.2 Develop standards and criteria for applications that will offer functions via web services.	Standards and criteria established and implemented	Outcome

EXHIBIT 9
PERFORMANCE METRICS TO ASSESS PROGRESS TOWARD AITS STRATEGIC GOAL #4

AITS shall improve service delivery capabilities, enhance service delivery management, implement improved metrics to demonstrate results, and create new and effective forums for client communications in order to

become widely recognized as an information technology service provider of world class excellence.

Strategic Thrusts	Performance Metrics	Metric Type
4.1 Improving Service Delivery Capabilities - Working with Campus units to extend access to innovative solutions developed by individual departments.	Locally developed applications migratrated to be enterprise applications	Outcome
4.2 Improving Operational Capabilities - Improved Service Desk Capabilities and Enhancing Service Delivery Management & Improved Metrics	Publication of metrics Improved performance based on the published metrics	Outcome Outcome
4.3 Identify opportunities for UA and campus IT infrastructure and service collaboration	Instances of collaborative processes or solutions	Outcome

EXHIBIT 10
PERFORMANCE METRICS TO ASSESS PROGRESS TOWARD AITS STRATEGIC GOAL #5

AITS will work in partnership with University campuses, units, and related organizations to ensure the resources required to meet the administrative information needs of the University are available.

Strategic Thrusts	Performance Metrics	Metric Type
5.1 Assess the base resources required to achieve identified strategic goals.	Base resources identified	Process
5.2 Based on financial plans and required competencies, examine the relationship between objectives and available staff. Develop staffing and professional development plans to meet both current and future business needs (translate organizational goals into appropriate resources).	% of staffing and development plans developed	Process
5.3 Develop and implement a talent management business model to optimize attraction, retention, development of key talents, career progression, and succession planning – to ensure continued available of the right person, for the right project, at the right time.	Staff participation in talent management program. Career and succession planning identified. Staff participation in department mentoring program.	Outcome Process Process
5.4 Explore opportunities to collaborate with other VPA units, and identify where common approaches to talent management and potential cost- and resource-sharing may exist.		

1. APPENDIX - SWOT

STRENGTHS – internal attributes of organization which contribute to organizations success

- Staff strengths – staff exhibits the following characteristics:
  - Proven ability to deliver with quality, on-time and on-budget
  - Dedicated and knowledgeable
  - Flexible and able / willing to adapt
  - Unique and gifted ability to listen and work together
  - Willing to accept responsibility and be accountable
  - Willing to share ideas outside one's area of expertise
  - Good stewards of the University's resources
  - Knowledgeable about the University's business, as well as about information technology
  - Strong working relationships with user community and with our vendors
  - Strong problem-solving ability
  - High level of transparency about what AITS does – ITPC projects, work requests, routine work, etc.

- Utilization of technology
  - Server architectures simplified and made consistent to enable efficient support of a large numbers of servers.
  - Vendor software is kept up-to-date and current.
  - Equipment is current at the present time and uses proven technologies.
  - Systems have a high level of built-in redundancy due to architecture used.

- History of success
  - Completed an ERP that consolidated multiple applications and simplified the software environment. That ERP provides a platform to build upon. It requires less effort to maintain and upgrade as compared to a set of disparate and duplicative systems.

- Internal processes are sound and receive positive recognition
  - Good processes for change control, incident management and deployments.
  - Adherence to standards.
  - External auditors labeled AITS as an "exemplary site" from standpoint of security.
  - Internal auditors forwarding AITS templates for Application Support system documentation and BCP to several other University of Illinois organizations as a model for system support and BCP

WEAKNESSES – Internal factors which diminish the organizations ability to deliver

- Service Level Agreements (SLA's)
  - Inconsistency among the SLA's for a particular service results in additional costs to track the details of each agreement, to generate chargeback, to research and justify the charges, etc.
  - There is a perception that the SLA's may cause friction with the customers, because they are time consuming to develop and monitor.

- Processes and procedures need to be continually improved or developed
  - Need to update and document key information technology processes, such as Systems Development Life Cycle, Configuration Management, Release Management, etc.
  - Need overall prioritization mechanism for distributing AITS resources across work coming in through various channels, such as work requests, production support activities, problem ticket reports, and ITPC projects.
  - Need an effective process to define testing scenarios to ensure that problems are identified and resolved prior to production implementation.
  - Need to establish and follow consistent good practices across all information technology areas.

- Training
  - Need continued training, particularly in the areas of the new technology directions.
  - Need to allocate more resources for staff development to address deficit of training that occurred during the UI-Integrate project.

- Organizational
  - Tendency to work in silos across and within various Information Systems units.
  - Functions that could benefit from centralization (e.g. information security practices) are established redundantly, and in some cases inconsistently, across Information Systems units.
  - Don't do enough to celebrate AITS successes and identify the value that AITS provides to the University. AITS has been working in a focused, determined manner and has accomplished a tremendous amount of work for University clients, but AITS staff doesn't necessarily identify with the overall value that has been provided to the University through their work.

- Application Redundancy
  - Redundant and inconsistent approaches to common features result in more effort to build and maintain applications, and increased learning curve and complexity for individuals who use multiple approaches. Some examples are workflow (routing and approval), security maintenance, authentication and authorization.

OPPORTUNITIES – external conditions that could help the organization grow

- Perception / publicity
  - Communicate externally about AITS accomplishments – share successes as an information technology leader, thereby generating good publicity for the University.

- Vendor relations
  - Build on partnership with key vendors. In a number of cases AITS is more than just a customer and has directly contributed to improvements in vendor products through beta testing, identifying and assisting in resolution of problems, contributing to design of future enhancements, etc.
  - Effectively use AITS participation in vendor enhancement activities to drive toward solutions that address the University's current and future needs.

- Administrative support or streamlining
  - Leverage existing administrative systems to position the University for an administrative leadership role for consortia that the University may participate in.
  - Provide leadership for University information technology initiatives that cross institutional boundaries.
  - Leverage good processes, procedures and systems that are in place to more broadly and more cost effectively provide information technology services across the University.
  - Provide common support services, such as email, discussion services, etc., across the University Administration.
  - Take an active leadership role in eliminating redundant or improving ineffective administrative processes.

- Open source
  - Leverage OpenEAI and open source experience and expertise.

- Support University strategic efforts

- Provide information for strategic decision-making, rather than simply providing data.
- Align information technology project efforts with University strategies.
- Leverage content from the new Project and Application Portfolio Management system to provide management feedback on alignment of projects with the University's goals.

THREATS – external factors that may be harmful to the organization

- Reduced funding
  - Diminished ability to maintain up-to-date equipment, software and software maintenance as costs continue to rise and the administrative budget continues to tighten.
  - There is limited funding for productivity tools (e.g. Oracle inquiry tool, XML tool, robust reporting tool) that would equip people to do their job more efficiently.
  - Administrative data centers are aging and significant funding is needed to bring them up-to-date.

- Service Level Agreements (SLA's)
  - There has been a significant time lag between the start of providing a service and having the SLA signed and funding received.

- Customer focus / service
  - A funding model based on charge-backs may be at odds with having a vision of being perceived as a service provider.
  - AITS, as a department, does not market itself well to the University community. Many faculty, staff, and students, do not know what the unit does.

- Evolving technology
  - Ever evolving technology is a threat in a fiscally constrained environment. The ongoing pressure to enhance and upgrade technology to be the latest and greatest can be at odds with keeping costs low.
  - Difficult to respond quickly to changing market and economic forces.

- Outsourcing
  - Outsourcing opportunities must be handled judiciously to ensure long term effective and responsive service is not sacrificed for short term cost savings.