

THE UNIVERSITY of TENNESSEE   
CHATTANOOGA

**Information Technology Master Plan**

May 6, 2011



Prepared by:



## INFORMATION TECHNOLOGY MASTER PLAN

### Table of Contents

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Executive Summary of the IT Master Plan.....	4
Overview of the IT Master Plan .....	7
University of Tennessee, Chattanooga Strategic Plan Priorities.....	8
IT Mission and Guiding Principles .....	9
Strategic Themes and Initiatives.....	10
IT Governance Initiatives .....	13
Initiative #1 – IT Governance Model.....	14
IT Organization Initiatives .....	17
Initiative #2 – Technology Leader .....	18
Initiative #3 – Technology Community Organization.....	20
IT Budgeting Initiatives .....	23
Initiative #4 - Technology Purchases/Intake Process.....	24
Initiative #5 – Student Technology Fee Budgeting Process .....	26
Initiative #6 – Technology Reassessment/Refresh .....	27
Initiative #7 –Technology Spending and Reporting .....	29
IT Services and Infrastructure .....	30
Initiative #8 – Enhance Customer Care.....	31
Initiative #9 – IT Service Catalog .....	34
Initiative #10 – Network Access Control.....	36
Initiative #11 – Define the Next Steps for Banner .....	38
Initiative #12 – Technology Asset Management.....	39
Initiative #13 – Computer Lab Management .....	41
Initiative #14 – Network Convergence and Architecture.....	42
Initiative #15 – Annual Systems Review – Looking to the Future.....	44
IT Communications Initiatives.....	46
Initiative #17 – Technology News and Updates.....	49
Initiative #18 – Systems Dashboard .....	51
Initiative #19 – Website Redesign.....	53

IT Training Initiatives..... 55

    Initiative #20 – Technology Community Training ..... 56

    Initiative #21 – UTC Employee Training ..... 58

Appendix #1: Sample Communications Scorecard ..... 62

Appendix #2: Sample System Status Dashboard from Case Western Reserve University ..... 63

Appendix #3: Suggested IT Service Model..... 64

Appendix #4: IT Governance Model and Process Flow..... 66

Appendix #5: Strategic Issues from IT Assessment – 9/29/2010..... 69

Appendix #6: Information Technology Refresh Standards ..... 71

Appendix #7: Purchasing Process Flow for Technology..... 73

Appendix #8: UTC IT Master Plan Initiatives Matrix ..... 74

Appendix #9: UTC Assessment Committee and Task Force for IT Master Plan..... 76

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Three	February 28, 2011	Final edits and updates from IT Strategic Planning Task Force
Four	March 25, 2011	Onsite review (March) with IT Implementation Task Force and Executive Sponsors
Final	May 6, 2011	Review and Approval from Executive Sponsors

*This section provides an executive summary of the plan and is intended to convey how the Plan addresses issues and challenges facing UTC. It includes a description of the planning process, sets the tone for strategic themes and initiatives presented in the Plan, and relates how this Plan sets a course for sustainable technology planning at the University.*

## **Executive Summary of the IT Master Plan**

The following document presents the University of Tennessee – Chattanooga’s (UTC) Information Technology (IT) Master Plan. This Plan is the culmination of a comprehensive technology assessment and planning process which has included input from over 150 University stakeholders.

Drafted by a collaborative team of University leaders representing academic, administrative, and student interests, this Plan is intended to be adaptive and flexible in order to balance the diverse technology needs of a growing University. The Plan does this by creating new processes for managing technology that will improve services and systems for the UTC community. The Plan seeks to create operational synergy by creating new processes and supporting the people that deliver technology services at the University. This Plan also establishes a foundation for sustainable technology planning at the University.

## **Project Background**

This project was commissioned by two executive leaders at the University: Dr. Richard Brown, Vice Chancellor for Finance and Administration, and Dr. Phillip Oldham, Provost and Vice Chancellor for Academic Affairs. Their intention in directing this effort is that effective use of information technology is at the core of the University’s ability to meet strategic objectives, and that UTC needs to invest its efforts and resources in the most efficient manner possible to set forth an effective path that will enable the University to address academic, administrative, and operational technology needs within a unified planning framework.

In 2010 BerryDunn began a two-part engagement with UTC to undertake an objective IT assessment and develop an IT Master Plan. The Technology Assessment, issued in September 2010, completed Phase One. The Assessment identified Strategic Issues that were vetted with faculty, staff, and management before being modified and updated. In addition, UTC identified three “aspirant peer institutions”: University of North Carolina-Charlotte, Tennessee Tech, and the College of Charleston. BerryDunn conducted research and interviewed the respective technology leader at each of these schools and issued a Benchmarking Report of its findings. Both the Technology Assessment and the Benchmarking Report were used to support the Plan.

Phase Two began in October of 2010 with the assignment of a core IT Implementation Task Force from the University to work with BerryDunn in developing this Plan. This core team (also referred to herein as the “Task Force”) was comprised of members of University Relations, Deans, Faculty, Instructional Technology, ITD, Distance Learning, and the UT System Office. The team was chaired by the Dean of the Library. Please see Appendix #9.

### Defining the Plan's Key Elements

The Assessment identified that a change in mindset and approach was needed with regards to the direction of information technology at UTC. New roles needed to be established, practices and policies defined, and some new services created.

The University sought to establish a customer-centric approach for the delivery and management of information technology services in a manner that would gain synergy across the UTC campus wide technology community. In its initial work, the team considered the mission and strategic priorities of the University, issues identified in the assessment, and principles that should guide IT decision making. BerryDunn and the planning team established six strategic areas, including Governance, Budgeting, Services, Organization, Communication, and Training. These strategic areas provided the framework for the 21 IT initiatives set forth by the plan.

This Plan takes into account a “New Normal.” IT resources and expenditures are likely to remain steady for the foreseeable future while the demands for technology services will continue to grow. In concert with establishing University-wide principles for guiding IT decision-making and emphasizing increased communication and coordination of IT efforts, this Plan seeks to optimize the University’s resources and leverage its strengths to meet growing demands while recognizing the fiscal realities that UTC will face over the coming years.

### Three Initiatives Provide the Foundation

Although all the initiatives presented in the Plan are important, the following three must be addressed first as they will serve as the foundation for future progress:

- 1. Establish an IT Governance structure that represents the University’s technology community and provides a framework for a sustainable IT strategic planning process.**

IT governance describes the process by which stakeholders have input into priority setting, risk assessment, policy setting, and decision making processes. IT governance is distinct from day to day information technology management. It is imperative that IT governance effectively encompass academic, administrative, and operational areas of the University. The Plan includes a matrix of accountability and emphasizes transparency of process.

This Plan puts forth a new model for IT governance that enhances communication, places technology customers at the center of decision-making, sets technical standards, and aligns decisions with the University’s strategic direction through the creation of two new committees that will serve distinct roles.

First, the IT Steering Committee (ITSC) will be responsible for the overall direction of IT at UTC. Second, the Technical Review Board (TRB) will be charged with the creation and maintenance of consistent technology standards for the entire UTC community. The new model will also establish “Participate IT.” This open forum concept will allow for the entire University community to have input into the decision-making process.

**2. Create a new role for technology leadership at the University that is widely visible to the University community.**

This position will have overall responsibility for technology leadership at UTC and will provide direction on technology decisions. The Technology Leader will be responsible for maintaining communication and collaboration with all the IT partners within the UTC technology community.

**3. Develop and communicate a comprehensive IT Service Catalog that defines and clarifies the roles and responsibilities of ITD, Partner IT, and OIT/UT SYSTEM for the University of Tennessee at Chattanooga.**

Components of IT services include infrastructure, software, hardware, staffing and customer support. The elements enable people to utilize technology for learning, management, and operations. In order to support and deliver IT services effectively, the University must equip people with the right information and adequate resources and tools.

The Plan seeks to define the roles and responsibilities of the entire UTC technology community to improve the delivery and effectiveness of IT services. The Plan does this by establishing an initiative to define who provides the services today, and increasing awareness of where services are best housed both within the University and externally. External providers may include System partners or cloud computing resources.

### **Getting Started with the Plan**

Successfully implementing the IT Master Plan will require thoughtful execution of a collaborative process that targets outcomes supported by the entire campus community. Gaining and maintaining the support of the campus will require clear, consistent, and accurate communication on behalf of University leadership throughout the implementation process. Throughout development of this Plan, UTC has undertaken a collaborative approach to technology planning. This has provided a framework for input from academic and administrative stakeholders and campus leadership into the decision making process around technology at UTC.

The process of hiring a new technology leader at UTC could take several months. However, implementing the recommended IT Governance initiative should begin immediately and be the top priority in preparing for the onboarding of a new technology executive. IT Governance, in particular, should not rely upon individuals. This will provide the framework to support many of the other IT changes that have been identified in the Plan.

### **Acknowledgements**

BerryDunn would like to extend a special thank you to the IT Implementation Task Force that met for many hours over the course of months to push and pull this document into a Plan that seeks to align UTC's technology priorities and demands with its overall strategic direction. Their tireless efforts provide the foundation for the next steps in this process.

## Overview of the IT Master Plan

The Plan contains various elements that seek to inform the strategic direction that technology will play in the coming years at UTC. The following descriptions provide the reader with a basic understanding of the structure and format of the Plan.

- **University of Tennessee, Chattanooga Strategic Plan Priorities**

The UTC Strategic Plan (2008 to 2013) identifies four main strategic initiatives. In order to ensure that the initiatives set forth in the Technology Master Plan support the overarching goals of the University, these initiatives were considered throughout the planning process.

- **IT Mission and Guiding Principles**

A mission statement provides an organization with a fundamental sense of purpose and provides guidance and direction for all actions and decisions that the organization undertakes. Accordingly, the IT mission statement at UTC is an essential component of the IT Master Plan.

- **Strategic Themes and Initiatives of the Plan**

The Plan contains initiatives that were developed to address the technology issues identified as part of the Current Environment Assessment. The initiatives are designed to facilitate and track the progress of technology governance, services, and communications over the next five years. During this time of change, the Plan should serve as a “living document” and will be an essential tool as the University moves forward in aligning its technology projects with the University’s overall strategic plan.

- **Communicating, Implementing, and Sustaining the Plan**

This section of the Plan describes how the UTC Strategic Technology Planning function will be sustained. It specifically describes important aspects of key roles and committees with respect to the technology governance structure and process, and presents the importance of a unified campus wide communications strategy and marketing plan with respect to information technology.

- **Appendices**

The Plan contains a number of appendices that were created to support the technology planning initiatives. Appendices include, but are not limited to, a listing of the Strategic Issues from the IT Assessment, the Suggested IT Service Model, the IT Governance Model, and the IT Master Plan Initiatives Matrix.

## University of Tennessee, Chattanooga Strategic Plan Priorities

*Technology is both a means and an end of UTC educational programs. It is a “means” because we will employ the latest proven technologies to achieve our strategic objectives in teaching and learning, research, community service, and economic development. It is an “end” because we will prepare students who will pursue professional careers in emerging technologies that hold the promise for improving lives and enhancing productivity in the 21<sup>st</sup> Century.*

– *The Strategic Planning Report of the University of Tennessee at Chattanooga 2008 - 2013*

The UTC Strategic Plan (2008 to 2013) identifies four main strategic initiatives. In order to ensure that the initiatives set forth in the Technology Master Plan support the overarching goals of the University, these initiatives were considered throughout the planning process.

### **1. Partnerships for Students: Teaching and Learning**

Create partnerships that provide distinctive educational experiences for students both in the classroom and beyond, lead to meaningful engagement between students and all other members of the University community, and enhance students’ commitment to The University of Tennessee at Chattanooga.

### **2. Partnerships for Education and Research**

Create external educational and research partnerships that take advantage of UTC’s distinctive programs, faculty expertise, and the resources of the Chattanooga metropolitan region.

### **3. Partnerships for Diversity**

Embrace, celebrate, and sustain a campus community that is inclusive of diversity in all its forms—people, ideas, and cultures.

### **4. Enabling Partnerships**

Create a learning, work, and community environment by enabling and supporting the University’s strategic direction and mission through efficient use of human, fiscal, physical, and communication resources.

## IT Mission and Guiding Principles

A mission statement provides an organization with a fundamental sense of purpose and provides guidance and direction for all actions and decisions that the organization undertakes. Accordingly, the IT mission statement at UTC is an essential component of the IT Master Plan.

### IT Mission<sup>1</sup>

*To provide technology services that support the University of Tennessee at Chattanooga as an engaged, metropolitan university. All IT professionals are committed to supporting excellence in teaching, research, and community service, and are dedicated to meeting the diverse needs of the region through strategic partnerships and community involvement.*

### IT Guiding Principles

During the planning process, the IT Strategic Planning Task Force identified a set of principles to guide information technology at UTC. These principles were predominant in the thinking and work of the team and are identified below:

- Develop a customer driven service model for IT services.
- Establish partnerships within the campus community and beyond.
- Direct IT resources strategically.
- Value the efficiency of standardization across overall operations, but support autonomy within departments, where it is needed to meet unique needs at UTC.
- Use assessment and evaluation to gauge institutional effectiveness of IT services.
- Demonstrate transparency and effective communications in IT governance and operations.
- Implement effective information security practices that balance access, control, and flexibility.

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<sup>1</sup> This mission statement was established by UTC internal planning in January 2010.

## Strategic Themes and Initiatives

The Current Environment Assessment (September 2010) identified 18 strategic technology issues. BerryDunn worked with UTC to develop an IT Master Plan that comprises of strategic initiatives that address these issues. Although the Master Plan does not correlate issues to initiatives in a “one to one” manner, it is intended that all strategic issues be addressed in the course of completing the Plan. Please see Appendix #5 for a complete listing of issues.

The initiatives are designed to facilitate and track the progress of technology governance, services, and communications over the next five years. During this time of change at UTC the Plan should serve as a “living document” and will be an essential tool as the University moves forward in aligning its people, processes and systems with the University’s strategic plan.

Each initiative contains the following information:

- A brief overview of the initiative and background information supporting its creation.
- When the initiative should be introduced and a general timeframe for initial completion.
- The identification of an Initiative Owner who will have primary responsibility for carrying this effort forward and will be accountable to the University at-large.
- A planning estimate of the costs and impact on budget that this initiative will have.
- An overview of key action items required to implement each initiative.
- An overview of the anticipated benefits for each initiative identified.
- Possible metrics for evaluating and assessing the effectiveness of the initiative.
- Where applicable, a benchmarking consideration has been provided, either from peer research that BerryDunn conducted as part of this engagement, or other research BerryDunn has conducted as part of this and other planning efforts.

Please note that the costs and timelines presented in the strategic initiatives have been estimated based on experience with similar strategic planning projects, research conducted for this project, consideration of best practices, and feedback from the University. Estimates are intended to be used for planning purposes, and do not reflect the formal selection of specific systems, software, or hardware. Please refer to Appendix #8 – Initiative Matrix.

The Initiative Matrix presents a summary of the recommendations that have been presented in this Plan. It includes: the initiative, an initiative owner, an implementation timeframe, and associated budget estimates over a five-year planning horizon. The timeframe and costs presented are planning estimates and may vary based upon a number of factors, including the University budget projections, competing technologies, availability of support resources, and the specific tactical approach used to undertake an initiative.

Category	#	Initiative Title	Initiative Description
IT Governance	1	IT Governance Model	Establish a new IT governance model that identifies decision making procedures. This should include a high-level IT Steering Committee (ITSC), a more “hands-on” Technology Review Board (TRB), and Participate IT.
IT Organization	2	Technology Leader	Establish and approve a new Technology Leader role at UTC that will provide leadership and direction for the entire technology community.
	3	Technology Organization	Establish a technology organizational structure that supports a functional, collaborative, and dynamic technology community at the University.
IT Budgeting	4	Technology Purchases/Intake Process	In concert with the new IT Governance initiative, 1) Establish a process that allows IT purchases to be reported to the new UTC “Technology Leader.” 2) Establish agreed upon thresholds across UTC for review of high-impact technology purchases by ITSC/TRB.
	5	Student Technology Fee Budgeting Process	Conduct review of the current usage and allocation of the Student Technology Fee at UTC.
	6	Technology Reassessment/Refresh	Establish a UTC technology assessment and refresh program. This should include computers, network devices, servers, and other peripherals that are managed by UTC.
	7	Technology Spending and Reporting	Establish standard reporting for technology spending.
IT Services and Infrastructure	8	Enhance Customer Care	Enhance customer care and establish a single point of contact for Help Desk intake and management.
	9	IT Service Catalog	Establish an IT Service Catalog at UTC.
	10	Network Access	Establish network access that is non-intrusive to end-users and easy to use. This includes network authentication, practical security parameters, and standard protocols for addressing maintenance updates.
	11	Next Steps for Banner	Institutionalize Banner operations and create a sustainable model at the University.
	12	Technology Asset Management	Develop a unified tracking system for computers, other technology devices, and software applications at UTC.

Category	#	Initiative Title	Initiative Description
	13	Computer Lab Management	Conduct a full campus assessment of current Computer Labs to identify opportunities for consolidation and streamlining.
	14	Network Convergence and Architecture	A three year tactical plan should be created to plan for changes to how UTC deploys and manages its network infrastructure.
	15	Annual Systems Review – Looking to the Future	Proactively plan for new technology and conduct annual systems reviews.
IT Communications	16	Promote a Culture of Continuous Improvement	Establish University-wide standards for assessing and measuring satisfaction with and seeking input on IT services.
	17	Technology News and Updates	Establish a clear and consistent technology communications program that keeps the entire campus community informed about technology initiatives.
	18	Systems Dashboard	Establish an information systems dashboard that monitors critical systems used at UTC. This should include standard protocols for communicating with users when systems are not functioning and alert users to scheduled maintenance.
	19	Website Redesign	Redesign and update the UTC website to improve navigation and to make the end-user experience more intuitive.
IT Training	20	Technology Community Training	Support training for people that deliver technology services at UTC. This should include the entire technology community.
	21	UTC Employee Training	Implement a technology training program for UTC employees across the University.

**IT Governance Initiatives**

“IT, as an enabler of institutional excellence, requires extensive collaboration among stakeholders, which is complicated by the exponential growth of education and research, and the accompanying competition for funds.”<sup>2</sup>

IT governance describes the process by which stakeholders have input into priority setting, risk assessment, policy setting, and decision making processes. IT governance is distinct from day to day information technology management. It is imperative that IT governance effectively encompass academic, administrative, and operational areas of the University.

The Current Environment Assessment identified a need for UTC to evaluate and modify the current governance structure and the practices that support it. The new IT Governance model attempts to create a more customer-centered decision-making process while increasing accountability and transparency of IT planning.

Category	#	Initiative Title	Initiative Description
IT Governance	1	IT Governance Model	Establish a new IT governance model that identifies decision making procedures. This should include a high-level IT Steering Committee (ITSC), a more “hands-on” Technology Review Board (TRB), and Participate IT.

<sup>2</sup> University of Texas Arlington | [www.uta.edu](http://www.uta.edu) | OIT/UT SYSTEM Home>IT Governance>IT Governance Overview | Accessed December 2010

Initiative #1 – IT Governance Model

**Establish a new IT governance model that identifies decision making procedures. This should include a high-level IT Steering Committee (ITSC), a more “hands-on” Technology Review Board (TRB), and Participate IT.**

The IT governance model should enable IT leaders to receive broad input, make informed decisions, and prioritize, fund, and implement meaningful IT projects and initiatives. Specifically, this model should define the IT budgeting cycle, and establish a sustainable and transparent process that includes open forums “Participate IT.”

The IT Steering Committee (ITSC) is responsible for providing input to the Chancellor’s Cabinet and the Technology Leader on decisions related to IT principles, infrastructure, business application needs, prioritization, and investment decisions. The IT Steering Committee should have representation at the University Planning and Resource Allocation Committee.

The Technical Review Board (TRB) is responsible for the evaluation, implementation, and maintenance of the UTC’s Technical Reference Model (TRM). A TRM is a documented and approved list of standards, specifications, and technologies that are used in supporting the delivery, exchange, and construction of IT components. In addition to setting the TRM, the board is also responsible for reviewing and approving proposed changes to the enterprise or campus wide architecture, reviewing IT trends, strategies and activities, and referring issues to the Technology Leader, IT Steering Committee, and other IT governance bodies. TRB evaluations will be based on established criteria.

“Participate IT” is an open forum for IT personnel across the campus to participate in with the purpose of providing input to the Technology Leader on IT matters related to enterprise information systems issues. Examples of input: review and recommend IT standards, guidelines and policies; review, oversee, and suggest priorities for all administrative systems projects; coordinate among client departments competing for limited IT resources; help IT maintain the architectural consistency of administrative systems; and advise IT on the opportunities for process improvement and operational efficiencies using technology.

IT Leadership, based on the IT Governance Model and IT Mission and Principles, needs to evaluate the IT organization (people, process, and technology) with the goal of providing customer-centered, effective and efficient services that are valued by the UTC community.

Using a Responsibility, Accountability, Consulted, and Informed (RACI) Chart, the proposed UTC IT governance model (as illustrated below) defines who is accountable and/or responsible for relevant decision areas. Furthermore, it outlines who should be consulted and informed of decisions regarding technology planning.

**Initiative #1 – IT Governance Model**

RACI Chart for UTC IT Governance	Direct IT Governance Involvement/Input					Indirect (via ITSC, Strategic Plan, and Annual Budget Process) IT Government/Input			
	Chancellors Cabinet	Campus CIO	IT Steering Committee (ITSC)	Technical Review Board (TRB)	Participate IT	Faculty Senate	Student Government (SGA)	Deans Council	Others Stakeholders
IT Principles	A/R	C	C	I	I	C/I	C/I	C/I	C/I
Prioritization and Investment Decisions	A/R	C	C	I	I	C/I	C/I	C/I	C/I
Functional Requirements Assessment	C	A/R	C	I	I	C/I	C/I	C/I	C/I
IT Architecture	I	A	I	R	C	C/I	C/I	C/I	C/I
IT Implementation	C	A/R	C	I	I	C/I	C/I	C/I	C/I

A = Accountable. The one role that is accountable (including enforcement). Should be consulted on all delegated responsibilities.  
R = Responsible. Multiple roles can be responsible, but the fewer the better. This is where the work is done/lead and decisions are made.  
C = Consulted. This role should be consulted before a decision is made. Input is collected, but does not make decision.  
I = Informed. This role needs to be informed about a decision.

The RACI model provides a straightforward way to describe the various roles and responsibilities associated with the IT governance process.

For more information about the suggested composition of the ITSC and the TRB, as well as a sample IT planning cycle, please refer to Appendix #4.

**Initiative Owners**

- Provost and Vice Chancellor for Academic Affairs
- Vice Chancellor of Finance and Operations
- Technology Leader

**Budget Description**

No additional direct costs are anticipated.

**Action Items to Implement Initiative**

1. Finalize UTC IT Governance Model documents created by the IT Task Force.
2. Establish IT Steering Committee (ITSC).
3. Establish Technical Review Board (TRB).
  - a. Create the Technical Reference Model (TRM).
4. Establish “Participate IT” forums.
5. Establish the Technology Leader (See Initiative #2 – Technology Leader)

Initiative #1 – IT Governance Model
Anticipated Benefits
<ul style="list-style-type: none"> <li>• Allows for broad input from stakeholders and strategic plans.</li> <li>• Establishes formal governance bodies charged with collecting input and providing recommendations.</li> <li>• Defines accountability and responsibility for reviewing recommendations and making the final decision.</li> <li>• Creates an enforceable model for IT oversight.</li> </ul>
Measures of Success
<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Revised Tech-Qual Survey (or an alternate survey tool)</li> <li><input checked="" type="checkbox"/> See Initiative <i>Promote a Culture of Continuous Improvement</i></li> </ul>
Benchmarking Considerations
<p>Tennessee Tech University (TTU) decisions are determined as part of the strategic planning process. Various cross functional, multidisciplinary planning teams or committees ascertain what can be done in and through IT. Generally, the teams are defined so that representatives from end-user groups related to the proposed services are on the team as well as IT representatives. The ideas are "costed out" and then it is determined where the funding will come from. The change is then proposed to the Cabinet. It is approved (or not) by the Cabinet and President.</p>

**IT Organization Initiatives**

UTC is similar to most Universities in that it has both central IT and distributed IT. However, this way of looking at technology is not only outdated, but it contradicts the very nature of information technology in that it puts up artificial barriers to communication and coordination that many technologies are designed to mitigate.

The Current Environment Assessment identified the need for UTC to redefine the IT organizational and leadership structure to build a more cohesive and synergistic technology community. This technology community includes “Partner IT” (commonly referred to as distributed IT) and ITD.

Category	#	Initiative Title	Initiative Description
IT Organization	2	Technology Leader	Establish and approve a new Technology Leader role at UTC that will provide leadership and direction for the entire technology community.
	3	Technology Community Organization	Establish a technology community organizational structure that supports a functional, collaborative, and dynamic technology community at the University between Partner IT and ITD.

**Initiative #2 – Technology Leader**

**Establish and approve a new Technology Leader role at UTC that will provide leadership and direction for the entire technology community.**

The UTC technology community includes the central IT organization (ITD) and Partner IT. Partner IT represents individuals and departments supporting technology at the University that are not part of ITD. Both central and Partner IT groups fill very important roles in supporting and delivering technology at UTC; however, the lack of a common point of technology oversight is disadvantageous.

Assigning a Technology Leader to the entire technology community will enable the University to recognize the advantages of better coordination of efforts and resources. The Technology Leader will be a new position that would have reporting lines to both the Vice Chancellor of Finance and Operations and the Provost and Vice Chancellor for Academic Affairs. The Technology Leader would be expected to provide direction on technology decisions and coordinate communication and collaboration with Partner IT representatives.

Once established, the Technology Leader should evaluate the current organization in consideration of the objectives set forth in this Master Plan. In particular, the IT Organization and the Service Catalog initiatives should be considered. Please refer to Initiatives #3 and #9 for more details.

**Initiative Owners**

- Vice Chancellor of Finance and Operations
- Provost and Vice Chancellor for Academic Affairs

**Budget Description**

It is expected that the University will need to budget at least ~\$150,000 per year to fill this role and provide a competitive compensation package in order to attract the type of individual that UTC seeks. Currently, it has been proposed that this funding would come from the Student Technology Fee for year one of this initiative.

**Action Items to Implement Initiative**

1. Identify permanent funding for this new position.
2. Have the IT Master Planning Group work with University to develop a job description that is reflective of key elements of the IT Master Plan.
3. Identify and hire a Technology Leader that will serve the needs of the UTC community. This will likely require a comprehensive search process.

<b>Initiative #2 – Technology Leader</b>
<b>Anticipated Benefits</b>
<ul style="list-style-type: none"> <li>• Better coordination of planning, communications, and overall technology management that results in improved technology services at UTC.</li> <li>• Increased visibility of technology issues across the University.</li> </ul>
<b>Measurement of Success</b>
<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Performance Reviews.</li> <li><input checked="" type="checkbox"/> Customers report improved service and performance of technology people and systems.</li> </ul>
<b>Higher Education Industry Consideration</b>
<p>The Chief Information Officer role in higher education is a very complex position, and the people filling it are equally complex. The role has been in existence for approximately 25 years, but the CIO career path is not as well-defined a road, as for example a Chief Financial Officer's, which has had a much longer time to become standardized. <i><b>A Study of CIO Roles and Effectiveness in Higher Education, Wayne Brown, 05/13/09, Campus Technology</b></i></p>

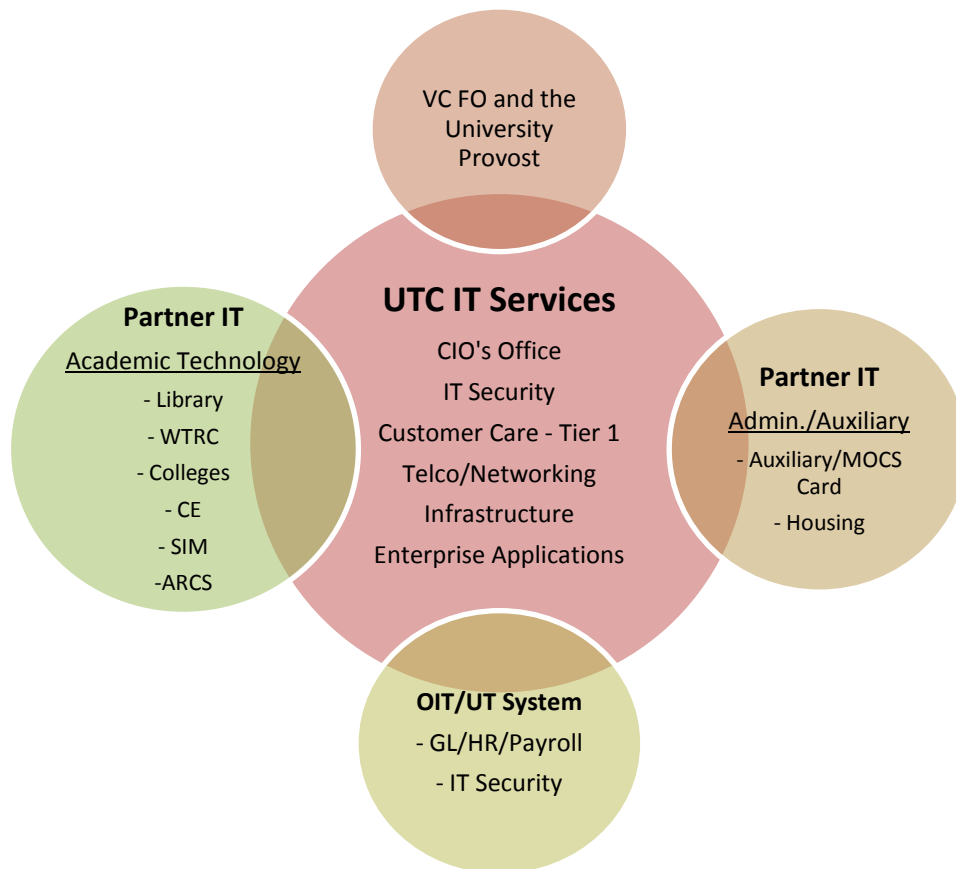
**Initiative #3 – Technology Community Organization**

**Establish a technology community organizational structure that supports a functional, collaborative, and dynamic technology community at the University.**

There needs to be greater collaboration across all technology functions on campus. UTC needs to realign, as appropriate, information technology services, systems, and personnel. Although staffing changes may be warranted, it is recommended that this not happen to any significant extent until a campus wide Technology Leader is hired.

It is recommended that the new Technology Leader begin by evaluating the central information technology organizational structure and staffing. Partner IT functions should also be assessed to determine how these services are best delivered in a distributed manner and to gain advantages from synergies of collaboration.

*The following is a graphic depiction:*



It is expected that completion of the UTC IT Service Catalog initiative (#9) will further inform this initiative as services and staff are better aligned for improved effectiveness and organizational synergy.

<b>Initiative #3 – Technology Community Organization</b>
<b>Initiative Owners</b>
<ul style="list-style-type: none"> <li>• Vice Chancellor of Finance and Operations</li> <li>• Provost and Vice Chancellor for Academic Affairs</li> <li>• Technology Leader</li> </ul>
<b>Estimated Initiative Budget</b>
<p>See Initiative #2 – Technology Leader</p> <p>See Initiative #9 – Service Catalog - The process of creating an IT Service Catalog should prove helpful in further identifying and defining organizational needs. However, given the current budgetary environment, this is likely to be a zero-sum game in the end with roles and responsibilities shifting, but minor impact on the total spending for IT staffing at the University.</p>
<b>Action Items to Implement Initiative</b>
<ol style="list-style-type: none"> <li>1. Establish a new Technology Leader.</li> <li>2. Create dotted reporting lines between Partner IT staff and the Technology Leader.</li> <li>3. Evaluate existing organizational structure for inefficiencies and redundant services.</li> </ol>
<b>Anticipated Benefits</b>
<ul style="list-style-type: none"> <li>• Improved technology services for UTC community.</li> <li>• Improved efficiency of operations through organizational streamlining.</li> <li>• Better campus awareness of existing IT resources.</li> </ul>
<b>Measurements of Success</b>
<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Revised Tech-Qual Survey (or an alternate survey tool)</li> <li><input checked="" type="checkbox"/> See Initiative <i>Promote a Culture of Continuous Improvement</i></li> </ul>
<b>Benchmarking Consideration</b>
<p><b>Tennessee Tech</b> demonstrates the highest degree of centralization in IT operations of the three institutions researched, with college/department dedicated technology staff reporting through central IT. It is important to note that Telecommunications reports to Facilities and does not fall under central IT.</p> <p>According to the Associate VP of IT Services, there are five areas within his organization:</p> <ol style="list-style-type: none"> <li>1. Office of the Associate VP of IT (the VP and his administrative staff -- 3 FTE).</li> <li>2. Academic Computing Support (10 FTE and some student employees) serving 11,000 students and</li> </ol>

**Initiative #3 – Technology Community Organization**

- 400 faculty. 1 FTE from this group is assigned to each college in the University and is housed at the college but reports into IT.
- 3. Administrative Systems Support Group (7 FTE, no students) serving 500 administrative staff.
  - 4. Network Services and Operations (6 FTE: 3 network and 3 security -- the 3 security are being moved into operations now that they have Banner).
  - 5. System Support (4 FTEs who maintain all 30 labs and 800+ computers on campus).

**IT Budgeting Initiatives**

In fiscal year 2010, total IT spending at UTC was approximately \$8.2M. This number does not include one-time federal stimulus funding. Based on numbers provided by both peer institutions reviewed and other data sources, UTC is spending relative to its size and mission.

IT spending information is available at UTC. Documentation and spreadsheets made available to BerryDunn suggest that executive staff and financial management have made efforts to create transparency at the University. However, many stakeholders and Partner IT remain uncertain about the amount of money allocated to technology and how it is spent today.

The Current Environment Assessment identified challenges pertaining to the process for technology priority setting and budgeting needs. UTC needs to work with the technology community to establish investment priorities, coordinate technology spending, and ensure that the technology budget remains aligned with the long-term strategic vision of the University. These initiatives attempt to address areas of concern identified during the planning process.

Category	#	Initiative Title	Initiative Description
IT Budgeting	4	Technology Purchases/Intake Process	In concert with the new IT Governance initiative, 1) Establish a process that allows IT purchases to be reported to the new UTC "Technology Leader." 2) Establish agreed upon thresholds across UTC for review of high-impact technology purchases by ITSC/TRB.
	5	Student Technology Fee Budgeting Process	Conduct review of the current usage and allocation of the Student Technology Fee.
	6	Technology Reassessment/Refresh	Establish a UTC technology assessment and refresh program. This should include computers, network devices, servers, and other peripherals that are managed by UTC.
	7	Technology Spending and Reporting	Establish standard reporting for technology spending.

**Initiative #4 - Technology Purchases/Intake Process**

**In concert with the new IT Governance initiative, 1) Establish a process that allows IT purchases to be reported to the new UTC “Technology Leader.” 2) Establish agreed upon thresholds across UTC for review of high-impact technology purchases by ITSC/TRB.**

In order to maximize the value of the University’s growing number of technology investments, the technology purchasing process requires oversight and coordination. The UTC Technology Leader needs purchasing oversight to ensure that UTC benefits from opportunities for interoperability as well as economies of scale. The Technology Leader is responsible for informing end users about standards and preventing counter-productive purchases. In addition, standard technology purchases should meet basic requirements as outlined in the Technical Reference Model (TRM) as outlined in the IT Governance Initiative #1.

The TRB will remain responsible for maintaining the TRM. The University will have to design, implement and communicate a consistent technology purchasing and intake process. Purchases covered by the process should include technologies that demonstrate any of the following characteristics.

- Will be used by other departments/Colleges beyond the purchasing entity.
- Technology not currently supported by IT Services.
- Has a dollar value above a threshold (to be determined by UTC).
- Will require additional IT staff to support once in production.

It will be imperative that the Technology Leader have a sufficient coordinating voice in the purchasing process. Accordingly, the Technology Leader will be responsible for keeping users informed of the process and for making applicable materials readily available. These materials should include guidance for users requesting larger purchases that require business case analysis, a checklist that documents the approval process, and a visual model that informs the requester of the mechanics of the process.

See Appendix #7 – Purchase Process Flow Chart.

**Initiative Owner**

- Technology Leader
- IT Steering Committee (established in Initiative #3)

**Budget Description**

No additional direct costs are anticipated, but a justification for improved coordination of purchasing would be an expectation of increased purchasing power at UTC and the potential for cost savings.

Initiative #4 - Technology Purchases/Intake Process
Action Items to Implement Initiative
<ol style="list-style-type: none"> <li>1. Implement Initiative #1.</li> <li>2. Identify purchasing thresholds and review process as indicated by the new governance model outlined in Initiative #1.</li> </ol>
Anticipated Benefits
<ul style="list-style-type: none"> <li>• Cost savings through improved usage of state purchasing contracts.</li> <li>• Better coordination with UT System purchasing.</li> <li>• Ability to make decisions that are considerate of opportunities for interoperability and shared software licensing needs.</li> <li>• Clear standards for what constitutes a technology purchase.</li> <li>• Improved coordination of purchases that meet the standards outlined in the TRM.</li> </ul>
Measures of Success
<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> As part of annual process conduct budget analysis to assess savings.</li> <li><input checked="" type="checkbox"/> Gather feedback from partnered technology stakeholders to assess perceptions of success and value of the new funding model.</li> </ul>
Benchmarking Considerations
<p><i>Excerpts from UTC Technology Benchmarking Report (2010)</i></p> <p><b>Q:</b> Who makes the decision to purchase campus wide IT products that impact students, faculty, and staff?</p> <p><b>A:</b> At the <b>University of North Carolina at Charlotte (UNCC)</b>, the final decision for campus wide products rests with the cabinet, which is usually comprised of the Provost, the Chancellor, and the CFO.</p> <p><b>A:</b> At <b>Tennessee Tech University (TTU)</b>, the Cabinet makes the decision for and the President has final say.</p>

**Initiative #5 – Student Technology Fee Budgeting Process**

**Conduct review of the current usage and allocation of the Student Technology Fee.**

The University should conduct a holistic review of the Student Technology Fee, including the amount of the fee, as well as the distribution and reporting of fee usage. At present the technology fee funds fifteen staff positions, which accounts for over 75% of the total fund. Historically, use of the fee required vetted proposals and a formalized reporting process. These practices no longer take place and this has led to a growing trend for reactive funding practices that have caused concern among technology stakeholders.

The University needs to increase accountability for all technology spending. The University should establish processes that treat the technology fee as recurring base budget with 10% “set-aside” for one-time discretionary spending dedicated towards differentiating technologies that directly impact the student experience.

The University needs to identify the source of funds for any inflationary increases for services, software, hardware, and personnel supported by the fee. The Information Technology Steering Committee (see Initiative #3 – Technology Organization) would manage the distribution of 10% discretionary funds.

**Initiative Owner**

- Vice Chancellor of Finance and Operations
- Provost and Vice Chancellor for Academic Affairs
- Technology Leader

**Action Items to Implement Initiative**

1. Require mandatory usage of the Student Technology Fee Funding Request form, or create a new one.

**Anticipated Benefits**

- Improved confidence at the University that limited dollars are being spent in the best interests of the University.
- Better coordination of staff and resources to increase impact of technology dollars.

**Measurements of Success**

- Clearly defined (and communicated) outcomes from Student Technology Fee spending.

**Benchmarking Consideration**

At **Tennessee Tech** 44% of the IT budget is derived from technology access fees paid by students. Technology access fees are \$112.50 per semester, per student. The other 56% is funded by the state.

**Initiative #6 – Technology Reassessment/Refresh**

**Establish a UTC technology assessment and refresh program. This should include computers, network devices, servers, and other peripherals that are managed by UTC.**

A successful Technology Refresh Program requires a recurring technology refresh budget and an effective asset management program. Accordingly, the Program will need the support of University leaders and should operate within the established IT Governance model. The following parameters should guide the refresh process:

1. Annual reassessment of the appropriate technology should inform technology refresh.
2. The TRM should inform but not dictate decisions.
3. Please refer to Appendix #6 that outlines industry standards for technology refresh lifecycles.

Standardizing work stations, servers, operating systems, and database environments greatly simplifies support and troubleshooting. Industry best practices for higher education institutions suggest that PCs should be replaced at a minimum of every four years, or as required. As part of the refresh program, the University will document, update, and publish minimum standards each year that align with the TRM.

A technology refresh plan helps to control the overall cost of technology by planning for upgrades, replacements, support, and training in a holistic manner. For example, UTC may determine its planned refresh for laptop computers is three or four years. Beyond this term, mechanical parts are more likely to wear out, hardware service and support costs increase, and the ability to support increasing software resource needs diminishes.

Different devices will have different refresh cycles. For instance, it may be practical to expect a server to last for five years, while a laptop may need to be replaced after three. Do not allow for extensions based on usage. Department managers should understand the value of proactively managing technology obsolescence and should not be granted exceptions.

**Initiative Owner**

- Vice Chancellor of Finance and Operations
- Technology Leader
- Partner IT

**Budget Description**

The technology refresh program will require a dedicated budget with continual funding. The direct costs may be high, especially during the first few years; however, the potential returns are measurable. Having current technology will position UTC to deliver a better academic experience to the entire campus community.

<b>Initiative #6 – Technology Reassessment/Refresh</b>
<b>Action Items to Implement Initiative</b>
<ol style="list-style-type: none"> <li>1. Work with established Technology Review Board and IT Steering Committee to set priorities.</li> <li>2. Establish a Technology Refresh Program budget.               <ol style="list-style-type: none"> <li>a. Determine a sustainable funding mechanism for the refresh budget. Evaluate the possibility of utilizing the existing Student Tech Fee Fund.</li> <li>b. Consider how refresh budgeting will be enforced for departmentally controlled (self funded) budgets.</li> <li>c. Work with hardware vendors to evaluate how different models may produce favorable economies of scale.</li> </ol> </li> <li>3. Establish an acceptable refresh rate for each technology asset category, based on established budget.               <ol style="list-style-type: none"> <li>a. Update the Technical Reference Model (TRM) (see Initiative #1 – IT Governance and Initiative # 4 – Technology Purchases/Intake Process) to establish that ITD supports technology that is within the acceptable refresh range.</li> </ol> </li> <li>4. Determine whether to use existing technology (IRIS) to monitor technology assets. See Technology Asset Management initiative for more details.</li> </ol>
<b>Anticipated Benefits</b>
<ul style="list-style-type: none"> <li>• Many technical issues are caused by using devices that have exceeded their expected life. A refresh program should result in fewer of these inherently difficult to remediate support requests.</li> <li>• Technology that works well with other technology (i.e., current applications, printers, other digital components.)</li> <li>• Better ability to manage network access control.</li> <li>• Increased system uptime.</li> <li>• Monitor the age of technology assets to ensure that all assets are within the acceptable range.</li> </ul>
<b>Measurements of Success</b>
<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> A Technology Refresh Budget that is sustainable and equitable.</li> <li><input checked="" type="checkbox"/> Utilize Technology Asset Management to improve tracking. See initiative # 12 – Technology Asset Management.</li> </ul>
<b>Best Practice Considerations</b>
<p>Based on available EDUCAUSE data, nearly 60% of MA institutions have implemented a refresh cycle that replaces computers within four years. The risks and the disadvantages of outdated technology are recognized by IT stakeholders; however, UTC has not been able to successfully implement a policy and a system that would provide the framework for an effective technology refresh program.</p>

**Initiative #7 –Technology Spending and Reporting**

**Establish Standard Reporting for Technology Spending.**

To better manage year over year spending on technology personnel, software, and hardware, UTC should establish a standard reporting model that can track these expenditures. Based on the University’s desire to adopt ITIL best practices this initiative should be aligned with other Strategic Initiatives, including Initiative #9, which calls for the creation of an IT Service Catalog.

UT Knoxville has developed a cost based budget model that is used by Central IT to track all IT services provided at the campus. This tool allows the Central IT function to not only track hardware and software, but the amount of personnel time that is spent on repairs, service calls, and maintenance. Although still a new function, it was reported that this capability has already improve their ability to better allocate staff and determine staff time spent on specific technology support functions.

This allows the University to more closely track effectiveness of dollars being spent for services being provided. UT Knoxville has expressed their willingness to share this tool with UTC.

**Initiative Owner**

- Vice Chancellor of Finance and Operations
- Provost and Vice Chancellor for Academic Affairs
- Technology Leader

**Action Items to Implement Initiative**

1. Require that technology funding be required to report out on the cost of service, student impact. Cost of services should include both FTE support and software/hardware costs.
2. Evaluate the current system at UT Knoxville.

**Anticipated Benefits**

- Improved tracking of technology dollars.
- Better coordination of staff and resources to increase impact of technology dollars.

**Measurements of Success**

- Establishing a standard reporting process for tracking technology spending.

## IT Services and Infrastructure

According to the IT Infrastructure Library, V3 (ITIL), a service is a means of delivering value to customers by facilitating outcomes customers want to achieve without the ownership of specific costs and risks.<sup>3</sup> The IT Services and Infrastructure category includes initiatives that aim to improve the quality of technology services at UTC.

The Current Environment Assessment identified a need for UTC to evaluate how technology services are coordinated and delivered to the University community. By combining guidance provided by ITIL and the institutional knowledge of those who contributed to the Current Environment Assessment and this IT Master Plan, we have established the following initiatives.

Category	#	Initiative Title	Initiative Description
IT Services and Infrastructure	8	Enhance Customer Care	Enhance customer care and establish a single point of contact for Help Desk intake and management.
	9	IT Service Catalog	Establish an IT Service Catalog at UTC.
	10	Network Access	Establish network access that is non-intrusive to end-users and easy to use. This includes network authentication, practical security parameters, and standard protocols for addressing maintenance updates.
	11	Next Steps for Banner	Institutionalize Banner operations and create a sustainable model at the University.
	12	Technology Asset Management	Develop a unified tracking system for computers, other technology devices, and software applications at UTC.
	13	Computer Lab Management	Conduct a full campus assessment of current Computer Labs to identify opportunities for consolidation and streamlining.
	14	Network Convergence and Architecture	A three year tactical plan should be created to plan for changes to how UTC deploys and manages its network infrastructure.
	15	Annual Systems Review – Looking to the Future	Proactively plan for new technology and conduct annual systems reviews.

<sup>3</sup> IT Service Management Forum. [Introductory Overview of ITIL V3](#). 2007

**Initiative #8 – Enhance Customer Care**

**Enhance customer care and establish a single point of contact for Help Desk intake and management.**

The [ITIL framework](#) asserts that, “the Service Desk is a single point of contact (SPOC) for end-users who need help. Without this SPOC, an organization would face major losses in time spent on looking for ways to fix issues and get help.” The Help Desk will also need to expand its hours of operation in order to better support students that are active outside of regular campus business hours, e.g., online learning.

The Help Desk should be accessible. Users should be able to quickly and easily submit requests by dialing a 4 digit number or online through the Help Desk portal. The Help Desk portal should be branded to make it recognizable and to facilitate navigability. The Help Desk portal should have a strong presence on the ITD home page, and a moderate presence on pages belonging to Partner IT constituents.

Help Desk requests from areas with partnered IT support should be entered into the ticketing system and then passed off to the appropriate support partner. Accordingly, the central Help Desk team will need to train support partners to use the ticketing system.

The Help Desk should be tracking ‘work orders’. Projects are resource intensive and require careful planning and management. Therefore, it is important to distinguish work orders from projects during the request intake process. To ensure that requests are identified and treated appropriately, UTC should formally establish what is considered a project and what constitutes a work order ticket.

The following characteristics may be helpful for distinguishing projects from work groups. These characteristics are general and will not apply in all situations, but for the purposes of Help Desk management it is important to separate the following two areas.

<b>Project</b>	<b>Work Order</b>
Non-recurring	Recurring issue
Dedicated Budget	Covered by Existing Budget
Implementing something new	Repair
Overhauling something that already exists	Maintenance
Involve stakeholders from various groups	Involves a single department/group
Long Term	Short Term

In addition, users should have distinct opportunities to provide feedback. This will enable management to assess the customer experience and to make adjustments and modifications as necessary. It will also provide end users with a ‘voice’; whether it is praise, suggestions, or criticisms.

**Initiative Owner**

- Technology Leader

Initiative #8 – Enhance Customer Care
Budget Considerations
<p>There will be costs associated with implementing a Service Management System that supports the needs of entire technology support community. There will be associated training costs to ensure that UTC is able to realize the maximum benefits of the Service Management System. Additional costs are likely if Help Desk hours are expanded, but this may be offset by improved coordination of staffing resources that “stretch” available hours by having people work overlapping shifts. However, a portion of these costs should be offset by improved coordination and increased productivity of support personnel.</p>
Action Items to Implement Initiative
<ol style="list-style-type: none"> <li>1. Establish goal of a Help Desk ticketing system that is capable of supporting technology community.</li> <li>2. Assess effectiveness of Numara as a Service Management tool and evaluate additional functionality.</li> <li>3. Work with a representative group of ITD and partnered support professionals to present objectives and discuss needs for developing the SPOC.</li> <li>4. Develop and communicate documented Help Desk procedures and expectations.</li> <li>5. Develop and implement a Help Desk marketing campaign that establishes the SPOC.</li> <li>6. Identify clear standards for “what is a Project” vs. “what is a Work Order.”</li> <li>7. Train technology community to use system.</li> </ol>
Anticipated Benefits
<ul style="list-style-type: none"> <li>• Improved customer service by means of better quality and faster response and resolution rates.</li> <li>• Gain credibility from the technology community.</li> <li>• Increase efficiency and effectiveness of support services by pooling resources and increasing visibility.</li> <li>• Increased visibility and control over technology infrastructure.</li> <li>• Meaningful data will enable management to make informed decisions about staffing needs, service deficiencies, training needs, and technology refresh and utilization.</li> <li>• Increase awareness of problematic trends and enable management to investigate and respond to underlying issues in an effective and informed manner.</li> </ul>
Measurements of Success
<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Establish service level goals and track progress using service management system generated performance reports.</li> <li><input checked="" type="checkbox"/> Summarize Service Level Performance to management and make information available to customers via regularly scheduled communications to the UTC community.</li> <li><input checked="" type="checkbox"/> Track downtime for customers against historical data.</li> <li><input checked="" type="checkbox"/> Tech Qual Survey Results.</li> </ul>

**Initiative #8 – Enhance Customer Care**

**Research Consideration**

One example of a “single point of contact” approach to help desk support is operational at UT Knoxville:



**Initiative #9 – IT Service Catalog**

**Establish an IT Service Catalog for UTC.**

The IT Service Catalog will be an online “menu” of service options that enables the campus community to educate themselves about available services and resources and to make informed decisions. An optimized Service Catalog will link directly to UTC’s designated service request software (i.e. Numara), which will further automate business processes and streamline the service management process.

The catalog should depict IT service delivery at UTC and identify the owner for each service established in the catalog. The Service Catalog should inform the UTC community of who owns what services, whether it is ITD, Partner IT, or the OIT/UT SYSTEM.

The Service Catalog should consist of a directory of services, each of which points to a dedicated page that provides a description of the service and indicates the following:

- Service owner (primary contact)
- Cost of service (if applicable)
- Customers served (i.e. students and/or faculty)
- Method for initiating contact with the service owner or department.

See Appendix #3 for an overview of the proposed IT Service Model developed by the Task Force.

**Initiative Owner:**

- Technology Leader, in collaboration with Partner IT and OIT/UT SYSTEM.
- Approved by ITSC and reviewed, assessed, and modified as necessary on an annual basis.
- TRB will have input as well (to Technology Leader).

**Budget Description**

UTC already owns technology management software for an IT service catalog (Numara). The IT service catalog will entail moderate indirect costs associated with the amount of time required to collect, compile, review, present, and finalize service data. However, increased efficiencies in service delivery should be realized.

**Action Items to Implement Initiative**

Steps for developing and launching an online IT Service Catalog:

1. Learn from OIT/UT SYSTEM and others who have already undertaken the process. For example, OIT/UT SYSTEM has recently developed a Service Catalog. Coordinate this effort with OIT/UT SYSTEM resources:  
[https://utworks.tennessee.edu/sites/Service\\_Catalog/Pages/default.aspx](https://utworks.tennessee.edu/sites/Service_Catalog/Pages/default.aspx)
2. Assemble a project team.
  - a. Include someone who understands web design/ content management at UTC.

**Initiative #9 – IT Service Catalog**

- b. Include someone who has a general understanding of the breadth of ITD services.
- c. Include someone who has a general understanding of the breadth of distributed IT services.
- d. Include someone who represents the System.
- 3. Consider viability of service management tools, such as the existing Numara Footprints system, to facilitate and help automate the creation and maintenance of the Service Catalog.
- 4. Create a standard template for presentation of services (i.e., service description, types of customers, fees, point of contact).
- 5. Introduce project to stakeholders (i.e., email announcement).
- 6. Request input from stakeholders (i.e., email form to service providers with instructions for submittal).
- 7. Evaluate response rate and follow up as appropriate.
- 8. Compile responses and identify gaps, overlaps, and contradictory responses.
- 9. Present findings to ITSC to determine plan of action.
- 10. Once service forms appear appropriate, submit to approval entity.
- 11. Once approved, deploy service catalog on UTC website.
- 12. Announce and promote new service catalog to campus community.
- 13. Establish policies and procedures for ongoing maintenance of the service catalog.

**Anticipated Benefits**

- Clear and consistent presentation of services will allow end users to find the service they are seeking.
  - Ensure that users do not hit ‘dead ends,’ all service catalog items should include the campus Help Desk extension for customers who cannot find what they are looking for.
- Clear delineation of service providers will bring transparency and help eliminate redundant services.

**Measurement of Success**

- Adoption of the Service Catalog.
- Service providers should request end users to designate “how did you hear about us” when signing up for services. Assess frequency of “utc.edu service catalog” response.
- Revised Tech-Qual.

**Best Practice Consideration**

ITIL defines the service catalog as “a database or structured document with information about all live IT Services, including those available for Deployment.”

**Initiative #10 – Network Access Control**

**Establish network access that is non-intrusive to end-users and easy to use. This includes network authentication, practical security parameters, and standard protocols for addressing maintenance updates.**

UTC needs to determine how it will balance security and accessibility. Students, faculty, and staff are unhappy with the current network authentication practices and have learned to associate the Bradford Network Authentication system with the inability to access resources that are critical to their day to day responsibilities. Network lock-outs result in higher call volume for Help Desk and frustration among users who are accustomed to being able to access information quickly.

Protecting the systems, data, and the infrastructure that forms the UTC network is critical. Security needs are not only driven by customer expectations, but by regulatory requirements such as the Family Educational Rights and Privacy Act (FERPA) and the Health Insurance Portability and Accountability Act (HIPAA).

**Initiative Owner**

- ITD/Director of Information Security
- Information Technology Steering Committee (ITSC)

**Budget Description**

Cost efficiencies will be gained by reducing the level of Bradford related support calls and intangible benefits of improved network access. However, as of June 2007 it is estimated that UTC has invested \$149,910 in Bradford and currently pays annual maintenance fees of \$21,532 for the most recent fiscal year. Based on these numbers, it is possible that UTC could expect to breakeven over the five year planning period, even if a new system is determined to be the best path forward.

**Action Items to Implement Initiative**

1. UTC recently drafted a University IT Security Plan with respect to user access to UTC’s network infrastructure. This document and its authors should serve as the starting point for improving standards.
2. Identify user requirements and clearly understand the reasons for current levels of frustration.
3. Investigate the reconfiguration of Bradford to better meet the needs of network users or, replace Bradford with another vendor.
4. Update policies and procedures regarding network access at UTC.

<b>Initiative #10 – Network Access Control</b>
<b>Anticipated Benefits</b>
<ul style="list-style-type: none"> <li>• Improved credibility with UTC community.</li> <li>• Reduced Help Desk call volume for network access.</li> <li>• Changes attitude of UTC community to accept security needs without forcing unnecessary controls.</li> </ul>
<b>Measurements of Success</b>
<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Use Help Desk statistics to track network access tickets.</li> <li><input checked="" type="checkbox"/> Conduct “town hall” style meeting to gauge user satisfaction.</li> <li><input checked="" type="checkbox"/> Tech Qual Survey Results.</li> </ul>
<b>Benchmarking Consideration</b>
<p>At <b>Tennessee Tech University (TTU)</b>, the services are largely determined as part of the strategic planning process. All IT-related services support two major university goals: access and retention of students.</p>

**Initiative #11 – Define the Next Steps for Banner**

**Define Institutional Banner operations and create a sustainable model at the University.**

The Banner implementation is well regarded and Phase One has been deemed a success by most at UTC. Currently there is no clear plan for next steps, and Banner remains a project although it is in production.

An exit strategy is required to separate production Banner from any Phase 2 project. Currently, the entire 12 person staff is still full-time on this project, although it is in an operational phase.

**Initiative Owner**

- Vice Chancellor of Finance and Operations
- Provost and Vice Chancellor for Academic Affairs
- Banner Project Manager

**Budget Description**

Currently, three accounts are used by the University for this project. Four people are paid with Banner project money, one is paid by the Tech Fee and seven are paid with “Banner 2000 account.” In production, OIT/UT System will cover maintenance costs and hardware costs and UTC will be responsible for updates.

**Action Items to Implement Initiative**

1. Set a timetable (less than one year) to transition from a project to production staffing model.
2. Reorganize Banner staff and allow excess staff to support other initiatives.

**Anticipated Benefits**

- Optimize limited staff resources.
- Define future steps for the University.
- Determine how Banner will impact other initiatives, such as integration with a new website for UTC.

**Measurement of Success**

- Clearly define plan for Banner production and “Future Projects.”

**Benchmarking Consideration**

At the **College of Charleston**, all members of the Banner project team learn through reps, “go-lives,” checklists, and keeping a “lookout.” The CIO is included in the discussions as Project Sponsor and remains involved through the management of the project.

**Initiative #12 – Technology Asset Management**

**Develop a unified tracking system for computers, other technology devices, and software applications at UTC.**

There is no unified tracking system at UTC for computers, other technology devices, or software, which leads to discrepancies in inventory counts. This indicates the need for a better way to quickly and easily generate accurate, ad-hoc reports about technology inventory. UTC should consider asset management as a best practice approach to not only technology refresh, but to gaining a better understanding of technology assets throughout their lifecycle. UTC does use the IRIS financial system to track some assets, but this is not used consistently or effectively to manage assets at UTC.

BerryDunn identified over 300 unique software items, 30 of which are supported by ITD. Many of the major software products used by the University are fixed fee licensing agreements that offer unlimited licenses to qualified members of the University community. This effectively eliminates the need to manage thousands of licenses for commonly used applications.

However, many UTC Departments that outfit students with technology do not have a reliable and centralized method for tracking digital equipment that is lent to students. Some equipment owners have resorted to manual tracking systems while others do not track at all. A systematic, centralized asset tracking system will better enable the campus to keep track of its ever growing inventory of technology assets.

**Initiative Owner**

- Technology Leader
- Assistant Vice Chancellor of ITD

**Budget Description**

UTC already owns the technology to support a comprehensive technology asset management system that would natively integrate with UTC’s Help Desk ticketing system (Numara Footprints). If this software (an industry standard) can meet the needs of UTC then acquisition and maintenance costs are negligible; however, some personnel costs may be incurred through training and ramp-up.

**Action Items to Implement Initiative**

1. Have the newly formed Technology Review Board (TRB) develop basic requirements for an Asset Management system for the University.
2. Determine University-wide standards for asset tracking of technology at UTC.
3. Demo the existing functionality of the Numara Asset Management Module software.
4. Determine the feasibility of implementing Numara first within ITD and then roll it out to Partner IT organizations if #3 is successful.

<b>Initiative #12 – Technology Asset Management</b>	
<b>Anticipated Benefits</b>	
<ul style="list-style-type: none"> <li>• Support Technology Reassessment efforts and provide more consistent data for budgeting purposes on an annual basis.</li> <li>• Reduce duplication of software and hardware across the campus.</li> <li>• Support the initiative to improve coordination of purchasing at UTC.</li> </ul>	
<b>Measurements of Success</b>	
<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Reduced costs for year over year IT asset tracking and spending.</li> <li><input checked="" type="checkbox"/> Improved utilization of existing resources.</li> </ul>	
<b>Best Practice Consideration</b>	
<p>This is a prevalent issue for many Universities and Colleges. The Consortium for Higher Education Benchmarking Analysis (CHEBA) recently announced they will be conducting a new study in the area of Information Technology Asset Management. This is a "best practices" study that will include site visits to top performing companies. The study will review Information Technology Asset Management processes including research into:</p> <ul style="list-style-type: none"> <li>• Overall IT Asset Management Strategies;</li> <li>• Inventories of IT Assets;</li> <li>• Asset Valuation Techniques;</li> <li>• Contracting For Redeployment;</li> <li>• Measures of Redeployment, Acquisition and Disposal Performance; and</li> <li>• Other Asset Management Issues.</li> </ul>	

**Initiative #13 – Computer Lab Management**

**Conduct a full campus assessment of current Computer Labs to identify opportunities for consolidation and streamlining.**

Currently, there are over 80 labs that contain well over 1,000 identified computers at UTC. UTC needs to determine a more manageable number of labs to maintain and review the current Computer Lab infrastructure at UTC and work to consolidate and streamline these operations. Consider labs in regards to reassessment / refresh program in terms of ongoing maintenance and support. Designate campus supported labs as appropriate.

**Initiative Owner**

- Technology Leader
- Assistant Vice Chancellor of ITD

**Budget Description**

According to work done by UTC’s “Efficiency and Effectiveness Committee” in 2009, it has been estimated that \$50,000 could be saved annually by reducing the number of labs.

**Action Items to Implement Initiative**

1. Review current inventory of Computer Lab assets University-wide.
2. Determine how best to utilize and schedule, if appropriate, existing labs, and consolidate as necessary.

**Anticipated Benefits**

- Improved services to students
- Increased utilization of computer labs through attrition.
- Reduced staff hours needed to support computer labs.

**Measurement of Success**

- Reduced overhead for Computer Labs.
- Improved coordination of Computer Lab assets.

**Initiative #14 – Network Convergence and Architecture**

**A three year tactical plan should be created to plan for changes to how UTC deploys and manages its network infrastructure.**

Network connectivity demands will continue to increase for academic, operational and residential bandwidth. As student housing increases at UTC, this will also require a full review of existing backbone and network components, both wired and wireless. YouTube, Skype, and other media will continue to put pressure on network services as traffic demands increase. UTC will need to determine how best to manage existing and anticipated future demands for bandwidth, network access, and new services.

One example is the current UTC PBX phone system, which is under vendor contract through 2014. UTC has been looking at Voice over Internet Protocol (VoIP) for at least five years, but has been unable to complete the transition largely due to financial constraints. In addition, although significant upgrades to the UTC network architecture have been made, VoIP can serve as a catalyst to ensure that all network components are sufficient to meet the converged (voice, video, and data) needs of a 21<sup>st</sup> Century campus.

The University should not consider a move to VoIP as just acquiring a phone system, but as an investment that leverages other network investments and provides added functionality and integration of services. More importantly, going forward, it will become more difficult to support PBX technology. Although the current PBX phone system appears to be cost effective on a per line basis, UTC should begin planning a migration to VoIP. The additional features and interoperability of VoIP make it a more attractive communications technology that better aligns with current network architectures. In the future, PBX technology will not be available except on eBay.

UTC should also consider outsourcing alternatives where appropriate. For example, some Universities and Colleges are outsourcing residence hall networks to simplify security management as well as to ease the burdens associated with growing demands for bandwidth.

**Initiative Owner**

- Assistant Vice Chancellor of ITD
- Technology Leader

**Budget Description**

The current VoIP estimates are dated at this time. However, prior costs for equipment and implementation exceeded \$1M. The challenge will be to review VoIP in the context of network demands such as wireless access and increasing need for bandwidth. New estimates will need to be reviewed against the existing cost structure and need for specialized labor to manage the PBX. However, based on revised data, it is expected that a staggered VoIP migration would cost approximately \$125,000 (additional budget dollars) per year over a three year window.

Initiative #14 – Network Convergence and Architecture
Action Items to Implement Initiative
<ol style="list-style-type: none"> <li>1. Create a three-year network convergence plan that includes VoIP implementation.</li> <li>2. Determine what, if any, current network services should be outsourced to focus limited resources at UTC. For example, should UTC consider partnering with EPB to deliver services to campus housing.</li> <li>3. Plan for a phased roll-out plan for VoIP.</li> </ol>
Anticipated Benefits
<ul style="list-style-type: none"> <li>• Reduced IT support costs due to specialized labor (telco) reductions, converged networks, and scalability of converged network platform.</li> <li>• Increased communication capacity will provide opportunities for new services and for integration with application systems.</li> <li>• Improved public safety through enhanced communications capacity.</li> <li>• Increased user productivity from VoIP’s intangible benefits.</li> </ul>
Measurements of Success
<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Tech-Qual Survey.</li> <li><input checked="" type="checkbox"/> Lower costs for phone service on a per-line basis.</li> </ul>
Benchmarking Consideration
<p>The <b>University of North Carolina at Charlotte</b> has a VoIP rollout that is about 60% complete. The residence halls are outsourced to Time Warner due to cost and bandwidth issues, and the email system is migrating to the cloud. According to the CIO, the University did not have the capability to meet the growing demand.</p>

**Initiative #15 –Annual Systems Review – Looking to the Future**

**Proactively plan for new technology and conduct annual systems reviews.**

Technology is constantly changing. In the long term UTC may see the level of complexity involved in securing the network decrease as systems move to the cloud and campus systems become more virtualized. This should be a consideration for any planning related to network access control, systems upgrades, and the implementation of new software and hardware.

Students desire prevalent technologies that support the working world and expect their educational institution to provide them with the background necessary to make a successful transition from students to professionals. In addition to planning for technology refresh and replacement, UTC should be able to effectively plan for and adapt to new technologies in a timely manner. The migration to GoogleMail for students is a recent example of how UTC was able to reduce the overall complexity of the email systems while leveraging investments made in network upgrades.

Over the next 3-5 years it is likely that cloud computing will move from hype to reality and open source and community source software will provide more alternatives to traditional vendor software offerings. This is especially true in the Higher Education arena. It will be critical for UTC to have an appropriate framework to evaluate and assess emerging technologies for both academic and administrative needs.

Please refer to Initiative #1 - IT Governance for more details on the roles and responsibilities of both the ITSC and the TRB in ensuring that data security, total cost of ownership, and other requirements are met in reviewing technology decisions at UTC.

**Initiative Owner**

- Technology Leader
- Participate IT
- ITSC
- TRB

**Action Items to Implement Initiative**

1. Develop a task force to assess the best opportunities for cloud computing services.
2. Continue to proactively assess external factors that will influence decision-making.

**Anticipated Benefits**

- Economies of scale.
- Focus limited resources on “value-added” UTC IT Services.

**Initiative #15 – Annual Systems Review – Looking to the Future**

**Measurements of Success**

- Align systems review process with standard metrics to gauge customer satisfaction and identify new technology opportunities.

**Best Practice Consideration**

The unsustainable economics of higher education’s traditional approaches to IT, increased expectations and scrutiny, and the growing complexity of institutional operations and governance call for a different *modus operandi*. So too does the mass consumerization of services, for which students and faculty are more likely to look outside the institution to address their IT needs and preferences, noted James Hilton, Vice President and CIO, University of Virginia. Cloud computing represents a real opportunity to rethink and re-craft services for the academy. *Shaping the Higher Education Cloud*, an EDUCAUSE and NACUBO White Paper, May 2010

## IT Communications Initiatives

IT Communications should clearly state when to expect an interruption and how the interruption will affect the technology service. Technology users report that system shutdowns and failures occasionally take place without notification. This exemplifies the importance of coordinated communication.

End users reported that technology communication is either too complex or non-existent. This often puts people in a wait-and-see mode. Communication about system upgrades and maintenance needs to be straightforward and timely. The objective is to notify users about those activities that will affect their ability to use technology.

The Current Environment Assessment identified a need for UTC to evaluate how technology operations are communicated to the University community. In addition, the processes identified in other initiatives in this Plan should be leveraged to improve communications on IT decision making, whether it is in regards to budget, systems, or staff.

Category	#	Initiative Title	Initiative Description
IT Communications	16	Promote a Culture of Continuous Improvement	Establish University-wide standards for assessing and measuring satisfaction with and seeking input on IT services.
	17	Technology News and Updates	Establish a clear and consistent technology communications program that keeps the entire campus community informed about technology initiatives.
	18	Systems Dashboard	Establish an information systems dashboard that monitors critical systems used at UTC. This should include standard protocols for communicating with users when systems are not functioning and alert users to scheduled maintenance.
	19	Website Redesign	Redesign and update the UTC website to improve navigation, make the end-user experience more intuitive.

**Initiative #16 – Promote a Culture of Continuous Improvement**

**Establish University-wide standards for assessing and measuring satisfaction with and seeking input on IT services.**

In 2010 - 2011 UTC underwent its SACS Accreditation process. Similar to this effort, improving service requires a consistent feedback loop. The accreditation process expects "an ongoing program of improvement" and demonstrable evidence of "how well [the University] fulfills its stated mission." This applies to the institution as a whole, as well as each departmental area. SACS asserts that "accreditation requires institutional commitment to the concept of quality enhancement through continuous assessment and improvement."

Currently, UTC does not have standard processes for evaluating IT service feedback. Although the TechQual survey is issued annually, it is from the vantage point of ITD and does not address services throughout the IT Community. In addition, the questions are created from a single perspective. However, it has been reported that the TechQual survey continues to be refined. Accordingly, TechQual may provide the basis for a future baseline assessment tool.

Another resource for continuous improvement is the Tennessee Center for Performance Excellence <http://www.tncpe.org/>. This is a nationally-recognized organization that assists all types of enterprises with establishing and improving their practices. Some UTC staff members, under the auspices of the Vice Chancellor for Finance and Operations, have completed training with this organization.

**Initiative Owner**

- Technology Leader
- Entire Technology Community

**Estimated Initiative Budget**

This initiative should not increase costs. Instead, this initiative may result in an overall decrease in costs as a result of improved customer satisfaction and continuous evaluation of services and technology.

**Action Items to Implement Initiative**

1. Review the TechQual survey to determine if that can be a starting point for assessment feedback.
2. Work with Help Desk to create single point of feedback that serves to continually assess services provided and levels of customer satisfaction.
3. Leverage this initiative to ensure that other initiatives have reasonable measurements of success established.

<b>Initiative #16 – Promote a Culture of Continuous Improvement</b>
<b>Anticipated Benefits</b>
<ul style="list-style-type: none"> <li>• Customer-centric decision making based on regular feedback.</li> <li>• An ongoing program of improvement and a focus on value.</li> </ul>
<b>Measurement of Success</b>
<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Issue feedback requests through the Numara Help Desk system.</li> <li><input checked="" type="checkbox"/> Improved customer satisfaction with technology at UTC.</li> <li><input checked="" type="checkbox"/> Utilize an improve Tech-Qual Survey or another device.</li> </ul>
<b>Lessons from SACS Accreditation</b>
<p>Principle 3.4.12 states that the institution’s use of technology enhances student learning and is appropriate for meeting the objectives of its programs. Students have access to and training in the use of technology. (Technology use).</p>

**Initiative #17 – Technology News and Updates**

**Establish a clear and consistent technology communications program that keeps the entire campus community informed about technology initiatives.**

As part of its Strategic Plan, UTC seeks to enable partnerships. This initiative extends to the technology community, which consists of central and partnered technology services. In order to operate in a way that is cohesive, collaborative, and effective, a functional communications structure is imperative. Informing the UTC community about successful technology initiatives and projects will help the technology community gain credibility and open additional opportunities for partnerships.

UTC should define and implement a comprehensive communications program that outlines standards and expectations surrounding projects, accomplishments, events, bulletins and general updates that relate to technology services at UTC. This program should be developed with input from technology community constituents, as well as faculty, staff, and students. Gathering input from a group that is representative of the target audience will enable UTC to establish a program that is considerate of user needs. This balance is important; too much communication will overwhelm the targeted audience, while too little communication will create tension and uncertainty.

The communications program will require upkeep. As the technology landscape changes, certain communications will become irrelevant and new communication needs will emerge. It will be important for UTC to regularly review the program and make updates as needed.

Please see Appendix #1 - Communications Scorecard for an example from Higher Education.

**Initiative Owner**

- Technology Leader

**Estimated Initiative Budget**

There are no significant direct costs associated with this initiative; however, formulating and coordinating a communications strategy that is acceptable to the UTC community will require a time commitment. There may be additional costs associated with developing necessary branding materials, but these costs are not expected to be significant.

Initiative #17 – Technology News and Updates	
<b>Action Items to Implement Initiative</b>	
<ol style="list-style-type: none"> <li>1. Assess target audience needs.</li> <li>2. Assign responsibilities among technology community to ensure that every technology partner has a communications liaison.</li> <li>3. Design communications program that is considerate of UTC community (audience) needs.</li> <li>4. Build a communications scorecard that enables communicators to perform self assessments.               <ol style="list-style-type: none"> <li>a. Clarity – Did users understand the message?</li> <li>b. Consistency – Did we establish a communications plan? Did we stick with it?</li> <li>c. Channel – How did we ‘package’ the message? Email? Bulletins? Social Networking? Was this successful?</li> </ol> </li> <li>5. Establish acceptable vehicles for communicating the IT brand.               <ol style="list-style-type: none"> <li>a. Open Meetings, Question and Answer (Q &amp; A) Sessions, Town Hall Meetings</li> <li>b. Technology Fair</li> <li>c. Newsletters, email, fliers</li> <li>d. Social networking</li> <li>e. Portal/Web site updates</li> <li>f. Giveaways – key chains, bumper stickers, thumb drives</li> </ol> </li> </ol>	
<b>Anticipated Benefits</b>	
<ul style="list-style-type: none"> <li>● Gain credibility by informing community of initiatives and demonstrating ability to successfully complete projects.</li> <li>● Minimize counterproductive interruptions from uninformed parties of interest when engaged in projects, tasks, and initiatives.</li> <li>● Informed and engaged community.</li> </ul>	
<b>Measurement of Success</b>	
<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Communications Scorecard.</li> <li><input checked="" type="checkbox"/> Tech Qual survey.</li> <li><input checked="" type="checkbox"/> Open Forums – Participate IT.</li> <li><input checked="" type="checkbox"/> Include measurement in new assessment initiative.</li> </ul>	
<b>Benchmarking Consideration</b>	
<p>At <b>Tennessee Tech University (TTU)</b>, technology initiatives are assigned to cross functional implementation teams that are responsible for facilitating communication efforts.</p>	

**Initiative #18 – Systems Dashboard**

**Establish an information systems dashboard that monitors critical systems used at UTC. This should include standard protocols for communicating with users when systems are not functioning and alert users to scheduled maintenance.**

Proactive management of events that cause system interruptions will minimize tensions among users who are inconvenienced by unfavorable maintenance schedules or unexpected system downtime. Establishing well-coordinated maintenance schedules and incident identification and response mechanisms in concert with clear and consistent communication practices will position the technology community to build credibility.

System owners should work together to establish performance standards and metrics for minimum acceptable downtime. These metrics should be available to the UTC community. System owners should be accountable for ensuring that actual service levels remain compliant with performance metrics.

System owners should establish maintenance windows that minimally impact system users. This initiative will require technical personnel to work closely with University Relations (web communications), business units, and academic departments to establish communication protocols and to determine appropriate scheduled maintenance windows.

One example of a working Systems Dashboard that UTC may consider is the System’s “Traffic Control Center” <http://OIT/UT System.utk.edu/tc/>. Also, see Appendix #2 for another example of an Operational Systems Dashboard from Case Western University.

**Initiative Owner**

- Technology Leader (in conjunction with OIT/UT SYSTEM)

**Budget Description**

UTC may be able to leverage the existing functionality of the Numara Service Management System. This may require additional investment depending on how much functionality exists with the system as it stands today.

**Action Items to Implement Initiative**

1. Establish performance metrics that identify minimum downtime for the UTC network and critical systems and services.
2. Standardize technology communications to be clear and consistent. Standardized technology communications should address the following:
  - a. Unscheduled system outages – notify users upon detection and again upon resolution.
  - b. Non-functional public devices - notify users upon detection and again upon resolution.
  - c. System Maintenance – notify users in advance of system maintenance activity.
  - d. Other issues that are creating heavy call volume.

Initiative #18 – Systems Dashboard
<ol style="list-style-type: none"> <li>3. Communications should include standard elements such as “action required (yes/no/if yes, what).”</li> <li>4. Assess available tools for receiving updates about system outages and passing information along to end users.               <ol style="list-style-type: none"> <li>a. Consider use of social networking tools and mobile devices for communicating with users.</li> <li>b. Consider methods utilized by UTC partners, including UTK, for monitoring systems.</li> <li>c. Consider existing technology (i.e., Numara Footprints) to determine viability of existing features.</li> </ol> </li> <li>5. Work with system owners to establish maintenance schedules that are most conducive to user scheduling needs.</li> </ol>
Anticipated Benefits
<ul style="list-style-type: none"> <li>• By proactively managing system disruptions, ITD will decrease call volume and enable Help Desk personnel to focus on resolving issues rather than taking calls from disgruntled customers.</li> <li>• Using tools to provide automation in detecting issues and initiating notifications will make IT operations more efficient.</li> <li>• Gain credibility from UTC community by providing service metrics and accompanying availability statistics. Instill attitude that system downtime is the exception rather than the rule.</li> <li>• Customers will be able to plan for most system outages and can easily assess the status of unplanned outages.</li> </ul>
Measurements of Success
<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> System status dashboard web presence.</li> <li><input checked="" type="checkbox"/> Creation of agreed upon performance metrics.</li> <li><input checked="" type="checkbox"/> Monitor volume of Help Desk calls/requests related to system outages.</li> <li><input checked="" type="checkbox"/> Tech-Qual Survey.</li> <li><input checked="" type="checkbox"/> Gather feedback from representative groups such as Student Government.</li> </ul>
Research Consideration
<p>“Because we publish metrics that a service such as e-mail is available 99.9% of the time, clients know that unscheduled downtime for us is the exception, not the rule. IT’s important to have credible, publicly accessible statistics associated with our services.”<sup>4</sup></p>

<sup>4</sup> Pirani, Judith A. et al. “ITIL at New York University: A Framework for Excellence.” ECAR Case Study 1, 2008

**Initiative #19 – Website Redesign**

**Redesign and update the UTC website to improve navigation, and make the end-user experience (for both UTC and visitors) more intuitive.**

The UTC website is the global face of the University to potential students, donors, and alumni. It also serves as the primary reference point and hub of UTC activities for current students, faculty, and staff. A University’s website is an important tool when it comes to capturing the interest of potential students. The website serves not only as a platform from which UTC can reach out to perspective students, but it is typically the first impression that a visitor has of UTC.

The current website design is dated and lacks intuitive navigation for users. Student focus groups indicate that a redesign and update of the UTC website to improve navigation and make the end-user experience more intuitive is needed. Currently, the lack of a Content Management System does not allow for data owners such as ITD, Advancement, Deans of Colleges, etc. to easily update and manage their respective content.

Any redesign should include implementing a Content Management System to enable content owners to submit website modifications in a standard University approved format. A comprehensive website management program includes ongoing assessment and maintenance and established expectations for training, control, and updating content on a regular basis. An effective website should combine efficient publishing practices with compelling and consistent presentation of information.

**Initiative Owner**

- Assistant Vice Chancellor, University Relations

**Budget Description**

The Content Management System could use existing technology such as Banner/Luminis. This will require further evaluation from the University. Another option would be adopt “Open Source” technology like the new WordPress content management system recently implemented at the University of Maine, Orono.

**Action Items to Implement Initiative**

1. Conduct focus groups to determine how to reimage the website.
  - a. Research other institutions to identify examples.
2. Establish an owner of the UTC website.
3. Identify and implement an effective Content Management System.
  - a. Work with stakeholders to identify requirements.
4. Develop a consistent process for updating content and set expectation for regular updates. Some of these standard elements include:
  - a. University logo
  - b. Font colors and font sizes
5. Train users on the Content Management System and once website standards are approved.

Initiative #19 – Website Redesign
Anticipated Benefits
<ul style="list-style-type: none"> <li>● Remove the current bottleneck of the UTC Webmaster’s role in updating content across the site.</li> <li>● Improved workflow efficiencies across departments by empowering end users to own their content. This means that departments cannot rewrite the catalog just because they post something different on their departmental web site.</li> <li>● Collaborative planning and content sharing that creates a more consistent website presence.</li> <li>● Real time tracking of content creation.</li> <li>● Consistent branding.</li> <li>● Improved compliance and ability to audit the UTC website.</li> </ul>
Measurements of Success
<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Surveys (prospective students, alumni, other UTC stakeholders).</li> <li><input checked="" type="checkbox"/> MyMoc.net statistical information.</li> <li><input checked="" type="checkbox"/> Work with University Relations to determine if changes have improved efficiencies of their operation.</li> </ul>
Benchmarking Considerations
<p>The <b>College of Charleston</b> has a dedicated Web Strategies group, which is responsible for researching the newest technologies. In addition, this group develops and manages the College website, the my.Charleston Luminis-based portal, and any peripheral pages associated with the College.</p>

**IT Training Initiatives**

Like any business, UTC’s success depends on the quality of its employees. Training is an essential element in maintaining a quality workforce that can effectively utilize and support existing resources while remaining open and comfortable with innovation.

The Current Environment Assessment identified a need for UTC to evaluate how technology training is coordinated and delivered to the University community. It was determined that training needs to be strengthened for both users and providers of technology services.

Category	#	Initiative Title	Initiative Description
IT Training	20	Technology Community Training	Implement a training program for people that deliver technology services at UTC. This should include the entire technology community.
	21	UTC Employee Training	Implement a technology training program for UTC employees across the University.

**Initiative #20 – Technology Community Training**

**Provide training for people that deliver technology services at UTC. This should include the entire technology community.**

Develop a program that sets training standards and expectations for technology staff. Eventually, this will include a standard set of minimum technical competencies that are integrated with the standard job applicant screening process, and included with position description questionnaires (PDQ).

Training should be aligned with new technology initiatives and should also include soft skills, such as leadership and customer service.

*“When IT leaders emphasize the importance of soft skills, good communication and active listening are more likely to become ingrained in the organizational culture”.<sup>5</sup>*

ITIL training provides a good opportunity for technology staff to understand what it means to provide quality IT services. IT personnel should begin to view their responsibilities differently, realizing that their roles go beyond providing technical assistance, and understanding the importance of meeting service oriented objectives in support of the big picture.

This may involve establishing a training and support group that promotes information sharing, cross training, soft skills and mentoring for all technology personnel across the institution. These training sessions should also include opportunities to stay relevant and up-to-date on new technologies, new software, hardware, networking practices and procedures, and infrastructure developments. Both internal and external trainers are encouraged.

**Initiative Owner**

- Technology Leader

**Budget Description**

In addition to soft skills training, specialized training will be required to keep technology community personnel informed about relevant new technologies, software, and infrastructure developments. Technical training may be less scalable than soft skill training, as individuals will require unique types of training to address their areas of expertise (for example, network security or enterprise system management). UTC can expect to spend an appropriate amount on annual training and should leverage current internal resource such as the Training and Advisory Group (TAG).

**Action Items to Implement Initiative**

1. Define the community of technology workers.
2. Establish a technology training and support group. Consider creating a sub-group of the Training and Advisory Group (TAG).

<sup>5</sup> Trubitt, Lisa and Jeff Overholtze. “Good Communications: The Other Social Network for Successful IT” Educause Review, vol. 44, no. 6 (November/December 2009): 90 -101

**Initiative #20 – Technology Community Training**

- Include representation from the following areas:
  - WTRC, ITD, Library, and Banner
- The work group should expect to work closely with the following departments:
  - University Relations, Human Resource, and OIT/UT SYSTEM
- 3. Identify training needs. This may require the use of surveys, focus groups, or open forums.
  - Identify existing resources to meet needs.
    - Recruit trainers internally to capitalize on existing expertise. Work with trainers to develop training materials and delivery method.
    - Identify and evaluate online training tools that might support this initiative.
  - Establish a budget to meet residual needs.
- 4. Outline a process by which the training funds can be requested and accessed.
- 5. Work with HR to develop consistent evaluation criteria for assessing technology competence.
  - Incorporate a process by which employee skills are evaluated (by customers/managers, etc.) to indicate potential training needs (have a way to collect all of the training needs).
  - Consider how continual training feeds into a career ladder for employees.
- 6. Incorporate active participation in the group as a part of all related Staff Performance and Development Review (SPDR) and Evaluation and Development by Objectives (EDO) process.

**Anticipated Benefits**

- Targeted training to improve technology staff skills.
- Improve technology staff skills to better serve the user community and to provide new services.
- Enable improved communication among University departments, IT personnel, etc.
- Improve staff retention through effective, lifelong learning and training programs.

**Measurement of Success**

- Work with HR to track overall technology competency levels of personnel.
- Provide feedback mechanisms for personnel.
- Include measurement in Initiative #15 – Annual Systems Review.
- Tech-Qual Survey Results.

**Benchmarking Considerations**

At **Tennessee Tech University (TTU)**, the implementation teams assigned to new services or initiatives determines the appropriate training plan and formulates recommendations.

A 2008 ECAR Case Study of **New York University (NYU)** reported “as a result of ITIL training, the concept of service partnerships has permeated the ITS organization, increasing Client Services’ credibility among it ITS service partners and heightening those units’ understanding of their own roles in providing client services.”<sup>6</sup>

<sup>6</sup> Pirani, Judith A. et al. “ITIL at New York University: A Framework for Excellence.” ECAR Case Study 1, 2008

**Initiative #21 – UTC Employee Training**

**Implement a technology training program for UTC employees across the University.**

Technology training is a critical component of any Institutions ability to keep daily operations and business processes efficient. In order to fully leverage current tools and resources, faculty and staff require introductory training on new technologies and refresher training on existing technologies. Furthermore, an effective technology training program is most often supported by a strategy for training delivery.

All personnel should meet a standard set of minimum technical competencies. These competencies should be integrated with the standard job applicant screening process, such as documentation within position description questionnaires (PDQ). All new hires should be required to complete basic training for software and systems that are part of their day to day responsibilities. UTC may wish to make access to certain resources, such as Banner, contingent on completion of basic training classes. In order to do this, UTC must allocate the appropriate resources to ensure that training classes are readily available. To the extent possible, hiring departments should coordinate training activities with the training and support work group (see Initiative #20 – Technology Community Training).

It will be important for the training and support work group to constantly evaluate the technology training program and to make updates accordingly.

The training and support work group will work closely with Strategic IT Planning Initiatives to ensure that new technology initiatives include appropriate training plans.

The work group should also expect to work closely with Human Resources to ensure that minimum technology competencies are enforced and that employee evaluations are considerate of technology aptitude. The training and support work group should also establish a method for collecting and considering training related feedback and suggestions.

**Initiative Owner**

- Office of Human Resource, in cooperation with the Technology Leader’s office.

**Budget Description**

It is expected that existing resources will be utilized for this initiative. These resources include the WTRC, Library, the Training and Advisory Group (TAG), identified ‘super’ users, and subject matter experts. In addition, UTC should work to establish a knowledge base of additional existing training resources. There will be a need for some additional training resources; however, training investments should be scalable. UTC should also explore free training resources that may be available via the web, as well as gather an inventory of existing resources that can be better utilized.

**Initiative #21 – UTC Employee Training**

**Action Items to Implement Initiative**

1. Identify technology skills needed for each position and post those with PDQs.
2. Based on technology skills identified, build a menu of training that indicates which training items are recommended and which items are required for each position.
3. Develop a process for ensuring that faculty and staff are trained upon employment and with each job change within the institution.
4. Develop process for ensuring that staff and faculty are properly trained when new technologies are introduced on campus.
5. Develop or adopt training documentation available for UTC faculty and staff as needed for support.
6. Work with Human Resources to implement a program of recurring technical training for all members of the UTC community, including students, staff, faculty and IT service providers.
  - a. Communicate and distribute IT training documents (via SharePoint, Wiki's, etc.) that have been developed or are being developed.
  - b. Develop and enforce standards for technical competency that will be incorporated into job descriptions at UTC.
7. Identify budget line items for technology training.
8. Seek ways to partner with other members of the UT community to reduce costs of training that are common across the System.
9. Evaluate online training tools that could support this initiative.

**Anticipated Benefits**

- Targeted training to improve technology staff skills.
- Improve technology staff skills to better serve the user community and provide new services.
- Improve staff retention through effective, lifelong learning and training programs.
- Improve productivity with existing core University applications.
- Increase the importance of technology awareness University-wide.

**Measurements of Success**

- Monitor Help Desk statistics to evaluate level of basic technical issues.
- Work with Walker Teacher Resource Center to identify changes in level of training requests.
- Have staff perform self assessments for technical competency.
- Tech-Qual Survey Results.
- See Initiative *Promote a Culture of Continuous Improvement*.

## Communicating, Implementing, and Sustaining the Plan

*This section of the Plan describes how the Technology Planning function will be communicated, implemented and sustained. It describes the critical elements for successfully implementing the strategic initiatives identified in the Plan and summarizes the potential impacts to the University as a result of carrying out the Plan.*

The IT Master Plan will require thoughtful execution of a collaborative process that targets outcomes that are supported by the entire campus community. Gaining and maintaining the support of the campus will require clear, consistent, and accurate communication on behalf of University leadership throughout the implementation process. Accordingly, improved delivery of IT services in conjunction with communication and IT Governance will be cornerstones of the IT Master Plan.

### Technology Planning Consideration from the University Strategic Planning Process

The UTC Strategic Planning Process should also include specific consideration of how Information Technology supports the mission of the University. Strategic plans are, by nature, intended to provide guidance to the Chancellor's Cabinet for making decisions on priorities and investments. In this light, it is important for UTC to have an appropriate framework to evaluate and assess emerging technologies for academic, operational, and administrative needs.

UTC should consider the following requirements that a plan of this magnitude necessitates:

- Continued active sponsorship from senior academic and administrative leaders will be critical to the successful adoption and continued support of the Plan.
- Project goals and objectives should be clearly communicated to stakeholders and progress should be proactively monitored and communicated.
- Many changes will be non-technical; for example, changes may entail cultural shifts, process changes facilitated by new initiatives, policy and guideline adjustments, or financial and/or budgetary modifications.
- Some additional or redirected technology resources will be required to manage new systems, new technologies, and to properly react to changing business needs.
- Faculty, administrators, and staff must work cooperatively and collaboratively to facilitate effective change that is in the best interest of the University.
- Training and technical support staff will be critical to the success of the Plan's implementation. University constituents must be ready, willing, and able to use new technology and embrace effective change.

### **A Unified Communications Strategy and Campus-wide Marketing Plan**

The UTC technology community needs a unified communication strategy and a sustainable marketing plan. Effective communication begins with listening and understanding. To promote this, IT leadership meets with deans, division heads, and administrative offices each semester. These interactions provide members of the user community with opportunities to share perspectives and insights, and for IT service providers to listen and understand needs.

A marketing plan entails broad, campus wide communications that are executed on a consistent basis and make use of multiple communication venues. Examples of communication venues include web page updates, newsletters, topic-specific email communications, focus groups, joint communications with operating departments, spotlights on members of the campus technology community, and campus presentations.

### **Updating the IT Master Plan**

Throughout development of this plan, UTC has undertaken a collaborative approach to technology planning. This has provided a framework for input from academic and administrative stakeholders and campus leadership into the decision making process around technology at UTC. Going forward, campus wide collaboration amongst the University's technology community will be important.

As presented in Initiative 3 of this plan, two new committees are identified with respect to technology at UTC: the University Information Technology Steering Committee (ITSC), and the Technology Review Board (TRB). The role of these Committees with respect to technology decision making, responsibility, and accountability, and also in relation to the campus wide Technology Leader and the Chancellors Council, is also depicted in Appendix 4. In addition, Participate IT (open forums for the UTC community) will also provide important feedback for updating the Plan.

The IT Mission should remain constant for the foreseeable future. However, the initiatives set forth in the IT Master Plan require ongoing evaluation. While the Plan has been designed with an eye towards the future, the technology landscape is rapidly changing. What makes sense for 2012 may not make sense in 2014. As part of the IT Master Plan, UTC should establish a formal technology planning process that includes ongoing evaluation and prepares the University to develop its next technology plan in 2015-16.

By establishing a University-wide technology planning approach, working to standardize tools and applications, and developing a repeatable process for setting technology priorities, University leadership should have a more complete picture of resources, materials, and capabilities. New technology services can create significant opportunities to change how the University manages daily operations. To obtain the benefits of technology investments, the University must plan for business process changes that streamline operations and focus on using technology to improve customer service.

Appendix #1: Sample Communications Scorecard

## Communication Scorecard

Use this scorecard to help you think critically about a communication effort in your organization.

**1. Consider each aspect of the effort.**

**2. Rank its level of success.**

- 1 – Low
- 2 – Low-Medium
- 3 – Medium-High
- 4 – High

**3. Identify areas of strength and areas for improvement.**

Aspects		Considerations	Success ranking
Context	Project	How clearly defined was the project that the communication serves?	
	Goals	How clearly defined were the success criteria for the communication?	
	Audience focus	How clearly defined was the audience for this communication?	
Message	Message clarity	Was the message clear and concise? Was it structured for maximum impact? Was it free from non-essential information? Did it enable community members to find additional information?	
	Message consistency	Was the message disseminated consistently?	
	Message distribution	Was the message disseminated in varied ways?	
	Message frequency	Was the message communicated frequently enough? (not too much, not too little)	
	Message timing	Was the message well timed?	
Materials	Collateral	Were the collateral items well-designed and eye-catching? For example, did they make good use of color, images and white space?	

Created by Lisa Wiecki and Joshua Wilson; Library & Technology Services; Brandeis University  
Inspired by Synopeia Communication Measurement Scorecard (<http://www.synopeia-communication.co.uk/pdf/Scorecard.pdf>)



Appendix #2: Sample System Status Dashboard from Case Western Reserve University

**NAVIGATE**

- Students
- Faculty
- Staff
- ITS Home
- About ITS
- Current Projects
- Operational Excellence
- Search ITS...

Information Technology Services (ITS) is dedicated to the effective and efficient delivery of information technology and service required by the end users that add measurable value to our University Community.

### Critical Application Summary

Application	From	
● Active Directory	12/14/2010 6:56:58 PM	<a href="#">Detail</a>
● Blackboard	12/17/2010 4:37:19 AM	<a href="#">Detail</a>
● Financials	12/15/2010 3:47:29 AM	<a href="#">Detail</a>
● Google Mail	12/20/2010 4:38:42 PM	<a href="#">Detail</a>
● HCM	12/20/2010 3:52:00 AM	<a href="#">Detail</a>
● Internet	12/20/2010 4:57:11 PM	<a href="#">Detail</a>
● LDAP	9/29/2010 8:01:22 AM	<a href="#">Detail</a>
● SIS	12/17/2010 3:37:22 AM	<a href="#">Detail</a>
● Single Sign-On	11/28/2010 12:53:08 AM	<a href="#">Detail</a>
● VoIP network	9/29/2010 10:29:26 AM	<a href="#">Detail</a>
● Wired network	7/26/2010 11:23:45 AM	<a href="#">Detail</a>

As of 12/20/2010 5:24:28 PM ● Up ● Down

**Appendix #3: Suggested IT Service Model**

<b>Service Area</b>	<b>Mission</b>	<b>Primary IT Service Provider</b>	<b>Partner IT Service Provider</b>	<b>Illustrative Services</b>
<b>IT Services- Customer Care</b>	Customer Care provides high quality solutions and direction concerning the use of IT services to the entire campus community through collaboration with IT partners.	Call Center (SPOC), Field Repair Services, Customer Communications		call center, request tracking, dispatch and referral, customer communications - how to, FAQs, web pages, newsletters, etc., equipment repair
<b>IT Services</b>	IT Services works in collaboration with other departments to deploy reliable, accessible, and secure core IT services, including communications, servers, databases and networks.	Servers, Networks, Telecom, Cabling, Databases, Portal/Web, Core application administration	UT System OIT/UT SYSTEM	cabling, networks, servers, databases, authentication and directory services, data storage and backups, web, portal and mobile services, secure file transfer, network access, file serving, email, calendar, collaborative tools, telecommunication services, voice mail, training
<b>IT Security</b>	IT Security works with the entire campus community, law enforcement, and the UT Information Security Office, to protect the UTC network and connected systems.	Office of the CIO	UT System Information Security Office	security standards and practices, security awareness training, assessment, forensics

<b>Partner Administrative</b>	Administrative IT works in coordination with client departments and IT partners to develop practical, integrated, future-oriented, and reliable solutions to business processes.	Business Analysts, Programming, Non-Academic Office Systems, Admin. Systems Application Administration	UT System IRIS and OIT/UT SYSTEM, Auxiliary Services IT, and Housing IT,	process analysis, gl, hr, ap, payroll, effort certification, alumni, THEC reporting, employee self-service, admissions, catalog, class schedule, registration, grading, academic records, financial aid, student accounts, housing, card access, room scheduling, graphic services. Includes application support for document imaging, reporting tools, programming, office tools integration, catalog, circulation, interlibrary loan, electronic library services, training, office tools and PC support to non-academic offices
<b>Partner Academic</b>	Academic IT works in partnership with other departments, colleges, faculty, and students to support, empower, and advance the evolving use of information technologies to facilitate learning, teaching, and research.	Labs, Podiums, Media, Academic Office Systems	Walker Teaching Resources, Library IT, Continuing Education Distance Learning, Nursing IT, SIM Center, Academic and Research Computing, COB IT, COECS IT	instructional design and consulting, computer labs, classroom technologies, online teaching, teleconferences, media delivery, media production facilities, training, office tools and PC support for academic offices
<b>IT Consulting</b>	IT Consulting works in partnership with other IT departments to design new IT services and as a trusted intermediary to resolve disputes.	Office of the CIO	UT System OIT/UT SYSTEM	seeding of new technologies, ombudsman for IT services, project management, service design

## Appendix #4: IT Governance Model and Process Flow

### IT Steering Committee (ITSC) Composition and Approach

The ITSC is intended to govern the University's Strategic Technology Plan and planning process. The functions of the ITSC will be to:

- Provide opportunity for input from all stakeholders into the technology planning process
- Recommend prioritization of IT initiatives to the Chancellor's Executive Council
- Recommend investment in IT initiatives to the Executive Council
- Oversee an annual assessment of IT services, needs, issues, and update of the Technology Master Plan
- Work with the IT Leader to recommend organization structure changes with respect to the campus IT Community

The ITSC will include leadership representing the colleges, library, faculty (including the Classroom Tech Committee), finance, student affairs, operations, and information technology. An example of this makeup can be seen in the Technology Planning Task Force that worked on the development of this plan with BerryDunn. The Chancellor should sponsor and appoint the chair for this Committee on a rotating 2-year basis. The ITSC should be comprised of 8–10 people. The technology wide campus leader will actively participate in leadership and work of this committee, but will not necessarily be the chair.

The annual plan update should include considering the list of strategic issues, re-evaluating current initiative prioritization, and developing new initiatives that will become the basis for the Plan going forward. Representatives will be expected to carry out their duties in a way that represents the University's overall mission, vision, and goals ahead of the needs of their own departments.

The ITSC should be a regularly scheduled agenda item on Executive Council meetings to ensure that these efforts are being communicated to the Chancellor and that appropriate input is gained from this group. Annually, the ITSC will be responsible for updating the Plan and for contributing to the budgeting process by providing direction and recommendations regarding the annual technology project and initiative funding review.

### The Technology Review Board (TRB) Composition and Approach

The TRB is intended to be a technology savvy group comprised of members of the UTC leadership, faculty, and staff from the campus technology community. This group has an important role to help keep the University aware of how technology is used and functioning throughout the University at a tactical and application (hands-on) level.

The TRB will bring consistent oversight to IT technical standards, specifications, and technologies across the campus. The functions of the TRB will be to:

- Define scope for approval by ITSC.
- Defining campus wide technologies.

- Evaluate and document standards for the university's IT Architecture.
- Serve as the review body for IT technical decisions and recommend substantial product decisions.
- Conduct technical reviews of major investments to ensure consistency with architectural standards.
- Serve as a development body for technical solution documents.
- Conduct an annual evaluation of the university's technology and architecture standards and management processes.
- Provide a forum for identification, discussion, and resolution of stakeholder issues.
- Make recommendations to Technology leadership and to the ITSC.

The TRB members should represent a diverse set of University departments and technology community members, and will include representatives from central and Partner IT services. Members will be nominated by technology leadership and approved by the ITSC. Each member should have a participatory voice in establishing training priorities, identifying technology issues, and making recommendations.

To keep the body manageable it is recommended that approximately 12 people serve on the TRB team at any one time. A Chair for the TRB should be a member of the TRB nominated by their peers and approved by the IT Leader in collaboration with the ITSC. The TRB Chair should rotate on an annual basis. The Chair should be responsible for communicating the committee's activities and sharing its findings, concerns, and comments with technology leadership and the ITSC.

### **Responsibilities of the TRB**

The TRB should function with an emphasis on proactively identifying problems, training needs, and technical and business processes that could be improved through the effective application of technology. Areas of information technology to be considered by the TRB will include:

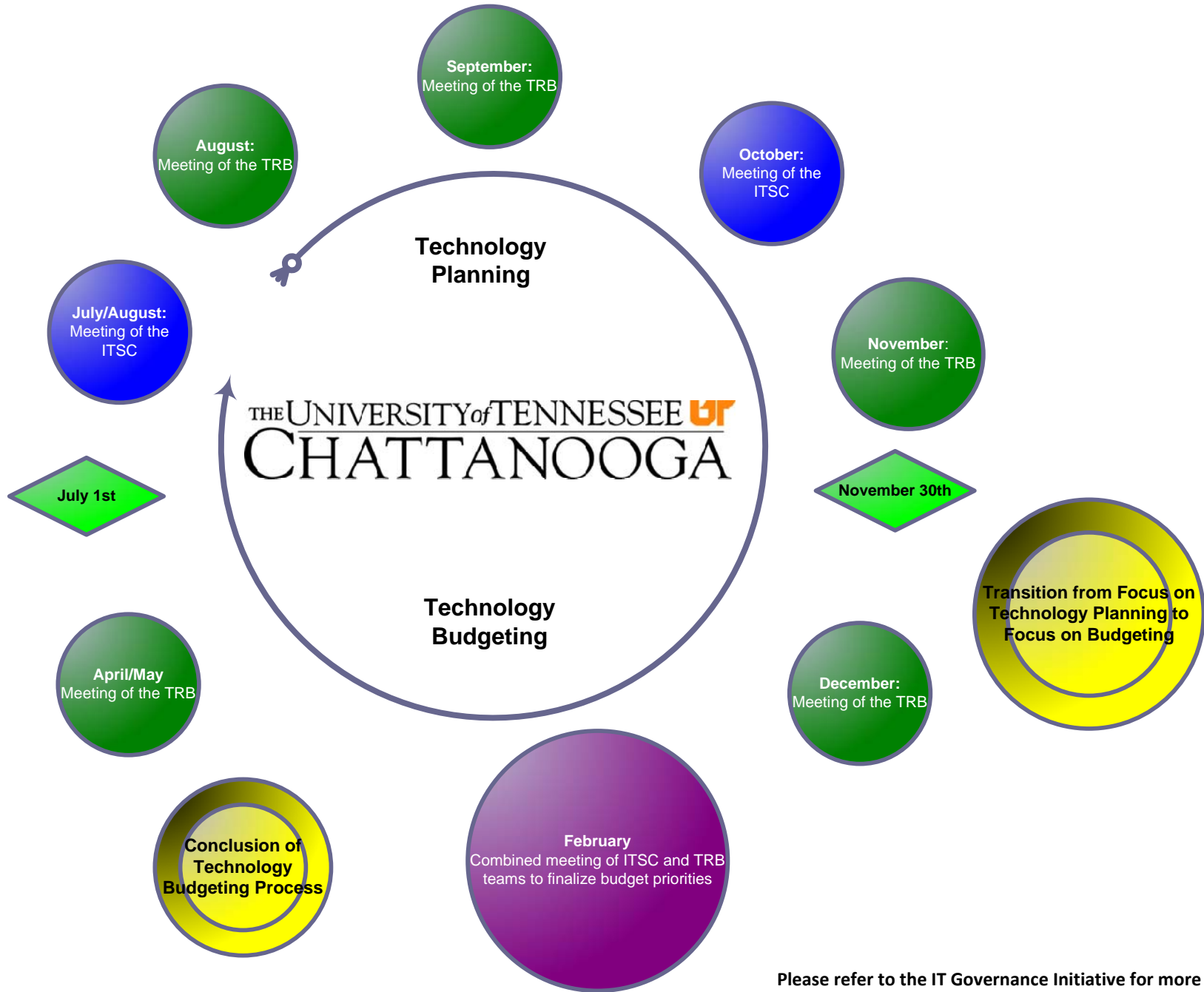
- Applications
- Instructional Technology
- Database
- Infrastructure
- Security
- Service
- Systems
- Audio/Visual

The TRB team should regularly evaluate these technology functions University-wide.

### **Participate IT**

Participate IT seminars and worksessions should be scheduled on a regular basis (at least 3x per year) and to be determined and coordinated through the Office of the CIO.

# Appendix #5: Process Flow for Updating the Master IT Plan



Please refer to the IT Governance Initiative for more details

**Appendix #5: Strategic Issues from IT Assessment – 9/29/2010**

The Current Environment Assessment (September 2010) identified 18 strategic technology issues, which are described in the following table. BerryDunn worked with UTC to develop an IT Master Plan that comprises of strategic initiatives that address these issues.

Issue ID	Description	Supporting Initiatives
<b>People</b> - Issues related to how the UTC community perceives, promotes, and supports technology.		
People 1	UTC needs appropriate staffing to support the University's growth.	Technology Leader, IT Organization, Student Technology Fee Budgeting Process,
People 2	UTC needs to redefine the IT organizational and leadership structure to build a more cohesive and synergistic IT community.	Technology Leader, IT Organization,
People 3	UTC needs an effective development program for all technology staff.	Technology Community Training
People 4	UTC must consider external forces that will compete for quality technical staff.	Technology Community Training, UTC Employee Training
People 5	UTC Help Desk support is not sufficient to support future initiatives such as an expanded Distance Learning curriculum.	Help Desk, Systems Dashboard
<b>Process</b> - Issues related to technology planning, procurement, and service delivery.		
Process 1	The process for technology priority setting and budgeting needs to be evaluated and redefined to establish investment priorities, coordinate technology spending, and align with the long-term strategic vision of the University.	IT Governance Model, Technology Purchases, Technology Refresh
Process 2	IT Governance needs to be established with an effective Charter, appropriate authority for decision making, and the ability to manage expectations at UTC.	IT Governance
Process 3	UTC needs to develop an IT Service Catalog.	IT Service Catalog, Technology News and Updates

Issue ID	Description	Supporting Initiatives
Process 4	UTC needs to formalize procedures to support the implementation of technology decisions and to guide appropriate technology usage and information security.	IT Governance, Technology News and Updates
Process 5	UTC needs to communicate a clear plan for 'Phase Two' of the Banner project.	Next Steps for Banner
Process 6	Distance Learning initiatives need strategic support, oversight, and standardization.	Technology News and Updates, IT Service Catalog
Process 7	UTC needs to establish a culture of project management practices in order to most effectively execute campus technology projects and improve customer service.	Technology News and Updates
Process 8	UTC should develop an internal technology consulting function to assist the University community members in better defining technology needs.	Technology Community Training
<b>Technology</b> - <i>Issues related to technology accessibility, utilization, and security.</i>		
Technology 1	Network access needs to be evaluated for all UTC stakeholders.	Network Access
Technology 2	UTC needs to identify a Content Management System (CMS).	Website Redesign
Technology 3	UTC needs to proactively manage the growing requirements of its systems and network infrastructure.	Network Convergence and Architecture
Technology 4	UTC needs to implement a comprehensive technology asset management program.	Technology Refresh (Budget), Computer Lab Management, Technology Reassessment/Refresh (Services)
Technology 5	UTC recognizes the importance of maintaining current technology; however, the planning process does not reflect this imperative.	Cloud Computing and Systems Review

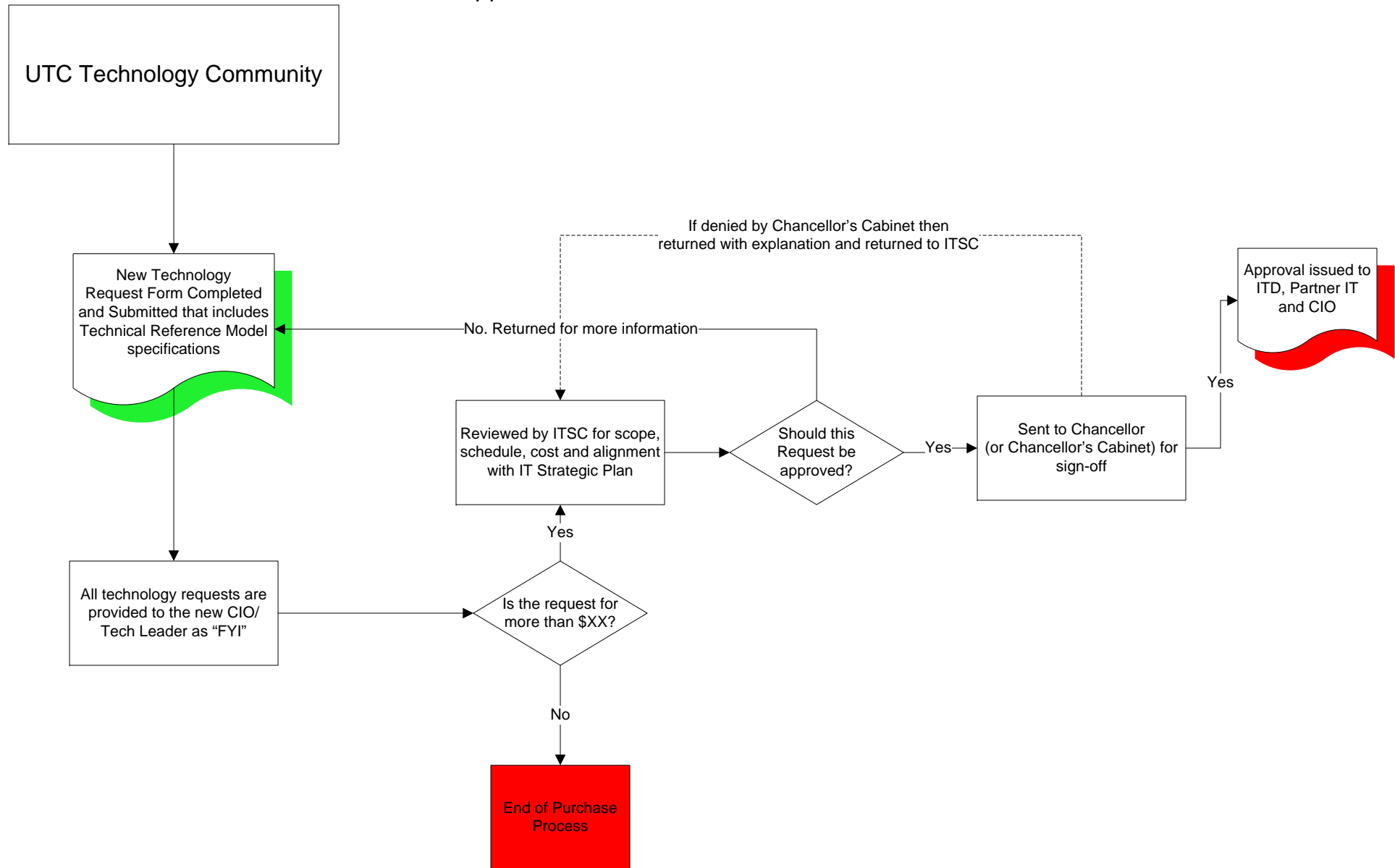
## Appendix #6: Information Technology Refresh Standards

The following table was developed based on industry standards and research from recognized Higher Education resources such as Educause.

Equipment Type	Expected Lifespan of Equipment
<b>1. Wired Network</b>	
Switches	at least 6 years, not more than 10
Routers	at least 6 years, not more than 10
<b>2. Wireless Network</b>	
Access Points	at least 6 years, not more than 10
Controller	at least 6 years, not more than 10
<b>3. Servers</b>	
	In general, not more than 5 years
Storage Area Network	3-4 years
Network Attached Storage	
<b>4. Data Center Infrastructure</b>	
Data Center HVAC Systems	up to 15 years
Data Center UPS	at least 10 years
Wiring Closet UPS	8 plus years, but batteries will need to be updated more frequently
<b>5. Desktop Computers</b>	
	3-4 years
Laptop Computers	2-3 years
Tablet Computers	Limited information, but typical refresh for a tablet would be 2 years in order to keep up with technology
SmartPhones	Limited information, but typical refresh, would be no more than 2 years in order to keep up with technology
<b>6. Classroom Technology</b>	
Projectors	at least 5 years or until it becomes too costly to repair
Document Camera	N/A
Control System	N/A
Desktop Computer(Same as above)	3-4 years
Screen	at least 5 years or until it becomes too costly to repair
Media player VHS DVD	at least 5 years or until it becomes too costly to repair

SmartBoard	3-5 years
Flat Screen Displays	until it breaks, becomes too costly to repair, or there is a different size requirement
<b>Equipment Type</b>	<b>Expected Lifespan of Equipment</b>
Audio System	until it breaks, sound quality is suffering, or the technology is outdated
Wireless Microphones	several years, but batteries will need to be replaced more often
<b>7. Video Distance Learning</b>	
	<b>Research indicates that most will use the equipment until it breaks, becomes too costly to repair, or until the point that the technology becomes outdated.</b>
Codex	see above
Video Cameras	see above
Control System	see above
Media Streaming	see above
Audio System	until it breaks, sounds quality is suffering, or the technology is outdated

## Appendix # 7 - Purchase Process Flow



\*New technology requests that meet certain dollar thresholds should include a basic “business case” for why the requesting organization needs this technology. It should include estimates for one-time and maintenance costs and benefits expected by implementation and utilization of this new technology.

Appendix #8: UTC IT Master Plan Initiatives Matrix

	Category	IT Initiative	IT Issue(s) Addressed	IT Initiative Description	Implementation Timeframe (Fiscal Year)	Assumptions and Constraints	Year 1 Fiscal 2012	Year 2 Fiscal 2013	Year 3 Fiscal 2014	Year 4 Fiscal 2015	Year 5 Fiscal 2016	Five Year Totals
1	IT Governance	IT Governance Model	Process 1 Process 2 Process 4	Establish a new IT governance model that identifies decision making procedures. This should include a high-level IT Steering Committee (ITSC), a more "hands-on" Technology Review Board (TRB), and Participate IT.	2011-12	There are no costs associated with this initiative other than the time that ITSC and TRB members would volunteer to participate.	\$0	\$0	\$0	\$0	\$0	\$0
2	IT Organization	Technology Leader	People 1 People 2	Establish and approve a new Technology Leader role at UTC that will provide leadership and direction for the entire technology community.	2012	Year one funding is expected to be provided from the Student Tech Fee.	NA	\$150,000	\$157,500	\$165,375	\$173,644	\$646,519
3		Technology Community Organization	People 1 People 2	Establish a technology community organizational structure that supports a functional, collaborative, and dynamic technology community at the University between Partner IT and ITD.	2012-14	Although changes are likely the total number of IT-designated staff is not likely to increase.	\$0	\$0	\$0	\$0	\$0	\$0
4	IT Budgeting	Technology Purchases/Intake Process	Process 1	In concert with the new IT Governance initiative, 1) Establish a process that allows IT purchases to be reported to the new UTC "Technology Leader." 2) Establish agreed upon thresholds across UTC for review of high-impact technology purchases by ITSC/TRB.	2012	This initiative does have the potential to save costs over the long term as purchasing power is better coordinated across UTC.	\$0	\$0	\$0	\$0	\$0	\$0
5		Student Technology Fee Budgeting Process	People 1 Process 1	Conduct review of the current usage and allocation of the Student Technology Fee.	2012	The new IT Governance model would not require additional staff or costs to UTC.	\$0	\$0	\$0	\$0	\$0	\$0
6		Technology Reassessment/ Refresh	Process 1 Technology 4	Establish a UTC technology assessment and refresh program. This should include computers, network devices, servers, and other peripherals that are managed by UTC.	2012-16	Cost estimates for technology refresh are based on unfunded projections to replace existing computer equipment based on standard lifecycle estimates. Equipment includes faculty and staff computers (based on 4 year cycle).	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$2,000,000
7		Technology Spending and Reporting	Process 1 Technology 4	Establish Standard Reporting for Technology Spending.	2012-13	Assuming that UTC leverages investments already made at UT Knoxville, the costs for implementing this initiative should be minimal.	\$0	\$0	\$0	\$0	\$0	\$0
8	IT Services	Enhance Customer Care	People 5	Enhance customer care and establish a single point of contact for Help Desk intake and management.	2012-13	Improving customer service and establishing a single point of contact should not increase costs. In addition, expanding usage of the existing Help Desk software (Numara) will not increase licensing costs.	\$0	\$0	\$0	\$0	\$0	\$0
9		IT Service Catalog	Process 3	Establish an IT Service Catalog at UTC.	2012-13	Provided that UTC utilizes technology investments already made (Numara) then additional costs are minimal.	\$0	\$0	\$0	\$0	\$0	\$0
10		Network Access Control	Technology 1	Establish network access that is non-intrusive to end-users and easy to use. This includes network authentication, practical security parameters, and standard protocols for addressing maintenance updates.	2012-13	Assuming that UTC does move off of Bradford, but does not end up with a system that is significantly more expensive than what is already spent on Bradford than costs should be negligible.	\$25,000	\$0	\$0	\$0	\$0	\$25,000
11		Next Steps for Banner	Technology 4	Institutionalize Banner operations and create a sustainable model at the University.	2012-13	Estimates are based on unfunded maintenance that will be required in future years.	\$125,000	\$125,000	\$125,000	\$125,000	\$125,000	\$625,000
12		Technology Asset Management	Process 5	Develop a unified tracking system for computers, other technology devices, and software applications at UTC.	2012-14	Because UTC has already purchased Numara and owns the license for Asset Tracking module there are no additional costs other than maintenance.	\$11,000	\$11,000	\$11,000	\$11,000	\$11,000	\$55,000
13		Computer Lab Management	Technology 3 Technology 4	Conduct a full campus assessment of current Computer Labs to identify opportunities for consolidation and streamlining.	2012	Estimate is based on 2009 efficiency study conducted by UTC.	-\$50,000	-\$50,000	-\$50,000	-\$50,000	-\$50,000	-\$250,000
14		Network Convergence and Architecture	Technology 3	A three year tactical plan should be created to plan for changes to how UTC deploys and manages its network infrastructure.	2013-15	Based on available data from ITD, it is estimated that "new costs" for upgrading network infrastructure would cost the following amount.	NA	\$125,000	\$125,000	\$125,000	\$0	\$375,000
15		Annual Systems Review – Looking to the Future	Technology 5	Proactively plan for new technology and conduct annual systems reviews.	2012-2016	No additional costs.	\$0	\$0	\$0	\$0	\$0	\$0

Appendix #8 - Initiative Matrix - UTC Master IT Plan

	Category	IT Initiative	IT Issue(s) Addressed	IT Initiative Description	Implementation Timeframe (Fiscal Year)	Assumptions and Constraints	Year 1 Fiscal 2012	Year 2 Fiscal 2013	Year 3 Fiscal 2014	Year 4 Fiscal 2015	Year 5 Fiscal 2016	Five Year Totals
16	Communications	Promoting a Culture of Continuous Process Improvement	Process 7 Process 8	Establish University-wide standards for assessing and measuring satisfaction with and seeking input on IT services.	2012-2016	Some costs for training may be required, but these are covered in Initiative #20.	\$0	\$0	\$0	\$0	\$0	\$0
17		Technology News and Updates	Process 3 Process 4	Establish a clear and consistent technology communications program that keeps the entire campus community informed about technology initiatives.	2011-13	This initiative should not require an additional investment of dollars at UTC.	\$0	\$0	\$0	\$0	\$0	\$0
18		Systems Dashboard	People 5	Establish an information systems dashboard that monitors critical systems used at UTC. This should include standard protocols for communicating with users when systems are not functioning and alert users to scheduled maintenance.	2012	This initiative is likely to have no costs because of the ability for UTC to leverage investments already made at UTK.	\$0	\$0	\$0	\$0	\$0	\$0
19		Website Redesign	Technology 2	Redesign and update the UTC website to improve navigation, make the end-user experience more intuitive.	2012-14	There are many low costs options for UTC. However, it should be expected that some web design assistance would be required, even if the University decided to go with an Open Source Content Management System.	\$25,000	\$50,000	\$0	\$0	\$0	\$75,000
20	Training	Technology Community Training	People 3 People 4 Process 7 Process 8	Implement a training program for people that deliver technology services at UTC. This should include the entire technology community.	2012	The Plan has estimated a range of \$500 to \$1500 per employee for annual technology training. This number will greatly vary year to year, but for planning purposes we recommend an annual budget of \$1000 for each identified "technology staff".	\$70,000	\$70,000	\$70,000	\$70,000	\$70,000	\$350,000
21		UTC Employee Training	People 4	Implement a technology training program for UTC employees across the University.	2012-16	Coordinate existing resources and revise HR policy to ensure that new employees receive proper orientation regarding technology applications and that workshops and seminars are provided to UTC customers on a regular basis.	\$0	\$0	\$0	\$0	\$0	\$0
							<b>Year 1 Fiscal 2012</b>	<b>Year 2 Fiscal 2013</b>	<b>Year 3 Fiscal 2014</b>	<b>Year 4 Fiscal 2015</b>	<b>Year 5 Fiscal 2016</b>	<b>Five Year Allocation</b>
Estimated "New Dollars" to Implement and Sustain Plan Initiatives						This estimate does not include existing expenditures.	\$606,000	\$731,000	\$681,000	\$681,000	\$556,000	\$3,255,000
Delta Between FY 2010 Spending and Identified New Initiatives						Percentage increase is based on total spending of \$8,199, 836 for FY 2010	7%	9%	8%	8%	7%	8%

## Appendix #9: UTC Assessment Committee and Task Force for IT Master Plan

### I. Executive Sponsors (Phase One and Two)

Dr. Richard Brown Vice Chancellor Finance Operations and IT  
Dr. Phil Oldham Provost and Vice Chancellor Academic Affairs

### II. IT Implementation Task Force (Phase Two)

Dean Theresa Liedtka, Library (Chair)  
Karen Adsit, Walker Teacher Resource Center  
Chuck Cantrell, University Relations  
Beth Dodd, Continuing Education  
Richard Gambrell, ITD  
Leslie Inman-Jensen, Art Department Faculty  
Jamie Perry/Robert Ridenour, UT System  
Dean Will Sutton, College of Engineering

### III. UTC IT Assessment Steering Committee 2010-11 (Phase One)

#### Committee Co- Chairs

Dr. Karen Adsit Professor and Director of Walker Teaching Resource Center  
Mr. Monty Wilson Assistant Vice Chancellor for IT and Chief Information Officer

#### Members of the Steering Committee:

Ms. Theresa Liedtka, Dean of Library  
Dr. Stephanie Smullen, Computer Science  
Ms. Virginia Cairns, UTC Library  
Dr. Ed Rozema, Mathematics  
Dr. Cindy White, Business Management  
Dr. Joe Wilferth, English  
Dr. Kay Lindgren, Nursing  
Dr. Beth Dodd, Director, Continuing Education  
Mr. Chuck Cantrell, Assistant Vice Chancellor University Relations  
Mr. Matt Pope, Assistant Director of Athletics  
Mr. Yancy Freeman, Assistant Vice Chancellor, University Recruitment  
Ms. Vanasia Parks, Assistant Vice Chancellor, Finance and Administration  
Dr. Clint Smullen, Director of ARCS, and Co Chair Banner Project  
Ms. Debbie Parker, Associate Vice Chancellor Business and Financial Affairs, and Co Chair Banner Project  
Mr. Richard Gambrell, Director Information Systems ITD  
Dr. Deborah Arfken, University Strategic Planning  
Mr. Michael Dinkins, Directory Systems and Security ITD  
Mr. Steve Dodd, Auxiliary Services  
Dr. Roger Thompson, Criminal Justice