



Information Technology Operations Framework

Executive Summary

Lone Star College System provides high quality, affordable educational opportunities and services to its students with the vision to be recognized globally as the premiere community college for student success, innovation and partnerships. In furtherance of Lone Star's vision, the mission of the Office of Technology Services (OTS) is to provide exemplary services that promote student success, quality instruction, effective employees, and a thriving community.

This **Information Technology Operations Framework** describes how the Office of Technology Services operates in support of Lone Star's mission and vision. It describes the overall structure of OTS including how the department is organized, how it is funded, who makes decisions and how successful achievement of goals is measured. It is written to complement the IT Strategy and IT Strategic Plan documents and to provide a framework for the IT Tactical Plan. The Framework provides detailed information on:

Purpose, Mission & Vision

A graphical representation of the department's purpose, mission and vision, as well as its values, strategies and metrics.

Organization

Describes how the department is organized, including the division of responsibilities between System Office and campus OTS staff.

Internal Practices

Outlines internal practices specific to OTS like the department's guiding principles, strategies and 24/7/365 availability.

IT Budget

Discusses how OTS is funded and how the money is spent.

IT Governance

Describes how IT-related decision-making occurs at Lone Star.

Support Standards

Provides information on service level agreements, standard operating procedures, equipment standards and how work is tracked.

Metrics

Describes the metrics OTS uses to measure IT capacity, performance, relevancy and satisfaction.

Project Management

Describes the lifecycle of an IT project and how projects are staffed.

Change Management

Outlines the department's change management practices.

Communications

Describes the department's internal and external communications strategies.

VISION

TO BE *THE* INNOVATION & SERVICE EXCELLENCE LEADER IN HIGHER EDUCATION



PURPOSE

Serve the information technology needs of Lone Star through:

ACADEMIC SUPPORT

Application of technology in the classroom

ADMINISTRATIVE SYSTEMS

Solutions that enhance productivity

INFRASTRUCTURE SERVICES

Stable, robust framework

CONSULTING

Trusted advisor

PARTNERSHIPS

Cultivate relationships internally & externally

VALUES

These beliefs are at the core of everything we do:

LEADERSHIP

Rally ourselves and others to achieve great results

EXCELLENCE

Surprise and delight our customers with our work

AGILITY

Rapidly change

PEOPLE

Treat everyone with respect

SPEED

Respond with urgency

STRATEGY

We pursue a five-prong strategy:

STRATEGIC ALIGNMENT

Work on what matters most

SERVICE EXCELLENCE

Continuously improve

INNOVATION

Put great ideas into play

SECURITY

Protect our customers

IT FOUNDATION

Build for innovation

METRICS

We measure achievement of our vision through:

EFFICIENCY

Operational effectiveness

STEWARDSHIP

Management of resources

CUSTOMER DELIGHT

Satisfaction

SERVICE PERFORMANCE

Key Performance Indicators

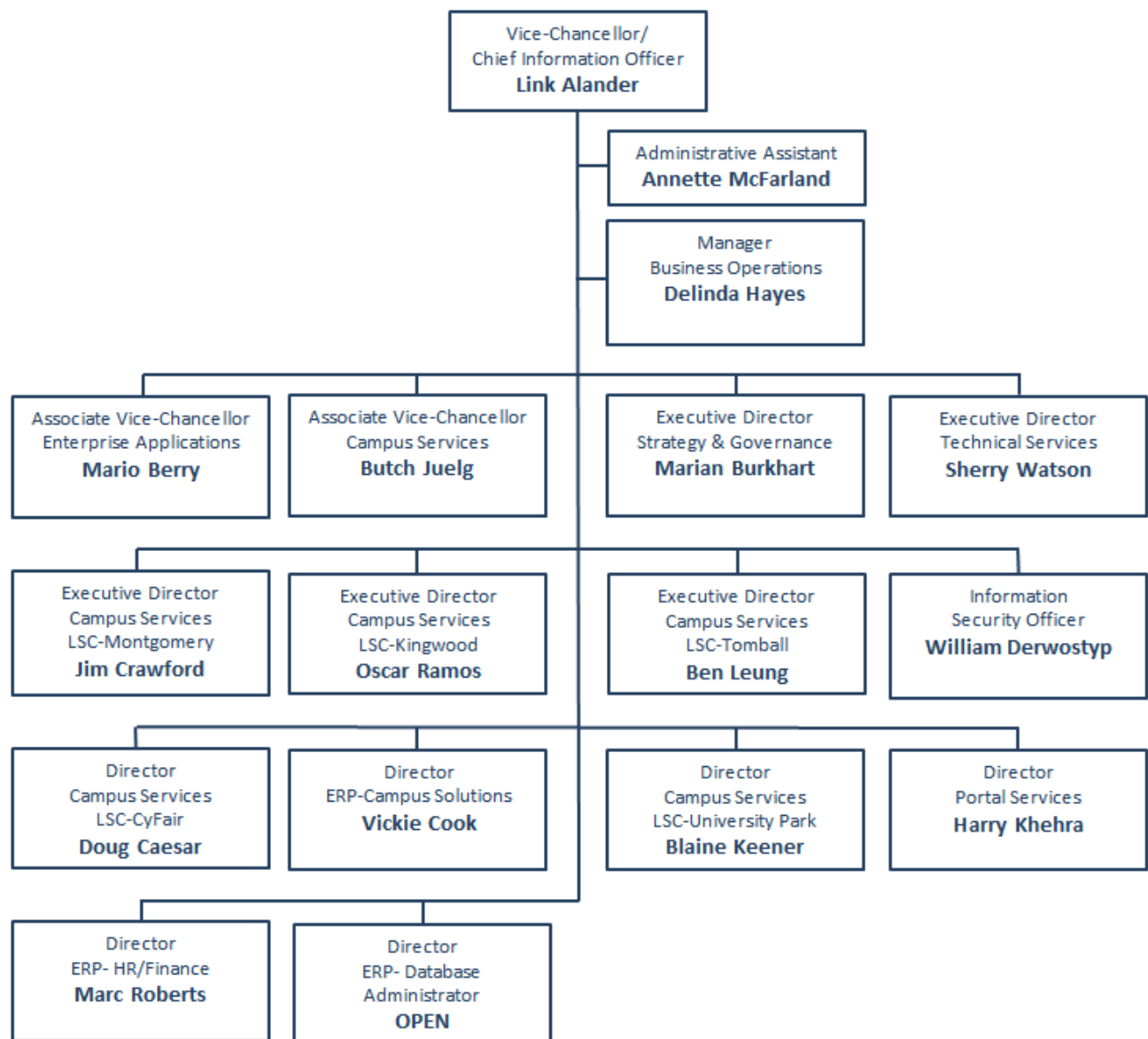
CONTRIBUTIONS

Build the profession

Organization

Leadership & Decision-Making

The below chart depicts the Office of Technology Services' Leadership Team. This group develops system-wide technology budgets, approves technology processes and standards, identifies and resolves technology issues, disseminates information to the LSCS community, and improves awareness of technology decisions and planning. Strategic decision-making and operational decision-making in two areas are split in terms of reporting structure. The OTS/Financial Aid Call Centers report to the CIO on strategic matters and the AVC of Campus Services on operational/tactical matters. Likewise, the campus Executive Director/Director positions report to the CIO on strategic matters and the AVC of Campus Services on operational/tactical matters.



Structure

The Office of Technology Services is centrally-organized with a generally flat reporting structure. All staff ultimately report to the Vice-Chancellor/Chief Information Officer. Direct reports to the CIO include Associate Vice-Chancellors over Campus Services and Enterprise Applications, respectively, and Executive Directors/Directors at each campus. Additional direct reports to the CIO include an Information Security Officer, an Executive Director of Strategy & Governance and an Executive Director of Technical Services. The Network and Server teams are centralized under Technical Services with staff located at both the system office and campuses. The Service Desk is also centralized, reporting to the CIO on strategic matters and the AVC of Campus Services on tactical matters, with staff primarily housed at the call center and one Service Desk technician housed at each campus. The Enterprise Applications department is organized by ERP function: EA-HR, EA-Finance, EA-Campus Solutions, Portal, Security and Tier II support. The campus organizational structure includes an Executive Director/Director, User Services Manager at most locations and Center Coordinators, when appropriate. The Executive Director/Director reports to the CIO on strategic matters and the AVC of Campus Services on tactical matters. The campus OTS department is further organized by areas of support like: Desktop Support, A/V Support and Business Services. Here is a snapshot of each area's responsibilities:

Campus Services

Campus Services is focused on student success by promoting classroom innovation, standardization, technology services that are identified by our customers and the measurement of those services, exceptional customer support and system-wide purchasing to reduce costs and increase efficiencies. Areas of responsibility include, but are not limited to: develop policies and procedures for campus operations; establish enterprise-wide hardware standards; conduct an annual refresh of computer equipment; provide computer classroom and open lab support to faculty, staff and students; provide A/V support; and oversee two call centers – a 24/7/365 technology Service Desk and a Financial Aid Call Center.

Enterprise Applications

Enterprise Applications (EA) is responsible for the reliability, availability, and accessibility of Lone Star College's mission-critical, enterprise-wide information system, known as iStar. The EA team is accountable to ensure that the administration, management, and support of iStar is performed for installations, testing, research and deployment of new solution modules, upgrades, bundles/fixes, any customizations/changes, security and accessibility, multiple integration points with in-house and third party applications, and second level technical support for Business Owners/Units. The EA team is also responsible for Lone Star College's comprehensive Portal, known as myLoneStar, which is the centralized user-interface for iStar to faculty, staff and students of Lone Star.

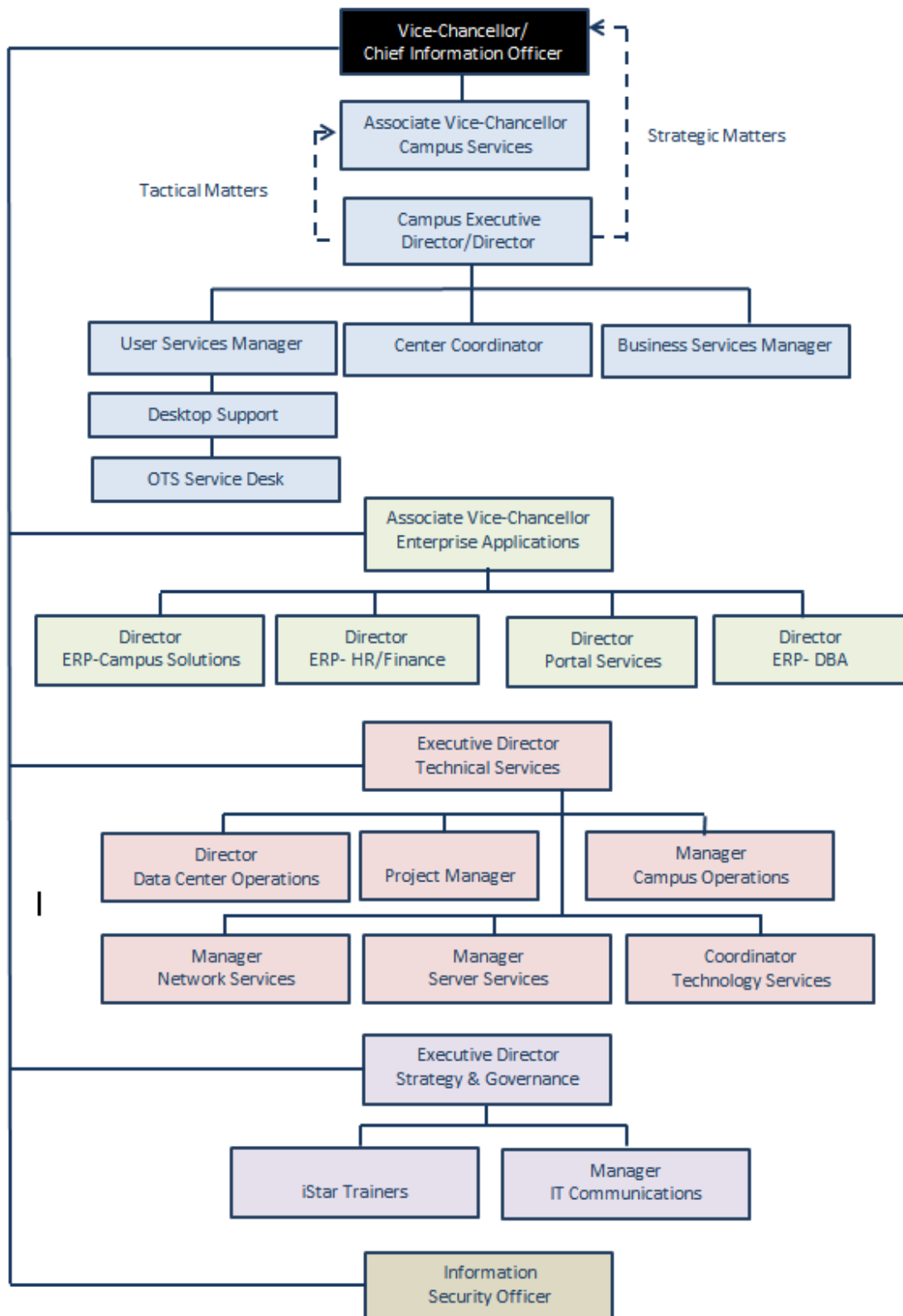
Technical Services

Technical Services provides core IT infrastructure resources for Lone Star. The Technical Services team is responsible for the network, server and storage infrastructure, Internet connectivity, the wireless network, multiple data centers, Lone Star's private cloud, telecommunications and video systems, mission-critical systems like Email, and all aspects of information security.

Structure (cont.)

Business Operations

Business Operations within the Office of Technology Services centralizes all business-related activities. These include but are not limited to: develop the annual budget with the CIO; manage and track all technology-related contracts, purchases and expenses; assist in hiring, termination and promotion of OTS staff; and serve as liaison to other departments on business-related activities. A Business Services Manager and several Coordinators at the System Office oversee system-wide business-related activities and Business Services Coordinators on each campus oversee local business-related activities.



The below chart depicts IT responsibilities that are centrally-managed and those that occur on-site on a campus:

	Centrally-Managed	Handled On-site
Network Infrastructure	•	
Data Centers	•	
Mission-Critical Systems	•	
Service Desk	•	•
Desktop Support		•
Classroom Support		•
Business Services	•	•

Internal Practices

Guiding Principles

A strong set of guiding principles is important to IT decision making because it ensures consistency and clarity of vision. The Office of Technology Services adheres to these guiding principles in decision making:

1. Technology resources and services will be uniform system-wide (**Standardization**)
2. IT assets and services can be rapidly scaled to support student success (**Scalability**)
3. The 'User Experience' drives technology decision-making and delivery of services (**User Experience**)
4. Technology resources and services are reliable and highly-available (**Stability, Reliability**)
5. Outcomes are measured to maintain accountability (**Accountability**)
6. The creative use of technology is encouraged and promoted (**Innovation**)
7. Technology is accessible to faculty, staff and students (**Access**)
8. Efficiency is increased through the appropriate use of technology (**Efficiency**)
9. OTS builds and sustains internal and external relationships (**Relationships**)
10. OTS ethically and responsibly manages IT resources and funding (**Stewardship**)
11. Data and the entire computing environment is secure (**Security**)

Strategies (2013-2016)

The Office of Technology Services pursues a five-prong strategy to execute its IT Strategic and IT Tactical Plans:

Strategic Alignment

Collaboratively achieve Lone Star College's strategic initiatives as reflected in system and campus 2012-2015 strategic plans or identified by Executive Council.

Service Excellence

Enhance and expand existing OTS-provided technology services.

Innovation

Advance the organization in the innovative use of technology to meet Lone Star College's unique challenges and needs.

Security

Strengthen Lone Star College's security systems, processes and approach to identity management.

IT Foundation

Maintain Lone Star College's award-winning infrastructure to ensure it meets organizational technology needs.

Availability

24/7/365 Support

The Office of Technology Services provides Lone Star College with 24/7/365 technology support and services. As such, the department is staffed for this model and uses a number of systems and tools to deliver 24/7/365 support.

On-Call

Key OTS staffs are assigned on-call duty and compensated accordingly.

Technology Service Desk

Currently, the OTS Service Desk is manned by Lone Star College employees 7am-10pm, Monday-Friday. On weekends, after-hours and on holidays, the Service Desk phones are answered by an external partner.

Escalation Procedures

Timely communications are key to 24/7/365 support and the Office of Technology Services uses internal escalation procedures to ensure problems are immediately addressed once identified. Technical staff is contacted first but if they are non-responsive, the automated call system notifies their supervisor and then that supervisor's manager, all the way to the CIO.

Alert Monitoring

All mission-critical systems and many secondary systems utilize automated alert monitoring tools to notify on-call staff of system failures. Per internal escalation procedures, additional staff may also be notified if not responded to within the SLA.

Automated On-Call System

In addition to alert monitoring, the Office of Technology Services uses an automated on-call system to ensure key staff is notified of system problems in order to respond to them. Again, escalation procedures are used when on-call staff fails to respond.

IT Budget

Funding Sources

The Office of Technology is funded by three sources: Operating Funds (67%), Technology Fees (28%) and Auxiliary Funds (5%). Operating Funds are derived through taxes and tuition and are allocated in the annual budget process. They are used to pay for the department's operating expenses and represent a majority of the Office of Technology Service's budget. Technology Fees are assessed per credit hour and a majority of this money is allocated to OTS for spending on everything except salaries. Auxiliary money is collected by Lone Star College through revenue-generating activities, like Food Service or Bookstore operations, and are allocated system-wide in the annual budget process. The Office of Technology Services also generates revenue through a computer buy-back program and various lease agreements. Auxiliary funds from both of these sources are spent on activities that cannot be funded by taxes, tuition or fees and represent a very small percentage of the overall OTS budget.

Equipment

The Office of Technology Services purchases and supports technology-related equipment system-wide. This includes office computers, phones and printers for all faculty and staff (including new employees), as well as classroom and computer lab equipment used by students and community members. OTS purchases all necessary equipment to manage and maintain Lone Star College's technology infrastructure and resources. There are a few exceptions: Departments fund the hardware purchase of new computer labs and special requests for equipment not appearing on the hardware standards list are considered on a case-by-case basis. The Office of Technology Services does not support or replace personal equipment – e.g. a personal printer – used by faculty or staff. It also does not provide students with personal computers or mobile devices.

Software Licensing

The Office of Technology Services pays for a majority of Lone Star College's software licenses system-wide. This includes annual renewals and upgrades. Exceptions include specialized instructional software or hosted software services. In situations like this, departments budget and pay for annual licensing expenses. Requests for brand new software or for additional licenses for existing software also come out of department budgets.

Professional Development

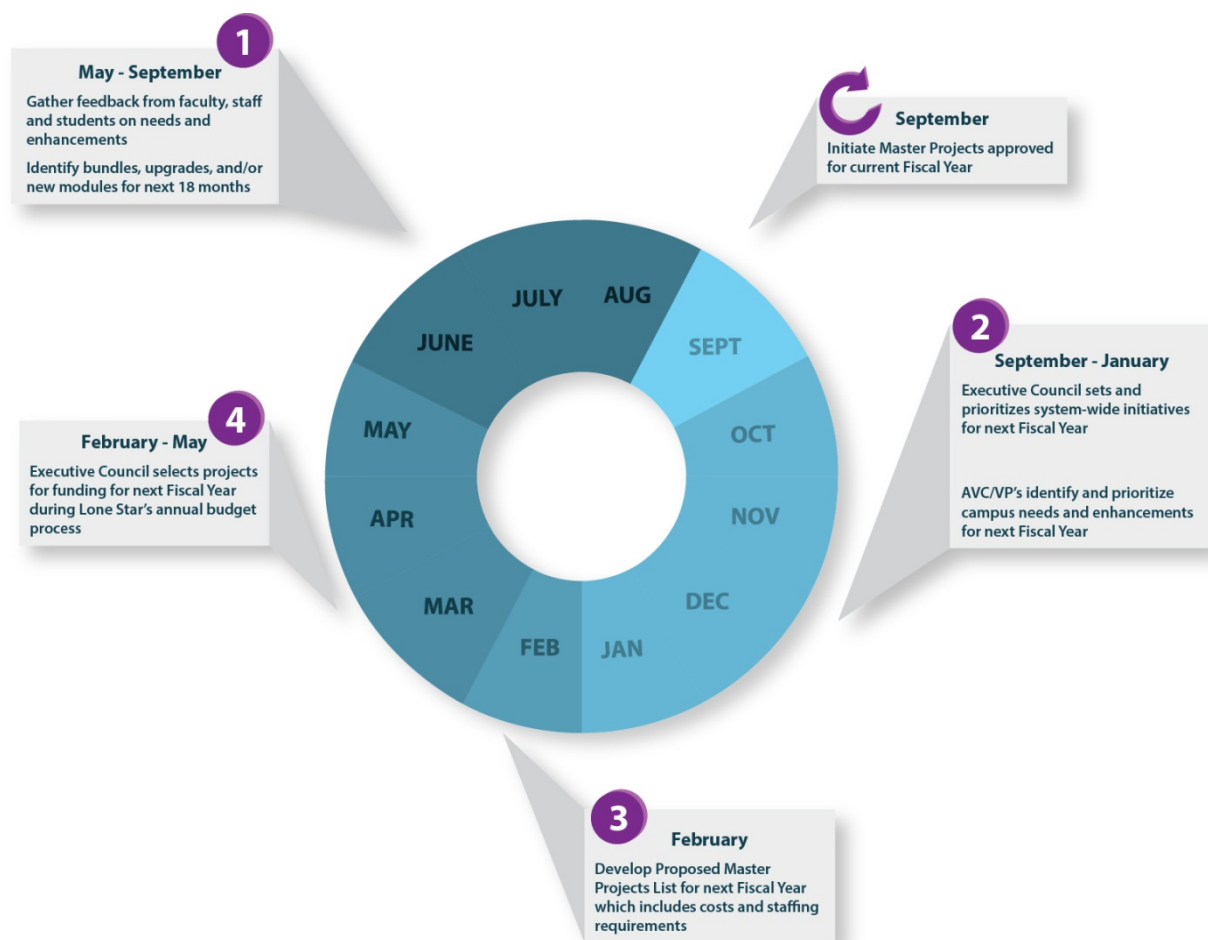
The Office of Technology Services actively encourages staff to participate in professional development activities. Each year, the Leadership Team identifies training for the entire department to undertake which is funded at the system-level. Additionally, each campus receives professional development funds for technical and leadership training for its staff on an individual basis. As part of their professional growth, staff are also encouraged to present at national and international conferences and to contribute to the IT profession through the publication of white papers, service in professional organizations and using their expertise to help other higher education IT professionals.

IT Governance

ERP

Lone Star College's ERP governance model uses a cyclical approach that begins in the summer. During this time, user needs and ideas for enhancement are gathered through surveys, focus groups, in-person interviews and workgroup meetings. In addition, business owners and the Enterprise Applications team identify bundles, upgrades and/or new modules needed for the next 18 months. In the fall, this information is compiled by a Governance Committee into a prioritized Proposed Master Projects List which includes cost estimates, project timelines, dependencies and risks. Lone Star College's Executive Council sets and prioritizes system-wide initiatives for the upcoming Fiscal Year and these are also added to the Proposed Master Projects List. This List is considered during Lone Star College's annual Budget Process and projects are selected for funding.

Here's a graphic of the process:



Enterprise Architecture and IT Operations

Technology governance at Lone Star College is designed to achieve a partnership between the colleges and the Office of Technology Services. It is designed to enhance strategic alignment, standardization and consistency, inclusion, collaboration, and communication. To put the framework into operation, functional standing councils are established to advise the CIO and/or campus executive directors in specific areas on the prioritization and integration of academic and administrative technologies. Council members are selected by the CIO, campus OTS executive director or campus president based on their expertise. Councils meet twice a year or more as needed.

Leadership Technology Advisory Council (L-TAC): Is composed of the six (6) campus OTS Executive Directors/Directors and six (6) System Office OTS Executive Directors/Directors, and the Chief Information Officer (CIO). This council develops System-wide technology budgets; approves technology processes and standards; identifies and resolves technology issues; disseminates information to the LSCS community; and improves awareness of technology decisions and planning.

Campus Technology Advisory Council (C-TAC): Is composed of a cross-section of 12-15 representatives from each respective campus (appointed by the campus president, VPs and deans) and the OTS Executive Director/Director. C-TAC advises the campus OTS Executive Director/Director on strategic educational and administrative priorities of the campus. C-TAC is responsible to identify funding allocation for proposed campus priorities. The OTS Executive Director/Director will serve as a non-voting co-chair. C-TAC will also disseminate information to the campus community to increase awareness of technology decisions and planning. C-TAC will select one of their members to serve as their representative in Sys-TAC.

Student Technology Advisory Council (S-TAC): Is composed of three (3) student government or organization leaders from each college (recommended by their campus presidents), and the CIO. This council improves an open line of communication between our students and the OTS leadership. S-TAC will focus on recommendations and prioritization of innovative and upcoming technologies for students. S-TAC will also disseminate information to the student community to sustain awareness of technology decisions and planning. S-TAC will select one of their members to serve as their representative in Sys-TAC.

Ad-hoc Committees

From time to time it may be necessary for OTS to establish ad-hoc committees to address specific technology-related issues or initiatives. Ad-hoc committees will serve for a definite time and be given a specific project charter by the CIO or campus OTS Executive Director/Director.

Support Standards

Service Level Agreements

The Office of Technology uses service level agreements (SLAs) to manage customer expectations, measure performance and improve communications. SLAs exist for all mission-critical systems and key services provided by OTS. Here's an example:

Hardware/Equipment Standards

The Office of Technology Services standardizes technology equipment system-wide for a number of important reasons. First, it reduces costs. OTS leverages Lone Star College's size during contract negotiations when buying large quantities of computers and other resources, resulting in substantial savings to the organization. Standardization also reduces internal support costs by reducing the number of different systems in use. Second, standardization ensures faculty, staff and students have access to the same high-quality equipment at all Lone Star College locations. And last, standardization allows Lone Star College to plan and budget for the periodic replacement of end-of-life equipment in a systemic manner. The Office of Technology Services replaces hardware according to the following replacement cycle:

Desktop computers (every 4.5 years)

Laptops (every 3.5 years)

A/V equipment and printers are replaced as needed

Standard Operating Procedures

The Office of Technology Services uses standard operating procedures (SOPs) to provide direction, improve communications, reduce training time and ensure consistent delivery of services at Lone Star College. The OTS Leadership Team is responsible for the development and updating of SOPs, as well as their enforcement. All SOPs are published to the OTS SharePoint site and staff is expected to regularly review them.

Work Order Tracking

A hosted ticketing system service is used by OTS to enter and track customer requests. In addition to self-help tools and the ability to submit requests online, the web-based interface also allows faculty, staff and students to text or chat with a Lone Star Service Desk technician.

Metrics

The Office of Technology Services adheres to the “what gets measured, gets done” principle in measuring achievement of operational goals, improving performance and enhancing services and uses metrics to accomplish this. These metrics fall into four categories: the first two are operational measurements that rely on instrumentation, monitoring and logging; and the latter two are gleaned through customer feedback and surveys.

Capacity

Tracks resource consumption. Examples include: System usage (CPU, bandwidth, memory, etc.) and support capacity (PC to Tech Ration, PC to Student Headcount, IT Funding per Student, IT Funding per Square Footage).

Performance

Measures uptime and reliability of systems. Examples include: Achievement of 99.999% uptime; data transfer rates; meeting Service Level Agreements (SLAs).

Relevancy

Gauges how dependent customers are on a particular service. Helps distinguish levels of importance and prioritization of services, including those that should be discontinued.

Satisfaction

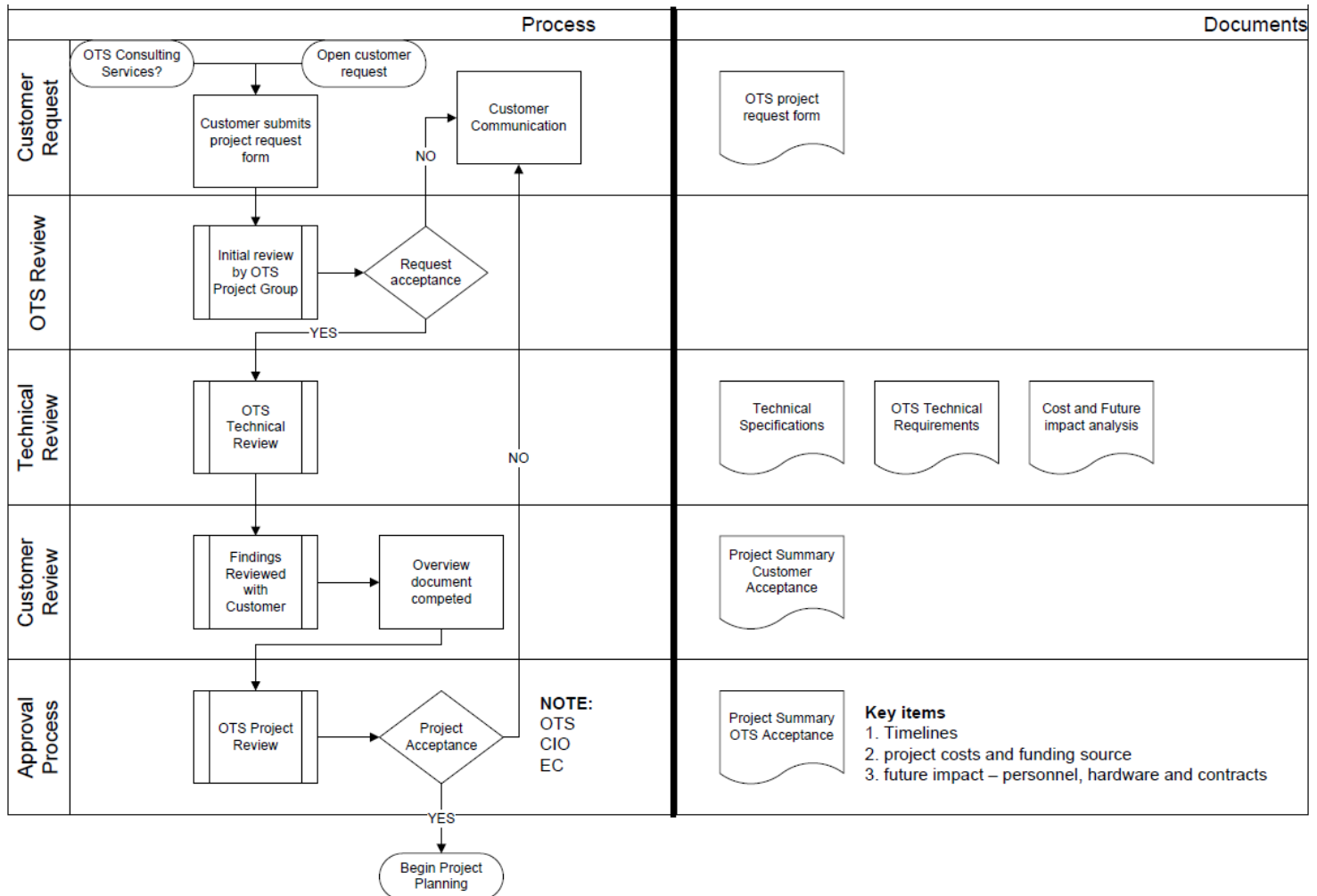
Measures customer satisfaction with particular services. Identifies areas of strength and weakness and informs continuous quality improvement efforts.

Capacity Management

The Office of Technology Services is reshaping its approach to capacity management to meet the challenges presented by virtual and internal cloud infrastructures. The goals of capacity management include improving service-level performance, forecasting infrastructure growth, proactive allocation of resources, and anticipating increased demand for internal cloud services. OTS uses a number of enterprise management tools to assess and optimize capacity management and is in the process of updating service levels and key performance indicators. Modern capacity management is complex and still evolving and the Office of Technology Services is committed to continuously improving its use at Lone Star College.

Project Management

The Office of Technology Services adheres to a project management methodology to align project execution with Lone Star College goals, increase return on investment, balance resources, establish documented processes, enhance communications and continuously improve. The department uses the project management modules of its hosted ticketing system to track and monitor projects. The below flowchart shows the new project request, review and approval process:



Change Management

Change Control Process

Change control is a systematic approach to managing all changes made to an application or system. The purpose is to ensure that no unnecessary changes are made, that all changes are documented, that services are not unnecessarily disrupted and that resources are used efficiently. The Office of Technology Services follows a change management methodology and established a Change Advisory Board (CAB) that meets weekly to review and approve proposed changes.

Blackout Calendar

As part of its change control process, the Office of Technology Services uses a Blackout Calendar to identify mission-critical dates on the academic calendar and prohibit changes to the network and services during these times. The dates include peak periods of registration (two weeks prior to start of classes), finals and when grades are due.

Network/Server Maintenance Schedule

Server patches are completed during normal maintenance windows (11pm-6am) Tuesdays, Thursdays & Saturdays. These are dependent on when new releases come out. Regular workstations are updated 10am-3pm during workdays for machine that don't have DeepFreeze and computer lab machines are updated during normal maintenance windows (11pm-2am) Tuesdays, Thursdays & Saturdays. Other infrastructure maintenance and patches are completed during normal maintenance windows, as well when patches are delivered from the vendors or to repair/fix issues (normally twice a year).

ERP Maintenance Schedule

ERP maintenance is an ongoing annual process which ensures that Lone Star College is in alignment with compliance and regulatory processes for Financial Aid, Federal Taxes, State Reporting, and Federal Compensation guidelines, as well as to ensure the ERP solution is kept up to date with any new enhancements or bug fixes released by Oracle/PeopleSoft. Each year the Enterprise Applications team tests and installs approximately 6 maintenance bundles/patches.

Communications

OTS Communications Plan

Reliability of information systems is important to everyone. Although some outages are beyond individual control, communication to those impacted is crucial to quality customer service. During a system wide outage for instance, it is necessary to get as much information to the right people as soon as possible. For that reason, the Office of Technology Services follows an outage communication plan. The Communication Plan is a guide on how OTS will communicate outages, planned or unplanned, to customers in a timely and consistent manner. The plan is continuously updated and improved based on feedback from students, faculty and staff at Lone Star College System.

3³ Communications Strategy

The Office of Technology Services is widely-regarded as the model for effective communications within Lone Star College due in large part to its 3³ Communications Strategy: All communications on major initiatives must occur 3 different times, to 3 different audiences, using 3 different methods. For instance, when Lone Star College moved to 7-digit internal dialing, notification to employees occurred through the monthly OTS newsletter, through a series of Email messages reminding employees of the cut-over date, and as a Quick Reference Guide distributed to all employees so they could easily look up a location's prefix.

SharePoint

Lone Star uses Microsoft SharePoint as its intranet to share internal information and resources. The Office of Technology Services uses SharePoint extensively to share and archive important internal documentation. The site can be found at <http://intranet.lonestar.edu/ots>.

OTS Website

Lone Star College's public web site (www.lonestar.edu) includes an OTS web page with links to additional technology-related information and resources including self-service tools, request forms, the OTS Service Catalog and hours of operation.

References

Office of Technology Services IT Strategy
Office of Technology Services IT Strategic Plan
Lone Star College System Strategic Plan
Disaster Recovery Plan
OTS Communication Plan
Information Security Plan
Change Management Plan
OTS SharePoint site (<http://intranet.lonestar.edu/ots>)