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A Message from the CIO

Right now, ITS and the broader LSU community are working hard to manage resources in support of LSU students, faculty, and staff during one of the most trying times in the history of our country. The adaptability and responsiveness of LSU and ITS (in particular) to the needs of the campus users of the LSU network and applications has been and continues to be tested in innumerable ways.

In March of 2020, ITS provided considerable support during the University’s transition of daily business process into a largely virtual environment. This unprecedented transformation, made possible through collaboration among ITS and University units, was relatively seamless for students, faculty, and staff. ITS team members worked around the clock – both remotely and on site – to ensure that consistency in IT service could be sustained. Even now as this report is being compiled, we are continuing our efforts to keep an open ear to our customers in order to refine our plans for process and service improvement despite any challenges and changes that may arise.

While working within this new environment, ITS continued to make advances in the effort to transform and optimize enterprise IT in alignment with University community needs. These initiatives, which you will discover in the coming pages, allowed our teams to strengthen relationships with multiple campus partners; improve customer experiences; expand customer resources for a multitude of areas including high performance computing research and LSU Online; and improve the wireless infrastructure in a number of areas on and around campus. The ITS team also recognized and met head-on the fundamental adversities that remained from the previous year, such as resolving matters of leadership and managing the decommissioning of aging systems. Despite these hardships, the ITS team strived to remain responsive to the needs of the customers, providing stability and adapting service delivery where needed.

Earlier this fiscal year, ITS teams initiated and, in many cases, finalized measures to improve a number of critical information technology systems in response to the needs and requests of campus units. The Information Security team developed our capacity to manage information technology security as well as more effectively mitigate security risks, further ensuring the safety of sensitive data including those for individual students, faculty, and staff and their research. The Portfolio Management Office conducted an internal resource allocation study which is maturing into a department-wide resource capacity management process. This activity supports ITS management’s ability to allocate resources for projects of varying sizes and needs – projects which are intended to improve the University experience for students and researchers as well as streamline processes for faculty and administration. The Central Support team also worked with the Human Capital Management and Finance Subcommittee to refine Workday hiring business processes – this effort is the first of many Workday business process improvements expected to transform the customer experience, reduce costs and resource expenses, and improve overall Workday process efficiency.

In the coming fiscal year, we will work to improve our ability to serve our customers. We’ll accomplish this with the help of the results of our recently completed customer satisfaction survey, identifying key areas for improvement, working to make our department more customer-friendly, and striving to have every interaction with our team be a positive one. We are also developing ways to improve our ability to communicate and collaborate with our customer base.

As I continue to familiarize myself with the ITS team, goals, and strategies, I look forward to cultivating the existing qualities that have served this unit so well, while at the same time, continuously looking for areas where we can improve. I am proud of our team's efforts to ensure continuity of services for the LSU community during these trying times. I feel fortunate to be here at LSU and to have such dedicated individuals on my team.

Even now as this report is being compiled, we are continuing our efforts to keep an open ear to our customers in order to refine our plans for process and service improvement despite any challenges and changes that may arise.

- CRAIG WOOLLEY

Craig Woolley
Executive Summary

Despite any changes that affect the LSU community, ITS staff remain dedicated to ensuring that day to day University activities are conducted in a seamless and efficient manner. We leverage our team’s expertise and resources to support activities from University research to scheduling classes in addition to transforming the digital landscape to improve existing and future processes.

This past fiscal year, our primary goals included designing a modern IT infrastructure and architecting a unified and accessible IT network for the University community.

Although we were able to make significant headway on projects related to these goals, we – along with the entire University community and others across the globe – were also challenged with creating and acclimating to a pandemic-focused environment. In spite of this major hurdle and other leadership and financial adversities, ITS was able to collaborate with campus stakeholders and partners to meet mission and strategy objectives, developing innovative IT solutions with best practices and principles best suited for our unique IT model.

Designing a Secure and Modern IT Infrastructure

Now more than ever, ITS Leadership and staff recognize the need for a transformation of the digital landscape of LSU. Although the decommissioning of the mainframe and its related systems remain a top priority, ITS units continue to work with the larger University community to refine and evolve existing business processes and IT resources with emphases on research technology availability and enterprise IT security.

Mainframe mitigation largely consists of designing and planning an alternative to the outdated Student Information System, but it also includes identifying which existing systems and processes can be migrated completely or partially off the mainframe prior to the selection and implementation of that solution and towards a more modern environment. ITS teams such as Legacy Support, Central Support, and Production Support, are key players in our efforts to manage this ongoing digital transformation and conversion to modern digital infrastructure. In the past year, these units have made considerable headway in the mitigation effort, including laying the technological groundwork to enable LSU Online undergraduate program capabilities and the automation of transcript request, payment, and delivery through the Office of the University Registrar.

The University Networking & Infrastructure (UNI) and High-Performance Computing (HPC) teams continue to improve the virtual research assets and services available to both students and faculty. Whereas the UNI networking teams (Network Engineering and Architecture, Wireless Networking, and Network Facilities) completed much needed renovations across campus, including rooms within Coates, Hatcher Hall, the Chemical Engineering building, and the Football Operations building; the HPC team worked with the Board of Regents on commissioning an upgrade to the State’s cluster – the QB3. This new resource will increase the research capabilities of users in the Louisiana Optical Network Infrastructure (LONI) including research regarding particle physics, gravitational wave source characterization, ocean-atmosphere modeling, and bioinformatics. In support of enabling research assets to be more centralized and convenient, the HPC team has also begun production on the LSU HPC Open OnDemand portal, a browser-based “one stop shop” for end users to access HPC resources and more easily conduct their studies.

The IT Security (IS) team remains committed to ensuring the privacy and protection of data critical to the institution and valuable to all our end users, most recently through the gradual implementation of Multi-Factor Authentication (MFA) fold across the enterprise system and the expansion of LSU Single Sign On to an additional 25 enterprise applications. MFA is a security feature that relies on two or more forms of authentication to protect applications and enterprise services. This effort mitigates the risk of account and data compromises which could lead to possible phishing or other cyberthreats that could have a relatively significant impact for the University. To expand on the University’s data protection capabilities, IS has also implemented the Information Security Risk program which is designed to proactively address and mitigate information security issues, ensuring a more secure cyber infrastructure for LSU users.
Part of what makes managing IT at LSU so unique is ensuring that each decision reflects the multi-institutional nature of the LSU system. Although ITS primarily serves the Baton Rouge flagship location, many ITS activities directly and indirectly affect the seven other LSU campuses which have their own distinctive IT frameworks.

Because of this, ITS is therefore motivated to transform the IT landscape into one that is responsive to the multi-faceted needs of the end users, compliant with shared standards, and effectively utilizing all possible resources to develop solutions in support of the entire University network.

In service to the needs of the student population and to enable progress beyond the No Geaux vote, the Student Modernization Working Group completed the Workday Student Status Update. This multi-institutional, cross-functional activity effectively reassessed the readiness of Workday Student to accommodate essential business processes and multi-institutional requirements in alignment with the standards set forth by LSU Leadership.

To better accommodate the students of the flagship campus and increase accessibility of virtual resources, the UNI team expanded the wireless network to include adjacent green spaces and parking lots, allowing students to participate in coursework outside of conventional study areas. This development was especially critical to oblige the social distancing needs of students.

The Data Governance Working Group, coordinated by ITS leadership, has also made headway in their efforts to develop shared IT standards amongst the various LSU institutions through the planning, architecture, and implementation of a business intelligence environment. This collaborative mission will produce a data-driven strategy that will include the development of institutional data standards, processes for data governance, and data communications channels that will ultimately contribute to improved strategic planning for each unique campus and the needs of their data stewards, end users, and customers.

The Portfolio Management Office (PMO), Central Support, and Production Support teams assisted the Office of Research and Economic Development in their multi-institutional initiative to implement the GeauxGrants (InfoEd) Conflict of Interest Disclosures and Grants and Proposals electronic research administration solutions. The GeauxGrants solution enables faculty and staff to develop and manage proposals for grants to institutions including the federal government and the National Institute of Health, post-award modification requests, and grant awards and subawards. The GeauxGrants solution effectively transformed a manual and mostly paper process into a virtual procedure that reduces wait time, is more accessible and user-friendly, and responsive to current and future needs.
John Borne Retires

John Borne, a beloved and respected member of the LSU family, recently announced his retirement after almost four decades of service to the LSU IT Service operation. His dedication, humor, and wealth of experience has been a significant factor in the development of IT infrastructure here at the University.

During John’s tenure at LSU, he was part of a contingent of people brought on to develop the first information systems at LSU. These early team members - some of which are also still employed at ITS - spent nearly 20 years learning and writing code, programming and developing systems and databases that supported LSU enterprise, business, and student lifecycle processes until and through the introduction of the internet. Many of the systems and data models that John’s team bought, designed, installed, or programmed are still in use today.

Over time, John would become a key component in the development of critical IT infrastructure including leading the technical design and implementation of the server infrastructure for LSU’s first web portal, PAWS (the precursor to myLSU); playing a leading role in the federated wireless authentication initiative (EDUROAM) at LSU and its incorporation into the InCommon Federation, and implementing the campus emergency notification technology (e-TXT). Throughout the lifecycle of these and countless other projects, John climbed the career ladder to eventually become an Executive Director and, most recently, Deputy Chief Information Officer and CIO.

Although he is lauded for his institutional and technical expertise, John’s leadership style is yet another positive quality that will be missed. He recognized that ITS is a team filled with capable and smart people who have an important mission – one that bridges the gap between customers and higher education administration and research technology needs – and have developed and continue to refine customer service delivery to fulfill their duty to the University.

In the last few months of his ITS career, John guided the organization through a leadership transition and a multi-institutional response to a global pandemic.

Overall, his investment in and mark on this organization is enduring, and he will be missed as a trailblazer, manager, and witty colleague. We graciously thank John for his years of service and support and wish him the best in the years to come.
ITS Mission

The ITS mission is to deliver University-tailored and enterprise-grade technology infrastructure, security, applications, communications, and services to empower and enable the research, teaching, and administrative functions of LSU with little to no risks. To provide a transformative experience, ITS will embrace new technologies, pursue operational excellence, and employ industry best practices to inspire innovation in enterprise architecture and supply IT shared services to enrich the student, faculty, and staff experience at LSU.

ITS Roadmap

Central to our efforts to provide world-class University IT services, infrastructure, and systems is our intention to continuously transform and modernize these digital resources where possible. Stakeholders within the LSU A&M community actively collaborate across LSU institutions to develop and guide impactful projects, enhance virtual resource management and capabilities, and improve student, faculty, and research support services and virtual tools through the ITS Roadmap.

With guidance administered by the IT Governance Council (ITGC), the Portfolio Management Office (PMO) and various ITS units have engaged University departments to assess and develop streamlined and automated solutions for critical business processes and services, compliance requirements, and new services. The implementation of a new change management solution has further enabled ITS units to realize these modernization efforts while maintaining and improving University IT support.

In alignment with enhancing virtual resource management and capabilities, ITS units dedicated to providing research and education technologies and have made considerable progress. The High-Performance Computing (HPC) team secured National Science Foundation grants to build a small GPU cluster for research utilizing deep learning and AI technologies. This unit also began production on the LSU HPC Open OnDemand portal, a web-based “one stop shop” for the HPC resource access.
**Core Focus Areas**

**Leadership Projects**
These projects support LSU’s Strategic Plan 2025 with focus on LSU Online, enrollment management, grant management, and scholarship management.

**Mainframe Mitigation**
These projects protect and preserve the mainframe and legacy application while minimizing legacy application reliance. They will focus on outsourcing mainframe operations and support, outsourcing or re-platforming mainframe systems and applications, and managing legacy staff resources.

**Faculty, Research, and Student Support**
These projects seek to provide affordable and robust technology solutions and support for faculty and students. They will focus on refining campus community-facing services and expanding support for digital learning environment tools.

**IT Modernization**
These projects seek to reduce mainframe dependence while moving forward with enterprise and student systems modernization. They will focus on the preservation, enhancement, and management of physical and virtual data and telecommunications infrastructure and systems.

**Beyond the Core Paths**

**Shared Services**
These projects seek to support resource-challenged units and campuses through business process and resource management improvements. They will be accomplished with the guidance of the CIO Alliance as a primary resource and the development of the IT Field Consulting service and the Shared Service Cadre.

**Communications Efforts**
These projects seek to increase community awareness of technologies and support for technology and cybersecurity. They will focus on creating campus-wide awareness of IT services, cybersecurity, and projects; foster stakeholder awareness of technology opportunities and risks; and enhance Workday support.

**Hybrid Cloud Infrastructure**
These projects seek to increase technology capabilities and reduce risk around disaster recovery and business continuity. They will focus on developing available hybrid cloud resources.
ITS Organization Structure

In support of the mission to deliver enterprise-grade technologies to the University community, the organizational structure of ITS underwent improvement modifications. The changes were intended to minimize inefficiencies and provide both ITS members and customers with a structure that would enable more organized, coordinated, and responsive service delivery.

In FY20, ITS leadership was directed by John Borne, Interim Chief Technology Officer (CTO and Assistant Vice President). The four primary departments are Research & Educational Technology Services, Information Security, Enterprise Architecture, and Service and Operations.

The following gives an overview of the 180 full time staff members and the structures and sizes of their departments and teams, not including the five members of the CTO Office.

**Research & Educational Technology Services**

Research & Educational Technology Services is a four-team unit responsible for the development, management, and delivery of IT services to the University community and partners, specifically for research and technology purposes.

- **5** Classroom IT/Multimedia Classrooms
  Responsible for supporting the hardware, systems, and networks that multimedia classroom technologies and facilitating the Equipment Check-Out Program (Gear-to-Geaux).

- **3** Computer Labs
  Responsible for managing the pay-for-print service stations; monitoring and supporting various campus public access and specialty labs; and maintaining technical support for these facilities.

- **9** Louisiana Optical Network Infrastructure
  A state-of-the-art, fiber optics network that runs throughout Louisiana, connecting major research institutions to one another and to services such as Internet2, high performance computing, and specialized IT consulting. LONI is a Louisiana state project which is run by the Board of Regents and contracted out to LSU.

- **11** High Performance Computing
  Responsible for creating and supporting an interdisciplinary system of high performance computing hardware, software, and technical support for computational research and experiments.

**Information Security**

Information Security protects University systems, services, and data against unauthorized use, disclosure, modification, damage, or loss.

- **5** Identity Management & Compliance
  Responsible for identity and access management for all users and for LSU ERP (Workday) solution, as well as serve in advisory capacity for compliance.

- **4** Security Operations
  Responsible for incident response, security consultation, as well as management of security tools supporting security posture of the University.
### Enterprise Architecture

Enterprise Architecture is a five-team unit responsible for the design, planning, and realization of IT strategy for the enterprise system and ensuring the synergy of University operations and IT processes.

<table>
<thead>
<tr>
<th>Team Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Intelligence</td>
<td>Responsible for designing, developing, implementing, and maintaining enterprise BI, data warehousing, ETL, and reporting and analytical artifacts, infrastructure, and related processes.</td>
</tr>
<tr>
<td>Legacy Support</td>
<td>Responsible for maintaining critical legacy mainframe systems and assisting with data transition to new environments as part of the IT modernization effort.</td>
</tr>
<tr>
<td>Production Support</td>
<td>Responsible for the day-to-day support of operations application systems and includes the Application Development, Integrations, and Database Administration teams.</td>
</tr>
</tbody>
</table>

### Service & Operations

Service and Operations is a five-team unit designed to proactively manage the expectations of LSU IT system users, while supporting and stabilizing service quality and delivery.

<table>
<thead>
<tr>
<th>Team Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Management</td>
<td>Responsible for IT account management; procuring supplies and services; recording equipment inventory; and providing telecommunications billing services to students, faculty, and campus units.</td>
</tr>
<tr>
<td>Service Architecture</td>
<td>Responsible for monitoring mainframe services and applications, campus network equipment and services, campus and LONI network traffic, network security systems, and all external connections to the LSU network. It includes the Network Operations Center, Data Center facilities, Change Management, and Quality Assurance.</td>
</tr>
<tr>
<td>Talent Management</td>
<td>Responsible for managing professional and student employment opportunities.</td>
</tr>
<tr>
<td>Portfolio Management Office</td>
<td>Responsible for coordinating a variety of projects aimed at modernizing the LSU IT environment and related processes using industry best practices and facilitating cross-department collaboration. It also includes the Business Process Management team, responsible for business operations review and optimization.</td>
</tr>
<tr>
<td>Service Management</td>
<td>The primary campus interface for IT services, providing in-person, online, and telephone technical assistance to faculty, staff, and students and includes the Print Desk, Field Consulting, and the GROK Knowledge Base.</td>
</tr>
</tbody>
</table>
When LSU developed Strategic Plan 2025, ITS Leadership committed to provide support worthy of this vision. The plan aims to posit the University as a repository for solutions, not just for Louisiana, but regional and global issues that affect populations on a social, economic, and environmental scale. ITS Leadership defined a future state for the University’s IT infrastructure that would deliver the framework, architecture, and opportunity for innovation necessary for this plan to excel. In completing the following goals, ITS seeks to fully transform the LSU IT environment into one that more than meets the needs of the community, surpasses the expectations of the Administration, and serves as an example for higher education IT.

Below is the current status for FY2025 Goals.

### 1. Institutionalize IT Governance and Good IT Practices

<table>
<thead>
<tr>
<th>Goal</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Utilize the ITS Portfolio Management Office to design improvements to business processes.</td>
<td>Complete</td>
</tr>
<tr>
<td>Create IT Governance Subcommittees to enhance strategic decision-making.</td>
<td>Complete</td>
</tr>
<tr>
<td>Develop and implement comprehensive data policies and strategies that emphasize data as an institutional asset.</td>
<td>In Progress</td>
</tr>
<tr>
<td>Develop and implement a progressive IT financial management business model that promotes transparency, accountability, and enhanced decision-making.</td>
<td>In Progress</td>
</tr>
<tr>
<td>Construct and formalize a multi-campus IT Shared Services strategy. Identify and implement a shared service and support philosophy, including the use of IT management tools and processes where it will improve the service and support experience for faculty, students, and staff.</td>
<td>In Progress</td>
</tr>
</tbody>
</table>

### 2. Modernize IT Architecture

<table>
<thead>
<tr>
<th>Goal</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create an enterprise architecture strategy and formalize architectural principles.</td>
<td>Not Started</td>
</tr>
<tr>
<td>Optimize and standardize current end-to-end business processes to use industry best practices provided by our administration systems.</td>
<td>Not Started</td>
</tr>
<tr>
<td>Review current administrative system customizations and remove or streamline any customizations that are unused or increase complexity for users.</td>
<td>Not Started</td>
</tr>
<tr>
<td>Build a shared-service institutional business intelligence environment to provide a common data access service that the entire University can use for learning, research, and administrative reporting and analytical needs.</td>
<td>Not Started</td>
</tr>
<tr>
<td>Design a flexible and cost-effective architecture for future data centers.</td>
<td>Not Started</td>
</tr>
<tr>
<td>Create an informative and transparent dashboard highlighting all IT activities.</td>
<td>Not Started</td>
</tr>
</tbody>
</table>

### 3. Implement Student Modernization Project

<table>
<thead>
<tr>
<th>Goal</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implement a modern student information system that meets the needs of students, faculty, and staff.</td>
<td>In Progress</td>
</tr>
<tr>
<td>Ensure data created from new systems can be utilized for institution-wide decision-making.</td>
<td>In Progress</td>
</tr>
<tr>
<td>Re-design student related business processes for optimal efficiency &amp; effectiveness.</td>
<td>In Progress</td>
</tr>
</tbody>
</table>
4. **Provide A Strong and Unified Research Infrastructure with Data and Capabilities That Enable Expansion and Innovation**

Design an extensible research storage infrastructure that adapts to the changing needs of the institution.

Collaborate with LONI and Center for Computation and Technology (CCT) to design and implement the next generation high performance computing (HPC) cluster architecture.

Coordinate and expand the research support community across the university, providing technical support and knowledge of standard based best practices.

<table>
<thead>
<tr>
<th>Task</th>
<th>Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design extensible research storage infrastructure</td>
<td>In Progress</td>
</tr>
<tr>
<td>Collaborate with LONI and CCT</td>
<td>Complete</td>
</tr>
<tr>
<td>Coordinate and expand research support community</td>
<td>In Progress</td>
</tr>
</tbody>
</table>

5. **Institutionalize Security Program**

- Development and/or maintenance of Information Security Policies

- Development, maintenance, and improvements of Information Security Risk Management Program

<table>
<thead>
<tr>
<th>Task</th>
<th>Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development and maintenance of Information Security Policies</td>
<td>In Progress</td>
</tr>
<tr>
<td>Development, maintenance, and improvements of Information Security Risk Management Program</td>
<td>In Progress</td>
</tr>
</tbody>
</table>
Master Objectives for Best Practices

The following are Master Objectives for Best Practices. These were created at the start of the fiscal year as part of a continuous optimization effort, thereby enhancing enterprise IT systems and improving service efficiencies using formalized best practices. Attention to these specific areas has uncovered opportunities for modernization and transformation planning and implementation to further align with the needs of both ITS and ITS customers.

The sudden prioritization of the COVID-19 pandemic response caused ITS to reallocate specific resources in an effort to ensure the stability, quality, and capacity of IT resources in an almost entirely virtual transformation of daily University processes and activities.

IT Governance Council

The Information Technology Governance Council (ITGC) was developed to guide ITS’ implementation of the ITS Roadmap and collaborative, strategic transition into a Lean organization. The very function of the ITGC and its subcommittees is to encourage and embrace open, synergistic dialogue within the LSU community, including stakeholders, subject matter experts, and all LSU entities. Through ongoing communication and collaboration, the ITGC is actively seeking, encouraging, and implementing creative solutions for new and existing services and operations. This transformation of LSU’s view of the present and future of IT is deliberate, focused on modernization and transparency, and piloted by ITGC’s dedication to innovate and improve LSU IT services.

To optimize the utility of the ITGC, the LSU Office of Internal Audit conducted an IT Governance Assessment. This audit was designed to ensure that value provided to the University community is risk-averse and cost-efficient; supported by an aligned cadre of IT principles, processes, and philosophies; and is delivered through effective IT resource management.

Enterprise Architecture Committee

Enterprise Architecture (EA) is an essential contributor to operational excellence. At its surface, EA serves as a cyclical framework that provides transparency into the process of technology adoption and application. Looking deeper, EA helps organizations achieve operational excellence by balancing the demands for knowledge creation, operational function, innovation, budget efficiency, security, compliance, and risk management. It supports the development of a coherent IT fabric by defining standards, identifying technology needs, and recognizing opportunities for shared services. At the same time, it contributes to the engineering and re-engineering of technology organizational structures as it seeks to fulfill those needs and exploit opportunities. The final result is a higher level of operational efficiency that maximizes the value and worth of technology resources.
Service Desk
The Service Desk (SD) has actively transformed the IT service experience for the LSU community through reorganizing staff roles, work-flow processes, and IT service management tools and enabling technology. The SD collaborates with other LSU departments to support the development of new applications and systems and to cross train staff among functional areas.

Portfolio Management Office
The Portfolio Management Office (PMO) is designed to assess requests for new technology or automation that surpass the scope of the Change Management team. Since formalization, the PMO has continued to transform and respond to varying IT challenges including capacity limitations, adapting to the evolving support needs of the ITGC and shifting ITS organizational structures. In support of the underlying charge of transforming IT at the University, the PMO’s initial activities involved augmenting staff with contract project managers and business analysts; and with developing standard processes, project intake procedures, and project management methodology. The PMO works closely with and receives guidance from the ITGC regarding approval of large projects, prioritization of projects, alignment with strategic objectives, and the organization of resource capacity. This collaboration is key to the oversight and success of the numerous and varied IT projects currently underway.

Data Architecture Environment
The transformation of the University data architecture environment into one that is sustainable and responsive to innovation is the first step of a venture necessary for the practicability, applicability, and efficiency of University technologies. This foundation will help with sustaining the work of the students and faculty, and bringing efficiency to the services of the administration and staff. To support the business of an evolving collegiate climate of technological innovation, ITS provisions and solutions that store, manage, and transform LSU data into information that can be shared in a secure and trusted manner for decision making.

Hybrid Cloud Infrastructure
The security and transformation of LSU data and data environments involves ITS teams to design and implement sustainable and secure infrastructure that is compatible with current and future solutions. To develop this, ITS is leveraging current on premises resources and expanding cloud storage and compute capabilities to establish a hybrid environment capable of supporting the modern enterprise system demands being designed and implemented. Teams are also employing an integrations framework capable of bridging different technologies. Essential to the success of this hybrid environment is the use of cloud-based data management software, which is the middleware between moving data between aging, custom-built mainframe and enterprise vendor solutions.
FY20 Modernization Goals

The following are Modernization Goals developed in support of resource and resource management efficiency and sustainability. These goals are critical to the Master Objectives found on the previous pages, providing the means to implement and orchestrate the projects and solutions found most practical and functional by ITS Leadership and institutional expertise.

1. Update Frey Data Center
   - Supplement high performance computing systems
     - Converting fire suppression system: Complete
     - Planning for generator and data center infrastructure upgrades: In Progress

2. Update Server/Network Infrastructure
   - Update current business model for funding telephony, network maintenance, and life cycle replacement: In Progress
   - Identify and engage with cloud solution for gaps in research data storage: In Progress
   - Identify and engage cloud solution for compliance with NIST-800-171: In Progress

3. Student Systems Modernization Project
   - Fit and feasibility project: Completed
   - Geaux Forward Together: effort to assess multi-institution, accounts receivable, and LSU
     - Online requirements: Completed
   - Student enterprise resource planning software implementation: In Progress

4. Mainframe Data and Application Transition Project
   - “Save the mainframe data” project: Completed
   - Extract, transform, and load
   - Decommissioning of mainframe applications migrated to Workday: In Progress
   - Sponsored programs application: Completed
   - Cashiering/payment processing system (Cashnet): In Progress
   - Parking application: In Progress
   - Imaging system: In Progress
   - Identity and access management: In Progress
5. Consolidate Multiple Academic and Administrative Tools into Enterprise Applications

<table>
<thead>
<tr>
<th>Tool</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visualization (Tableau)</td>
<td>Complete</td>
</tr>
<tr>
<td>Project management</td>
<td>Complete</td>
</tr>
<tr>
<td>Customer relationship management</td>
<td>In Progress</td>
</tr>
<tr>
<td>IT service management</td>
<td>In Progress</td>
</tr>
</tbody>
</table>

6. Select and Implement New Enterprise Administrative Tools

<table>
<thead>
<tr>
<th>Tool</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contract management</td>
<td>Complete</td>
</tr>
<tr>
<td>Education Advisory Board</td>
<td>In Progress</td>
</tr>
<tr>
<td>Business intelligence</td>
<td>In Progress</td>
</tr>
<tr>
<td>Enterprise time clock</td>
<td>In Progress</td>
</tr>
</tbody>
</table>
Strategic Highlights

ITS leadership and staff are proud of the progress made towards modernizing internal policies and processes, continuing on the path laid out in previous fiscal years. These highlights are the culmination of operations, service, and IT infrastructure goals and indicators that the changes envisioned are implemented and fulfilling the needs for which they were designed.

Optimizing Capacity Management
The Portfolio Management Office (PMO) collaborated with ITS units to implement a process for improved organizational decision-making and project resource allocation. This process captures the forecasted efforts and the actual effort exerted by ITS unit members, providing management with data visualizations.

Optimizing Information Security Technologies and Planning
The Information Security unit is reorganized and better poised to further develop methods of ensuring the confidentiality and safety of data assets from risks and vulnerabilities. The unit recently implemented Multifactor Authentication to improve security for authentication services for the Microsoft platform (e-mail, OneDrive, Teams, etc.), Box, and Zoom.

Optimizing Project Management Efforts
The PMO supported the IT Governance Council through developing a revised charter in an effort to introduce efficiency gains, optimized communications, and overall support through the addition of an ITGC coordinator. The PMO also collaborated with the Service Desk and Strategic Communications to evaluate and revitalize the current ITS website. The new site is being designed to be more service-oriented, reflect the new ITSM, which includes a more targeted service catalog, and be fully ADA compliant.
**Enhancing Multi-Institutional Enterprise Technologies**

Continuous improvement of Workday business processes and the processes that rely on them is central to reducing inefficiencies. Central Support recently provided similar support by collaborating with Finance and Administrative Services to initiate a multi-institutional strategy to improve Workday hire business processes. This effort is projected to improve the customer experience, reduce costs, and enrich business analysis support while strengthening relationships across institutions.

**Developing the Next Generation of LSU Information Security**

Information Security is developing strategies and tools to ensure the security and compliance of the University data and technology assets and support efforts of mitigating risk and cost associated with security incidents and incident response. has developed a strategic technology framework roadmap in an effort to improve the efficacy of the information security framework. With support from the PMO, the unit will evaluate, identify, and resolve gaps in compliance, human resources, business processes, and utilization of resources.

**Developing the IT Infrastructure and Hybrid Cloud Environment**

The Systems Architecture Group is currently developing IT infrastructure and hybrid cloud environment management and operations platforms to further modernize the IT landscape architecture. Most recently, the unit has deployed solutions with enhanced network and operations visibility and analytics, faster troubleshooting capabilities, and improved capacity and expense planning and management tools integrated into a platform-wide continuous improvement toolset.
Operating Highlights

ITS Operations Highlights is an overview of some of the services that the department provided to students, faculty, and staff within the LSU community in FY20. This includes improving and offering hardware, software, and services; offering training for instructional tools; or sustaining a library of information and software exclusively for students and faculty.

In alignment with the continuous service improvement practice, ITS has implemented a new IT Service Management solution, begun an article flush of the GROK library, and maintained machine lifecycle renewal efforts. These changes have had an effect on the highlights that follow, and ITS hopes to see sustained improvement as modernization efforts continue into the next year.

Service Desk

<table>
<thead>
<tr>
<th>Total Trouble Tickets</th>
<th>Tickets via Phone</th>
<th>Tickets via Walk-in</th>
</tr>
</thead>
<tbody>
<tr>
<td>49,469</td>
<td>30,562</td>
<td>3,226</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tickets via Email</th>
<th>Tickets via Chat</th>
<th>Tickets via Portal</th>
</tr>
</thead>
<tbody>
<tr>
<td>14,613</td>
<td>864</td>
<td>204</td>
</tr>
</tbody>
</table>

High Performance Computing

<table>
<thead>
<tr>
<th>HPC Grant Awards</th>
<th>HPC CPU hours</th>
<th>HPC Grants</th>
</tr>
</thead>
<tbody>
<tr>
<td>159 million</td>
<td>108.7 million</td>
<td>156</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HPC jobs</th>
<th>HPC Trouble Tickets</th>
<th>LONI Trouble Tickets</th>
<th>HPC Tickets via Portal</th>
</tr>
</thead>
<tbody>
<tr>
<td>9,272</td>
<td>968</td>
<td>940</td>
<td>204</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HPC User Groups</th>
<th>HPC users</th>
</tr>
</thead>
<tbody>
<tr>
<td>115</td>
<td>625</td>
</tr>
</tbody>
</table>
Portfolio Management Office

- Total Projects: 22
- Active Projects: 11
- On Hold Projects: 0
- Closed Projects: 7

Network Operations

- Wireless Access Points Replaced: 1,063
- New Connections Established: 1,100
- Campus Network Switches Upgraded: 92

Computer Labs/Pay for Print

- Completed Print Jobs: 130,628
- Lab PCs Replaced: 90
- Pages Printed: 704,802
- New Gear-to-Geaux Machines: 65
- Unique Lab Logins: 80,500

Tigerware/GROK/Site Hosting

- GROK Article Views: 8,854,020
- Tigerware Downloads: 33,299
- Tigerware Users: 10,582
- New Omni Sites: 36
ITS Responds to COVID-19

On March 17, 2020, the Governor of Louisiana announced that Louisiana residents would engage in social distancing and remote work where possible to minimize virus spread. The University responded by immediately requiring non-essential staff, faculty, and students to comply. This new environment generated an exceptional demand for virtual technology resources, solutions, and support including as virtual communications availability and accessibility, modifications to enterprise-wide administrative processes, and business process customizations. ITS, as the University system’s primary facilitator of service and technology delivery, linked arms with countless other LSU staff members to amend systems and processes, increase the accessibility of remote work tools in a safe and secure environment, and provide realtime support for COVID-specific responses.

The following are highlights of the support that ITS provided during this challenging time.

Expanding VPN Services
Over the course of two weeks, the Network & Infrastructure and Information Security teams collaborated with units across campus to deploy a Virtual Private Network (VPN) solution to the entire LSU faculty and staff population who began to work remotely on short notice. Administrative Computing Services contributed to this effort by providing guidance for new users in the form of webinars and help desk support.

Mainframe Changes
The Legacy Support team responded quickly to install system changes to convert mainframe output from physical to digital output, enabling remote work for administrative staff on short notice.

Enabling Accessibility Among COVID-Related Efforts
As the need arose, numerous ITS units, including Legacy Support, Production Support, Central Support, and Networking and Infrastructure, assembled resources to expeditiously support the availability and accessibility of COVID-related projects across LSU institutions including creating the Return to Campus form and process, symptom checker, contact tracing applications, and integrations for related projects.

Sustaining Telecommunications
Units within Networking and Infrastructure deployed a phone solution to enable administrative offices such as Bursar Operations, University Registrar, and LSU Online, to provide call center customer support while working remotely.
Rapid Tele-Conference Expansion
The Network Applications unit collaborated with the University Registrar and LSU Online to deploy Zoom and ensure each faculty and staff member is connected to the virtual conferencing solution. This required guaranteeing licenses for users, deploying integrations with programs such as Moodle and Kaltura to best deliver online courses for audiences of varying sizes, and securing sufficient storage for Zoom recordings.

Transforming Student Lifecycle Processes
The Production Support and Legacy Support teams supported University-wide adjustments due to the pandemic response, including enabling Pass/No Credit grading for the main campus and law school, implementing CARES Act requirements for student disbursements, implementing unique payment and tuition exemption processes for students, and enabling virtual student orientation.

Providing Support for Administrative Technology
TSPs and administrators were afforded the support of the Field Consulting team, who provided in-person and remote support in addition to trainings to ensure that TSPs are sufficiently serving their respective departments and resources are accessible to University administrators. TSPs also collaborated with Research & Education Technology Services to provide access for remote students to specific applications residing on devices within campus locations.

“Without the prompt response of the Field Consulting team, I would not have been able to start safely working from home when the University sent its staff members to work remote.”
- LISA DIECKMAN
COORDINATOR OF ACADEMIC AREA 1
DEPARTMENT OF PHILOSOPHY AND RELIGIOUS STUDIES

Enhancing Existing Services
The Service Desk, High Performance Computing, Louisiana Optical Network Infrastructure, and Administrative Computing Services customer support teams sharply pivoted from in-person service to remote service, transforming workshops and instruction to accessible virtual formats. The Service Desk launched campaigns designed to educate the ITS and LSU communities on remote work resources and disinfection methods and the Louisiana Optical Network Infrastructure ensured that adequate bandwidth was prepared for the change in network utilization.

Supporting a Socially Distanced Tiger Experience
The Enterprise Architecture team collaborated with the LSU Athletics IT team to expand the Tiger Stadium wireless network to allow for contact-less ticketing for the 2020 football season. The Enterprise Architecture team also worked with the Herbert Law Center to expand the wireless network to adjacent greenspaces and parking lots and allow students to participate in coursework outside of conventional study areas. Lastly, the Labs team expanded the Gear-to-Geaux program to better accommodate students who need to rent devices for longer periods of remote learning.
Each department of ITS has contributed to the collective effort to mitigate spending and maximize resources. The bulk of this initiative has been carried out by the Financial Management team, responsible for negotiating purchases and licenses as well as managing accounts for each ITS departments. The financial report gives insight into expenditures and funding for all of ITS and expenditures for the Louisiana Optical Network Infrastructure (LONI) for FY20.
The IT Governance Council (ITGC), the University’s multi-institutional mechanism convened to steer the trajectory of University IT assets and standards, continues to use the combined resources of sub-committees, supporting units, and members to guide management of enterprise efforts as well as make strides to internally develop as an institutional asset.

In this past fiscal year, the ITGC has seen to significant projects through a fully implemented solution to allow the Laboratory School Student Information System to be self-sustaining, separating it from the LSU Bursar system, and a successful student information system solution for LSU Online undergraduate students.

Additionally, the ITGC participated in an audit conducted by the LSU Office of Internal Audit to ensure institutional IT strategies are aligned with organizational objectives, identify and develop solutions for IT risks, assess the value delivered by institutional IT to the University, assess the management of critical IT resources, and develop metrics to assess IT performance. The findings will be presented to LSU leadership in FY21 and a plan forward will be subsequently developed.

**FY20 IT Governance Council**

**SANDI GILLILAN**
Chair  
Associate Vice Provost, Academic Affairs

**ANDY MAVERICK**  
Associate Dean, College of Science

**NEAL LAMONICA**  
Associate Director, LSU Athletics

**LU PENG**  
Professor, College of Engineering

**BRET COLLIER**  
Associate Professor, College of Agriculture

**DARYA COURVILLE**  
Executive Director, Sponsored Programs

**ELAHE RUSSELL**  
Assistant Vice President, Accounting Services

**CHAD BRACKIN**  
Chief Auditor, Internal Audit

**SALLY MCKECHNIE**  
Assistant Vice President, Procurement

**BEN CORNWELL**  
Assistant Dean of Students & Director of Disability Services

**JONATHAN LEVESQUE**  
Staff Senate

**GABIE DEBRULER**  
Student Government

**CRAIG WOOLLEY**  
CIO, LSUAM

**DAVID ALEXANDER**  
CIO, Pennington Biomedical Research Center

**KENNY BROWN**  
CIO, LSU Health Sciences Center, Shreveport

**STEPHEN HEYWARD**  
CIO, LSUE

**J. MICKEY KEES**  
CIO, LSU Health Services Division

**SHELBY KEITH**  
CIO, LSUS

**JASON NORMAND**  
CIO, LSU

**KEN BOE**  
CIO, LSU Health Sciences Center, New Orleans

**FRED PIAZZA**  
CIO, LSU AgCenter

**FY20 Ex-officio Members**
ITS Services

The ITS Service Catalog offers a comprehensive list of all IT services available to the University. Some of these services are reserved for students, faculty, and staff, while others are available to LSU’s surrounding community and family members. All services are available to respective users within the IT Service Management Tool accessible through lsu.edu.

What’s New?

NEW IT SERVICE PORTAL

The newly implemented IT Customer Self-Service Portal, TeamDynamix, was implemented to replace Cherwell as a more feasible and appropriate solution for ITS customers to seek IT solutions, request services, or report IT issues. This solution is user-friendly, simplified, and inclusive, providing more efficient tracking, measuring, and communication tools to better serve the University community and support ITS as IT service providers and facilitators.

Access GROK for more information.

NEW ADOBE PRODUCTS

The newly negotiated contract with Adobe paves the way for LSU faculty and staff to have access to the full Adobe Suite of applications. This includes access to the Creative Suite, including Photoshop for photography and InDesign for publishing; and Adobe Acrobat for PDF management. This enterprise collection also includes Adobe Sign, which allows users to virtually participate in and manage signature processes.

Access GROK for more information.

VIRTUAL OFFICE TOOLS

ITS facilitates access to and provides support to a cadre of digital tools for student, faculty, and staff needs. These programs and applications can be accessed through the University VPN or your LSU account. They include video conferencing tools such as Microsoft Teams and Zoom, productivity tools such as the Microsoft 365 ProPlus, and instructional tools such as MatLab and Mathematica.

Access GROK for more information.

OTHER FEATURED SERVICES

The ITS Service Desk is a full service customer support team that offers in-person, chat, e-mail, and phone assistance for IT solutions.

Account Management
Security
Networks
Research Tools
Software and Administrative Applications
Communications Tools

Hardware and Printers
Professional Services
can be related to the data center, academic technology, data and security consultations
Servers, Storage, and Backups
Instructional Technology
Web-Based Tools
In alignment with the commitment to enhance the value of University IT services, ITS recently distributed a survey to 153 LSU Faculty and Staff to gauge their satisfaction of ITS services. Using the responses from the survey (including those featured below), ITS has developed a long-term plan to implement efficiencies, improve existing business processes, strengthen relationships with stakeholders, and redefine IT Governance and the role of the Portfolio Management Office.

The respondents expressed an overall satisfaction of 70% for ITS Service. 280 comments gathered.

Satisfaction Ratings

- ITS is aligned with LSU mission and goals: 71%
- ITS is focused on the right priorities: 74%
- ITS values me as a customer: 73%
- I am satisfied with the availability of IT Services: 73%
- ITS proactively looks for ways to help me do my job: 56%
- ITS changes do not disrupt my work: 71%

Top 5 Customer Satisfaction Themes

- SERVICE OFFERINGS: 42 comments
- COMMUNICATION: 34 comments
- INFRASTRUCTURE/APPLICATIONS: 27 comments
- PROCESS/PROCEDURES: 21 comments
- CUSTOMER SERVICE: 115 comments
The Year in Review

The 2019-2020 Fiscal Year has presented ITS with a fair share of challenges – but the dedication and expertise of the team allowed the organization to contribute to sustained University operations and considerable progress in a number of strategic and impactful areas intended to transform the University IT landscape into one that is responsive to the needs of the community, viable, and collaborative. The following narratives offer insight into the work that ITS supports to transform the enterprise system, research and instructional support, and standard University IT system support mechanisms.
Enterprise Modernization

Transforming the hardware, systems, and processes that support the unique LSU system is a venture that requires staying abreast of industry innovations, maintaining an awareness of the needs of the LSU community, and reducing inefficiencies. Using these principles, ITS prioritizes data and service access and management, the security of virtual and physical IT infrastructure, and resource management when responding to University staff requests for business process improvement for enterprise resources.

Modernizing and Automating Critical Student Services

Louisiana State University, much like other colleges and universities across the country, continue to offer and support instructional programs based on processes and systems developed in the days before the internet became a mainstay in our daily lives. A major component along the route of progress and transformation is the effort to acclimate these systems to digital environments and automate the processes, often transitioning them from largely manual and hand-to-hand methods to those contained within a virtual architecture and automation procedures where possible.

ITS works with LSU campus units to modernize these services, thereby reducing possibilities for human error and increasing staff availability for other pressing matters that must be addressed through person-to-person contact and communication. Although students, some faculty, and some staff see the transition from the outside – where there is an announcement of a procedural change and instructions are provided as to how to use the new process – the internal course is far more resource-intensive and complex.

A typical paper to digital modernization entails, first, a request from a campus unit to the Service Desk or the IT Governance Council, followed by a current state assessment, where the entire process is mapped and assessed for opportunities for automation and improvement. Once these gaps are documented, the search for a digital solution begins. The solution is assessed, approved, and integrated into the current enterprise system. ITS team members also create campaigns to inform students, faculty, and staff about the impending changes.

In the recent fiscal year, Production Support and Legacy Support assisted in the modernization of a number of student services, including fully automating processes to correct grades and the request and delivery of transcripts.

The grade correction process originally existed in manual format – students and instructors were required to submit paperwork and obtain approval signatures in order to change grades. This increased the opportunity for human error to slow or distort the process – a challenge that became increasingly difficult to account for within a largely virtual University environment. Due to the immediate demand for this process to be aligned with the new setting, ITS worked with the Office of the University Registrar to quickly bring the digital solution to life, allowing grade changes to be made directly to the mainframe. Thus far, the new process has decreased the environmental footprint, reducing the amount
of paper needed to complete grade corrections, and also made the procedure more secure as it now requires true authentication through the LSU enterprise system.

The transcript delivery process was similar to the grade correction process in that it required multiple interactions with Registrar staff at various intervals including taking requests and mailing transcripts. Through the digital solution developed by ITS units, transcript requestors did not experience an interruption to transcript request services and are now able to request transcripts through a more secure and efficient process. Additionally, Registrar staff have increased availability for other projects that significantly benefit the University community.

The Business Process Management (BPM) team continues to build upon the progress made in the previous year through ongoing efforts to evaluate and develop solutions for various campus units in an effort to map out business processes, uncover gaps in operations, and identify opportunities for process improvement. Completed audits for this past fiscal year included the LSU Graduate School and the LSU Police Department.

The Graduate School recognized that the process through which degrees are tracked by students, faculty, and staff was largely manual – student progress was not efficiently tracked, real-time corrections were not possible, and the records existed in silos not easily accessible by interested parties. An audit conducted for a solution that would address the challenges brought forth by the Graduate School and a slew of other advancements including increased communication with students who are falling behind, increased availability of retention and graduation data, transparency about the degree process, and implementation of web-based forms.

The LSU Police Department reached out to the BPM, subsequently discovering a need to be in compliance with the Criminal Justice Information Services (CJIS) Security Policy instated by the Federal Bureau of Investigators (FBI). Following the audit, which also assessed the Police Department’s resources and current capabilities, a solution was found for the Police Department to meet all requirements. These dedicated teams would create a streamlined process and depository for Police Department documents and data thereby optimizing the efficiency and accuracy of critical information access and management within a secure and compliant environment.

Developing Campus-wide Business Process Management Solutions

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Teaching and Research Support

ITS units both provide access to and support for instruction and learning resources used by faculty, students, and researchers. Interdepartmental efforts and cross-campus collaborations combine the use of ongoing dialogue and attention to advantageous and transformative technology innovations. Initiatives such as continuous expansion of complex research tools and networks and modernizing classroom and instructional technology are prioritized to ensure that the University experience remains competitive and continues to prepare students for wherever life may take them after graduation.

Providing Support to LSU Online

ITS teams sustain and support the infrastructure that powers nearly all electronic processes that push the University forward. This also means integrating new programs and capabilities into the existing system, including LSU Online (LSUO) programs, by engaging in dialogue with faculty and staff, assessing multiple solutions for the best fit, and coordinating implementation and support procedures and resources.

In the past year, ITS teams worked with LSUO to implement a number of new offerings to directly support student lifecycle processes including enabling LSUO undergraduate and graduate students to schedule their courses and participate in other typical student account activities previously only accessible to LSU A&M students enrolled in brick and mortar classes. ITS teams also implemented the Student Academic Progress procedure within Financial Aid for LSUO students. This new tracking automated tracking procedure better enables LSU to comply with requirements for financial aid recipients to sustain their aid status when placed on probation.
Expanding HPC Opportunities for Deep Learning

The ITS High Performance Computing (HPC) team sustains and provides support for the high performance computing resources that allow many LSU researchers to conduct highly complex and resource-intensive experiments, analyze dense data, and extract highly technical results. In the past year, researchers using HPC resources have been awarded approximately 156 grants totaling $159,198,925 in areas including but not limited to biological sciences, physics, astronomy, coastal environments, and chemistry. Acknowledging the need to further growth of these technologies and tools, the HPC applied for a grant offered by the National Science Foundation’s Campus Cyberinfrastructure (CC*) program, which imparts funding for campus-level cyberinfrastructure expansion, improvements, integrations, and advancements for science-based research.

The grant, which was awarded to the HPC team, will be used to build Deep Bayou, a small GPU cluster that will support research utilizing deep learning, an AI technique that teaches computers how to predict and classify information in a way similar to a human brain, and other AI technologies. This new system, which contains 13 compute nodes and has a peak performance of 286 Teraflops, will be available exclusively for LSU researchers, their collaborators, and the Open Science Grid, which is a national consortium of research communities who share large-scale scientific research computing resources.

Initial research projects that Deep Bayou will support will include particle physics, ocean and ocean-atmosphere modeling, bioinformatics, infrastructure modeling for disaster management, and computational biology.

“My program has greatly benefited from HPC resources. It focuses on ab initio calculations for nuclear structure and reactions and many of these calculations are no longer possible on local clusters. In addition, the available HPC resources are utilized by my undergraduate student researchers for their research projects, which is key to inspiring young talents to pursue careers in STEM disciplines. The HPC Help team has been tremendously helpful and has been vital to the smooth implementation of the research projects.”

- DR. KRISTINA LAUNEY
ASSISTANT PROFESSOR OF PHYSICS & ASTRONOMY,
Enhancing Complex Scientific Research Resources

The Louisiana Optical Network Infrastructure (LONI), which is jointly managed by the Louisiana Board of Regents and LSU ITS, is a regional provider of HPC services, networks, and resources for complex scientific research. LONI subscribers, much like the HPC community, have access to a growing cadre of computational assets that allow for innovations in a wide range of fields. In this past year, LONI subscribers have conducted research in areas including, but not limited to, hydrodynamic-biogeochemical models for fishery management; wind, tidal, and buoyancy circulation in the Louisiana Coastal Area and the Gulf of Mexico; Mississippi River sediment diversion studies; single cell RNA sequencing for treated and untreated tumors; computational modeling and synthesis of fluorescent dyes for medical imaging, photodynamic therapy, and other uses; and research in nanoparticles, nanostructures, and gravitational wave detection.

The LONI team recently collaborated with the LSU HPC team to complete the initial deployment steps of the new addition to the LONI compute resources, the QB3 cluster. This 3rd generation research system which is funded by the Board of Regents holds 9,696 CPU cores, 202 compute nodes, and a peak performance of 857 Teraflops. It provides an ideal platform for researchers working on large-scale problems that directly affect the citizens of Louisiana, such as predicting the trajectory of hurricanes and storms, exploring the environmental impacts of coastal erosion on the Gulf of Mexico and beyond, and discovering drug candidates.

In addition to this expansion, the LONI team participated in the establishment of the Midsouth US Internet Exchange (MUS-IX). This research and education network is made up of multiple institutions based in Louisiana, Arkansas, Texas, and Oklahoma who are dedicated to providing a network of data, communications, and connections necessary for scientific research collaboration.

MMC moving classrooms to digital

The Multimedia Classrooms team ensures that the hardware, equipment, systems, and networks for each of the multimedia classrooms are maintained and works with the Faculty Technology Center to provide dedicated support. This unit guarantees that both instructors and students have access to virtual tools that enhance their instructional experience and accommodates the shifting instructional landscape. Over the years, the team has worked hard to transform campus classrooms into digital-friendly spaces in numerous ways.

The procurement of an IP-based control and monitoring system aids the unit in observing equipment remotely. Most importantly, this tool allows the unit to receive real-time updates on the status of classroom virtual technology. Another significant improvement came with the installation of digital switchers for classroom presentation screens. This tool allows presenters to make their screens viewable in a wide format which is easier for audiences to see.

The most recent improvement is the installation of digital document cameras for lecture capture and streaming capabilities. This tool is significant because it enables instructors to simultaneously host lectures in a hybrid classroom - both in-
person and virtually. Before the pandemic, the unit was well on their way to achieving the initial goal of 75% hybrid classrooms before Fall 2020. The pandemic response included a new goal of 100% hybrid classrooms – a challenge that the unit was able to complete by the end of the Spring 2020 semester.

Continuous Improvement

ITS units both facilitate access to hardware, systems, and tools that support daily University functions and operations and respond to community requests for improvement and expansion. To continue to do this, teams include maintenance of existing systems when planning for modernization and teaching and research support solutions. This consideration typically consists of ensuring data, application, and system preservation and protection, functionality continuity, economic viability of the IT system and support services, and quality and consistency of campus IT support.

Expanding the Virtual Network Access and Sustainability

ITS University Networking and Infrastructure (UNI) teams are responsible for the planning, application, and management of the hardware and software that support data and telephone network access and connectivity. These teams work with various campus units to architect, design, and install wired and wireless networking infrastructure across campus, support new technology implementation, and are also present to respond to emergencies and other projects when necessary.

In the past year, UNI teams have supported the expansion of the LSU wireless network in an effort to leverage campus resources for social distancing needs. In collaboration with the Herbert Law School, the Network Engineering and Architecture (NEA) team expanded the wireless network to reach adjacent greenspaces and parking lots so that students can participate in coursework outside of conventional areas. In addition, NEA collaborated with the Technical Architecture and Network Construction (TANC) team to replace 258 wireless access points in the Nicholson Gateway Development residential halls within two weeks after a September lightning strike destroyed them.

The Network Applications and Systems Architecture (NASA) group also completed a number of critical projects this past fiscal year. These included ensuring faculty have the necessary Zoom licenses and integrations with Moodle and Kaltura to conduct online courses; continuing the upgrade of physical and virtual servers to ensure that end of life (obsolete) operating systems are decommissioned or upgraded, high-risk vulnerabilities are resolved, and infrastructure is optimized for long-term viability; and deploying a solution to manage LSU ITS’ infrastructure and hybrid cloud environment to manage current assets and prepare for future advancements.
Unit Achievements

Each ITS unit has and continues to contribute to support the foundations that allow daily University processes and tasks to endure. The achievements described on the following pages gives more insight into these efforts that impact ITS pursuits to sustain maintenance, engage in and implement modernized technology, and contribute to the University experience.
Research & Educational Technology Services

High Performance Computing

- Facilitated 108.7 million CPU-hours for a total of 625 users running 339,272 jobs, a 9 percent increase compared to FY19.
- Finished the initial stage of the deployment of QB3, the latest addition to the LONI HPC portfolio.
- Led the efforts of competing for and winning a National Science Foundation Campus Cyberinfrastructure (NSF CC*) grant for $400,000 to purchase and commission Deep Bayou, a small GPU cluster.

Computer Labs

- Added more than 200 desktops from various departments to VLAB in several different pools.
- Expanded our existing desktop footprint by several hundred machines by converting our physical labs and expanding virtual desktop pools.
- Helped Louisiana State University at Eunice recover from a major incident.

Multi-Media Classrooms

- Consulted and/or assisted in projects for various colleges, departments, and offices including: College of Human Science and Education, Foreign Language, LSU Agricultural Center, Faculty Technology Center, History, Experiential Statistics, Business Education Complex, Physics and Astronomy, University Registrar, Facility Services, and Computing Services
- Upgraded Extron Global Viewer IP based system for classroom technology control and system monitoring.
- Purchased and installed 40 new Epson document cameras for hybrid teaching.

Louisiana Optical Network Infrastructure (LONI)

- Facilitated 49.4 million CPU-hours for 146,156 jobs.
- Assisted the State of Louisiana and Federal Bureau of Investigation to mitigate cyber threats against Louisiana education institutions.
- Established multiple agreements with the Research and Education Networks in Arkansas, Texas, and Oklahoma to establish a mutually beneficial collaboration to Content and Internet Exchanges in the Dallas market known as MUS-IX.
- Established access to 130G of Internet capacity to address the uncertain bandwidth need with hybrid learning for the 2020 Fall Semester.
- Purchased and commissioned a 3rd generation research instrument, QB3, with the latest technology from Dell, Intel, NVIDIA, and DDN.

Information Security

Identity Management & Compliance

- Completed Multifactor Authentication (MFA) for Azure Active Directory to improve security posture for authentication services for Microsoft platform (e-mail, OneDrive, Teams, etc.), Box, and Zoom.

Security Operations

Service & Operations

Portfolio Management Office

- The PMO created resource visualization dashboards in Tableau to help ITS leadership decision-making around IT resource availability for projects.
- The PMO successfully mapped all internal processes and implemented achievable Opportunities for Improvements (OFIs) including: better utilization of current systems in use and modeled Future State for the incoming ITSM system.
- The PMO successfully implemented viable OFIs for the IT Governance Council such as the use of tools to improve scheduling and communication.

Service Desk

- Created and helped implement the ITS Major Incident Response Plan (MIRP), a strategy for ITS which focuses on restoring normal service operations as quickly as possible when faced with an unplanned degradation or failure of any critical ITS service.
- Created and designed the Service Status page – status.lsu.edu - which is an integral part of the MIRP and gives customers a site to reference when a major IT disruption is occurring on campus.
- Service Management led efforts to educate the campus community on remote work resources at the beginning of the COVID-19 pandemic through a public site: https://lsu.edu/it_services/remote/index.php, an official LSU ITS Guidelines for Working Remotely document, and guidelines for cleaning and disinfecting computer equipment.
- Administrative Computing Services (ACS) purchased, imaged, and deployed about 30 laptops within T. Boyd within a week's time due to remote work needs.
- ACS hosted numerous VPN webinars to support the transition to remote work.
- Field Consulting installed Adobe Acrobat DC Pro for over 300 College of Humanities and Social Sciences (HSS) users and assisted in migrating 300 HSS users from the HSS Adobe license to the LSU Adobe license.
- Field Consulting provided support to Technical Support Professionals (TSPs) across campus including providing training so that users could utilize LSU devices from off-campus to work remotely.

Service Architecture

- The Data Center group along with PDC (Planning Design and Construction) produced a program document outlining the needed data center infrastructure upgrades for Frey and David Boyd.
- The Change Management group processed 1238 change requests.
- The Quality Assurance (QA) group provided testing for multiple integrations in support of the ITS Integrations team.
Enterprise Architecture

Networking & Infrastructure

- The Network Application (NASA) group worked with LSU Online and the Registrar’s Office to ensure faculty have the necessary Zoom licenses and integrations to conduct online courses.
- The Systems Architecture group has worked with the IT Security Group and virtual server owners around campus to ensure end of life operating systems on hosted virtual servers are decommissioned or upgraded.
- The Systems Architecture group is nearing completion deploying a solution for the operations and management of LSU ITS’ infrastructure and hybrid cloud environment. Three systems have been deployed in support of operations management, log analysis, and network infrastructure management.
- The Network Engineering and Architecture (NEA) group completely redesigned and upgraded the University Lab School wireless network, replacing and upgrading the wireless controllers and 82 APs.
- NEA and Technical Architecture and Network Construction (TANC) collaborated to replace 258 APs at the Nicholson gateway residential halls after they were all destroyed in a lightning strike in September 2019.
- NEA-Wireless also worked with the Herbert Law Center to expand wireless network to adjacent greenspaces and parking lots.
- NEA rolled out a VPN solution to address increased VPN needs due to remote working.

Production Support

- Converted Transcript Request process from in-house printing to a web-based, vendor process.
- Converted the undergraduate student resignation process to a web-based process available to all students.
- Implemented Pass/No Credit application which allowed students to opt into Pass/Fail in the 2020 Spring Semester.
- Implemented integration for fee bill paying for domestic and international students.
- Updated Tuition Exemption workflow process to allow exemption requests for LSU Online courses.
- Worked with Financial Aid to implement Student Academic Progress for LSU Online.
- Established new Faculty website solution and began migrating sites to new solution.
- Configured solutions to support monitoring the LSU website for broken links and ADA compliance and support service and resource management.
- Assisted Legacy Support and the Office of the Registrar in converting the grade correction process from a paper-based process to a web-based workflow.
- Worked on 100 new integration processes within the last year and maintained over 400 integration processes.
- Assisted with data conversion and integrations for the implementation of the new Electronic Research Administration (eRA) system to manage research grants within LSU.
- Extended database availability on distributed system, thereby increasing the frequencies and duration of database backups for disaster recovery.
- Created and configured five new databases and upgraded database servers to meet enterprise requirements for security, functionality, and compatibility.
- Completed the decommissioning of 12 databases on mainframe and distributed systems and reclaimed resources.

Legacy Support

- Automated LSU Online undergraduate student life cycle business processes to enable access to undergraduate programs.
- Implemented new test score super scoring process for Undergraduate Admissions.
- Assisted in the implementation of 11 new processes in support of COVID-19 pandemic initiatives including CARES Act requirements for student disbursements, waiving late fees for students, and payment deferral processes for LSU Online and On-Campus Students.
- Completed CRM integrations with mainframe academic student lifecycle processes.
- Assisted in the automation of LSU Online undergraduate student life cycle business processes to enable student access to undergraduate programs.
- Assisted in the automation of the transcript request, payment, and delivery process.
- Assisted in the implementation of several new processes in response to the COVID-19 pandemic including converting mainframe printing to e-delivery, aligning student disbursements with CARES Act provisions, and a process to allow 15% tuition exemption to students’ fee bill for spring intersession, summer, and summer intersession semesters.
Central Support

- Automated the recruitment prescreening process for Louisiana Department of State Civil Service.
- Integrated new requirements for academic appointment processes.
- Assisted in the implementation of multiple COVID-19 response efforts including integrating Paid Sick Time for COVID19, emergency time tracking, and new time off plan for COVID19 in business processes.
- Implemented Exit Interview functionality for LSU Human Resources.
- Assisted Accounting Services and Human Resources to implement a multi-company payroll costing and position budget system.

Business Intelligence

- Upgraded enterprise Business Intelligence technology solutions to enable an enterprise-level, collaborative approach to managing business terms, as well as providing a visual tool for analyzing the relationships between data objects in the business environment.
- Implemented a solution to port historical human resources records into the current enterprise Human Resource Management system, including new reports and user interfaces.
- Began converting historical mainframe user interfaces to reporting solutions.
- Developed the institutional COVID-19 dashboard, including automated weekly updates, accessible by the public.
- The Data Governance Working Group inventoried compliance reporting across all institutions, identified an initial list of data elements to be considered as enterprise, and developed a data standards template and completing standards for enterprise data elements.
Looking Ahead to FY21

Over time, ITS has provided a University IT environment that has supported LSU through many challenges and changing landscapes. The current phase of technology has brought the community through a pandemic, countless natural emergencies, and an increase of students, faculty, and staff through the optimization of best industry practices, dedication, and technical expertise.

With a nod to the coming fiscal year, ITS intends to continue on the path to modernization and efficiency. However, alongside the spirit of continuous improvement and system modernization, ITS units will also forge a path guided by a desire to improve customer service for each area of IT University services, to maximize collaborative opportunities, and to develop a multi-institutional data policy and asset management process and standard.

Customer Service as a Goal

Developing an IT environment that is responsive, transparent, and efficient requires the collaboration of numerous entities, extensive planning, and countless resources. ITS recognizes that there is still much progress to be made in this area and is dedicated to developing processes and practices that will contribute to this goal. Improvement efforts will include enhancements to the Service Desk that will ensure that customers are receiving the best care, routed to the proper units, and each issue is resolved efficiently. Included in this is an initiative to improve both internal and external ITS communications so as to maximize interactions to convey critical information to the appropriate audiences.

Bringing the University Community Together to Optimize IT

Improved and enhanced data management for an institution such as LSU will allow for an enterprise infrastructure that is more accommodating to the specific needs of the University community using the current and future resources available to us. To accomplish this, ITS will build upon the progress of the previous year in a number of ways, including developing enterprise data policies and standards and policies in coordination with experts from each campus and subject area, with a focus on the most essential data elements.

Building on the progress of the PM-36 (LSU System Information Security Plan) revision process in the previous fiscal year, multi-institutional data governance policies will be proposed to University leadership. Additionally, the development of a centralized reporting portal will continue, including the conceptualization of a data catalog delivered with purpose-built software aligned with LSU-specific data standards. In the coming year, focus will turn to establishing measures for data quality; exploring a master access plan, including establishing information security based on data access roles; and architecting a data warehouse that solves institutional challenges and facilitates a user-friendly, centralized data repository.
Looking Ahead to FY21

Information Technology Services:

Chief Information Officer
Craig Woolley

Service and Operations:
Susan Crochet, Executive Director
Katie Bouey, Director, Portfolio Management Office
Adam Clary, Director, Service Management
Theresa Markey, Director, Financial Management
Terry Doub, Director, Service Architecture

Enterprise Architecture:
Robin Ethridge, Deputy CIO, Executive Director
Mike Smith, Director, Production Support
Byron Honoré, Director, Legacy Support
Lisa Gillen, Director, Central Support
Sean Robbins, Director, Networking and Infrastructure/Network Engineering
Robert Gill, Assistant Director, Network Infrastructure

Information Security:
Sumit Jain, Executive Director, Information Security and Policy
Andy Waggenspack, Director, Security Operations
David Garner, Director, Identity Management & Compliance

Research & Educational Technology Services:
Ric Simmons, Executive Director, Research and Educational Technology Services
Lonnie Leger, Executive Director, LONI
Sam White, Director, High Performance Computing