**Summary**

In FY2014-15, goals for the CIO areas were aligned around two areas: the Cornerstone Plan (particularly Pillar V, Organizational Excellence, and Pillar II, Research Infrastructure and Services) and Operational Goals. During FY2014-15, with minor exceptions noted in the detailed report, all goals in the focus areas were achieved.

Going forward into FY2015-16, goals are aligned again to the Cornerstone Plan and Operational Goals. These goals are articulated in detail in the last section of this report.

**Accomplishments with respect to 2014-’15 Goals**

**Strategic Goals:**

**Organizational Excellence (Pillar V, Strategy 14)**
- Providing State-of-the-Art Technology: Ensure key technology refreshes to enable work done in support of UVa mission.
  - **Wireless Network Refreshes/Next-Generation Wireless:** By the end of FY2014-15, complete the roll-out of centrally-managed access points supporting 802.11ac wireless standards, a standard that dramatically increases wireless throughput.
    **Status:**
    - Due to staff turnover and re-calibration of the project schedule, the wireless Access Point upgrades are now projected to be complete by 11/30/15. As of June 2015, Academic buildings are 76% complete and Residential buildings are 85% complete.
  - **With approved funding, Core Wired Network/100 Gig Core Network:** In 2014-15, increase the throughput (from 10 gig to 100 gig) between the University’s network and its connection to Internet2 in Northern Virginia.
    **Status:**
    - The University’s 100 Gbps connection will be implemented via an electronics upgrade to our existing fiber-optic pathway to Northern Virginia. We are soliciting final vendor information and expect to have the planning completed during the fall 2015 semester.
  - **VoIP Rollout:** During FY2014-15, the Academic division portion of the University’s phone system replacement, with a modern, standards-based Voice over Internet Protocol (VoIP) system, will be complete. The entire project, including the Medical Center, will be completed by September 2015.
Status:
- The VoIP roll-out for Academic buildings was successfully completed ahead of schedule, on 4/23/15, with 10,830 Academic users migrated to the new University Telephone System. The VoIP roll-out for the Medical Center remains on schedule for a September 2015 completion.
  - Integrated System Hardware Refresh: by spring 2015 complete a hardware refresh for the Integrated System that will enhance redundancy and failover.

Status:
- This project was completed in multiple phases. Production environments for both the Student System and HR/Finance systems were migrated to the new IBM servers and storage starting April 19th and finishing on June 14th. This hardware refresh provides redundant storage and servers at both the University Data Center and the Carruthers Data Center to support a production failover environment.

- Strengthening IT Security, Policy, and Records Management (Note: all the following will be ramping up throughout 2014-15, depending on funding approval.)
  - Web Application Security Scanning: Web application vulnerabilities are one of the leading causes of security breaches. A web application scanning tool was implemented to proactively identify security vulnerabilities in web applications before these can be exploited by cyber criminals. With funding, staff will be hired to aggressively promote the use of and provide guidance for the tool within the University.
    Status:
    - A position has been created and staffed to begin expansion of the Web Application vulnerability scanning program. Additionally a third party assessment, performed by KPMG, recommended further expansion of the program. The recommendations and associated funding requirements are under review.
  - Strengthen Information Security Compliance Programs, Tools, and Incident Response: With funding, staff will be hired to keep up with ever increasing legal and regulatory compliance requirements and penalties concerning information security and privacy – as well as meeting the growing demand within the University for consulting on compliance issues (especially for research projects).
    Status:
    - Two initiatives, an assessment by KPMG and an internal Data Loss Prevention/Security Architecture, will provide
recommendations and structure for deployment of funding approved in June 2015.

- **Reduce Sensitive Data Exposure**: pending funding approval, complete evaluation of all data loss prevention tool options, develop a final cost proposal for purchase and deployment, and begin a limited project ramp-up.
  
  **Status:**
  - Both a security assessment by KPMG and a draft internal effort surrounding Data Loss Prevention/Security Architecture have recently been completed. A multi-year security enhancement program plan, as well as funding requirements that exceed initial budget projections, are being prepared.

- Actively support and implement Organizational Excellence (OE) projects in 2014-15
  - **OE projects that the CIO is primarily responsible for:** Server/Data Center Centralization and Email Consolidation.
  
  **Status:**
  - The Server/Data Center Centralization project is in the execution phase. Targeted marketing/discussion meetings are being held with all major business units and schools to stimulate and encourage increased ITS data center and server centralization.
  - The Email Consolidation project is in the execution phase. A CMS (legacy Central Mail Service) retirement date of 12/31/15 has been announced and dormant accounts have been de-activated in preparation for a migration of ‘eligible’ accounts to Exchange. Free/busy calendar integration of ITS/HSTS Exchange systems has been successfully completed.

- **OE projects for which the CIO is a partner:**
  
  **Status:** Managerial Reporting (Finance): During FY15 the ITS Enterprise Applications team worked closely with Managerial Reporting and OE on the implementation of Hyperion to support the new financial model.
  - **Status:** Research UVA (OSP): In May of 2015, Phase One of ResearchUVA was launched as a portal that provides easy access to view and track critical research documents, and a single entry point and sign-on for all research-related financial and compliance sites. This new portal has been well-received by faculty researchers. Additional functionality such as the ability to search the abstracts of funded awards is being deployed. Future phases are being planned to provide additional functionality to enhance the support services provided to researchers.
• **Status:** Travel Management and Expense (Procurement): The ITS Enterprise Applications team has been working with OE to define better processes for travel and expense management and select a travel and expense tool. Full implementations for these projects will be in FY16.

• **Status:** HR Service Delivery (HR): The ITS Enterprise Applications team worked on One HR/HR Revisioning in FY 2015, and this work is planned to be implemented in FY16 and beyond.

### Research Infrastructure and Services (Pillar II, Strategy 5)

- **High Performance Computing (HPC) Cluster and Environment:** In 2014-15 complete the implementation of a 4800-core high performance computing cluster for computationally-intensive research. Partner with the director of the Data Science Initiative as well as schools with data-intensive research programs to develop a robust high performance computing (HPC) environment.

  **Status:**
  - The Rivanna HPC implementation has been completed, service unit credit system established, service unit purchase procedure established, faculty onboarded and support structure in place.

- **Science DMZ:** During FY15 and FY16, implement networking security technology that isolates scientific and research data to facilitate communication.

  **Status:**
  - Further discussion with researchers is planned in FY2016 with a decision on what we will do in this space, if anything, before the end of the fiscal year.

### Operational Goals:

- **Disaster Recovery:** In FY2014-15, the next two phases of Disaster Recovery will run in parallel: 1) the documentation of the current state of IT service disaster recovery plans and delivery of step-by-step recovery guides for each platform in scope; and 2) the documentation of options around a total grounds-wide outage – plus improvement projects to align Recovery Point Objectives/Recovery Time Objectives (RPO/RTO) with business needs.

  **Status:**
  - Due to staff turnover and rapid changes in technology options for Disaster Recovery, the Disaster Recovery effort will be
refactored/restructured. One part will be “Infrastructure Resiliency” which involves the redundancy for our servers, storage, network, and VoIP infrastructure. The second part will be “Business Continuity”, having to do with key applications and databases (ERP and other systems), on top of this resilient infrastructure.

- **IT Service Management (ITSM)** – Continue to implement ITSM best practices to improve ability to deliver predictable services and achieve promised service level: in 2014-15 complete the roll out of Asset Management, and one other ITSM area (tbd), and the implementation of the ServiceNow tool to support these processes.

  **Status:**
  - Our organizational ITSM priorities shifted to a roll out of Problem Management instead of Asset Management. This roll out is complete and included implementing process standards and procedures, as well as training ITS staff on how to use this new process. Problem Management was implemented in ServiceNow where it is integrated with the existing processes for Incident Management and Change Management.

- **Enhance Records Management Services (Note: dependent on funding approval):** During FY2014-15, add a records management FTE to develop and support enhanced online communication and education methods that will extend awareness of records management requirements to faculty and staff who are not currently being reached via in-person classroom training. This person will also help address the increasing volume and complexity of high priority e-discovery, FOIA, and internal investigation requests.

  **Status:**
  - A new staff member was added and educational opportunities have been and will continue to be expanded. A project has been launched to provide automated support for investigative efforts.
Goals for 2015-16

Strategic Goals:

Organizational Excellence (Pillar V, Strategy 14)
- Modernize and strengthen IT infrastructure: Ensure key technology refreshes to enable work done in support of UVa mission.
  - VoIP Rollout: Complete the entire implementation project, including the Medical Center, by September 2015. The wrap-up/stabilization and decommissioning of the old Siemens system will be finished by the end of December 2015.
  - Wireless Network Upgrade: Academic buildings are scheduled to be upgraded by late fall 2015, with residence halls to be completed in subsequent months. This upgrade moves our wireless network from a "convenience" network to one that supports the increased demands of our students, faculty and staff.

- Strategic Service Sourcing – Providing Services that Scale
  - Explore cloud-based services: Begin migration of appropriate central services to “the cloud”; broker cloud services for the University community while being mindful of security and contractual complexities.
  - Launch a centralized desktop support service: Continue to grow the centralized desktop support service by enrolling one new unit per quarter.

- Strengthening IT Security, Policy, and Records Management
  - Complete enterprise architecture plan for Data Loss Prevention (DLP).
  - Begin implementation of measures to strengthen security (validated by the KPMG assessment completed in summer 2015). These measures will include a Governance Structure, as well as security intrusion prevention, detection, and response enhancements.

- Actively support and implement Organizational Excellence (OE) projects in 2015-16
  - OE projects that the CIO is primarily responsible for: Server/Data Center Centralization and Email Consolidation.
  - OE projects for which the CIO is a partner: Managerial Reporting (Finance); Research UVa rollout (OSP); Travel Management and Expense projects (Procurement); HR Service Delivery (HR).
Research Infrastructure and Services (Pillar II, Strategy 5)


- Continue to plan for and implement network infrastructure needed to support modern research technologies, including enhancements such as:
  - With approved funding and in conjunction with other Virginia state network members, upgrade the University’s main external network connection to Internet2 in Northern Virginia from 10 to 100 Gigabits per second. This higher speed connectivity provides the foundation needed for large-scale research data transport.
  - Design and plan for the implementation of Science DMZ infrastructure. Local Science DMZ technologies can enable researchers to make more effective use of high speed connectivity from University data centers, while a Distributed Science DMZ could bring the same technologies to specialized research locations around grounds. Software Defined Network (SDN) technology may be an enabler for long-term Science DMZ functionality.

Operational Goals:

- IT Service Management (ITSM): Continue to implement ITSM best practices to improve our ability to deliver predictable services and achieve promised service levels. In 2015-16, implement Request Management.

- Project and Portfolio Management: Continue to improve project and portfolio management processes, including project prioritization. In 2015-16, implement supporting tools and improved reporting/tracking capabilities.

- Continue to standardize, streamline, and monitor enterprise infrastructure, and to provide measureable reliability and performance metrics for Voice-over-IP and Ethernet services that can be compared to the agreed upon service level expectations.

- Disaster Recovery: The Disaster Recovery effort will be refactored/restructured during FY16 and FY17.
  - To design and deploy “Infrastructure Resiliency” which involves the redundancy for our virtual servers, storage, network, VoIP and authentication infrastructure.
  - To ensure “Business Continuity”, having to do with key applications and databases (ERP and other systems), on top of this resilient infrastructure.