In a world where access to information and communication technology is fully decentralized, where every device is potentially compromised, and where economics force a more strategic approach to sourcing, the job of managing technology is more about policy, architecture, contracting, efficiency, and relationship building than it is about hardware speeds and feeds. Accordingly, goals for the VP/CIO areas are organized around four themes designed to focus attention on the challenges and opportunities at hand: operational efficiency, architecture and policy, security, and strategic investments in IT.

**Progress on 2012-'13 Goals**

**Improving central IT’s operational efficiency:**

- **Cost of service:** Refine and apply UVA’s cost of central IT services framework to provide meaningful data informing decisions around the catalog of central IT services. In collaboration with Indiana University, identify key central IT service areas to benchmark.

  Status: Working with ITS and VP/CIO Leaders, streamlined the Cost of Services framework to include the Services Catalog listings, simplify data collection, define indirect cost categories, and design/implement a communications plan for collecting FY13 data.

- **Catalog of services:** Work with governance and other advisory groups to refine the catalog, ensuring that we are tracking costs for key services through Cost of Services, and for some services, develop optional offerings for increased service levels.

  Status: A fully updated and expanded service catalog was published in February, and it was vetted by the Deans’ Technology Council. The 113 services were published with descriptions, links for obtaining the services, fees if applicable, support hours and planned downtimes, and promised service levels. The newly-defined services were synched with the Cost of Services to ensure we are tracking costs appropriately. A contractor was brought on board to develop an updated, robust rate structure for standard and “premium” service offerings.

- **Service Level Agreements:** Expand the number of SLAs published and the number of SLAs negotiated with specific customers by 20%.

  Status: The service catalog, with 113 services, published service levels for global University services. In addition, 7 full SLAs were signed with University Data Center occupants, 9 SLAs were signed for custom
applications, an MOU was put in place with the City of Charlottesville for backup fiber, an MOU is in draft with NRAO for data center services, and 2 SLAs have been developed for University Related Foundations (University Foundation and the University Physicians’ Group) for server administration and imaging applications. SLAs for the ERP applications (HR, Finance, SIS) have been drafted and are being reviewed by key stakeholders.

- Enhance the project management capabilities in the VP/CIO areas: Evaluate the need for a more automated project inventory mechanism. Establish contact with other PMOs within the state and participate in periodic meetings and assess best practices.

  Status: A real-time web based Project Inventory application is in the testing phase presently. It will be ready for production use before the end of the fiscal year. In addition, a project repository has been developed and is in production. Also, the project complexity tool is having improvements made to it and will be ready for production as well in the near future. In June, 2012 the VP/CIO IT Portfolio & Project Management Office hosted a state institutional higher education PMO summit with participation from the majority of the state schools.

- Continue to enhance our ability to ensure that services and projects are aligned with University Priorities: Expand involvement of stakeholders/governance/advisory groups in the project prioritization process. Update the balanced scorecard to include FY12-13 initiatives.

  Status: The VP/CIO leadership team developed a framework to ensure IT capabilities are strongly tied to University strategic priorities, especially those coming out of the current strategic planning process. The ITS balanced scorecard was revised for FY12-13 and will be updated at fiscal year end with accomplishments for the year.

- Improve our ability to deliver predictable services and achieve promised service levels by formalizing IT service management with ITIL (Information Technology Infrastructure Library) best practices: Educate the organization on ITIL; Develop a roadmap for ITIL Lite implementation; implement the most cost effective components of ITIL.

  Status: Leadership and others (over 50 people) in the VP/CIO area received training and were certified in ITIL Foundations. Incident Management was operationalized in May 2013, and a Change Management implementation is underway. A management tool to support ITIL operations has been selected and is expected to be implemented by Fall 2013. In addition, more structured data center operations and formal procedures have been
developed, and an overhaul of the disaster recovery plan is underway. Storage has been analyzed and a new storage solution from a single vendor has been procured. Implementation of this solution will allow more streamlined provisioning of services to the University and more efficient (and less costly) management and operation, improving predictability.

**Ongoing modernization of enterprise IT architecture and Policy:**

- **Modernize the University’s Voice Communication Infrastructure:** Complete the remaining procurement aspects and complete contracts, perform the detailed design work to develop the implementation plan and implementation schedule, and if performance of design work with vendor is as expected, begin the implementation of the replacement systems.

  **Status:** Procurement aspects have been completed, and the RFP is expected to close by June 30. A favorable trunking contract was signed, affording significant savings. Dark fiber (capacity of up to 40Gb) was procured, and 10Gb has been operationalized with ITS gear and staff.

  A VoIP project manager was hired in January 2013, and a project team has been hired/assembled. The detailed design project with a potential vendor is underway. Much groundwork has now been laid to ensure appropriate stakeholder involvement and governance.

- **Identity Management:** Complete the process of mapping both the interim next steps and the longer-term strategy for identity management enhancements. Pending resource allocation, start the process to enhance the identity management system.

  **Status:** Key UVa identity management systems have been shored up and stabilized. An Identity Management project manager has been identified and work has been done toward developing a plan/roadmap and re-engaging key stakeholders.

  Work continues on the national level, with UVa’s engagement in CIFER (a project to leverage existing tools and create new tools to produce an open source Identity Management System designed to meet the needs of Higher Education), Two-Factor Cohortium (to help solve the general problem of passwords being a weak solution for authentication by leveraging 2-factor authentication technologies that are easy to use and widely deployable), and InCert (a project to develop a set of community sourced tools for on-boarding devices on to campus networks, managing device security settings, supporting eduRoam, and provisioning digital certificates).
Ongoing strengthening of IT security:

- Network and Application Security project: Technical solutions will be implemented and production rollouts will be well underway by July 1, 2013.

  Status: "Technical solutions have been implemented for all five project components and production rollouts have either been completed or are well underway. Specifically:

  1) an enhanced tool for detecting web application security vulnerabilities has been rolled out;
  2) a newer generation network traffic analysis tool for detecting malicious activity is in production;
  3) an updated tool for examining network-connected devices for vulnerabilities is now available for use;
  4) a web application firewall is implemented in test mode on one high-risk system and production roll-out is underway; and
  5) a means for more rapidly blocking compromised network-connected devices has been developed and production roll-out is in progress.

- Protecting Highly Sensitive Data: 1) Complete remediation of potential highly sensitive data found on UVaCollab and centrally hosted web services. 2) Continue to search and remediate other locations where legacy files might be stored. 3) Continue periodic scanning of remediated systems to guard against return of inappropriate data. 4) Shepherd the revised data governance policy through the approval process and implement across the University.

  Status: A total of 12.8 million occurrences of potential highly sensitive data (SSN pattern matches) improperly stored on centrally hosted servers by individual users and departments has now been remediated. This very successful proactive scanning and remediation effort remains an important part of our ongoing efforts to protect highly sensitive data. Work on the revised data governance policy is continuing.

- Records Management: Continue to build records management capabilities. Pending funding or re-allocation, implement a solution for automating records management and destruction processes. Finalize records storage agreements and trustworthy system standards and enroll university departments in their benefits.
Status: The University Records Management Policy was approved in December 2012. Implementation of the University Records Management Application powered by Infolinx is well underway with an expected go-live date this fall. Storage agreements with two professional records storage vendors have been completed, and the process of moving physical records storage is underway. Physical Records Storage Standards are completed and communicated, and an outline of Trustworthy Electronic Records Systems Standards is completed.

Ongoing investment in strategic initiative:

- Digital Preservation: 1) In partnership with the Library, continue to position UVA in leadership roles for both the Digital Preservation Network and APTrust and shepherd both through their initial start-up phases. 2) In partnership with the VPR and the Library develop data management templates and workflows that will help streamline grant writing and that will leverage our investments in digital preservation infrastructure.

Status: Both APTrust and DPN now have active partner communities. Both organizations held face-to-face full partner meetings as well as various subgroup meetings during Spring 2013. The most active area for both organizations is the development of the architectural designs and initial implementations of the technologies involved. The goal for delivery of APTrust Phase 1 is December 2013.

We are working with the VPR office and the Library on the Big Data Initiative -- and data management plans are part of that work.

- 4-VA: Continue to coordinate and provide infrastructure support for UVa’s participation in the 4-VA initiative that focuses on leveraging technology to improve teaching/learning efficiency, productivity and quality, and enhance the research competitiveness of the partner institutions. In 2012-’13 we will: 1) complete the interoperability work to bring full functionality to the TelePresence infrastructure; 2) hold the High Performance Computing Bootcamp in the TelePresence facilities and make it available to a broader range of institutions; 3) support an increased number of shared courses originating from UVA; and 4) continue to expand opportunities for faculty collaboration across the 4-VA institutions.

Status: 1) standard procedures have been established for scheduling TelePresence rooms, classes, and other events; 2) the HPC Bootcamp was made available to other 4-VA partners via streaming video; 3) UVa originated Persian; 4) several UVa faculty participated in research collaborations with colleagues at other 4-VA partners. New initiatives included launching the
Nucleus STEM course redesign program, beginning implementation of an online version of the Course Design Institute, launching a baseline study of the prevalence of evidence-based teaching techniques across the curriculum, and submission of a 4-VA/MARIA collaborative NSF proposal for a regional computational grid.

- Support for Computation Intense Inquiry and Digital Scholarship: Continue to enhance support for computation-intense inquiry and digital scholarship. In 2012-'13 we will: 1) continue to enhance our digital infrastructure capacity/use by: a) increasing network bandwidth available for research; b) continue to invest in tools that create a framework for weaving together disparate UVA digital resources into a digital ecology supporting the sustainable and scalable creation of scholarly web sites; c) in partnership with the Provost, evaluate the adequacy of Collab and strategic direction for providing online support for classes; 2) enhance our high performance computing capacity/use by integrating cloud compute-on-demand into our UVa grid infrastructure; 3) build the culture around digital/computational inquiry focusing on launching support for advanced visualization through a partnership between UVACSE and SEAS; 4) continue to provide direct support for computation intense projects; and 5) continue to work with University partners to measure the impact of these investments on funding support for computation intense research and scholarship.

Status: 1a) This Spring we made operational the UVa-owned fiber optic cable from Charlottesville to Northern Virginia, enabling dramatically expanded connectivity to national and international research and education networks; b) prepared for summer deployment of the last major components of the digital ecology for scholarly Web communication; c) worked with the Provost and a faculty advisory committee to evaluate Collab, resulting a recommendation to remain with the current environment for now.

2) We continued to provide leadership for the Internet2 NET+ education cloud initiative. We were the lead institution in the effort to secure Amazon AWS participation as a service provider, an effort that should be successfully completed over the summer.

3) Created and equipped the new Viz Lab in Rice Hall, and collaborated with the Library on the new viz wall in Clemons.

4) We have successfully completed 94 UVACSE tiger team projects, and have another 21 currently under way.

5) Grant proposals with intensive computational needs are now tracked through the application process.
Online Faculty Annual Reporting: Support the Provost in the assessment and implementation of an online faculty annual reporting system.

Status: Potential commercial product solutions for Faculty Annual Reporting have been identified and reviewed by members of ITS, Darden School, School of Engineering, and the School of Medicine. Findings were recently updated with the Associate Provost for Academic Affairs and the Senior Vice Provost for Strategic Planning to reconfirm the project’s priority and the sponsorship availability.

Supporting Implementation of New Financial Model: Continue to provide support for the development of the new university financial model. While the specific form of the new model has yet to be established, it is clear that any new model will require significant investments dedicated to enhancing/creating new reporting mechanisms.

Status: We continue to work closely with the new NIFM project director and the Assistant Vice President for Finance, especially around budgeting, financial planning, and financial reporting solutions. Consultants have been engaged in planning for short-term and long-term solutions.