

## Office of Information Technology Strategic Achievements Report

The Office of Information Technology (OIT) was created in response to recommendations from a review in 2001 of the University of Florida Information Technology (IT) environment. This central unit was the first step in a comprehensive University-wide reorganization of IT resources and operations with a focus on the University's missions of teaching, research, and service/extension. The OIT was charged with forming an organization to address:

1. The creation of a new IT organization from existing organizations,
2. On-going strategic planning,
3. Strategic allocation of resources and budget guidance,
4. IT architecture planning and management, and
5. Performance measurement to assess benefits and outcomes.

As a second step to address those mandates, a new IT strategic planning process was initiated involving a broad range of individuals from the newly created Information Technology Advisory Council (ITAC) and the various ITAC committees and subcommittees. The proposed IT SP was approved by the Vice Provost and submitted for University approval on May 7, 2002. With the approval of the Provost and President, the IT SP has now become the roadmap for OIT operation and development (See the IT SP at <http://www.it.ufl.edu/vp-cio-office/strategic-plan/> . The plan identifies a set of five strategic focus areas related to University IT functions: (1) Planning, Administration, and Human Resource Issues; (2) Teaching, Learning, and Research; (3) Service and Support; (4) Infrastructure; and (5) Security and Standards. Under each of these focus areas, a series of goals were adopted to align the OIT organization and its goals with the greater University mission as defined in the UF Strategic Plan.

This report is an overview of efforts in support of the strategic focus areas and specific goals established in the IT Strategic Plan. It does not provide an exhaustive list of OIT activities. Rather, it presents a representative sample of activities during the report period (14 months) that have a direct bearing on the directions outlined by the strategic plan. Other activities, considered fundamental to operations or basic infrastructure, are not reported here.

## Planning, Administration and Human Resources

### *Coordination, Leadership and Planning*

Over the period covered by this report, the Information Technology Security Council (ITAC) and the Vice Provost for Information Technology worked within a campus-wide ITAC advisory structure for planning, coordinating, and policy development. Strong participation of the ITAC membership in the development of an IT Strategic Plan ensured that needs and problems were identified, alternate solutions were assessed, and resources and plans were allocated and executed in a coherent and timely manner. In addition, the Vice Provost and the OIT Directors participated in a number of university-wide or high-level college steering and advisory committees to ensure open communication about strategic directions and to facilitate broader collaborations on IT projects.

To increase the effectiveness and efficiency of OIT in the delivery of services to the university community, existing central resources were reorganized into three major units: Academic Technology, Data Infrastructure, and Computing and Network Services. Directors for each of these units were hired and tasked to start immediate implementation of strategic actions in each area. This reorganization and new leadership resulted in marked improvements in synergistic collaboration within the central OIT units. It also led to the elimination or realignment of redundant positions and internal business processes, the improvement of existing services, and a focus on the creation of new services required by the university community. Finally, this reorganization provided a more coherent structure for delivery of central or enterprise IT services.

### *Sustainable Funding*

OIT explored business models that will ensure long-term, sustainable funding for fundamental IT resources and services, as well as for an atmosphere of inquiry and innovation. The implementation of a pilot program providing IT services to the wall plate using a cost recovery model was implemented in order to gain experience and evaluate quality of service, cost efficiencies, cost avoidance, gains in interoperability, the total cost of ownership, and return on investment. Funds generated in this model would be used for the upgrade and life-cycle replacement of local equipment, and reinvested in core network infrastructure. In addition, at the President's request, a student technology fee was carefully studied by a committee of students, staff and faculty. The committee's final report recommended that such a fee be implemented (starting at \$3 per credit hour for all students) as soon as practicably possible. The committee's recommendation also included guidelines for the use of such funds. While the proposal was not forwarded to the Legislature for

GOALS
-coordinate and provide leadership-
-provide an on-going, open, participatory planning process-
-provide sustainable funding that avoids excessive and redundant costs-
-recruit, develop and retain qualified personnel-
-address emerging intellectual property issues-

approval in the last session, it is a high priority for the 2004 session. The Directors of Academic Technology, Computing and Network Services, and Data Infrastructure are also working to establish base funding models for fundamental services. This will allow the University to set base funding on a routine cost to continue and, as funds permit, to select additional projects to serve higher level goals or specific needs.

### *Staff Issues*

A substantial effort to remove existing barriers and improve the flexibility in IT professional hiring and retention was made through the development and implementation of a new IT employee classification system. A pilot project using the new classification system is underway now in UF Human Resources and will extend six months before evaluation. In addition, efforts were conducted to establish strong linkages and relationships between OIT personnel and unit- or college-level IT personnel through a variety of OIT meetings, listservs, and a new on-line newsletter (called IT Connections). Training opportunities were made available to all IT professionals throughout campus through the Information Technology Security Awareness (ITSA) program, the Computer Challenge on-line courses, and courses offered by the Center for Instructional Technology and Training (CITT). Finally, an OIT employee recognition program was implemented. Outstanding performance in each unit is recognized with cash bonuses, and awards are presented during OIT Town Hall meetings.

### *Intellectual Property*

An emerging issue of particular interest to the faculty is the intellectual property rules applying to educational materials provided or delivered in electronic format to nonresidential students, and to outreach and extension audiences. To ensure fairness to faculty and to protect the University's investments in this area, the ITAC-AT committee is developing a draft policy recommendation to be reviewed by the ITAC. In addition, a faculty awareness and training program on intellectual property was conducted in collaboration with the Office of Technology Licensing and the Deputy General Counsel.

## Teaching, Learning and Research

### *Use of innovations in teaching*

A central element of the OIT strategic plan is to provide resources needed by the university community to carry out its academic mission. During this year, improvements were made to existing systems, and new services were created for learners, teachers, researchers, extension faculty and staff. The necessary resources to create these new services were acquired through efficiency gains from reorganizing staff and resources. New services include: (1) A Learning Support Systems area which includes course management, testing and anti-plagiarism services, (2) a Video and Collaboration Support Systems area that provides highly subsidized services for video streaming, point-to-point video, satellite, television and videoconferencing, (3) an Advanced Learning Projects Support group that provides faculty with a resource for projects requiring high-level software engineering competence and integration to existing University systems such as GatorLink, and (4) an IT Sponsored Project Support area designed to assist faculty in pursuing funding for IT related projects.

GOALS
-use innovation and best practices in teaching using technology-
-provide on-going support for learning and skill development-
-invest in synchronous and asynchronous learning programs-
-provide High Performance Computing resources-

In addition to the above new systems added by OIT-AT, improvements were also made to: (1) the Electronic Thesis and Dissertation (ETD) program, by implementing changes that resulted in a tenfold increase in services provided to students over the previous year, (2) technology-enhanced classrooms (50 classrooms had major technology improvements), (3) portable videoconferencing capabilities, (4) the refresh schedule for equipment in centrally managed computer laboratories, and (5) training programs designed to assist faculty and TAs in the use of currently available systems and facilities.

### *Learning IT skills*

Because innovation in technology does not necessarily lead to innovation or to improvements in teaching, efforts this past year were directed toward building faculty expertise in the use of newly developed IT resources and systems. To this end, OIT resources were used to work with faculty in developing new uses of laptops and PDAs, new ways to take advantage of technology to enhance learning and faculty delivery, and improved efficiency in refreshing course materials.

Services for students in the Teaching Center were improved. To alleviate long standing space and resource problems, a TV tutoring program was initiated. Tutoring sessions are now transmitted live through closed circuit TV into UF Housing as well as streamed through the Internet for students living off campus. This service has been very well received. In addition, courses related to IT skills are offered to students through the leisure course program.

To address staff training needs, the training committee introduced and implemented the very successful "Computer Challenge" training program. Also, they continued offering more than 600 Netg on-line courses to the university community.

### *Synchronous/Asynchronous Learning Systems*

UF is developing resources and incentives to enable comprehensive and effective synchronous and asynchronous learning programs. Beneficiaries of these programs are faculty and students involved with distance education. Through the Division of Continuing Education, UF has developed a Distance Learning Plan to address needs of place-bound students. Part of this effort includes strategic partnerships between Distance, Continuing and Executive Education, the Institute for Food and Agricultural Sciences, and OIT to leverage the presence of the University in every county of the State. Investments in infrastructure described elsewhere in this report such -- as those related to learning support systems, technologies for collaboration, and investments in networking -- have an important bearing on these learning systems programs as well.

Although synchronous and asynchronous learning programs are generally associated with distance education, the same technology has proven to be useful in conventional campus-centered courses. For example, the ability to store lectures and to stream them at a later time on demand is becoming more common among faculty teaching on-campus courses. During this reporting period, there was a very significant increase in demand for these services for conventional, on-campus courses.

### *High Performance Computing*

A High Performance Computing (HPC) strategic plan was developed in the ITAC-HPC, in collaboration and consultation with the Vice Provost for IT and the Vice President for Research. This plan calls for HPC development in a three-phase build-out centered on cluster-server models. The plan leverages UF's grid networking and technology expertise, joins in a local grid several current HPC facilities with new dedicated clusters, and increases overall campus-wide HPC coordination and capacity. The plan addresses a number of current areas of research strength as well as the new interdisciplinary areas of research emphasized in the UF Strategic Plan, ranging from nanoscience and biomedical science, to genetics and cancer, to bioinformatics and other data intensive sciences. The Office of Information Technology (in collaboration with the ITAC-HPC and faculty, deans, and vice presidents from several large units) is evaluating opportunities for a partnership with major vendors. The partnership is expected to lead to a named center for research and high performance computing excellence. Phase 1 is near final agreement now, and plans are to finish phases 2 and 3 by 2005.

## Service and Support

Service and support are crucial to the use of IT in academia. Making beneficial changes in service and support levels depends both on the competence of the support personnel that facilitate and assist users, and on the competence of the university user community. During this reporting period, efforts were directed toward improving services and support through improving skills of staff, faculty, and students.

### *Provide curriculum development and assessment consultancy*

Curriculum development and assessment was provided at two levels: (1) No-cost consultation to faculty and self-use of facilities for curriculum development and implementation, and (2) cost recovery curriculum development and implementation. Staffing changes were made in the Center for Instructional Technology and Training (CITT) to resolve productivity and throughput capacity issues. Support staff were trained in techniques and tools related to accessibility in curriculum materials development, and in new technologies such as Learning Objects.

GOALS
-provide curriculum development and assessment consultancy-
- enhance productivity and communication services-
-provide a campus wide resource pool of IT services-
-improve Help Desk support-
-conduct network infrastructure services

New investments were made in the CITT that include: (1) High-end video post-production stations, (2) virtual reality stations, (3) high-end web application development stations, (4) high-end scanning stations, (5) video conferencing, and (6) emerging technologies in education display area. These service stations are staffed with consultants who can demonstrate use and help faculty in using these resources. Though not offered this year, discussions were initiated in the ITAC-AT committee suggesting the desirability of providing similar services to graduate student teaching assistants.

### *Enhance productivity and communication services*

The GatorLink e-mail servers were upgraded to increase reliability and to handle the rapidly growing volume of mail. Currently, 80,000 GatorLink user accounts send and receive more than 350,000 messages per day. GatorLink e-mail traffic has been growing approximately 40% per year. To keep up with this demand, a new server with 4 times the processing power and storage capacity was installed in May. Another new server will be added in September. Improvements were also made to GatorLink directory services to enable single point authentication and role-based permissions.

The creation of the portal my.ufl.edu provides a central location and cornerstone for value-added services. This single site provides access to information and news from across the university, selectable by the user. In addition, the site provides a single point of access to web-based applications at the university. The portal currently provides single sign-on capability to the student information system (ISIS), the Administrative Menu, GatorLink account services and Enterprise Reporting. Additional applications will be integrated as the portal is developed. The portal leverages previous development in GatorLink and the university directory to provide access to existing GatorLink users based on the affiliation with the university. As additional elements of the PeopleSoft system are brought on-line, users will gain access through the portal.

A data warehouse of student system information, financial information, human resource information and directory information has been designed and deployed. The data warehouse provides a unified collection of university data for management and decision-making purposes. The warehouse is accessed using Enterprise Reporting tools through the portal.

Enterprise Reporting tools have been deployed. A collection of business intelligence, reporting, visualization and analytic tools from Cognos, Inc. ([www.cognos.com](http://www.cognos.com)) have been licensed and deployed as part of the Enterprise Resource Planning implementation. These tools provide access to the new data warehouse.

#### *Provide a Resource pool of IT services*

A successful Peer-to-Peer training program was instituted this last year. It uses local talent and expertise for training on and awareness of IT-related subjects at UF. This program also served well as a networking forum for IT-related professionals.

An OIT Sponsored Project support area was created in the later part of this period to assist faculty in pursuing funding for IT-related projects. Multidisciplinary faculty-led teams supported by this AT area and by CNS were assembled to seek funding for IT related to teaching, learning, extension and networking. These collaborations resulted in submissions to funding agencies such as the National Science Foundation, the United States Department of Agriculture, the Mellon Foundation, the National Institute of Health, and the Kellogg's Foundation.

#### *Improve Help Desk Support*

Services at the Help Desk were expanded to include support for new technologies such as wireless devices (PDA's, laptops and tablet PCs). This expanded support includes providing walk-in services for setup of portable devices. Staff numbers were increased to address administrative and faculty support and new systems deployed, such as: 1) portal sign-on, 2) menu and enterprise reporting system, 3) directory conversion, and 4) expansion of UNIX support. In addition, new tools for improved management of the help desk email and ticketing system and automated surveys were implemented this reporting period. Also, an ad hoc committee was established to develop a plan to provide support services through a single point of contact – a one-stop help desk. The committee is exploring consolidation of decentralized customer support facilities into a virtual center that can provide faster and more effective service and improve customer satisfaction.

#### *Conduct Network Infrastructure Services Evaluation*

To improve quality of network services throughout UF, a continuous feedback and advisory mechanism to Network Services was developed by the ITAC-NI committee. Web-based reports are now produced regularly to provide continuous feedback on network usage and performance.

## Infrastructure

As technology evolves, it creates new opportunities for the university community to apply new tools to teaching, learning, research and outreach. But all technology investments need to be carefully assessed to ensure that they will result in a clear benefit to those engaged in university activity. As noted below, there were several major investments in infrastructure this reporting period.

### *Infrastructure that supports the UF Mission*

UF is a charter member of a consortium of nine Florida universities involved in a national project for the development of the next generation Internet, The National Lambda Rail (NLR). The NLR is a research and education network built on a fiber national backbone loop. At the nodes of the backbone, state or regional fiber networks would attach, creating a high-performance network with much greater capabilities than those of the current commodity Internet and Internet2 networks. In addition to participating in the national effort, the Florida consortium of universities will build the Florida Lambda Rail (FLR), a statewide network that will provide better connectivity within the state, the aggregation of Internet and Internet 2 services (reducing the connections from five to two), and direct access to the NLR..

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| <p style="text-align: center;"><b>GOALS</b></p> <ul style="list-style-type: none"><li>-develop an IT infrastructure in support of the university mission-</li><br/><li>-be compliant with and aware of accessibility issues-</li><br/><li>-provide a network infrastructure for moving voice, video and data throughout UF-</li><br/><li>-provide data and computing facilities that provide a stable administrative and academic environment-</li></ul> |
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The new FLR and NLR networks will serve and facilitate major research projects currently underway at UF and at the other participating universities ranging, from large national and international grid projects focused on high energy physics, to biomedical, nanoscience and bioinformatics research. Through participation in building out these new high speed networks, UF maintains a high profile among AAU research institutions while advancing the critical new networks and HPC infrastructure needed both for current large scale research, and for the new research that will come the NLR and FLR projects as a result of new strategic initiatives.

### *Accessibility issues*

Accessibility to university IT resources was given major attention during this period's activity. A policy to clarify UF's position and mechanisms to address IT accessibility needs of students was developed in the ITAC-AT and approved by ITAC. A Web Policy was established to set accessibility guidelines for unit web designers to use in developing and maintaining web pages at UF ([www.it.ufl.edu](http://www.it.ufl.edu)). In addition, in collaboration with the Dean of Students and the Director of Americans With Disabilities Act Compliance Office, a program to increase faculty awareness about accessibility issues was initiated. External funding was obtained to develop training materials for faculty and K-12 teachers and to develop curriculum for an outreach training program.

### *Infrastructure for voice, video and data*

To improve the efficiency and reduce costs of networking infrastructure, UF is moving in the direction of converging voice, video and data over IP. Adopting standards and equipment that use

this infrastructure for videoconferencing as well as deploying Voice Over Internet Protocol (VoIP) telephony over the existing data network have helped further these goals. Infrastructure investments were also made in multicasting units, call managers, and IP gateways. Thus far, about 800 VoIP phones have been installed at UF to replace legacy telephone systems.

Substantial progress was made in the deployment of wireless technology, both to outside public spaces and to inside office spaces and teaching laboratories. Associated Help Desk support and training programs for faculty were also put in place. Large investments were made in video conferencing technologies. Following the recommendations of the Video Advisory Committee, video conferencing facilities were installed that allow multi-conferences of up to 256 points, with associated support and training services. In addition, video streaming capabilities were put in place that allow web-based delivery of live or stored video, and high quality point-to-point digital video transmission was implemented. We also created two new television-related initiatives this year: multi-language television programming to support UF's language programs, and the Academic Technology TV channel.

#### *A stable administrative and academic environment*

An Enterprise Resource Planning system (ERP) -- The UF Bridges Project will provide modern, web-based, real-time systems for university business processes, replacing aging State of Florida financial and human resource systems, as well as most legacy systems that currently make up UF's data infrastructure (e.g., student financials, student records, admissions, student advising, grant processing, application security, password management, asset management, purchasing, travel). UF Bridges is designed to improve nearly every business function of the University. The integrated system will allow greater flexibility and accessibility in gathering, retrieving, combining, analyzing and reporting institutional data. Substantive investments in staff, software and hardware have been made to support IT components of this initiative, and training has been conducted in preparation for the changeover. In addition, to improve access and services for the university community a portal ([my.ufl.edu](http://my.ufl.edu)) has been deployed, as well as a data warehouse and enterprise reporting tools. As features are implemented and content added, the portal will provide a highly personalized web interface to UF information systems.

Driven by the need for a single definitive source of directory information, a new campus-wide directory was implemented this last year. The project was the largest IT project ever completed at UF. Running in parallel with this project was the conversion from Social Security Number (SSN) to a new UF ID number. The new directory implementation is a standards-based state-of-the-art-system that provides greatly improved functionality for academic and administrative systems. In addition, OIT has leveraged this project to become part of a SURA grant sponsored by the National Middleware Initiative ([http://www.nsf.gov/news/special\\_reports/cyber/middleware.jsp](http://www.nsf.gov/news/special_reports/cyber/middleware.jsp)), a National Science Foundation project for developing and testing middleware components.

Implementation of university Active Directory Services was started. Staff were hired, a macro design was developed, hardware was acquired and unit-level system administrators are engaged in developing a scalable and reliable Active Directory service for the university. Active Directory will provide GatorLink authentication for local network sign-on and will enable sharing of resources -- files, printers, email and calendars -- by a wide cross-section of university users.

Given the dependence of academic and administrative activities on IT, it is essential that robust and reliable IT-related systems be in place and available for use by the university community. In response to the increasing growth in demand for communication services such as email, listservs, forums and chat, an upgrade plan was developed and new equipment is being deployed to ensure that these services perform well in the immediate future, and that system capacity and performance is adequate to meet future demands.

Major investments were made in networking, systems, storage, and software to support the new services. These investments represent a turning point in the provision of information services at the University, moving toward more modular, server-based systems and away from mainframe systems. This direction will continue over the coming years as additional systems are moved from the mainframe to the new server systems.

Finally, management of the huge amounts of information handled in paper form was improved. Several major units on campus converted to or increased use of an electronic imaging system for retaining and accessing documents and records. The imaging system allows ease of access, reduces physical storage needs, and nearly eliminates lost document information.

## Standards and Security

### *Standards for compatibility and functionality*

Several standards and policies were developed, approved and implemented through the ITAC structure this reporting period, including: (1) Secure wireless networking, (2) Virtual Private Networking (VPN), (3) telecommunications construction standards, (4) middleware standards, and (5) adoption of an IMS Global Learning Consortium-compliant course management system software.

### *Secured networking policy and practice*

Significant attention was drawn to security given the evolving threats to UF data and systems. Policies to ensure protection of physical assets, use of resources, and accountability were reviewed during this reporting period. Some existing policies were amended, including the IT Security Policy and the Acceptable Use Policy. (<http://www.it.ufl.edu/>). An information security risk assessment was conducted to identify security challenges and to make strategic action recommendations. Follow-up actions include working with unit personnel to address specific findings in the report, and more generally to promote campus-wide security awareness and compliance through outreach and consultation. Continuous assessment of security vulnerabilities and issues is ongoing.

### *Enhance incident response team*

Incident response and security in general were a focus of activity and change this past year. First, the OIT security group was given a higher profile and increased staff resources. Second, a network of IT security managers was established throughout the University to ensure effective communication, and that security risks, threats and incidents are handled promptly to minimize impact to operations. Third, efforts to improve faculty and staff awareness were increased by web page improvements, and new training opportunities through web seminars.

## In Conclusion

The past fourteen months have been very active in the IT arena. In every major area of activity, there has been some level of reorganization, personnel changes, and clear progress toward achieving goals set in the IT strategic plan. But there is still much to be done, and none of us in the OIT is expecting things to slow or quiet down any time soon. The fact is, none of us would be satisfied if they did. IT is -- almost by definition -- about change, change management, and planning for more change.

I hope this document will be read as a progress report on the one hand, but as a reality check on the other. That is, I hope readers will look at this document as a short report on where things are in OIT with an eye to engaging your own units and the centrally reporting units, and suggesting any revisions that are necessary. We are interested in views from the wider university community regarding not only work finished or in progress, but also on what directions or changes in directions users and IT professionals would request.

GOALS
-support standards for compatibility and minimum functionality-
-provide secured networking policy and practice-
-enhance the incident response team-