

Beyond.

**Reaching UB's new horizon
via information technology**

The rapidly changing path of information technology is expanding the boundaries and borders of how we learn, discover, and communicate. Charting this course for the University at Buffalo is IT, providing the infrastructure and support to open new windows of opportunity that will help position UB among the country's top-ranked public research universities.

ANNUAL REPORT 2006-07

STRATEGIC PLAN 2007-08

INSIDE AND BEYOND.

Page 1:

Windows of opportunity:

Introductions

Pages 2-5:

Borderless learning:

Beyond the classroom

Pages 6-9:

The collaborative laboratory:

Connecting research

Pages 10-13:

The expanding campus:

Across campus and beyond

Pages 14-17:

Privacy plus:

Information security and compliance

Pages 18-21:

Community reach:

Connecting Buffalo Niagara

Pages 22-25:

Our future in sight:

IT Transformation toward UB 2020

Pages 26-29:

The IT overview:

Financial picture

WINDOWS OF OPPORTUNITY.

IT paves the path for UB 2020 prominence

AT UB, OUR SIGHTS ARE VERY CLEARLY ON THE FUTURE.

Through UB 2020—our vision for achieving sustained academic excellence—we are actively rethinking what it means to be a model public research university for the twenty-first century. We define success in terms of our impact, and we are committed to serving a public that is both local and global. Our growth and progress as an institution aren't ends in themselves; they're the tools we use to improve the quality of life around us, now and for generations to come.

Rather than simply building on our margins, we are looking beyond the existing framework of our institution to envision what our university can be for our students, faculty, and staff, and for all



of the communities we serve. Reflecting our university's unique focus on the interdisciplinary strategic strengths that define us, our faculty collaborate across a broad spectrum of academic fields to address the critical social, medical, intellectual, and technological issues and challenges facing our world.

At UB, our sights are very clearly on the future, and on our relevance to a world that is continually changing.

Information technology, given its ability to transcend borders of all kinds, is ideally suited to this new para-

digm. Information is the key to the knowledge-based economy of the twenty-first century, and our leadership in information technology is therefore essential to fulfilling UB's mission of academic excellence and far-reaching social impact.

The success of our ongoing IT Transformation is an outstanding example of what we can achieve when we move beyond individual units to pursue a common mission, when we see beyond existing boundaries to envision a new paradigm for discovery and innovation, and when we reach beyond our current horizon to pursue a bold vision for the future.

James A. Willis

JAMES A. WILLIS

Executive Vice President for University Support Services

BEYOND THE CLASSROOM. BEYOND CAMPUS. BEYOND TOMORROW.

The rapidly changing path of information technology is expanding the boundaries and borders of how we learn, discover, and communicate. Charting this course for the University at Buffalo is IT, providing the infrastructure and support to open new windows of opportunity that will help position UB among the country's top-ranked public research universities.

This path to prominence is linked by a wide range of IT advancements focused on improving the quality of education and research, preparing our students for work in the twenty-first century, expanding our role in the community and around the world, increasing public and private support, and acting as good stewards of the environment and university resources.

The following pages of this report highlight an array of major IT initiatives launched in 2006-07 and continuing into 2007-08 in support of university goals. You will see the creation of new learning spaces prompted by the wireless freedom of Mobile UB, an evolving initiative that is changing the face of education.

\\ Note how IT is providing the connectivity and data storage for the collaborative, interdisciplinary nature of today's research.

\\ Observe the way IT is laying the foundation for an enabling infrastructure of progress throughout the campus and into the community.

\\ Check the secure environment IT has developed to protect the private data of UB community members and our research assets.

\\ Overall, note the transformative path of IT in advancing UB 2020, the future plan of 40 percent growth that will raise UB to new heights as a research university and as a catalyst for economic growth.

We are proud of all the ways that IT is helping to lead UB toward a new horizon of world-class prominence in education and research—an endless, wireless path leading far beyond the expected, the traditional, the moment. Come along on a journey beyond.

Elias G. Eldayrie

ELIAS G. ELDAYRIE

Chief Information Officer



360-degree,
24/7 all-access education

borderless learning

Mobile UB

New learning spaces

Digital course-casting

UBlearns

Anywhere accessibility

Virtual learning communities



THE EVERYWHERE/ANYTIME LEARNING COMMUNITY

Teaching and learning are launched on a boundless platform at UB, in response to very significant facts: 94 percent of our students own cell phones, more than 70 percent own laptops, and large numbers own MP3 players, PDAs, and other mobile devices.

With students arriving on campus with multiple mobile devices and high technological expectations of living and learning in a connected and collaborative environment, UB employs IT to create living and learning landscapes: connecting students locally and globally in learning communities and providing the tools and technology-enabled formal and informal learning spaces for collaborative learning.



This everywhere/anytime technology has resulted in the development of Mobile UB—or mUB in texting parlance—allowing communication, information access, and resources to be made available to everyone everywhere. Our mUB initiative provides resources and services for mobile devices, enabling students to communicate with each other, form learning communities, download or stream course materials, and work collaboratively using their preferred mobile devices.

NEW LEARNING SPACES

Public computing and corridor spaces will be transformed into informal learning spaces with a technology-enabling infrastructure that includes ubiquitous wireless connectivity, power, presentation screens and whiteboards, and collaboration tools. These are not your typical classrooms or lecture halls.

Pilot projects to provide spaces that help catalyze deep learning and provide common areas for collaborative work for the Undergraduate Academies and other learning communities include these demonstration projects for 2007-08:

- \\ Technology-enriched group spaces where students can work on team projects
- \\ Informal spaces for collaborative learning where students can develop an understanding of complex concepts through informal discussions with peers
- \\ Spaces where students can prepare and rehearse presentations

ADVANCED COURSE, COMMUNICATION TECHNOLOGY

Digital course-casting is playing a prominent role in the boundless learning opportunities. A leader in state-of-the-art digital course capture infrastructure and course-casting/streaming, UB is providing students with audio and video recordings of lectures that can be accessed from student mobile devices,

including iPods and laptops, as well as from non-portable computing devices. Recordings are accessed through our course management system, Ublearns, and in a 2007-08 pilot project, via a UB-branded, iTunes Web site.

We have accelerated the addition of technology to formal teaching spaces, providing Internet access in all centrally scheduled classrooms and computer projection in more than 75 percent of these spaces, investing more than \$2 million this year. Our goal is to provide computer projection in all classrooms. Audience response systems (clickers in the classroom), providing an active learning environment for students, are available in a large number of technology classrooms and will soon be available in all of them.

A video-on-demand system supplies instructional videos directly over the data network to appropriately equipped classrooms and faculty desktop computers. The conversion of all high-use media library videotapes to digitally delivered assets is being completed by fall 2007.

A mobile phone program (Rave Wireless) is providing delivery of emergency messages and campus alerts directly to cell phones. A next step will be providing timely information from instructors and campus offices, such as the registrar, to students who are part of the “always connected but hard to reach” generation. This program will also provide communication tools to support virtual learning communities, such as the UB Undergraduate Academies, in fall 2007.

ANYWHERE ACCESSIBILITY

Other initiatives include print-from-anywhere accessibility from personally owned laptops to public computing site printers, and a “virtual access to software” pilot project enabling students to run campus-licensed public site software on their laptops without the need for installation.

Next steps include accelerating the wireless build-out to provide ubiquitous wireless access, enhancing cellular coverage, and developing a lightweight UB portal for handheld devices to deliver content such as the campus directory, calendar and event information, and campus maps.

Expanding the reach beyond the classroom is continually evolving. IT is poised to stay ahead of the technological demand, transforming learning in the process.

Connecting faculty
to advance research

the collaborative laboratory

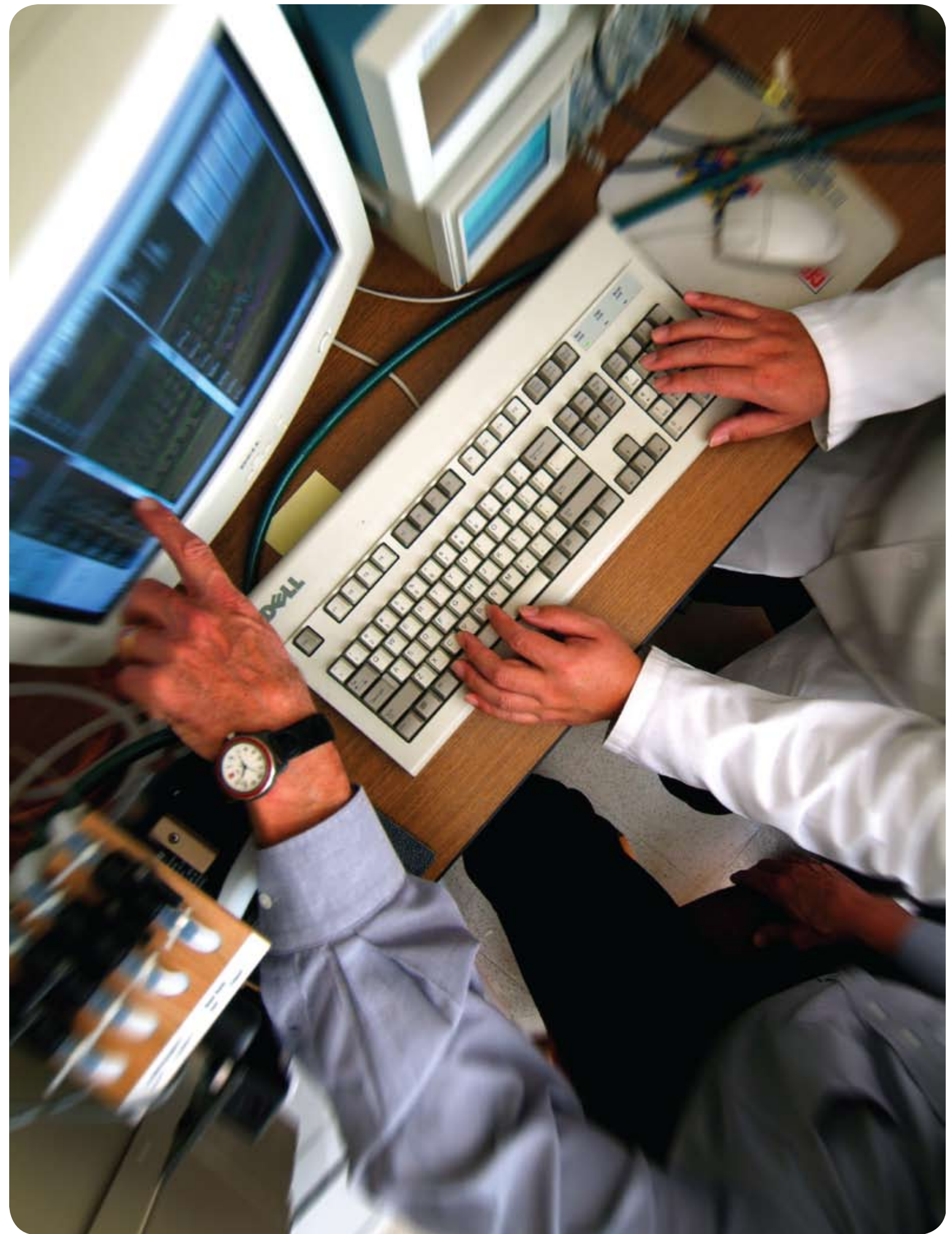
Multidisciplinary environment

Scholarly technology tools

Advanced research networks

Big team science projects

Facilitating grant proposals





WITHIN THE REACH OF NATIONAL AND GLOBAL RESEARCH

Great advancements in research go beyond the solitary scientist in a laboratory today, involving teams of multidisciplinary investigators. To meet the needs of today's research faculty, IT is providing an advanced computing environment and support structure for creative work in partnership with the Center for Computational Science (CCR) and the Office of the Vice President for Research. This environment enables UB faculty to collaborate on nationally and globally distributed research initiatives in our strategic areas of excellence.

An Enterprise Research Computing Services Group has been created to provide a portfolio of IT services for researchers, including coordination of site licensing for critical software tools, data storage and management services, and collaboration tools and platforms.

ADVANCED RESEARCH NETWORKS

IT is advancing collaborative research by providing connectivity to advanced research networks and resources. These include:

- \\ Internet2, the foremost U.S. advanced networking consortium, which brings research and academia together with technology leaders from industry, government, and the international community to promote collaboration and innovation that has a fundamental impact on the future of the Internet.
- \\ National LambdaRail: UB is a member of the Northeast LambdaRail (NeLR), a consortium enabling educational institutions in New York and New England to connect to and support the National LambdaRail (NLR), a national high-bandwidth research network. NLR's networking infrastructure provides scientists and scholars with new capabilities, allowing network members to exchange massive amounts of data and to remotely operate supercomputing and other resources at member institutions, greatly enhancing UB's research competitiveness and opportunities for research collaborations. NLR production networks support cutting-edge applications by providing users guaranteed levels of reliability, availability, and performance. At the same time, experimental networks enable the deployment and testing of new networking technologies, providing researchers national-scale test beds without the limitations typically associated with production networks.
- \\ TeraGrid, an open scientific discovery infrastructure that integrates high-performance computers, data resources and tools, and high-end experimental facilities around the country.

This connectivity has enabled UB researchers to participate in national "big team science" projects and other multi-institutional projects that comprise the national research agenda and funding priorities.

GRANT SUPPORT

Research administrative support is furthered by IT via the Coeus application, a system to assist in proposal development and pre- and post-award management, simplifying and facilitating award acquisition and administration. One of the first cradle-to-grave award management tools in the nation, Coeus software now makes it possible to prepare proposals, route them internally to obtain proper approvals, and submit them to sponsors electronically.

Coeus is being used to automate the processing of grant requests with grants.gov. UB is hosting the infrastructure for the use of three other SUNY schools. The infrastructure is comprised of production, development, quality assurance, and test environments. Several other SUNY institutions are interested in joining the SUNY Consortium, the first multi-campus implementation of the software.

RESEARCH OUTREACH

IT has begun outreach efforts to research faculty, with interviews conducted with key research faculty to develop a composite view of research IT needs from both the administrative and project standpoint. A faculty research computing needs survey was conducted in 2007 in partnership with CCR and the Office of the Vice President for Research. Analysis of findings led to recommendations for a set of investments to enable UB faculty to compete successfully for large multi-institutional grants. Focus groups to discuss new or improved services are scheduled for fall 2007.

To facilitate support, an IT service desk was instituted for the New York State Center of Excellence in Bioinformatics and Life Sciences, the new UB research building in the Downtown Campus. The building occupants, comprised of faculty and staff from more than ten departments as well as several local corporations, now have a single point of contact for IT services while in the building. The support desk triages problems and coordinates support provider services.

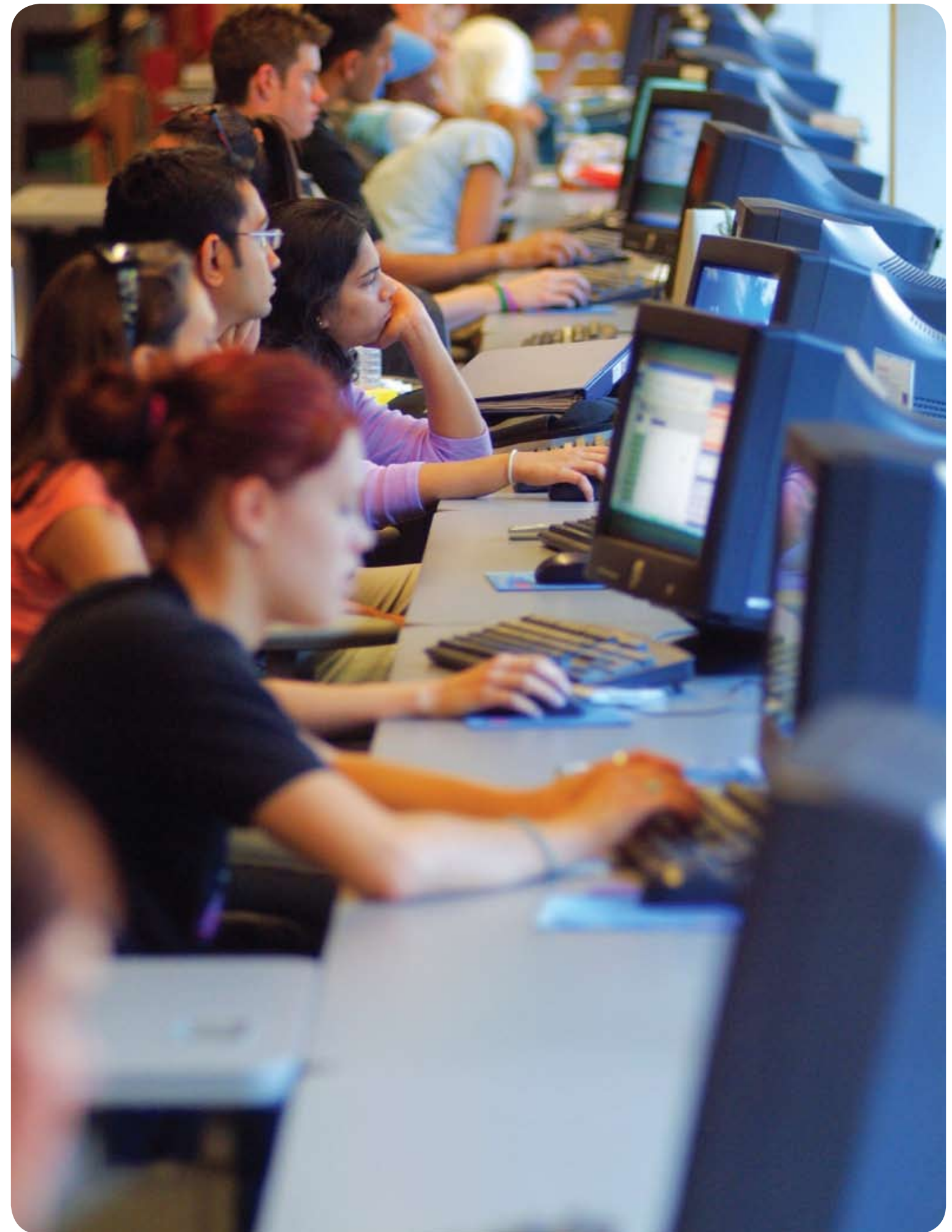
Technology and computing
push the boundaries

the expanding campus

Tech-enabling infrastructure

Core services, infrastructure, and user support

Administrative systems enhancement



SHAPING THE WAY WE WORK, COMMUNICATE, AND LEARN

Technology-enabling infrastructure and services increasingly shape the ways in which we work, interact, and learn. An increased reliance on information systems and technology and a growing number of mobile devices on campus have led to increased expectations for service availability, quality, and reliability.

The university's advanced IT infrastructure has become a critical resource for the university community. As a benchmark of progress toward our vision of providing the enabling IT infrastructure and services in support of university goals of growth and academic excellence, some key accomplishments and initiatives follow.



CORE INFRASTRUCTURE

- \\ The campus Gigabit backbone network was upgraded and Gigabit building links were completed this year. The UBNET multiyear initiative resulted in upgrades to more than 25 percent of the devices that serve the "edge" of the network with 10/100/1000 Mbps Ethernet switches, supporting Power Over Ethernet (POE) and various other cutting-edge features to enhance network reliability and security.
- \\ The conversion of the wireless infrastructure to a centrally managed system is enabling more efficient maintenance of the large numbers of access points deployed. All access points have been upgraded to current code levels, and the campus build-out to provide ubiquitous coverage continues. Maps showing UB wireless hot spots are available at www.oss.buffalo.edu/Network/Wireless/wls-maps/.

CORE SERVICES

- \\ The UBmail Web e-mail client, with substantial user interface and functionality improvements, has been rolled out to the community. In addition, new SPAM management functionality has been added to the central e-mail service. Authenticated SMTP and secure IMAP also provide more security for e-mail delivery and reading.
- \\ New campus licensing agreements have been negotiated, allowing improved access to UB-licensed software, now available via download from the UB IT Web site: ubit.buffalo.edu/software/.
- \\ Faculty, staff, and students can now add their own RSS feeds to their custom MyPage on MyUB, and implementation of a single sign-on for MyUB services has been completed.
- \\ To meet the growing demand for central backup services, backup capacity has been increased from 140 TB to 300 TB by employing denser technologies, enabling the same footprint to be maintained in the main data center.

CLIENT SERVICES

- \\ A Call Center routing system based on VoIP technology has been implemented at the CIT Help Desk, resulting in improved service.
- \\ A production service to support Blackberry™ devices and provide integration with UB e-mail/calendaring services has been launched via a partnership of IT staff across campus, and MS Mobile Service deployed for "smart phone" access to MS Exchange Services.
- \\ An investment of approximately \$1 million was made to provide new workstations in the public computing sites via the Dell/UB partnership, and new informal learning spaces are being created to support students with mobile devices. Software Virtualization is being piloted in the public computing areas, with the new 2007 workstation images being a blend of virtualized and installed applications.
- \\ Network printers in public sites have been upgraded to improve print quality and turnaround time. The iPrint print management service reduced the 2006-07 annual public site printing volume by 38 percent from the previous year.

ADMINISTRATIVE SYSTEMS

- For 2007-08, UB IT is focused on two major administrative systems projects: a student systems assessment project and a strategic information reporting initiative, described in the section, "Our future in sight," on pages 22-25. The following key projects are also part of the administrative systems portfolio of accomplishments:
- \\ The campus enterprise electronic requisition system was enhanced to provide a real-time transaction gateway to feed purchasing transactions from the University Facilities' purchasing system to the campus system for processing.
 - \\ Upgrades have been made to the student billing system and the student electronic payment system (ePay). Enhancements have been made to student transcripts and a system was developed to automate the processing of Plus loans for graduate students. The SEVIS project team is working with International Student and Scholar Services to implement a new state-of-the-art SEVIS compliance project.
 - \\ The Campus Parking System has been replaced with a new, upgraded package. An upgrade of the system used by University Advancement and Development was completed.

Securing and protecting UB
community data and research assets

privacy plus

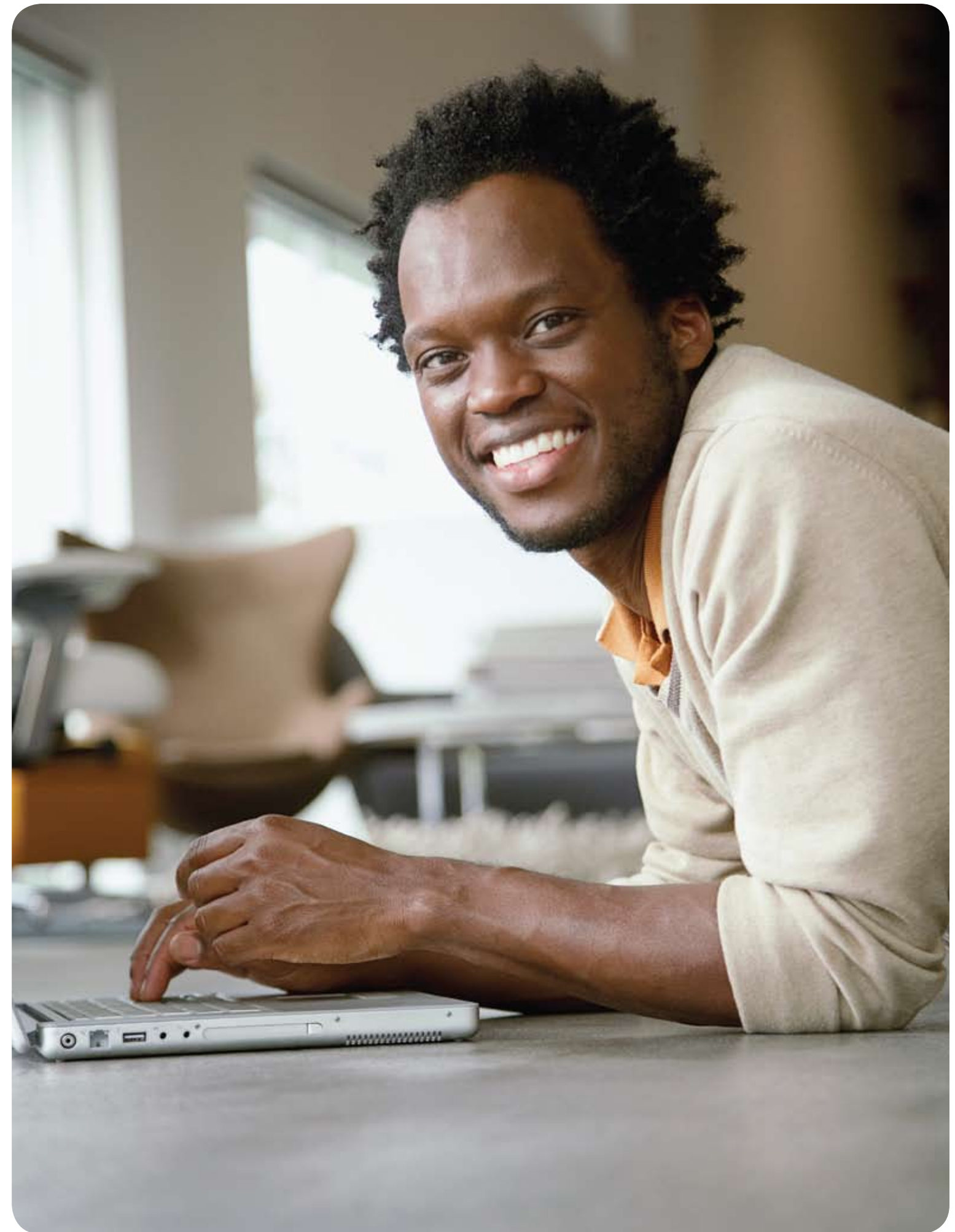
Information security program

Service continuity

SSN restrictions

Change management

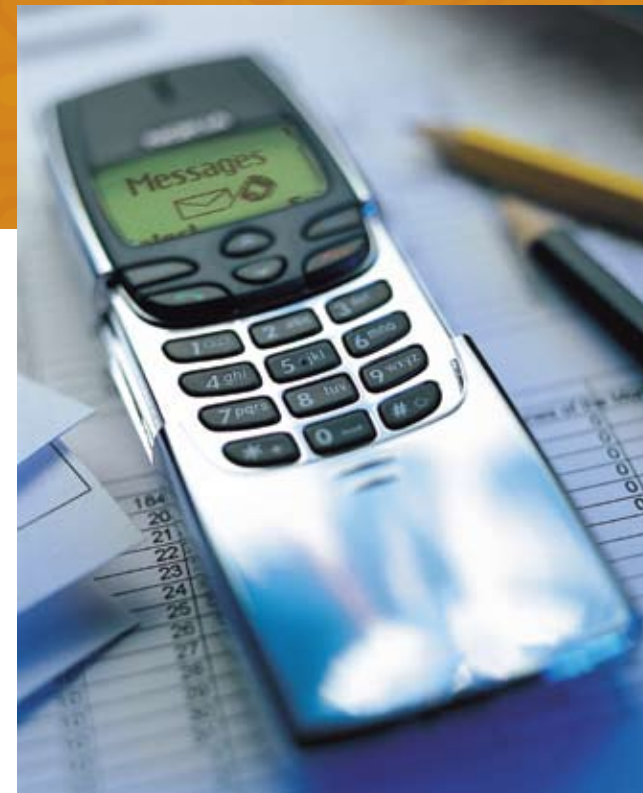
Upgraded compliance



PROTECTING UB'S CRITICAL INFORMATION RESOURCES

Security programs and practices help to protect the university's critical information resources.

In 2006-07 an Information Security Officer was appointed and charged with developing a comprehensive security program for UB. In addition, UB's off-campus service continuity site opened and an initiative to reduce the use of and access to Social Security numbers was completed. Standards for securing private, sensitive data (as defined by New York State) were developed and a campus Information Security Policy was approved by campus leadership.



INFORMATION SECURITY

The Information Security Officer (ISO), charged with the development, management, and facilitation of a campus-wide IT security program, has established an information security governance structure and a risk assessment framework for IT security at UB.

Resources are being focused on protecting sensitive data, such as Social Security, credit/debit card, and driver's license numbers. The campus has adopted the New York State Information Security Policy, with a few adaptations for the university environment, to set forth the minimum requirements, responsibilities, and accepted behaviors to establish and maintain a secure environment. UB IT policies can be found at www.itpolicies.buffalo.edu.

SERVICE CONTINUITY

The Library Storage Facility Service Continuity site, an off-campus machine room site, opened in 2006-07. Several machines were relocated from the Computing Center (North Campus) to the off-campus site. The South Campus computing and network hub has been moved from Crosby Hall to the newly renovated Hayes D. This provides two locations to allow necessary operations to continue in the event of a disaster at the main computing center. Service racks are also available in the Syracuse NYSERNet Data Center.

COMPLIANCE

The campus Payment Card Industry (PCI) compliance initiative includes successfully passing regular network scans by an approved vendor, the development of information security policies, and several infrastructure improvements, including the upgrading of firewalls and separation of database and Web server traffic.

CHANGE MANAGEMENT PROCESS

An ITIL-based change management framework has been adopted to minimize the impact of changes to IT infrastructure upon service quality and day-to-day operations. A cross-unit change management team has defined and implemented an improved change management process that includes establishing a common change management calendar.

RESTRICTING SSN ACCESS

A significant reduction in access to and use of Social Security numbers (SSN) has been achieved. Access to UB Info-Source data containing SSNs has been limited. Standards for the secure access, handling, usage, transmission, storage, and disposal of private and regulated information, such as SSN, credit/debit card numbers, driver's license numbers, and nondriver identification numbers, have been developed and promulgated.

Providing lines of communication
throughout our region

community reach

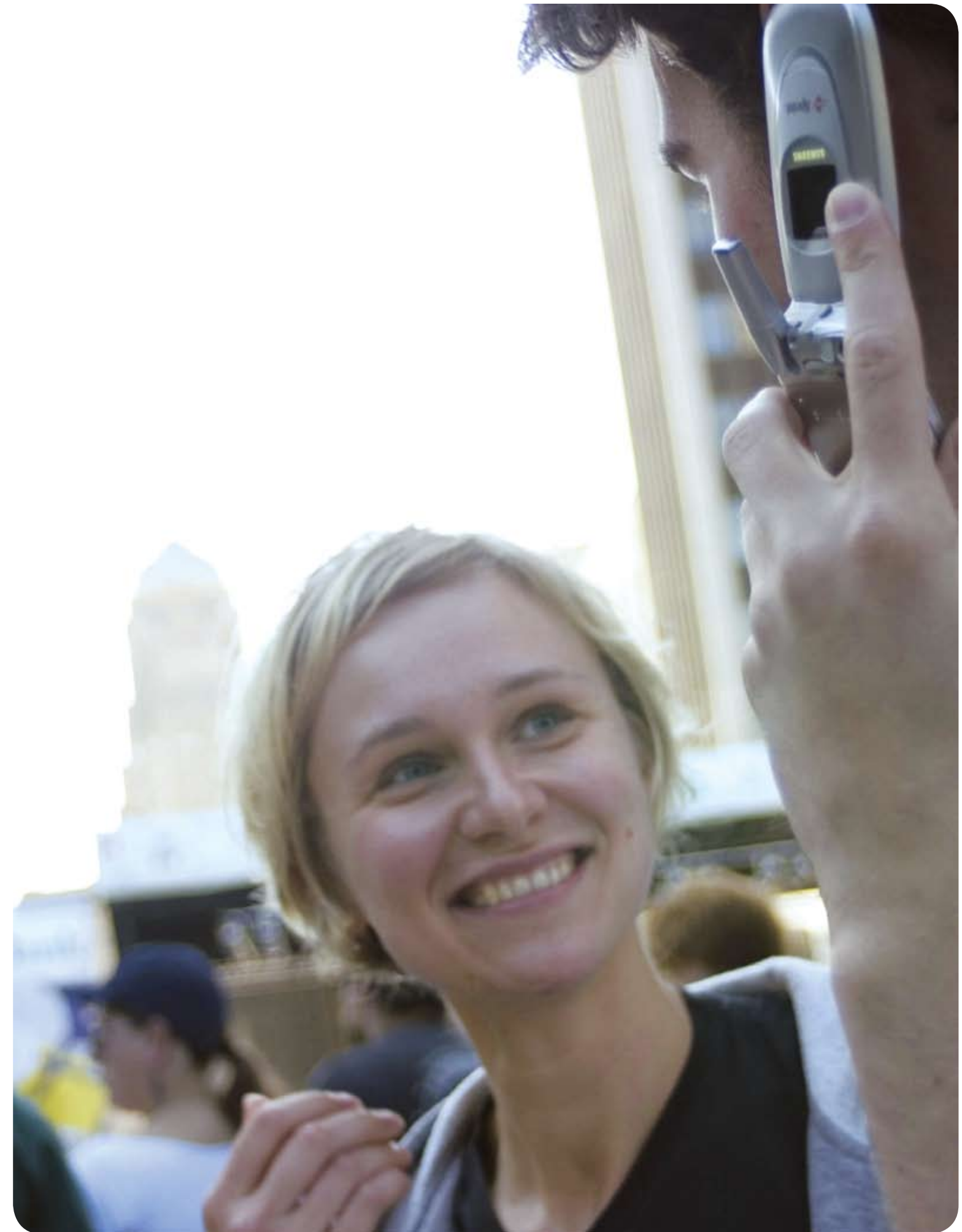
Buffalo Niagara regional network

Educational support

Health care outreach

Local government aid

Nonprofit assistance





ADVANCING AREA EDUCATION, HEALTH CARE, AND MORE

Beyond support for the UB community, IT advances the university's public service mission by providing technological assets that further education, health care, local government, and other nonprofit organizations throughout the Buffalo Niagara region.

UB IT has partnered with the City of Buffalo, Erie County, the Niagara Frontier Transportation Authority, and the New York State Department of Transportation to develop a regional network to support and improve community and economic development initiatives.

An expanded reach is part of the university's continuing focus on improving the community where we live, work, and learn.

LIGHTING UP THE REGION

The university has played a leadership role in the community by bringing together city, county, and state agencies in the development of a broadband fiber optic network subsidized by UB and made available to local higher education and K-12 institutions, health care institutions (hospitals and research institutions), and government organizations.

As we "light up" the dark fiber, we expand the Buffalo Niagara regional network infrastructure, enabling new educational, research, health care, and government initiatives involving the following organizations:

- \\ Educational institutions including Buffalo State College, Canisius College, Daemen College, the Erie Community College City Campus, and the Board of Cooperative Educational Services (BOCES);
- \\ Public sector (city and county government) centers;
- \\ Health care and research centers including the Buffalo Niagara Medical Campus (Hauptman-Woodward Medical Research Institute, Roswell Park Cancer Institute, and Buffalo General Hospital, in addition to UB's New York State Center of Excellence in Bioinformatics and Life Sciences), and Sisters of Charity Hospital.

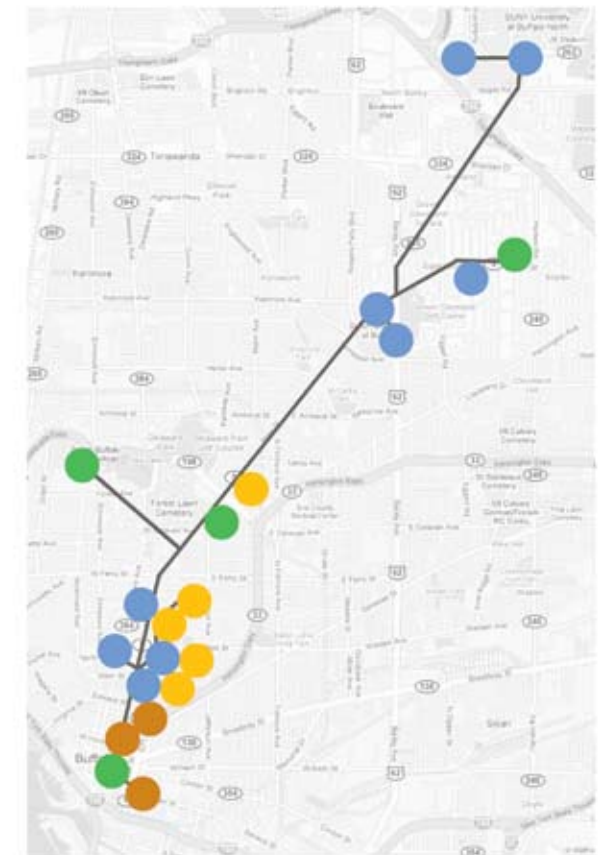
VITAL HEALTH CARE CONNECTIONS

Funding is being sought to facilitate the creation of a broadband network in the Buffalo Niagara region, connecting public and nonprofit health care providers in rural and urban locations. A joint proposal has been submitted by the CIO office and the Office of the Vice President for Health Sciences to the Federal Communications Commission's Telemedicine Pilot program.

The Rural Health Care Network Initiative would bring telemedicine services to local areas where the need for these services is most acute, enabling intensive-care doctors and nurses to monitor critically ill patients at multiple locations around the clock, enabling the delivery of continuing education to health care providers, and enhancing coordination of the health care community's rapid response in emergencies.

WIRELESS COMMUNITY

UB is also a participant in the City of Buffalo's community wireless initiative to provide ubiquitous wireless access to the region.



UB DARK FIBER OPTIC NETWORK

UNIVERSITY AT BUFFALO

- Research Institute on Addictions
- Downtown Campus
- Jacobs Executive Development Center
- Ira G. Ross Eye Institute
- UB South Campus
- President's residence
- UB service continuity
- UB North Campus

EDUCATIONAL INSTITUTIONS

- Erie Community College
- Canisius College
- Buffalo State College
- Daemen College
- BOCES

HEALTH CARE/RESEARCH

- Hauptman-Woodward Medical Research Institute
- Roswell Park Cancer Institute
- Buffalo Niagara Medical Campus
- Buffalo General Hospital
- Sisters of Charity Hospital

PARTNERS

- NFTA
- NYS DOT
- Erie County

The transformative
path to UB 2020

our future in sight

IT Transformation

Standardizing workstations

Uniform VoIP telephone system

Consolidating servers

IT shared service desk



IT TRANSFORMATION: HELPING UB ACHIEVE ITS GOALS

IT is playing an integral role in the university's plan for the future. Our goal to become one of the nation's premier public research universities by the year 2020 is founded on four pillars: achieving academic excellence, growth, building UB, and the transformation of academic support operations to realize efficiencies and improve quality.

In the IT Transformation framework and governance model, UB invests in IT as a shared infrastructure in a planned and coordinated manner, minimizing redundant expenditures.

An IT governance structure was established with the formation of the Executive Technology Advisory Group, charged to provide advice and policy guidance on the full range of information technology directions, policies, plans, priorities, and needs vital to sustaining UB's mission.

A COLLABORATIVE FUTURE IN PROGRESS

In 2007, the UB IT central and distributed community held their first campus-wide planning retreat with the goal of creating a campus-wide IT strategic plan and partnership.

Several collaborative IT initiatives moved into their implementation phases, helping the university to achieve cost reductions and efficiencies, as well as to provide improved services.

WORKSTATION STANDARDIZATION

The campus workstation volume discount purchase program is now providing deeply discounted desktop and laptop machines with a standardized base software image, producing cost reductions and creating efficiencies in IT support. A Dell partnership produced deeply discounted pricing: UB expects to realize equipment purchase cost reductions of approximately \$2 million this year. Other vendor partnership negotiations are underway. Deployment of standardized workstations across campus will also enable UB to reduce technical support costs.

TELEPHONE SYSTEM: VOICE OVER IP (VOIP)

Consolidation of the 76 disparate telephone systems that existed prior to the IT Transformation is underway in an effort to improve service, increase system predictability, and provide long-term cost reductions. After the phased-in implementation over the next three to four years, UB will achieve annual telephone cost reductions of nearly \$800,000.

ENTERPRISE RESOURCE PLANNING AND ADMINISTRATIVE SUPPORT SYSTEMS

\\ The Student System Assessment (SSA) was initiated to evaluate the multiple components of our current student systems and explore ways to integrate and improve them. A vendor selection process is now underway. UB's Request for Information (RFI) was distributed to three major student systems software vendors. Vendor site visits and demonstrations are underway.

\\ The Strategic Information Reporting Initiative (SIRI) team has developed a strategy and implementation plan for aggregating and integrating the various sources of university data. The long-term vision is to create an enterprise, all-resource, data-rich, analytic and reporting environment to support forecasting and planning, analytics, and reporting. The SIRI



team has recommended a Business Intelligence and Data Warehouse solution, using the Oracle Business Intelligence Enterprise Edition, focusing first on financial and human resources areas. The Phase II initial build and testing will be completed by the end of 2007, with implementation and support slated for the end of the first quarter of 2008.

IT SERVERS, SERVICES CONSOLIDATION PROJECTS

The Exchange and Unix e-mail consolidations to reduce the number of e-mail servers on campus are moving forward with 2007-08 implementation time frames. The File and Print Server consolidation team has identified requirements for an enterprise file service and is now evaluating responses from units responding to the Requirements and Request for Offers (RFO) issued to the campus.

IT SHARED SERVICE DESK

The workflow process for an IT shared service desk that integrates IT resources from across the campuses has been designed. Vendor evaluation is underway to select a service desk management product.

RECRUITMENT MANAGEMENT

The project to automate and streamline the recruitment process for faculty and staff has been completed.

EPTF

Completed in 2006-07, ePTF makes personnel transactions easier for units, departments, and individual PIs by creating a Web-based interface that can be pre-populated with information from existing systems, reducing the need to "look up" information in multiple systems, and increasing the speed at which requests can be made.

These initiatives are among the milestones along the UB 2020 path to prominence as IT works to improve the management of UB data, system, and network infrastructure security. To read more about these initiatives, visit <http://www.buffalo.edu/ub2020/itst/>.

Financial resources

the IT overview

Teaching, learning, research

Campus computing infrastructure and core services

Administrative computing systems

Security

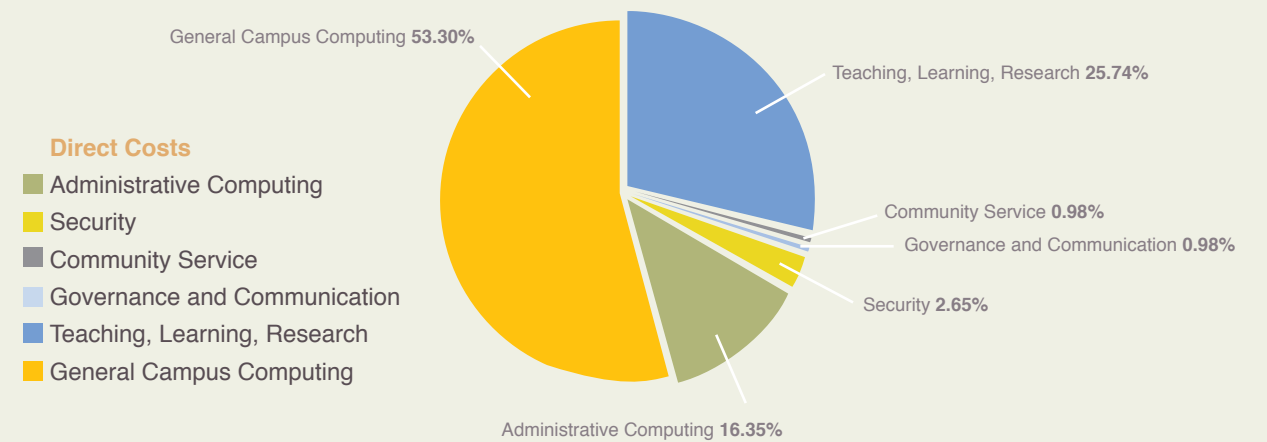
Community service

Governance, communication

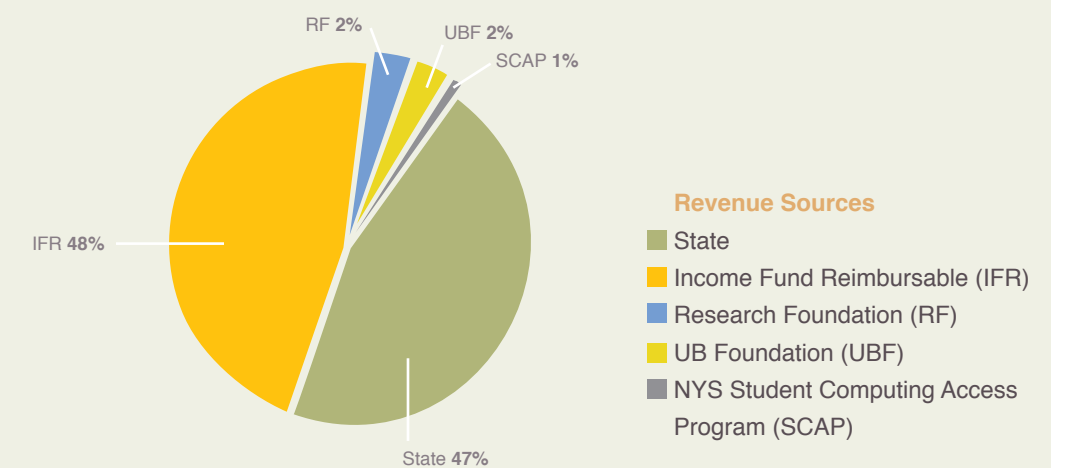
2006-07 FINANCIAL PICTURE

The following figures represent direct costs and revenue sources for 2006-07.

DIRECT COSTS OF UB ENTERPRISE IT PROGRAMS: \$42.7 million



REVENUE SOURCES



IT AT A GLANCE: 2006-07

New windows of opportunity to help lead UB to world-class prominence.

SUPPORT FOR TEACHING, LEARNING, AND RESEARCH

UB students who are connected and “unplugged”

- 70%+ own laptops
- 80%+ own MP3 players
- 94% have cell phones; 20% of freshmen have smart phones

Technology in the Classroom

- All centrally scheduled classrooms have Internet access
- 75% of classrooms are technology-enabled with computer projection
- Audience response systems (clickers) are available in many tech-enabled classrooms

Student Computing Labs

- 300 new workstations available in the public labs
- 2,400 workstations are available in labs across the campuses

Online Courses - UBLEARNS

- 5,000+ courses had UBLEARNS (Blackboard) sites
- Individuals accessing UBLEARNS:
 - 24,530 student accounts
 - 1,983 faculty accounts

Courses using digital streaming services

- Digital course captures: 1,854 individual recordings for 87 courses
- Digital recording classrooms: 33

Mobile phone program pilot

- Fostering collaborative learning for the Undergraduate Academies

Research Computing

- Advanced research network membership/participation: Internet2, Northeast LambdaRail, TeraGrid
- Coeus implemented to automate grant proposal and administration processes
- Partnered with academic areas to negotiate discount pricing for Matlab and Simulink
- Help Desk established in New York State Center of Excellence in Bioinformatics and Life Sciences

GENERAL CAMPUS COMPUTING

Network Access and Quality

- Upgraded campus Gigabit backbone and completed Gigabit building links
- UBNet Initiative: Replaced 25% of the edge switches in multiyear initiative

Wireless Network

- Upgraded wireless access points and installed a centralized management system
- 460 wireless access points currently maintained centrally (10,000 simultaneous users)

E-mail

- In Fall 2007, UB is processing 2M+ central e-mail messages daily (on average)
- In 2006-07, UB processed more than 512M messages
 - 75% with a spam rating of 80% or higher
 - Almost 2M of these had an e-mail-borne virus
- Spam management: In 2007-08 more user-level spam management capabilities will be available

CIT Help Desk

- Handles 25,000+ queries each semester
- Implemented a call-routing system to improve service, automate creation of service metrics
- Implemented weekly customer service satisfaction measurements

Printing

- iPrint Print Management System reduced yearly printing volume by 38% and improved turnaround time and customer satisfaction; Central iPrint service made available to departments
- Piloting *Print from Anywhere* to enable printing from laptops

Cellular Service Reinforcement

- The 2007-08 NextG project will provide improved, carrier-neutral cellular reception

Software

- Improved Web access to campus-licensed software
- Piloting Software Virtualization to provide personal laptop access to campus public site software

Web Services

- 1M+ Web pages hosted on UB servers
- Single sign-on implemented for MyUB portal
- Voice Over IP (VoIP) Project**
 - Wave of first VoIP (600+) telephones installed

Backup Services

- Increased capacity from 140TB to 400TB

ADMINISTRATIVE COMPUTING SYSTEMS

- ePay: \$50M+ was accepted via online payments
- 115,519 grades were posted through online Web grading
- 252,000+ online registration transactions were completed

Security

- Appointed an Information Security Officer and established an Information Security Office
- Adopted the New York State Information Security Policy
- Reduced the number of individuals with access to SSNs from 1,000+ to less than 100
- Network Operations Center handled 3,000+ security incidents
- The off-campus Service Continuity site opened

Governance, Communication

- Established an Executive Technology Advisory Group (ETAG)
- Held the first campus-wide IT Strategic Planning Retreat
- Sponsored monthly IT Town Hall meetings, a newsletter, and Web site

Community Service

- Expanded regional fiber network and partnered with BOCES for K-12 access to the fiber network and Internet2

THE DIFFERENCE THE UNIVERSITY AT BUFFALO MAKES

UB's growing impact on the economy and opportunity in the Buffalo Niagara region.

TO THE ECONOMY, 2005-06

\$1.1 billion: revenue generated by UB

\$1.2 billion: spent directly by UB, its employees, students, and visitors
\$943 million: UB dollars spent in New York State

\$1.5 billion: total UB annual recurring economic impact in New York State
\$1.3 billion: economic impact accruing to Erie and Niagara counties

20,200: jobs provided and supported by the University at Buffalo in the bi-county region

\$69 million: direct fiscal benefits to state and local government in property, sales, and income taxes

\$1.60: economic activity generated for every \$1 of UB-related, in-state spending

\$4: economic activity generated for every \$1 in net support from New York State

TO REGIONAL COMPETITIVENESS

6,800: total academic degrees awarded, 2005-06
3,000 graduate degrees
2,260 science and engineering degrees (graduate and undergraduate)

8,100: UB employees residing in Erie and Niagara counties

385: new technologies disclosed, 2001-05

1,000: jobs created by UB Technology Incubator businesses since 1988

52%: UB faculty and staff engaging in off-campus community service, 2006

400: UB news stories reported by national and global media outlets, 2006

10th: in international enrollment, out of all colleges and universities in the U.S.

AS IT GROWS TO 2020

+10,000 students +188,000 visitors +1,000 faculty +1,920 staff +capital improvements

\$1.9 billion: revenues generated by UB

\$2.1 billion: spent directly by UB, its employees, students, and visitors
\$1.6 billion: UB dollars spent in New York State

\$2.6 billion: total UB annual recurring economic impact in New York State
\$2.3 billion: economic impact accruing to Erie and Niagara counties

31,100: jobs provided and supported by the University at Buffalo in the bi-county region

\$99 million: direct fiscal benefits to state and local government in property, sales, and income taxes

\$1.60: economic activity generated for every \$1 of UB-related, in-state spending

\$5: economic activity generated for every \$1 in net support from New York State

Chief Information Officer

University at Buffalo

517 Capen Hall

Buffalo, NY 14260

716-645-7979

www.cio.buffalo.edu/