



UNIVERSITY OF HOUSTON
Learning. Leading.

Information Resources Strategic Plan

Appendix G

For Fiscal Years 2003-2007

Submitted By

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University of Houston System
University of Houston



Section 1: Goals, Objectives, Strategies, and Programs

The University of Houston System and University of Houston—Information Technology Division information resource (IR) goals support the University vision, mission, goals, and anticipated 2004-05 Legislative Appropriations Request (LAR). The IR goals comply with the State vision, mission, philosophy, goals and objectives identified in the 2001 State Strategic Plan for Information Resources, Transforming Government Through Information Resources Management available at <http://www.dir.state.tx.us/pubs/ssp2001/index.htm> .

Vision, Mission, and Goals

The Division of Information Technology vision is to be the leader in the creative use of advanced technologies to enhance instruction, research, administration and outreach services and to be the most successful higher education division in the country at delivering the best computer service to faculty, staff and students.

Information Technology's mission is to strive to meet customer expectations by providing:

- Best in class customer service
- Superior network and server infrastructure
- Integrated state-of-the-art information systems
- Proactive security
- Leading technology

Information Technology is committed to IR Strategic Goals to:

1. Deliver Web-based Services
2. Provide Superior Customer Support
3. Enhance High Performance Computing
4. Enhance the Technology Infrastructure

University of Houston System and University of Houston LAR Goals

1. Instructional & Operations Support
2. Infrastructure Support
3. Special Item Support

University of Houston Goals

1. Undergraduate Education
2. Graduate and Professional Education
3. Research
4. Partnerships and Public Service
5. Enrollment Management
6. Diversity and Opportunity
7. Administrative Efficiency
8. University Advancement
9. Information Technology
10. University Community
11. Globalism

University of Houston System Goals

1. Facilitate the delivery of high quality higher education services that are responsive to the needs of the people of Texas and greater Houston metropolitan area.
2. Successfully represent University interests before government officials.
3. Assist the universities in securing support from external constituencies.
4. Provide effective support for financial and administrative operations.



University of Houston System and UH IR Goal 1:

Deliver Web-based Services

The Internet should be the vehicle through which all University academic and administrative affairs are conducted. There should be a single, unified, secure web-based interface to every aspect of the University.

IR Goal 1 Supports:

LAR Goals: Instructional and Operations Support

UH Goals: Undergraduate Education; Graduate & Professional Education; Enrollment Management; Diversity & Opportunity; Administrative Efficiency; University Advancement; Information Technology; University Community; Globalism

UH System Goals: 1, 4

State IR Goals: 1, 4

Objectives

Information Technology will:

1. Enhance Support for Students
2. Establish the infrastructure to support a student-centered learning environment with “any time and any place” access to education.
3. Provide technologies to enhance the delivery of instruction on and off campus.

Outcomes

1. Students receive course schedules, register and receive syllabi, grades, and transcripts online. *Target Date: (2003, 04)*
2. Faculty course curriculum integrated into instructional technology. *Target Date: (2003, 04)*
3. Additional high-speed Ethernet connections in classrooms and other buildings on campus to provide students with access to the Internet capable of providing more than 175 times the speed of a 56K modem. *Target Date: (2003-07)*

TO REALIZE THE IT VISION AND GOALS

- Develop Web-based services for all administrative functions including financial aid, registrar, admissions and other student services)
- Establish Web-front-end for current and prospective students.
- Develop E-based waiting list for closed classes
- Develop entire undergraduate core curriculum offered Online
- Develop Web access to bookstore
- Establish self-advising system available to all students
- Develop Web-based schedule management system linking instructor information, classroom location information, and course content.

University of Houston System and UH IR Goal 2:

Provide Superior Customer Support

Innovative uses of IT come at a cost. In addition to the technology itself, people represent a substantial portion of the investment needed to meet return on investments expectations. UH should strive to have at least the same levels of IT support personnel as our peers. These personnel should be distributed in ways to best meet the goals and demands of IT use on campus. Namely, network support, web-based infrastructure and course support and high performance computing in central and college locations.

To deploy new technologies to the university community, high-quality customer support is essential. This support focuses on user education and technical consultation that helps customers leverage information technologies to enhance education, research, and service and enables efficient administration.



IR Goal 2 Supports:

LAR Goals: Instructional and Operational Support

UH Goals: Undergraduate Education, Graduate and Professional Education, Research, University Community, Administrative Efficiency, Information Technology

UH System Goals: 1, 4

State IR Goal: 4

Objectives

Information Technology will:

1. Implement Information Technology Customer Satisfaction Survey to measure IT performance
2. Conduct Information Technology Business Excellence Survey
3. Evaluate and enhance technology support and services for students, faculty, staff and visitors.
4. Enhance interaction, quality, and delivery of services to our customers, primarily via the Web
5. Develop aggregate and personalized Web-based services to UH constituents
6. Provide instructional technology support for faculty
7. Provide resources to enhance student friendliness
8. Enhance academic technologies to support any time and any place student-centered learning
9. Enhance and integrate technology support
10. Ongoing distributed support to the colleges

Outcomes

1. Web Portal to support Web-based services. *Target Date: (2003-2007)*
2. Integrated, student friendly, technology environment where students can go to one place to use a variety of on-line services such as, registering for class and paying tuition to seeking out students with similar interests. *Target Date: (2003-07)*
3. Services on demand *Target Date: (2003-05)*
4. Streamlined communication to our customers by enabling new role-based communications that send information to only the people who need it. *Target Date: (2003-07)*
5. Information technology distributed support in every college to enhance technology services. *Target Date: 2003-07*
6. Increased customer satisfaction with IT services and products *Target Date: (2003-07)*
7. Enhanced overall IT quality of service and support *Target Date:(2003-07)*

TO REALIZE THE IT VISION AND GOALS

- Design and build a UH Web Portal for campus constituents
- Implement the IT Quality in Business Excellence program to serve as a model for the university
- Desktop standardization—hardware and software purchase agreements (Microsoft Campus Agreement Site License)
- Implement a FAQ system to answer student’s questions related to financial aid, enrollment management and technology support services

University of Houston System and UH IR Goal 3

Enhance High Performance Computing

Research computing is a costly endeavor. As evidenced in so much of science today, current research is not possible without computing support. This critical resource is just the first step of a long process. Providing access to the technology is important. That technology could be found in a networked consortium.

Nonetheless, support is required. The University needs to not only provide access to the technology; it must also provide adequate support.



IR Goal 3 Supports:

LAR Goals: Instructional and Operations Support; Research Special Item Support

UH Goals: Research; Information Technology; Globalism; Institutional Advancement

UH System Goals: 1, 2, 3, 4

State IR Goals: 1, 2, 3, 4

Objectives

Information Technology will:

1. Maintain and improve research facilities and infrastructure, including libraries, and computer network resources.
2. Enhance connections to regional and global networks and research resources.
3. Improve the University's network

Outcome Measures

1. University of Houston is one of the premier urban research universities in the country
Target Date: (2003-07)
2. Increased Research support *Target Date: (2003-07)*

TO REALIZE THE IT VISION AND GOALS

- Develop UH System research infrastructure
- Provide research infrastructure support
- Access to local super computing facilities and support
- Access to online publications in the library
- Improved IT support for research
- Very high bandwidth network resources
- Compliance Testing

University of Houston and UH System IR Goal 4

Enhance the Technology Infrastructure

Timely and accurate information is necessary for the efficient operation of the University. Information Technology must continue to provide a robust state-of-the-art infrastructure and the resources to collect, store, protect, and make available mission-critical institutional data. These resources will streamline processes and enable more efficient decision making for better service to the University community. UH must continue to develop and enhance advanced campus networks that seamlessly interconnect with regional, national, and international resources.

IR Goal 4 Supports:

LAR Goals: Instructional and Operations Support; Infrastructure Support

UH Goals: Undergraduate Education; Graduate and Professional Education; Research; Information Technology; Institutional Advancement; Administrative Efficiency; Enrollment Management; Globalism; University Community

UH System Goals: 1, 2, 3, 4

State IR Goals: 1, 2, 3, 4

Objectives

Information Technology will:

1. Increase access to institutional data
2. Integrate UH System campuses' financial, HR & student information systems
3. Enhance local communication networks
4. Conserve financial resources
5. Enhance Computing Resources
6. Provide appropriate security and authentication to protect University assets.

7. Ensure continuous availability of the Universities mission-critical information resources
8. Comply with State rules, policies, guidelines and requests in a timely manner.
9. Collaborate with educational, research, and industrial partners to develop and deliver information technologies

Outcome Measures

1. Services and information will be shared between campuses through common systems, networks and processes *Target Date: (2003-07)*
2. Improved quality, security, availability, and performance of computing systems to keep pace with changing technologies *Target Date: (2003-2007)*
3. Increased productivity at the University through information technology. (2003-07)
4. Accountability to University of Houston and the citizens of Texas *Target Date: (2003-07)*
5. Enhanced access to information technology and ongoing training for faculty, staff and students *Target Date: (2003-07)*
6. Information systems and networks are continuously available and provide adequate security to protect the critical information infrastructure at the University. *Target Date: (2003-07)*
7. Internet 2 to Texas Gigapop *Target Date: (2003-07)*
8. Collaboration with Houston Area Technology Advisory Council (HATAC) to create an environment where Houston becomes a recognized leader in high technology. *Target Date: (2003-07)*
9. Ongoing enhancement of network speed and capacity *Target Date: (2003-07)*
10. Provide high-speed switched networking resources to 20% of the campus *Target Date: (2003-07)*

TO REALIZE THE IT VISION AND GOALS

- Implement PeopleSoft Financial, HR Student Information System at UH System campuses
- Backend (PeopleSoft) Integration into E-Business Applications
- Upgrade campus backbone
- Upgrade network in the colleges and administrative areas
- Web access to all administrative functions
- Effectively provide electronic responses to students questions about financial aid
- Revise current security policies
- Improve security
- Implement security training in collaboration with HR using Training Post.
- Develop and apply security configuration templates for all university computers (Windows & UNIX operating systems)
- Retain essential technology staff
- Increase central and distributed technology staff
- Outsource those functions that are not core to the University's mission
- Establish Web SWAT Team
- Move quickly to wireless hardware and software (Campus wireless initiative)
- Emphasize portable technologies
- New buildings using "smart" technologies
- Upgrade existing buildings and classrooms to use "smart" technologies
- Ubiquitous computing
- Pursue integrative technologies whenever possible

Section 2: University of Houston System and University of Houston Databases and Applications

University of Houston System Databases

Major agency databases critical to the administration or service of the University of Houston System's mission and a brief description of their uses are listed. This includes internal administrative databases, but excludes simple databases used in the support of administrative functions (for example, phone lists and address directories). The following information is provided for each database.

<p>Estimated Physical Storage Requirements Please note that sizes given in this section are in terms of the <u>end-user's view of production</u> or operating data. A technical support view will usually see several times the listed size as required to support reporting, batch, archiving, development, and shared (e.g., security) processes. A system administrator view will see even more storage required in terms of physical devices allocated (but not fully for performance reasons). Where, for example, the database may require 18GB; the device dedicated for this database may have a rated capacity of 36GB. For performance reasons only 18GB of the capacity can be used. System administrators will see 36GB allocated whereas end-users will see only 18GB available.</p>	<p><i>Size and projected growth of the database expressed in bytes as the unit of measurement, for example, 1.5GB</i></p> <p>Where indicated below a total database storage of 162.82 GB (estimated to become 198.28 GB by September), the overall storage to support these production data exceeds 492 GB.</p>
Database name	PeopleSoft ERP Public Sector Financials (PSFS)
Database Description	Provides financial accounting, general ledger, property management, facilities and planning, purchasing, microfilm indexing, and accounts payable support for both local and state funds – general, research, construction, and project accounting.
Database System	Oracle
Estimated Physical Storage Requirements	12GB (35% annual growth)
GIS Data Classification	NA
Sharing	Data are shared via the Texas USAS.
Future	Enhance with PeopleSoft releases
Database name	Financial Information (FIN)
Database Description	Provides historical financial accounting, general ledger, property management, facilities and planning, purchasing, microfilm indexing, and accounts payable support for both local and state funds – general, research, construction, and project accounting.
Database System	SAGA ADABAS
Estimated Physical Storage Requirements	42GB
GIS Data Classification	NA
Sharing	Data are shared via the Texas USAS.
Future	Beginning in FY03 will replace with Oracle-based DATAMART system.

Database name	PeopleSoft ERP Public Sector HR (PSHR)
Database Description	Provides payroll and human resources information for all components.
Database System	Oracle
Estimated Physical Storage Requirements	6 GB (35% annual growth)
GIS Data Classification	NA
Sharing	Data are shared via the Texas USAS, Texas HRIS, Texas ERS.
Future	Enhance with PeopleSoft releases
Database name	Payroll (HRS)
Database Description	Provides historical payroll and human resources information for all components.
Database System	VMS Indexed Sequential Files
Estimated Physical Storage Requirements	42GB
GIS Data Classification	NA
Sharing	None
Future	Beginning in FY03 will replace with Oracle-based system.
Database name	Institutional Advancement (INA)
Database Description	Former Alumni Development system. Now used for archival reference.
Database System	SAGA ADABAS
Estimated Physical Storage Requirements	3.09GB (0% annual growth)
GIS Data Classification	NA
Sharing	NA
Future	INA was replaced by the Advance/CS system.
Database name	Institutional Advancement (Advance/CS)
Database Description	BSR, Inc. proprietary product for UH System institutional advancement.
Database System	Oracle
Estimated Physical Storage Requirements	10.2GB (10% annual growth)
GIS Data Classification	NA
Sharing	NA
Future	Normal operations.
Database name	Budget Planning (BUD)
Database Description	Database for budget development.
Database System	SQL Server 6 (Microsoft)
Estimated Physical Storage Requirements	0.1GB (0% annual growth but, about 10 GB total)
GIS Data Classification	NA
Sharing	NA
Future	The PeopleSoft budget planning product was <u>not</u> purchased, but may later become a BUD alternative.

University of Houston Databases

Major agency databases critical to the administration or service of the University of Houston's mission and a description of their uses are listed. This includes internal administrative databases, but excludes simple databases used in the support of administrative functions (for example, phone lists and address directories).

Estimated Physical Storage Requirements Note that sizes given here are in terms of the <u>end-user's view</u> of <u>production</u> or operating data. A technical support view will usually see several times the listed size as required to support reporting, batch, archiving, development, and shared (e.g., security) processes. A system administrator view will see even more storage required in terms of physical devices allocated (but not fully for performance reasons). Where, for example, the database may require 18GB; the device dedicated for this database may have a rated capacity of 36GB. For performance reasons only 18GB of the capacity can be used. System administrators will see 36GB allocated whereas end-users will see only 18GB available.	<i>Size and projected growth of the database expressed in bytes as the unit of measurement, for example, 1.5GB</i> Where we indicate below total database storage of 162.82 GB (estimated to become 198.28 GB by September), the overall storage to support these production data exceeds 492 GB (UH and UHS combined).
<u>Database name</u>	Institutional Advancement (INA)
Database Description	Former Alumni Development system. Now used for archival reference.
Database System	SAGA ADABAS
Estimated Physical Storage Requirements	3.09GB (0% annual growth)
GIS Data Classification	NA
Sharing	NA
Future	INA was replaced by the Advance/CS system.
<u>Database name</u>	Institutional Advancement (Advance/CS)
Database Description	BSR, Inc. proprietary product for UH System institutional advancement.
Database System	Oracle
Estimated Physical Storage Requirements	10.2GB (10% annual growth)
GIS Data Classification	NA
Sharing	NA
Future	Normal operations.
<u>Database name</u>	Master (CTL)
Database Description	Control database for security, tables, change management, and batch scheduling.
Database System	ADABAS (Software AG)
Estimated Physical Storage Requirements	20.82GB (26% annual growth)
GIS Data Classification	NA
Sharing	NA
Future	CTL functions are scheduled to be replaced by Oracle PeopleSoft products.
<u>Database name</u>	Budget Planning (BUD)
Database Description	Database for budget development.
Database System	SQL Server 6 (Microsoft)
Estimated Physical Storage Requirements	0.1GB (0% annual growth but, about 10 GB total)
GIS Data Classification	NA

Sharing	NA
Future	The PeopleSoft budget planning product was <u>not</u> purchased, but may later become a BUD alternative.
Database name	Student/Financier (STU)
Database Description	Financial aid and student records including recruiting, admissions, advising, registration, billing and student receivables, academic records, datamart, and facilities management.
Database System	ADABAS (Software AG)
Estimated Physical Storage Requirements	68.72GB (21% annual growth)
GIS Data Classification	NA
Sharing	Numerous interfaces to external agencies exist.
Future	STU will be replaced with PeopleSoft Student Administration by late 2003 or early 2004.
Database name	Financial Aid Management (FAM)
Database Description	Former scholarships and financial aid database replaced by Wolfpack Financier and now used for archival reference.
Database System	RMS (DEC/COMPAQ)
Estimated Physical Storage Requirements	4.55 GB (0% annual growth)
GIS Data Classification	NA
Sharing	NA.
Future	None beyond records retention requirements.



University of Houston System Applications

Major software applications and a brief description of their uses are listed below. For this plan, major applications are those critical to the administration or service of the agency's mission.

Application Name	PeopleSoft Public Sector Financials (PSFS)
Application Type (choose from the listed types)	Financial system (none of the listed types are applicable).
Application Description	Financial Accounting and General Ledger application for both local and state funds – general, research, construction, accounts payable, purchasing, and project accounting.
Database System	Oracle
Development Language	People Tools
Sharing	Used by all UH components.
Future	Enhance and apply PeopleSoft updates as needed.
Application Name	Financial Records System (FRS)
Application Type (choose from the listed types)	Historical Financial system (none of the listed types are applicable).
Application Description	Historical Financial Accounting and General Ledger application for both local and state funds – general, research, construction, and project accounting.
Database System	ADABAS
Development Language	NATURAL 2
Sharing	Used by all UH components.
Future	Replaced with PeopleSoft Public Sector Financials beginning Fall, 2000. Used for view only of historical data until it is replaced by an Oracle based system beginning in FY03.
Application Name	Property Management System (PMG)
Application Type (choose from the listed types)	Traditional Financial system (none of the listed types are applicable).
Application Description	PMG is a fixed asset inventory system used to track and account for capital equipment.
Database System	ADABAS
Development Language	NATURAL 2
Sharing	Data are exchanged with the State (SPA feed)
Future	Scheduled to be replaced with PeopleSoft products. See http://www.uh.edu/FAST/docs/schedule1215.pdf .
Application Name	Facilities and Planning (FAP)
Application Type (choose from the listed types)	Traditional Financial system (none of the listed types are applicable).
Application Description	FAP is a space management system maintaining room and building inventories.
Database System	ADABAS
Development Language	NATURAL 2
Sharing	NA
Future	Candidate for replacement by either PeopleSoft or Schedule 25 products in combination with some datamart functionality to meet Texas requirements.
Application Name	PeopleSoft Public Sector HR System (PSHR)
Application Type (choose from the listed types)	Human Resources.

Application Description	Human Resource and payroll system.
Database System	Oracle.
Development Language	People Tools
Sharing	All UH components use this system.
Future	Enhance and apply PeopleSoft updates as needed.
Application Name	Human Resources System (HRS)
Application Type (choose from the listed types)	Human Resources.
Application Description	Human Resource and payroll system.
Database System	RMS (DEC/COMPAQ OpenVMS Records Management System), a file management service.
Development Language	COBOL
Sharing	All UH components use this system.
Future	Replaced with PeopleSoft Public Sector Human Resources product in Fall, 2000. Used for view only of historical data until it is replaced by an Oracle based system beginning in FY03.
Application Name	Budget Development System (PCBUD)
Application Type (choose from the listed types)	Client Server Financial System, Development.
Application Description	PCBUD models and develops budget information, produces budget book and reports, and loads budget account data into financial and payroll systems for future fiscal year.
Database System	SQL Server 6.5
Development Language	PowerBuilder 5.0
Sharing	FRS, HRS
Future	The PeopleSoft budget planning module is not purchased. There are currently no plans to replace PCBUD.
Application Name	Institutional Advancement (Advance/CS)
Application Type (choose from the listed types)	Client Server Alumni Development system.
Application Description	The BSR Advance/CS system holds the alumni and database and provides tools for fund raising and gift/ donor management.
Database System	ORACLE 8
Development Language	PowerBuilder 6.5, PL/SQL
Sharing	Data are shared with third party vendors (EMS, TransUnion, and EIS). All UH components share the system.
Future	The Advance/CS reporting capabilities are being enhanced in-house at user request.

University of Houston Applications

Major software applications and a brief description of their uses are listed below. For this plan, major applications are those critical to the administration or service of the agency's mission.

Application Name	Student System (STU)
Application Type (choose from the listed types)	Data Warehouse, Document Management, Electronic Commerce, web-enabled.
Application Description	The student system is an integrated multi-campus enrollment management system comprised of Recruiting, Admissions, Records and Registration, Advising, Student Financials, Engineering Minority Student program, and data extraction applications.
Database System	ADABAS
Development Language	NATURAL 2
Sharing	Data are shared with other institutions through the Texas SPEEDE server in Austin and on an ad hoc basis as approved by the Student Affairs Division.
Future	The student system is scheduled to be replaced with PeopleSoft Student Administration. See http://www.uh.edu/FAST/docs/schedule1215.pdf .
Application Name	Official Reporting (ORD or PPA)
Application Type (choose from the listed types)	Data Warehouse.
Application Description	The official State reporting system is comprised of student, course, and faculty extraction processes in support of Coordinating Board reporting.
Database System	ADABAS
Development Language	NATURAL 2, COBOL, SAS
Sharing	Data are shared with the Texas Coordinating Board, and the Office of Civil Rights. Summary data are shared with the National Science Foundation and others.
Future	Official reporting will drive off a datamart once the PeopleSoft Student Administration product is implemented. See http://www.uh.edu/FAST/docs/schedule1215.pdf .
Application Name	Financier (SFA and FAMS)
Application Type (choose from the listed types)	None of the listed types are applicable.
Application Description	Financier (a Wolfpack vendor product) supports the Scholarships and Financial Aid Office in dispensing financial aid to students. Functions include: application processing, awarding aid, managing loans, batch and on-line records maintenance, reporting, new aid year preparation.
Database System	ADABAS
Development Language	NATURAL 3
Sharing	Financier is integrated with the student system, and supports Department of Education processes through batch feeds and the Texas Guarantee Student Loan (TGSL) system through "PC AdvanTG".
Future	Assuming subsequent releases of the PeopleSoft financial aid system will meet UH needs (currently PeopleSoft does not), then at that time we will

	convert from Financier to PeopleSoft. See http://www.uh.edu/FAST/docs/schedule1215.pdf .
Application Name	Texas Guarantee Student Loan system (TGSL)
Application Type (choose from the listed types)	Client Server Financial system.
Application Description	AdvanTG is a Windows-based software system developed by the Texas Guaranteed Student Loan Corporation for guaranteeing loans electronically. AdvanTG also supports most CommonLine Release application functions and transactions.
Database System	PC based
Development Language	PC based
Sharing	Data are shared with TGSL and other guarantors via ComuServe.
Future	UH will continue using TGSL AdvanTG.
Application Name	Remedy Problem Reporting System
Application Type (choose from the listed types)	Action request system (none of the listed types are applicable).
Application Description	Remedy is a problem reporting, tracking, and action request system.
Database System	ORACLE 7.3.4 installed on a Unix machine
Development Language	SQL
Sharing	NA
Future	UH will continue using Remedy.
Application Name	Academic Audit (AA)
Application Type (choose from the listed types)	Client Server, Web-enabled (none of the listed types are applicable)
Application Description	Academic Audit is an automated advising and degree audit system from IronSoft Ltd.
Database System	Interbase
Development Language	Proprietary (system is vendor supported)
Sharing	NA
Future	UH will continue using Remedy.
Application Name	Voice Information Processing (VIP)
Application Type (choose from the listed types)	Client Server, Electronic Commerce (none of the listed types are applicable)
Application Description	VIP is an integrated voice response (IVR) system for 24x7 registration, admissions status inquiry, grading, and billing account status and payments.
Database System	Microsoft Access
Development Language	EPOS Encore ScriptWrite V6.1 Build 71
Sharing	NA
Future	UH will continue using VIP.
Application Name	WWW
Application Type (choose from the listed types)	Client Server, Web-enabled
Application Description	WWW is the administrative systems Internet access portal.
Database System	SAGNA iXpress NT Server
Development Language	HTML and DML (iXpress Dynamic Markup Language)
Sharing	Integrates to ADABAS and ODBC administrative systems.
Future	UH will switch to PeopleSoft Electronic Commerce

	after PeopleSoft release 8. The iXpress product may be retained to leverage some strategic business practices if necessary.
Application Name	Master
Application Type (choose from the listed types)	(none of the listed types are applicable)
Application Description	Master provides the shared administrative environmental utilities for security, access control, batch scheduling, print management, change and version control, email, and data administration (includes the data dictionary).
Database System	ADABAS 3.22 and ADABAS 4.11
Development Language	NATURAL 2.17, NATURAL 3.1.1.25, C, DCL
Sharing	Data are shared with the campus Remedy system.
Future	UH will switch to PeopleSoft for these services for those applications purchased from PeopleSoft. Non-PeopleSoft applications will either continue with these services or rely on internal equivalents.
Application Name	Parking System (PowerPark)
Application Type (choose from the listed types)	Client Server (none of the listed types are applicable)
Application Description	The PowerPark system maintains parking permits and citations issued. Batch interfaces link the parking system with the student, payroll, and financial systems. T2 Systems, Inc. maintains the server.
Database System	Oracle, ADABAS
Development Language	Interfaces are in NATURAL.
Sharing	NA
Future	New interfaces will need to be built to accommodate PeopleSoft.
Application Name	Internet Directory (LDAP)
Application Type (choose from the listed types)	Client Server, Web-enabled
Application Description	LDAP (Light-weight Directory Access Protocol) is an on-line directory server containing contact information on most faculty and staff.
Database System	DBM (database with hashed index)
Development Language	PERL, HTML, JavaScript
Sharing	The LDAP standard permits directory query from any Internet LDAP search engine.
Future	The directory may later be folded in with other single sign on and authentication services.
Application Name	AXIS
Application Type (choose from the listed types)	(none of the listed types are applicable)
Application Description	AXIS is the UH telecommunications management inventory system for telephone billing and directory services.
Database System	Oracle 7.3.4
Development Language	SQL
Sharing	NA.
Future	Additional interfaces are planned to link AXIS with the Remedy problem reporting and tracking system.
Application Name	ACE

Application Type (choose from the listed types)	(none of the listed types are applicable)
Application Description	FirstLogic's PostalSoft ACE/Libraries V6.10c provide CASS certification, bar coding, and address correction services for the administrative systems.
Database System	FirstLogic proprietary under USPS license
Development Language	C, PostalSoft jobfiles
Sharing	Callable C libraries permit integration with third party and in-house developed software. License agreement prevents external agency sharing.
Future	FirstLogic is a PeopleSoft partner and we anticipate integrating ACE with PeopleSoft.
Application Name	Cougar OneCard
Application Type (choose from the listed types)	Client Server.
Application Description	Cougar OneCard is the campus picture ID/library/debit card system.
Database System	? Proprietary
Development Language	?
Sharing	Card swipes connected to the system are made available to some local merchants, e.g., bookstores, vending machines.
Future	Will enhance as needed..
Application Name	CareerNet
Application Type (choose from the listed types)	Client Server, web enabled.
Application Description	University Career Services maintains this web-based career service system comprised of Campus Recruitment, JoBank, and ResumeBank. Service is provided to register UH students, paid UH alumni, and employers. Employers through controlled access may post jobs and search for resumes. Students and alumni can post three versions of resumes, request campus interviews, and schedule campus interviews or apply to jobs on line.
Database System	Microsoft SQL 7.0
Development Language	Microsoft Visual InterDev 6.0, Visual Basic 6.0, HTML, JavaScript.
Sharing	NA
Future	Will enhance as needed.

Section 3: Information Resources Management & Organization Policies and Practices

Brief Summary/Overview

A description of management and organization policies, procedures and practices for IR priorities; planning; quality assurance; procurement; disaster recovery; data center operations and standards will follow:

IR Priorities

Describe agency policies and procedures for setting information resources priorities.

Various factors are used to determine priority for information resources activities and projects. The Information Technology Computing Committee (ITCC) advises the vice chancellor and vice president for Information Technology on instructional and research technology issues, and the strategic direction of academic computing at the University of Houston. Usually, customer needs are the overriding factor but fund availability is a deciding consideration in establishing IR priorities. At all times, the user needs are considered, and whenever possible, users provide advice on the priority of our actions. In the absence of specific oversight or end user guidance, the following default priorities are followed in order of decreasing priority: production software problems, ad hoc information requests, mandates, ERP (PeopleSoft) implementation, ongoing maintenance and operations, performance and service enhancements.

Planning

Describe the methodology for planning, developing, and implementing information resources. Identify the level of involvement of project staff, project management, end-users, and executive management in the planning process.

The planning process is integrated and participatory both within Information Technology and the user base. Linkages from previous plans are maintained with the 2001-2005 Agency Strategic Plan; the Online Division of Information Technology Manual of Administrative Policies and Procedures (MAPP); University of Houston System, System Administrative Memoranda (SAM); Online IT Security Manual; and Information Technology policies, practices and guidelines at: <http://www.uh.edu/infotech/refguide/appropriate.html#guidelines>

The vice chancellor and vice president for Information Technology, University of Houston System and University of Houston and his departmental associate vice chancellors and associate vice presidents; directors, managers and assistant to the VC/VP collectively produce the Information Resources Strategic Plan. Information Technology collaborates with Institutional Advancement, Administration & Finance, and the Budget Office to develop a campus-wide planning process and calendar. The Information Technology Computing Committee (ITCC) plays a role in establishing the strategic direction for technology at the University.

Quality-Assurance

Describe the quality assurance procedures and practices within the agency, including risk management activities and compliance with Department of Information Resources' (DIR) internal quality assurance guidelines. These guidelines are available at <http://www.dir.state.tx.us/eod/qa/>

The project development methodology employed at the University begins with identifying a project director and project team to provide leadership for the project. The Project Director, with input from the executive management team, academic and administrative computing committees, CIO's and many other constituents from University of Houston System campuses, is responsible for developing and managing the Project Development Plan (PDP), a living-breathing document that identifies the scope of the project, goals, objectives, performance measures and project schedule.

The PCP divides the project implementation into several steps of increasing levels of details. The design intends the most significant decisions to be made “up front”, where the possibility of large-scale design has the least impact on project schedules.

Process for Evaluating the Effectiveness and Efficiency of Information Resources Projects

The goals and objectives identified in the plan are measurable and correlate to the agency’s strategies and outcomes identified in the UH Strategic Plan and Biennial Operating Plan. Measurement for projects is based on the work of Robert S. Kaplan, and Peter Norton in their development of the ‘balanced scorecard’ system of strategic measurement design.

A systems design methodology is incorporated in the PDP and addresses benefits of a project, management-control processes and standards by which the effectiveness and efficiency of a project can be evaluated.

Process for Project Monitoring and Control

As each Release progresses through these steps, the project teams should be increasingly focused on smaller and smaller scale decisions. This allows the project teams to move forward effectively, in an integrated fashion, while the answers to final process design questions are still being developed. A systems design methodology is incorporated in the PDP and addresses benefits of a project, management-control processes and standards by which the effectiveness and efficiency of a project can be evaluated. All implementation efforts in projects follow a standard methodology that sequences the implementation activities into a logical progression of environmental analysis, application review, design, development, testing and implementation. The steps followed throughout each implementation of projects include the following:

- Release Startup/Planning
- Process Analysis
- Fit Analysis
- Setup and Design
- Development
- User Acceptance
- Deployment

Process for Analyzing and Managing Project Risk

To comply with the Department of Information Resources (DIR) Quality Assurance Team, an initial risk analysis is conducted for projects over threshold. An initial internal risk analysis is conducted and included in the initial project risk analysis questionnaire from DIR.

A risk analysis instrument is used to identify and rate the risk factors to minimize the potential to compromise the successful outcome of the project. Risk factors are rated according to its probability and consequence of failure, after which an action plan to manage the risk is developed.

Ongoing internal risk analyses and project evaluations are performed throughout the project’s life cycle to mitigate the risks to the project.

Process for Determining the Benefits and Costs of Information Resources Projects

A systems design methodology is incorporated in the PDP and addresses benefits of a project. Projecting a budget for a project is based on many considerations such as the scope, timeline and initial project start-up costs; staffing (FTE resource needs) services of a consulting partner, supplementary short-term contracting assignments and training; facilities, equipment; hardware and software, operating costs ongoing maintenance and contract costs, evaluation and testing.

Personal Computer Replacement Schedule

Describe existing procedures for the replacement of personal computers (PC's within the agency, including the replacement schedule for PCs and laptops. Explain why the schedule does or does not comply with DIR's PC Life Cycles: Guidelines for Establishing Life Cycles for Personal Computers. This guidance document is available at <http://www.dir.state.tx.us/eod/pc/index.html>

The Information Technology Division has established a general 36-month computer replacement cycle for its student labs and staff. This cycle was based on a combination of factors including DIR guidelines, cost effectiveness, 3-year warranties for maintenance, and funding. A tiered approach is utilized in the replacement of desktop computers.

Within student labs, one third of the equipment is replaced annually. Older equipment is retained to provide for applications such as word processing and web browsers. A similar strategy is used for staff desktop computers.

Much of the software used for instruction and maintaining high-end applications is subject to upgrade within a 24-month cycle.

Procurement

Describe agency procedures for the acquisition of information technologies, including cost-benefit analysis and other assessment tools used to evaluate leasing versus purchasing. DIR's Guidelines for Lease vs. Purchase of Information is available at: <http://www.dir.state.tx.us/oversight/lvp/index.html>.

The University of Houston engages in competitive procurement to acquire information technologies as part of our standard business practices. Technology subject matter experts and business staff from the Division of Information Technology work closely with the Purchasing and Contracts Administration Departments to ensure the bid process meets State and University requirements and to leverage the expertise of these different constituents in the process. While cost is a major factor, it is not necessarily the deciding factor. Consideration is given to the long term architectural needs of the University and other strategic plans for technology. In the past several years, the University has actively pursued volume purchase agreements for hardware and software for the University of Houston and University of Houston-System to gain economies of scale. As part of this effort, UH has also partnered with other state agencies such as Texas A&M University in negotiations with hardware vendors to obtain the deepest price discounts possible. When at the bargaining table, UH adopts an aggressive posture in negotiating pricing with our vendors.

Because of the highly decentralized structure for technology funding at the University of Houston -- each college or department fund their own desktop and other hardware needs -- the Division of Information Technology seeks to offer a variety of procurement options for hardware and software. We are actively pursuing volume lease agreements for the University's desktop needs at this writing although we do not intend to proscribe either option, purchase vs. lease. Each unit would be encouraged to select the option that best meets their particular needs.

Disaster Recovery

Describe priorities and procedures for disaster recovery planning and business continuity planning, including existing or planned contracts with the West Texas Disaster Recovery and Operations Center (WTDROC). Information on disaster recovery and business continuity planning is available at www.dir.state.tx.us/security/continuity/index.html.

The Information Technology Division has combined the previously separate disaster recovery programs of the UH System with that of the UH central campus. Two years ago, this program was assigned to the Security and Disaster Recovery Department. Replacement of the current disaster recovery plan is projected to begin FY2003 in response to the incremental replacement of the university administrative applications

over the next five years. The project to develop this new plan has already been established and will be implemented by:

- Identifying critical university functions through an impact analysis
- Determining the hardware and software requirements for each critical function
- Defining how critical functions will be impacted over the next 5 year period
- Establishing hardware, software, and network requirements for each year
- Defining data backup requirements for each year of the plan and establishing off-site storage requirements that complement changes during the 5 year period
- Defining the organizational roles that support the plan: Publishing, testing and maintaining the plan.

Data Center Operations

Identify current data center operations within the agency including existing or planned contracts to migrate operations to WTDROC

We are not using DROC services and do not have vendor contracts for these services since we provide them ourselves. Our IT staff manages the university's data center and disaster recovery operations in lieu of off-campus services for several reasons:

- 1) As a university system, we subscribe to a diversified strategy, in which all resources are not located at a single site. This significantly increases the availability of our computer applications.
- 2) We have a cold site several miles away as a back-up to our data center.
- 3) Robust business contingency plans enable us to use other cold site services should ours be rendered inoperable.
- 4) Our approach minimizes risks of operational disruption that are increased through use of remote operations, especially given our current transition from legacy systems to PeopleSoft.
- 5) We avoid network capacity and reliability issues related to the distance from Houston of the services in West Texas.

There are no plans for migration to the West Texas Disaster Recovery and Operations Center for data center operations. The university is in the process of developing a comprehensive disaster recovery plan in house.

Standards

Describe agency policies and procedures for compliance with and implementation of information resources statewide standards. Information on standards is available at <http://www.dir.state.tx.us/standards/>.

University of Houston System and University of Houston is in compliance with the implementation of all statewide standards listed in DIR's Standards Review and Recommendations Publications (SRRPUB). The following guidelines to govern computer use on campus comply with DIR's Office of Information Security (OIS) Policies, Standards, and Guidelines. (State of) Texas Administrative Code - Section 1 TAC 201.13 should soon be replaced by - Section 1 TAC 202 (both can be found at: <http://www.dir.state.tx.us/security/policies/index.html>)

SAM Policies: Section 7 - INFORMATION SERVICES <http://www.uh.edu/sam/>

MAPP Policies: Section 10 - Information Technology <http://www.uh.edu/mapp/>

Information Technology Information Security Manual <http://www.uh.edu/infotech/security.html>

General Computing Policies <http://www.uh.edu/infotech/user.html>

<http://www.uh.edu/infotech/policies.html>

The Information Technology Workplace Standards Guide includes references to University Baseline Standards and the Manual of Administrative Policies and Procedures (MAPP). The objective of the Workplace Standards Guide is to create a clear set of performance expectations regarding individual and business conduct and a common set of standards for IT leadership to model and effect within their units. The guide establishes the ethical use of university resources, which is the responsibility of every employee. University resources such as copy machines, color printers, long distance cards and others that incur direct cost to the university through the consumption of materials, supplies and services should not be used for personal purposes. Personal use of resources like the telephone should be kept to a minimum. Each employee has the responsibility to safeguard the university's assets and should disclose to their supervisor or the department head inappropriate use of equipment or materials.

The Information Technology Support Center also published a set of guidelines, IT Support Center Standards that include specific references to computer care and placement, IP address assignment; data back-up and recovery, viruses; among other topics. Please see the full text of the Standards at <http://www.uh.edu/infotech/support/standards.html>

Information Technology Guide to Services addresses policies and procedures related computer accounts; purchasing computers; and general computing policies.
<http://www.uh.edu/infotech/services/staff/>

Disposal of equipment is aligned with DIR standards, guidelines, and the University's MAPP.
<http://www.uh.edu/mapp/framset3.htm>

Procurement of computer equipment complies with DIR standards, guidelines, and the University's MAPP.
<http://www.uh.edu/mapp/framset3.htm>

Web Standards:

UH has a Campus-Wide Web Team that meets quarterly and communicates via mailing lists. The current state rules have been promulgated to the team members both in meetings and via the mailing list.

A Web Policies Task Force, comprised of members of the Campus-Wide Web Team and operating under the Campus E-Commerce group is currently drafting campus policies that implement the state standards.

The Technology Support Services department and the University Advancement department work closely together in managing the university's Web presence and staff from those units are responsible for ensuring compliance with state standards for the main UH site.

TSS staff attend the DIR Public Electronic Services On-the-Internet (PESO Working Group) meetings and participate in that group's mailing list in order to stay apprised of changes to state rules.

Appendix A

State of Texas Information Resource (IR) Goals

Goal 1: Transformation of Government

Goal 1 promotes the use of technology in ways that will redesign how state government works. It leverages the strengths of high-tech leadership and a proactive Legislature to overcome barriers of decentralized IT administration and the resulting information silos. This means, for instance, that identical data needed by several governmental agencies should be collected only once. The result should be more accurate, timely, secure, and tightly controlled data. This also implies that agencies that provide identical, similar, or related services should coordinate manual and automated systems so that citizens can easily find and use those services.

Goal 2: Information Management Practices

Goal 2 promotes the infrastructures, policies, and procedures needed for the effective and efficient management of statewide information resources. It builds on many of the lessons learned from the Year 2000 Project, as well as leadership from the Legislature in establishing the Program Management Office. This goal promotes DIR's "best practice" models for IR standards, rules, guidelines, procurement, security, management, and training.

Goal 3: Stewardship of Information

Goal 3 focuses on the role that government must play in safeguarding information. In particular, it addresses citizen concerns about the use of private information in government databases. Because it represents a cost without obvious payback, it must rely on the power of the Legislature to set policy and appropriate funding to achieve the objectives that have been established.

Goal 4: Access and Participation

Goal 4 advocates an active role for the public in statewide information resources management. It is driven by the increasing influence of a technically savvy population and relies on the convergence of computers, communications infrastructure, and communications media to achieve its objectives.

State Goal 1: Transformation of Government

State government will leverage information resources to deliver services to citizens irrespective of government boundaries

Objective 1:

State and local government entities work toward integrating and/or sharing data within and among different levels of government.

Outcome Measures

- Increase in the number of successful cross-government or interagency initiatives, task forces, and working groups.
- Reduction or elimination of programs whose services overlap across agencies and/or other levels of government.
- Increase in the number of appropriate agencies participating in interagency data-sharing initiatives.
- Increase in the number of data integration initiatives coordinated by the Electronic Government Program Management Office.

Objective 2:

Design and delivery of government services is coordinated among agencies and across different levels of government.

Outcome Measures

- Increase in the number of successful cross-government or interagency initiatives, task forces, and working groups.
- Increase in the percent of state, county, and municipal government entities in Texas that participate in TexasOnline.
- Increase in the number of services for each state, county, and municipal government entity that are delivered through TexasOnline.

Objective 3:

State government executives support the growth of electronic government initiatives.

Outcome Measures

- Increase in the number of opportunity proposals¹⁹ submitted to the TexasOnline Authority.
- Increase in the number of electronic government initiatives submitted to the Legislative Budget Board in Legislative Appropriations Requests.

TO REALIZE THIS VISION

- Identify requirements for network bandwidth and connectivity for state and local law enforcement jurisdictions.
- Provide alternatives that serve networking needs of local agencies.
- Develop statewide standards for law enforcement databases, data exchange, privacy, and security.
- Establish interoperability among criminal justice agency databases that will provide a “virtual record” of offender and case history information, including warrant status, incarceration status, and court appearances. Give all state and local law enforcement entities access to the virtual record with appropriate security rights.

State Goal 2 Information Management Practices

State government will enhance agencies performance of their mandates and missions through the appropriate use of information resources.

Objective 1:

State government entities will follow DIR rules and guidelines.

Outcome Measures

- Increase in the percent of agency compliance with all statewide IR rules.

- Increase in the number of agencies that have adopted common architectures and directory services.
- Increase in the percent of agencies participating in IR working groups, standards bodies, and task forces.
- Increase in the percent of IRMs completing continuing education requirements.
- Increase in the number of projects under Quality Assurance Team review that are on time and under budget.

Objective 2:

State government entities will apply IT “best practices.”

Outcome Measures

- Increase in the number of agencies using metrics specified by the Software Engineering Institute²⁰ (SEI).
- Increase in the number of agencies using metrics specified by the Project Management Institute²¹ (PMI®).

Objective 3:

State government will employ information technology to meet citizen needs where appropriate.

Outcome Measures

- Increase in the percent of agencies with the IRM on the agency’s executive committee.
- Increase in the percent of IRMs involved in production of the agency strategic plan.
- Increase in the percent of agency services offered online to Internet-enabled citizens.

TO REALIZE THIS VISION

- Reduce or eliminate redundant databases and processes among agencies.
- Employ advanced directory services to implement statewide security and privacy standards by providing strong user authentication and verification.
- Implement statewide security and privacy standards to ensure private records are not compromised.
- Implement document/records management software, policies, and procedures to manage huge libraries of online documents

State Goal 3 Stewardship of Information

State Government will ensure the privacy, security, integrity, and relevance of its data

Objective 1:

State government entities will have policies on data security and privacy.

Outcome Measures

- Increase in the percent of agencies with security policies accessible from the main page of the agency Web site.
- Increase in the percent of agencies with a privacy policy accessible from the main page of the agency Web site.
- Increase in the percent of agencies with a public information policy accessible from the main page of the agency Web site.

Objective 2:

State government will collect only information needed for government operations.

Outcome Measure

- Number of agencies that conduct reviews to identify data needed and relevance of data collected.

Objective 3:

State government entities will ensure the long-term viability of records.

Outcome Measure

- Number of agencies in compliance with statewide records retention policies.[22](#)

Objective 4:

State government entities will follow statewide security guidelines.

Outcome Measures

- Increase in the percent of agencies that report security incidents monthly.
- Increase in the percent of vulnerability assessments performed.
- Decrease in the number of systems that experience outages due to security-related problems.
- Decrease in the number of security breaches.

TO REALIZE THIS VISION

- Provide bandwidth and rural connectivity to schools for videoconferencing over the Internet.
- Implement document/records management software, policies, and procedures to manage huge libraries of online documents.
- Develop privacy and security policies and procedures for government records and integrate them with the document and records management systems.
- Implement and enforce statewide standards for management of privacy and security.

State Goal 4: Access and Participation

Citizens will access to multiple information technology channels to interact with Texas Government Entities.

Objective 1:

State government will educate the public about access to online public services.

Outcome Measures

- Increase in public awareness of current electronic government services.
- Increase in number of education and awareness programs conducted by state, county, and municipal government entities.

Objective 2:

State government will increase access to electronic government services in all Texas communities.

Outcome Measures

- Increase in percent of cities and counties with Web sites.
- Increase in number of public schools that provide access to electronic services.
- Increase in number of public libraries that provide access to electronic services.
- Increase in visitors to state Web sites.

Objective 3:

The design of online services will meet citizen needs and expectations.

Outcome Measures

- Increase in number of online applications that have been tested for usability.
- Increase in percent of Texas public with a high level of satisfaction with online government services.

- Percent increase in use of government information technology channels (discussion forums, webcasting, e-mail, mailing list servers, etc.).
- Increase in number of agencies providing access to information and services in Spanish.

Objective 4:

Citizens have the opportunity to provide input to new electronic government programs.

Outcome Measures

- Percent of online applications developed with end-user input.
- Number of agencies with processes in place to obtain feedback from end users about online government services.

TO REALIZE THIS VISION

- Provide bandwidth and rural connectivity for videoconferencing over the Internet.
- Provide public access facilities at public locations in rural towns, such as schools and libraries.
- Provide accessibility accommodations, such as captioning, for people with disabilities.
- Improve multicasting infrastructure.
- Develop document and records management standards and facilities for multimedia records of government meetings.