Overview and Update of Information Technology Services
University of Hawaii
2012
Information Technology Services (ITS) provides enterprise IT services for the UH System and the UH-Manoa campus.

ITS is relatively unique at UH and within U.S. higher education in functioning simultaneously at both the system and campus levels.

ITS is the largest single operating unit at the UH System level, yet is at or near the very bottom of UH-Manoa peer and benchmark levels for central IT financing and staffing.

Like all universities, UH employs a centralized/decentralized approach to IT support.

- Many research universities have far more decentralized IT resource allocation than UH.
Challenge: Keeping It All Going While Doing More (with Less)

- ITS must ensure the continuous, secure & compliant availability of complex infrastructure and services providing over 70,000 students, faculty and staff on 6 islands
- ... While initiating and executing projects to provide new & improved services and increased efficiencies
- ... While figuring out what we can STOP doing to help address the pressing resource challenges we still face
Enterprise Information Systems
- Major Institutional Systems

- Finance
- Human Resources
- Student Systems
- Research Administration
- Library
- Data

Plus at UH
- RCUH Independent, but with many interfaces
- UH Foundation independent

All UH Enterprise Systems are Systemwide
Finance Related

- Legacy Financial Management Information System being replaced by Kuali Financial System (KFS)
  - Fundamental shifts to purchasing underway
  - [http://www.hawaii.edu/kualifinancial/](http://www.hawaii.edu/kualifinancial/)

- eTravel improvements
  - Promoting Payment
  - Tools for risk-based pre-audit
Human Resource & Payroll Related

- PeopleSoft HRMS for “regular” employees
  - State Payroll System
  - UH ePCS (2011); Offered for use by other agencies
  - SCOPIS for Casual/Overload
  - SECE for Student Employees

- Electronic Leave
  - Uses Kuali Rice Workflow
  - Rollout completed at end of 2011

- CURE & TAPS Underway
  - Consolidated University Record of Employees
  - Electronic timesheets for all hourly reporting
  - Scheduled for 2012 Implementation
Student Related

- **Banner Student & Financial Aid**
  - Upgrades, upgrades & upgrades
  - Improved performance during peak periods
- **STAR for degree audit, degree planning, advising, self-advising and more**
  - Support from Gates/EDCAUSE NGLC

- **My Future Hawaii College & Career Portal**
  - Support from College Access Challenge Grant program with DLIR, DOE, P20

- **State Longitudinal Data System**
  - P20 with HDOE support, USDOE proposal pending
Research Related

- myGRANT (Kuali Coeus) for Research Administration
  - Live November 2011 – Mandatory Feb 2012
  - Electronic preparation of proposals & budgets
  - Electronic workflow within UH
  - Electronic submittal to grants.gov

- Pending
  - Integration with KFS Financials
  - Automated billing & drawdown
  - Submittal to other federal agencies
Currently, independent datamarts for Finance, HR, C&G and Student Info

Currently, multiple tools in use

- Brio, Oracle Discoverer, Cognos, “dynamic reports”
- eThority for KFS

No fully integrated data warehouse
Room-based Video (extended classrooms)
Online (web-based) Learning
Desktop Video
Educational Access Cable TV
Plus Instructional Support Services
eCafe online course evaluation
Systemwide faculty development program with support for campus-based faculty development activities
Project Activities

All Major Services are Systemwide and Support Distance, Campus-based and Hybrid Learning
Room-based Video

- Hawaii Interactive Television System (HITS)
  - A 20+ year history of supporting statewide distance learning classrooms
  - HITS 1 – 1990: Analog video via microwave & ITFS
  - HITS 2 – 2000: MPEG2-over-IP w/ QoS & Multicast

- HITS 3 – Summer 2011
  - 37 sites upgraded at 17 locations on 6 islands
  - High Definition IP Videoconferencing
  - Tweaked for Distance Learning, but interoperable with standard H.323 VTC (Polycom, Tandberg, Lifesize)
  - Funded through ARRA broadband grant
  - Extension to desktops pending
Online (web-based) Learning

- **Laulima Course Management System**
  - Based on Sakai
  - Primarily asynchronous
  - Integrated with Banner and Portal
  - Integrated with clickers

- **Halawai – Realtime Web Conferencing**
  - Based on Adobe Connect Pro
  - Integrated with Banner

- **iTunes U**

- Experimentation and innovation abound
Statewide Educational Access Cable TV

- Channel 55 moving to 355 (digital)
- Adding new statewide digital education channel
- Adding new statewide video-on-demand channel
- Free cable boxes for UH students
- Accommodation of school and campus coax cable network distribution
Teaching & Learning Support Services

- eCafe online/paperless course evaluation
  - Available systemwide
  - Integrated with Banner and Portal
  - Adding section-by-section customization

- Systemwide faculty development program
  - Multi-technology support
  - Supportive of hybrid approaches
  - Support for campus-based faculty development activities
Instructional Technology Projects

- **Remedial/Developmental Math & English**
  - Utilize off-the-shelf competency-based software
  - Compress course sequences, time to readiness for college-level work
  - Improve student success
  - Gates Foundation support

- **Support for Trade Adjustment Assistance Community College and Career Training Grant**
  - U.S. Department of Labor - $24.7m

- **Participation in WICHE WCET Predictive Analytics Reporting (PAR) project**
  - Gates Foundation support
  - Initial work includes 33 variables about the online coursework of 640,000 students at 6 institutions/systems
Shifts in Research

- Research is now a Team Sport
- Research is increasingly interdisciplinary
- Research is increasingly international
- Research is increasingly data-driven and computationally enabled

*Competitiveness in research and driving research-driven innovation requires adapting to the shifts*
Cyberinfrastructure for Research

- Data collection devices -- large & small & globally distributed
- Large databases / Big Data – may be distributed
- Complex computational models & High Performance Computing
- Visualization of data and phenomena
- Collaboration tools -- real-time and asynchronous

Supported by people who “get it”

Empowered by high speed networks
UH Cyberinfrastructure for Research

- **High performance computing**
  - Hawaii Open Supercomputing Center @ MHPCC
  - Supported by US Dept of Commerce / NIST

- **Research data storage and curation**
  - Hawaii Geospatial Data Repository (EPSCoR)
  - Working with Manoa Library on data curation

- **Collaboration tools**
  - Synchronous and asynchronous tools for virtual organizations
  - Faculty & students can use the same tools for research and education

- **High-speed network connections**
  - Within the state and beyond

*Emerging Area for Institutional Support at UH and Research Universities Nationwide*
Technology Infrastructure

- **Servers**
  - Virtualization, standardization, performance
  - Preparing for full dual-site strategy for DR/BC

- **Phone services**
  - Marching toward systemwide integrated VoIP
  - Associated campus network improvements

- **IT Operations Center**
  - More comprehensive proactive monitoring & response across technology systems and services

- **Identity and Access Management**
  - Integration, lifecycle, groups, acknowledgements, passwords, InCommon, security support

- **Networks**
  - Manoa, Statewide, National/International
Networks, Networks, Networks

Campus Networks:

- 2011: Community College networks ALL upgraded to support VoIP
- MAJOR digital R&M underway at Manoa – Fiber, wiring, WiFi, VoIP
  - 5,500 phones
  - 1,300 PoE switches for phones and wireless
  - 500 UPS units
  - 10 WiFi controllers
  - 3200 wireless access points
  - 120,000 ft of fiber (~23 miles)
  - ~ 4 million ft of cat 6 copper (~757 miles)
Networks, Networks, Networks

Statewide Network

- All UH campuses and education centers moving to 10Gbps, including interisland
- Fiber and 1Gbps to every public school and public library on every island
- Plus ~700 new public computers in public and CC libraries
- Funded through Broadband ARRA grant

External Connectivity

- Continuing two Australian 10Gbps circuits
  Supported by NSF international networking program
- 2011: Two new 10Gbps UH-owned circuits
  Funded through ARRA NSF grant
- Pending Pacific Project
General IT Support

- Systemwide IT Help Desk by phone & email
  - On-site technical support at UH-Manoa
  - Increasing need for mobile device support
- Site license / discount program
- Emergency notification services
- Web hosting, including content management (Drupal, WordPress) and dynamic (PHP/MySQL)
- Statewide eWaste disposal program coordination
- Systemwide “point” (with OGC support!) for increasingly complex compliance issues

Support Needs Grow With Increases in Enrollment, Research Productivity and Pervasiveness of IT
Google @ UH Update

Schedule

- Student migration completed Fall 2011
- Faculty & staff migration now underway
- Shutdown of legacy @hawaii.edu email & webmail this summer

Improved Services

- 25Gb quotas
- Improved accessibility
- Advance user interface
- New services available

Savings in operations and foregone upgrade & replacement costs
Platform Support

➢ Contract Services
  ✓ Departmental server management
  ✓ Exchange & Blackberry

➢ Hosting Services – Current & Planned
  ✓ VMs, Co-Lo
  ✓ Applications: AIMS, ‘Ulu‘ulu, OneCard, CC Non-Credit Education
Information Security

- Information Security Governance
  - Administrative and Technical Leadership Groups, Chancellors

- Internal & External Risk Assessments & Audits

- PII Protection!
  - Locate and Delete or Secure!
  - Server scans

- Policies & Practices

- Identity Management and Access Control
  - Maintaining access consistent with current job reqs
  - Annual acknowledgement of policy & responsibilities

- Education & Training
  - Formal, mandatory and documented

- Technology Controls
  - SIEM tools
Sources of Projects and Priorities

- Dedicated Advisory committees
  - BPC, BAC, DLAC, KFS EC, KC EC
- Managerial and consultative discussions
  - Chancellors, VPs, MET, ACCFSC, CCAO, CCSAO
- UH Strategic Plans
- Staff ideas
- Customers and stakeholders
- National Best Practices
- Compliance requirements
- Budget Realities
- Opportunities and surprises
The Current Surprise

✓ Helping relocate FMO staff
Economic Realities

Casualties
- PC/Printer repair
- Small general-purpose computer labs
- Dedicated telephone operators
- OMR scanning
- Data entry
- e-Portfolio rollout
- Free premium services

Opportunities
- Reducing energy consumption
  - Server consolidation
- Open/Community Source
- Outsourcing
- Reducing paper, more online information & processes
- Leveraging economies of scale, including as a System
- Extramural funding

“Not wasting a budget crisis” is still painful
Major Extramural Activities

- Pacific Disaster Center
  - 5-yr contract ~$30m

- Educational Access Cable Programming

- NSF International Research Network Connections
  - ~$4m over 5 yrs with California and Washington

- ARRA Broadband Grants
  - NSF EPScoR Cyber Connectivity - $1.2m*
  - NSF Academic Research Infrastructure - $9.9m*
  - DOC/NTIA BTOP Infrastructure - $34m*
  - DOC/NTIA BTOP Public Computing Centers - $1.9m*

- MHPCC - UH’s largest contract (>200m)
  - Recompetition still underway

* ARRA Grant

Partnerships & Collaboration are Critical!
And, after 20 years…

- UH’s First Real Enterprise Data Center
- Emergency Situation Room
- ITS Staff Colocation