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SYSTEM

Overview and Update of Information Technology Services University of Hawaii 2012



Information Technology Services @ UH

- **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

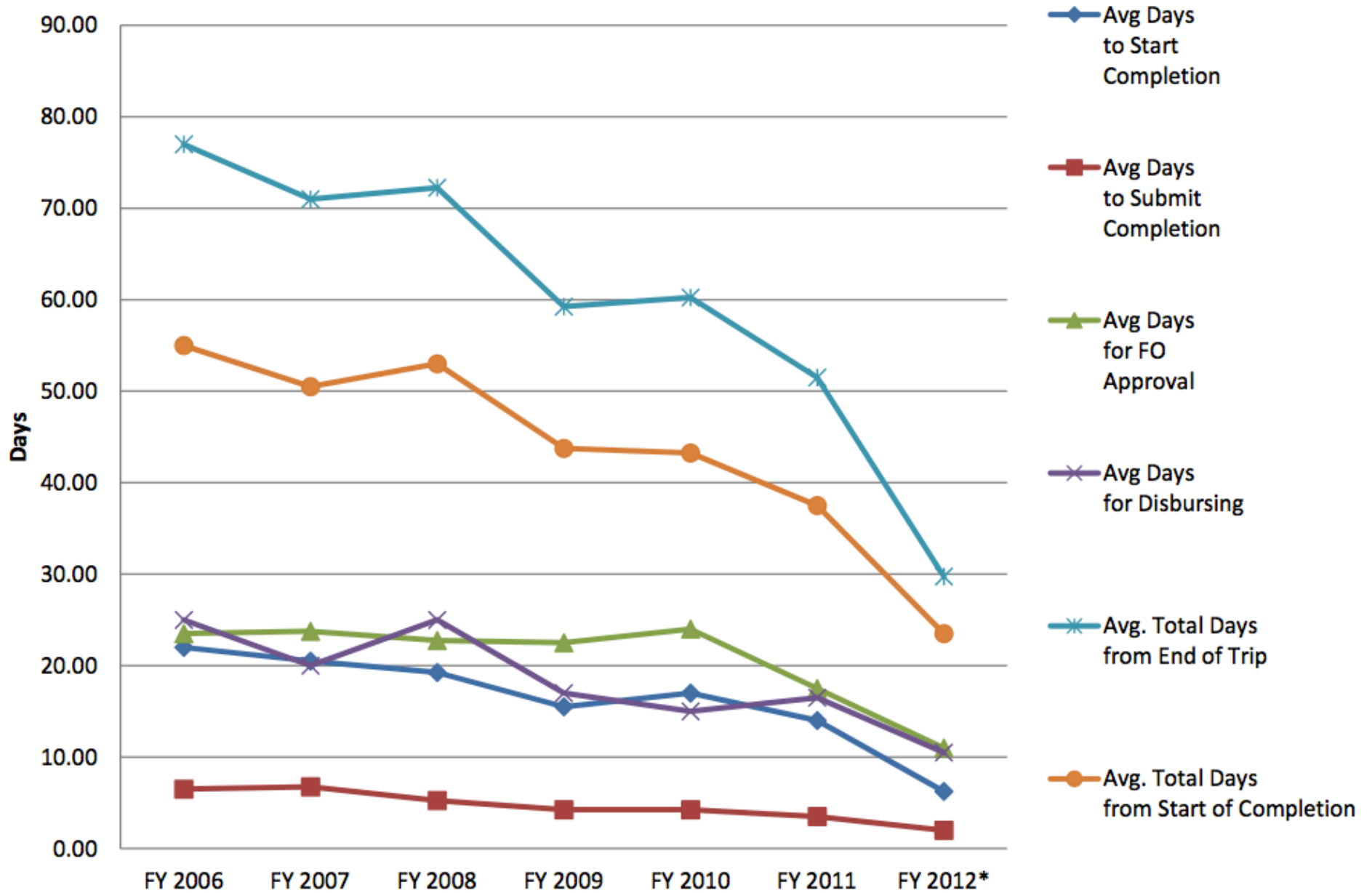
All UH Enterprise Systems are Systemwide



Finance Related

- **Legacy Financial Management Information System being replaced by Kualifinancial System (KFS)**
 - ✓ **Implementing: Chart of Accounts, General Ledger, Financial Processing, Labor Ledger, Accounts Receivable, Contracts and Grants, Purchasing, Accounts Payable and Capital Asset Management**
 - ✓ **Fundamental shifts to purchasing underway**
 - ✓ **<http://www.hawaii.edu/kualifinancial/>**
- **eTravel improvements**
 - ✓ **Promoting Payment**
 - ✓ **Tools for risk-based pre-audit**

Travel Reimbursement





Human Resource & Payroll Related

- **PeopleSoft HRMS for “regular” employees**
 - ✓ **State Payroll System**
 - ✓ **UH ePCS (2011); Offered for use by other agencies**
 - ✓ **SCOPIIS for Casual/Overload**
 - ✓ **SECE for Student Employees**
- **Electronic Leave**
 - ✓ **Uses Quali 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**



Data Related

- **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**



Teaching & Learning

- **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**



Cable Television

➤ **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**



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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

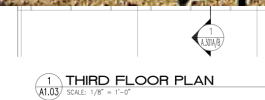
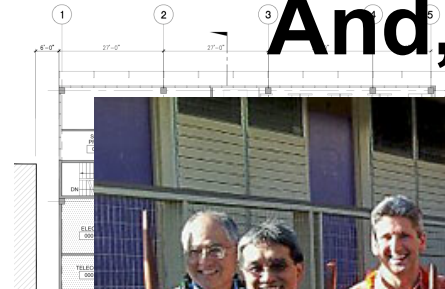
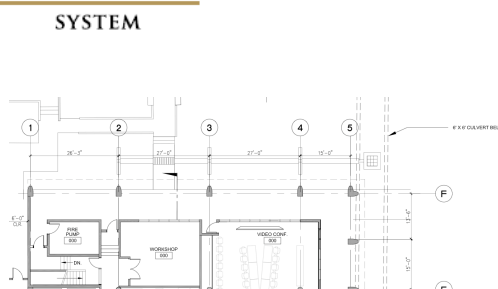
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Partnerships & Collaboration are Critical!



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And, after 20 years...



THIRD FLOOR PLAN
SCALE: 1/8" = 1'-0"

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