The Next Challenge for Western Michigan University...

Corralling the culture, collaboration and computing, to make it all work seamlessly!
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Presenters

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- Greg Lozeau
  - Director, Planning and Middleware Services
- Joel Fletcher
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Background on WMU

- Carnegie Research Extensive Institution
- Seven Colleges
- Six Regional Campuses
- 28,000 Graduates and Undergraduates
- 3,500 Faculty and Staff
- Business Technology Research Park
- The Broncos!
The Vision

- Building the network infrastructure – President Haenicke
- Then came Wireless Western and strongly recommended laptop program – President Floyd
  - Anytime, anywhere access to resources
- A better e-communication infrastructure
  - Multi-platform, open source, end-of-life system
- A new Student Information System – a competitive advantage – President Bailey
- Take advantage of the built infrastructure
  - new applications to launch an over-arching solution for identity management
The Challenge

- What we are trying to corral
  - Enhance electronic communication
- The culture we had to contend with
  - A little “old school”
- The collaborative effort it took
  - Buy-in and leadership at the top
And then along came SIS

- Replace a much needed student information system
- But there were the budget challenges as well
- Capitalized on the opportunity to address data access, assessment, information access and security
The Cultural Impact

- Changes within the administration
- Changes in state funding
- The necessity to work together – functional and technical
- A change of ERP vendors
  - PeopleSoft Financials
- A rapid timeline
The Collaborative Effort

- Presenting “in the middle” because...
  - The “who” – culture – needs to work with the “what” – technology/computing
  - Collaboration brings IT all together
    - Internal to the IT unit
    - Internal to the organization
    - External to the organization
      - IT and the vendor
The Collaborative Initiatives

- Services targeted to stakeholders
- Electronic Communication
  - Directory, Messaging and Calendaring
- Student Information System
  - GoWMU, iWebfolio, TouchNet, Cognos
- Identity Management
  - ID cards, provisioning, roles-based access
- Sun Center of Excellence
  - Wireless mobility
Initiative Timelines

- Determined the order and urgency with the collaborative dialog
- Sun JES started in Spring 2004 with phased in services throughout the year
- Luminis portal – Summer 2004 with SSO to self-serve applications this winter and content management starting August 2005
- IdM – in progress with Phase I completion by mid-May
- Wireless mobility this summer
Electronic Communication Initiative - Intentions

- Implement enterprise directory, messaging and calendar solution
- Migrate existing UNIX e-mail users
- Changing conventions
  - firstname.mi.lastname vs. username@ delivery
  - No forwarding off-campus
  - Requiring all mail host on campus to use one mail gateway
Electronic Communication Initiative - Collaborations

- External to the organization – vendor
  - Professional services
  - New directory schema
  - Delivery based on LDAP attributes

- Internal to the IT unit
  - Change our directory structure and supporting programs

- Internal to the organization
  - Faculty/staff and students
  - Departments with mail host
SIS - Intentions

- GoWMU.wmich.edu – portal delivery
  - Content development
  - SSO (Single Sign-on) capabilities
    - Seamless access to Banner Self-Serve
    - Seamless access to WebCT
    - Seamless access to ECS
    - Seamless access to...
SIS – Collaborations

- External to the organization – vendors
  - Built on Sun JES framework
  - Federated AuthN and AuthZ

- Internal to the IT unit
  - Understanding each others applications

- Internal to the organization
  - Students - design of portal content
  - Functionals – layout, data migration constraints, timing
Identity Management - Intentions

- The provisioning/de-provisioning challenge
  - More granular control of access to services
- Provide a new identifier on the campus ID card
  - Elimination of SSN on magnetic stripe
- Take advantage of the capabilities to better integrate SIS with Learning Management with Luminis portal with...
Identity Management - Collaborations

- External to the organization – vendor
  - Professional services
- Internal to the IT unit
  - To help “market” the solution to the end-user
- Internal to the organization
  - Stakeholders of the Bronco Card
  - Student Information System
  - HR and Financial Systems
  - Application access within Student Affairs, etc.
Center of Excellence - Intention

- “Content Transformation of the Java Enterprise System Services for Anytime, Anywhere, Any Device Digital Communication”
- Capitalize on the Wireless Western infrastructure
- Recognize that mobile devices are everywhere on a college campus!
Center of Excellence - Collaboration

- External to the organization – vendors
  - Cisco Content Transformation and Sun JES and mobile devices
- Internal to the IT unit
  - Network, web apps, security
- Internal to the organization
  - Device end-user
The Collaborative Challenge – Lessons Learned

- Educational process
  - Salesmanship and marketing
- Take advantage of existing governing groups
- Formulation of new governing groups
- When contracting with professional services, allow time for acceptance/buy-in
- Can never start the dialog too early
The Computing Details

- What technologies deliver all these various services
  - Sun hardware
  - Cisco Load Balancers and Content Transformation Engines
  - StorageTek D280 Storage Area Network
  - StorageTek Enterprise Backup
Foundation Services

- Single enterprise UserID – “Bronco NetID”
- Kerberos
- LDAP – Sun Java Enterprise Services Directory
- “Legacy” provisioning services
- Multiple web-authentication schemes
- ID Card-driven authentication services + self-serve kiosks
Current Provisioning Model
The 500,000 foot view
The New Components

- Sun JES Messaging
- SCT Banner
- SCT Luminis Portal
- WebCT - Banner Integration
- New Student/Employee ID (no SSN)
The Services View

- E-mail – (imap, smtp, webmail)
- Luminis Portal – (gowmu.wmich.edu)
- Student/faculty Web Pages (homepages.wmich.edu)
- WebCT e-learning system
- Interactive Systems (OpenVMS, UNIX)
- Departmental Systems
- External Systems (e.g. iWebFolio)
The Security View

- Three (plus) -tier network
  - Tier 0 – Internet and Residence Hall Network
  - ----- Cisco PIX Firewalls ----- 
  - Tier 1 – User Tier (Untrusted Hosts) 
  - ----- Cisco CSS Load-Balancer ------
  - Tier 2 – Application Services (DMZ)
    - User Services – imap, pop, portal, etc.
    - Proxy Services
    - Application Services
  - ----- Cisco CSS Load-Balancer ------
  - Tier 3 – Secure Network Services
    - Secure back-end (core LDAP, message store, kerberos)
    - Secure Databases
The Current Purple Box Environment
The Performance View

- Back-end services are clustered and highly redundant
  - SunFire V880 systems
  - Veritas HA Cluster
  - Dual drive paths to SAN
- Front-end services are load-balanced
- Horizontal scaling wherever possible
  - Multiple SunFire V1xx and V2xx SFF servers
Identity Management Components

- IDM Database (MySQL, Oracle)
- Interfaces to LDAP and enterprise databases
- Rules Engine
- Scheduler
- Provisioning Agents
After IDM – From 500,000 Feet

- Luminis
- SCT Banner
- WebCT
- PplSoft HR
- LDAP
- Kerberos
- Targets
Next Steps

- Federated Identity Support
- Two-Factor Authentication
- Integration of multiple SSO technologies into common SSO platform
  - WMU WebLogin (NormCookie)
  - Luminis CPIP
Contact Information

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