A preeminent, technically-focused University should be preeminent in its application of information technology to improve its own business mission and processes.

Roadmap for Enterprise Applications

Jeffrey L. Whitten
Associate Vice President for IT Enterprise Applications

CIC Presentation
June 2004
Scope & Terminology

**APPLICATION ARCHITECTURE PLATFORM**

- **Core Enterprise Applications**
  - Financial Resource Management
  - Human Resource Management
  - Student Resource Management

- **Peripheral Applications**
  - University Development
  - Research Administration
  - Facilities Management
  - Learning Management
  - Academic Information
  - and many others

**REPORTING & DECISION SUPPORT**

**INFORMATIONAL DATABASES**

**TRANSACTIONAL DATABASES**

**APPLICATION ARCHITECTURE PLATFORM**
University Snapshot

- Change – “Take the University to the next level”
- Five-year, top-down strategic plan – “Preeminence”
- Five-year capital campaign – $1.3B
- Information-centric administration
Today’s Situation

- Aging and brittle legacy applications
- Old application technologies
- Multiple application architectures
- Growing number of ancillary and shadow applications
- Inconsistent executive-level information
- Legacy applications do not support modern best practices
- Growing impatience with projects
The ITEA Strategic Plan

- Unify the application-technology architecture.
- Increase our reliance on purchased applications.
- Promote a culture willing to adapt business practices to purchased applications.
- Establish a common data framework that supports easy access to information.
- Manage University data as a shared, institutional resource.
- Improve project management through use of repeatable processes.
Data Principles

Responsibility – ITEA will be responsible for all institutional data management.

Standards - ITEA and the data stewards will jointly establish, adhere to and enforce uniform enterprise data standards to ensure common definitions and consistency.

Collection – ITEA will strive to ensure that data will be captured once and as close to the source as possible.

Access & Sharing – ITEA will facilitate standardized access and will share common data with authorized users.

Reuse – ITEA will facilitate the reuse of data within Purdue to avoid duplicate data capture, entry, and storage.

Security – ITEA will protect the integrity, security, and privacy of information to meet legal and institutional requirements.
Application Principles

**Buy vs. Make** – ITEA will evaluate purchasing application solutions or commercial components before building solutions from scratch.

**Simplicity** – ITEA will endeavor to deploy applications that minimize elaborate and complex activities by the end user.

**User Interface** – ITEA will deploy applications and tools that will present a common look and feel to avoid confusion and reduce end-user and developer training.

**Access** – ITEA will enable users to access their authorized applications and data through a single-user ID and password (accept where inappropriate or illegal).

**Security** – ITEA will implement security to ensure that applications and data are protected from unauthorized access.
Roadmap Strategy

- **Research**
  - Technical research: Gartner Group
  - Best practices research: EDUCAUSE and Gartner Conferences
  - Networking with peers: CIC Information Systems Officers

- **Benchmarking**
  - University of Michigan: Upgrading PeopleSoft ERP.
  - Penn State University: Developed homegrown solution, but through consultants; maintained internally.
  - University of Illinois: Implementing SCT ERP system-wide.
  - Indiana University: Implementing PeopleSoft ERP.
  - University of Wisconsin: Implemented and upgraded PeopleSoft ERP.
  - University of Louisville: Implemented and upgraded PeopleSoft ERP.
  - University of Alabama: Implemented Active Data Hub and implementing SCT ERP.
  - University of Minnesota: Implemented and upgraded PeopleSoft ERP.
  - Florida State University: Implementing PeopleSoft ERP.

- **IBM Consulting Engagement**
  - Examined Purdue business processes, business opportunities, technical architecture, and applications industry and market.

ITEA combined all of the above to make the “Case for Change”
Roadmap Vision

Roadmap strategy:
Buy and integrate enterprise applications as opposed to developing them in-house.

Applications are vital to University operations and strategic goals.

Our Vision
1. Enterprise Resource Planning (ERP)
2. Information Factory & 3. Business Intelligence (BI)
4. Constituent Relationship Management (CRM)

A shared information technology architecture for
5. Enterprise Application Integration (EAI)

Roadmap strategy:
Capture and manage data as an enterprise resource to empower management through information.
Vision

Enterprise Resource Planning … for Business
Replace the University’s aging, fragile application portfolio with an integrated ERP application for financial management, human resource management, student administration, research administration, constituent relationship management, and appropriate, complementary bolt-ons.

Information Factory … for Business Intelligence
Build a data hub to serve as a bridge between the University’s legacy applications and its ERP future. Deploy modern business intelligence technology to empower University managers and administrators to extract useful information, metrics, and online analytics from the data hub.

Enterprise Portal … the Window to OnePurdue
Empower students, faculty, staff, and administrators with self service access to ERP functionality and the information factory with a single sign-in, role aware, secure user interface … a personalized Web homepage that converges all.
Today (aka “Pre-ERP”)
1. ERP

IT Enterprise Applications
1. ERP II

- Sourcing & Procurement & SRM
- Contributor Relations
- Alumni Relations
- Research/Grant Administration
- Human Resources
- GL
- Payroll
- Benefits Admin
- Performance Management
- Recruiting/Hiring
- Resumix 6
- Financials
- Fixed Assets
- Projects
- Contracts
- Compensation
- Bursar
- Budgeting
- GL
- Institutional Research AR
- Time Collection
- Faculty/Staff Support
- Recruitment
- Registration
- Recruiting/Admissions
- Contribution Relations
- Alumni Relations
- Admissions
- Bursar
- Sponsored Programs
- Financial Aid
- Acquisitions
- Academic Scheduling
- Constituent Relationship Management
- ID MGMT
- Student Administration
- SpringBoard
- IT Enterprise Applications
2. Business Intelligence

Enterprise Data Warehouse

- Managed Reports
- Ad hoc Queries
- Business Analytics

Data Mart

- External Data

Data Mart

- Managed Reports
- Managed Metrics (KPIs)
- Business Analytics

Data Mart

- External Data
3. Constituent Relationship Mgmt

**CONSTITUENT RELATIONSHIP MANAGEMENT**

Coordinates all constituent facing functions:

- A comprehensive set of processes, metrics, and technology systems to coordinate relationship building and management
- Enhances the University’s ability to attract, retain, service, and expand constituent relationships
- Builds sustainable customer loyalty and business value to the university.
4. Enterprise Portal

An enterprise portal will provide students, alumni, employees, and other constituents with “one stop shopping” for access to applications, information, and services through a Web interface personalized to their authenticated roles with the University.
4. EAI Architecture

Architecture defines **consistent technology standards** for:

- **Data architecture**
  to ensure integration of data and high-data integrity.

- **Process architecture**
  to provide self-service and workflow management.

- **Presentation architecture**
  to provide a unified user interface and experience.

- **Security architecture**
  to provide single sign-on and secure data and services.
The Big Picture

Enterprize Portal Interface (from the ERP vendor)

Business Intelligence (from a BI vendor)

Data Warehouse (from the ERP vendor)

Ancillary Applications
- ADV C/S
- COEUS
- MAXIMO
- WEB CT VISTA
- others

CRM (TBD)

ERP
- Oracle or PeopleSoft or SAP or SunGard SCT

E-Commerce Data Hub
- (InfiNET or TouchNET)

App Databases

ERP Transactional Database

Dept App

Dept App

Dept App

Dept App

Dept Databases

Recruits

Students

Faculty

Staff

Alumni

Suppliers

Industry

Government

Application Servers

Database Servers

(Oracle)
Timeline

- **Case for Change** (June ‘02 – March ’03)
- **Total Cost of Ownership Analysis** (January ’03 – April ’03; September ’03 – January ’04)
- **OnePurdue Countdown** – Pre-ERP (May ’04 – June ’05)
  - ERP Selection (September ’04 – January ’05)
  - ERP Consultant Selection
  - Technical Infrastructure
  - Business Intelligence technology selection and deployment
  - Facility Prep
  - Targeted ERP new hires
  - Business and academic policy decisions
  - Governance
- **OnePurdue Liftoff** – ERP Implementation begins (July 1, 2005)
Timeline

▪ OnePurdue Flight Plan – (July ’05 – July ’08)
  • All subsystems developed in parallel.
    Projected completion dates:
    » Financials and Research Administration July 1, 2007
    » Human Resources January 1, 2008
    » Student Services September 1, 2007 thru July 1, 2008

▪ Post-ERP (July ’08 – December ’09)
  • Keep up with the upgrades
  • Purchase or write ERP bolt-ons and enhancements
  • Implement expanded business intelligence against ERP data warehouse
  • Replace Student Contact System with CRM
  • Implement System for Accountability Management, version 1 (earlier if funded independently from ERP)
Critical Success Factors

• **ERP**
  - Commit to vision … stay on message!
  - Ability to make timely decisions
    » Empowered teams
    » Effective governance
  - Stay on schedule and within budget
    » Keep it vanilla
      – Customization compromises integration, best practices, cost of implementation, implementation schedule, and cost of upgrades
    » Business process redesign
  - Keep the community informed
  - Partnership … tear down the silos of independence
Questions? Comments?

THE END … THE BEGINNING OF THE JOURNEY … ROAD DETOURS AHEAD?