

# The Components of an ePortfolio Infrastructure (The University of Denver Experience)

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## University of Denver

- Private institution founded in 1864
- 500 regular faculty
- 10,000 students
  - 4000 undergraduates
  - Graduate programs
  - Professional schools (Law, Psychology, Social Work, Education)
  - University College (adult learning)
  - The Women's College
  - Rick's Center (K-8), University High School (9-12)

## Discovery

- What resources are available at your institution?
- Does your institution have a preference for a particular hardware and software platform?
- Is there long term support for development and maintenance of a portfolio project?
- Who will provide support and training?
- Is the project sustainable (funding model)?
- Most Importantly
  - Is the University committed to this endeavor?
  - Who will be directing the development?
  - What mechanisms are in place for review?

## Choose an Approach Portfolio Generations

- 1<sup>st</sup> Generation
  - Paper Based
    - The traditional legacy portfolio
- 2<sup>nd</sup> Generation
  - Personal Web Page
    - Use a boxed product (FrontPage, Adobe GoLive, Dreamweaver etc.)
- 3<sup>rd</sup> Generation
  - Distributed Portfolio Application
    - Database driven application, consistent look and feel.
    - Limited integration.
- 4<sup>th</sup> Generation
  - Portfolio Management Environment (PME)
    - Single sign on, integrated into existing campus systems and systems external to the University.

## Aspects of Infrastructure

- Hardware and OS Selection
- Software (Development and Production)
- Database Selection
- Personnel (Development and Support)
- Faculty/Student/Institutional Support
- Expansion Capabilities

## Hardware and OS Selection

- Window Operating Systems or Linux/Solaris/Unix
- Load Balanced
- SSL Accelerators
- Backup Mechanisms (Data and Redundancy)
- Expansion Capabilities
  
- Environments
  - Development/Testing/Training/Production

## Software (Development & Production)

- Development Base
  - Programming Language
    - ColdFusion, dot NET, PHP or Java.
  - Development Software
    - JEdit, Toad.
  - Other Software
    - Versioning - Visual Source Safe
    - Builds – Ant
    - Database Architecture – ER Studio
- Discussion Forums
  - Develop own, or purchase a boxed product
- Web Servers
  - Apache/Tomcat or IIS
- Backup/Recovery

## Database Selection

- University available licenses
- Oracle
- Microsoft SQL
- MySQL
- Microsoft Access

## Personnel Development & Support

- Faculty Electronic Portfolio Committee
- Technical Committee
- Development Team
  - Project Manager, Information Architect, Programmer, Graphic Designer, Testing Staff.  
Multiple roles maybe preformed by an individual.
- University Technology Services
  - System Administration/Backup & Recovery
- Portfolio Community Help Desk

## Faculty/Student/Institutional Support

- Institutional support is REQUIRED if the project is to have a chance of success and receive the necessary appropriations of people and resources.
- Faculty and Student support is CRITICAL for the project to be sustainable.
- Allow the development of the project to be directed by the end users to ensure the application remains true to the initial goals.

## DU Portfolio Community Demonstration

- User-centric
  - Easy to set up and maintain
  - Portfolio owner controls & manages the content and how the content is shared
- Community capabilities
  - Expands communication beyond individual courses
  - Invites participation by people from outside of DU
- Complies with FERPA and with DU's privacy & intellectual property guidelines
- Assessment
  - Supports online assessment of student work
  - Contains a rubric library and rubric builder
  - Provides powerful reporting tools
  - Allows for extensive assessment management functionality
  - Is secure and separate from portfolio component

## Summary Technical Information (University of Denver Portfolio Community)

- System fully integrated with the central campus administration system (SCT Banner)
- Partially integrated with the Campus Portal
- J2EE, Tomcat based, Oracle 8i Backend, Jive community platform
- Development Platform: MS Windows
- Production Platform: Sun/Solaris
- Nearly 300 screens
- Current capacity 10,000 users (no firm quotas)
- CTL in-house development and support through UTS.

# Choose an Approach

## Portfolio Generations

- 5<sup>th</sup> Generation (PME<sup>2</sup> Under construction)  
Portfolio Management Environment
- Characteristics
  - Authenticated into multiple systems on and off campus
  - Whole of University Program Assessment (Evaluations)
  - Integrated Digital Rights Management System and Copyright Notifications
  - Federated Search of Portfolios
  - Supporting standards for content harvesting (OAI, RSS)
  - Interoperability Enabled

# What's Next for the DU Portfolio Community?

- Expand features
  - (including more user roles, additional file formats, etc.)
- Extend campus involvement
  - (more academic units, Career Center, Alumni Office, Accreditation Elements)
- Export portfolios as XML to CD/USB Storage, RSS or other systems
  - (interoperability)
- Expand and improve search ability and add further levels of security on the document
- Explore future collaboration

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