Challenges and Rewards of Driving OBIEE Standards

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Overview

• Introduction
• Background of FSU’s ERP Implementation
• Profile of Customizations
• Overview of FSU’s OBIEE Implementation
• Our Approach to Change Management & Issue Resolution
  – Usage Scenarios
  – Business Process
  – Init Block and Variable Usage
• OBIEE Standards
  – Dashboard Standards
  – Development Standards
• Lessons Learned
• Questions & Comments
Introduction

• Presenter:
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Florida State University

...is a premier, comprehensive, graduate research university, with both law and medical schools.

- Annual Operating Budget: $1.1B
- Over 200 Million in Research Dollars attracted each year.
- Over 41,000 students
- Over 14,000 employees
- Over 13,000 biweekly paychecks
- Over $18 million in biweekly payroll
Background of FSU’s ERP Implementation

• Implemented Financials 8.4, Portal 8.8, and EPM 8.8 in June 2004
• Implemented HR/Payroll 8.8 in December 2004
• Upgraded HR and EPM Suites to 8.9 in April 2006
• Upgraded FI Suite to 8.9 in November 2006
• Upgraded EPM and Portal Suites to 9.0 in November 2007
• Upgraded HR Suite to 9.0 in October 2008
• Currently Upgrading FI Suite to 9.0 (est. April 2009)
• Currently Migrating from DB2 to Oracle DB for FI (est. April 2009)
• Implemented OBIEE in March 2008
  – Initial Deployment of Development 08/2007
• Go Live for 10.1.3.4 (est. April 2009) with architecture switch to Linux
FSU’s OBIEE Implementation

FSCM Reports
- Fin & Budget Position
- Available Balance
- Department Ledger E&G
- Department Ledger C&G/CS
- Department Ledger AUX
- Department Ledger CF

HCM Reports
- Cost Center
- Employee Time Verification
- HR Active Employees
- HR-GL/Payroll Charges
- Position Detail by Dept
- Timesheets by Dept & Empl

Operations Reports
- OBIEE Usage Tracking
- DataStage Operations
- Data Reconciliation

Data Marts
- General Ledger
- Workforce Profile (Job)
- Commitment Control
- Financial Transactions
- HR-GL Transactions
- Payroll Cost Center
- Sponsored Research
- Employee Time
- Usage Tracking
- Data Operations

Sunday, March 29, 2009
OBIEE Customizations

- Customization of all delivered tables as of 03/01/2009 exceeds 60%
- Customizations range from minor field modifications to complete join/table redesign.
OBIEE Customizations

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- Customizations range from minor field modifications to complete join/table redesign.
OBIEE Customizations

- Customization breakdown by Fact/Dimension objects.

- 50% DELIVERED DIMENSION’S
- 50% CUSTOM DIMENSION’S

- 83% DELIVERED FACT’S
- 17% CUSTOM FACT’S
FSU’s OBIEE Implementation

• Implementation was broken into phases to achieve early, measurable success

• Phase I
  – EPM 9.0 (on Oracle Database)
  – OBIEE and BI Publisher Deployment
  – Oracle Fusion Intelligence
  – Development of 12 key dashboards
  – Training of developers and end users

• Usage Metrics since Go Live
  – 674 Distinct Users
  – 1.2 Million Reporting Object Requests submitted
  – Daily Reporting Load Ranges from 8k - 16k Requests
OBIEE Architecture

- OBIEE 10.1.3.3.0 (Current Windows Platform)
OBIEE Architecture

- OBIEE 10.1.3.3.4 (Current LINUX Platform)

Red = RedHat Linux
Blue = MS Windows
Challenge: To Much Noise!!!

• Way to many issues arising from users who state they need X; however no proven business reason
• Need method to track problems vs bugs vs enhancements
• Need method to track importance of bug as well as level of associated risk
• Functional business experts MUST be engaged and play an active role!
Issue Resolution Flow Process

1. Help Desk/Issue Logged → Functional Validation of Issue → Test Case Logged
2. Technical Group:
   - Issue Approval → Technical Development
   - Technical Specification Approval → Resolution Promoted for Testing
3. Functional Group:
   - Moved to Production and Issue Closed → Functional Testing
   - Issue Approved/Promotion to Production Granted

Sunday, March 29, 2009
• Are you SURE the report hasn’t changed?
• How can you prove to me (business analyst) something hasn’t changed
• Wait! The reporting change that just went in; well; I’m sorry to report; but it shows we have a few extra million in the bank; can we roll that back?

× Ooooops I just “accidentally” deleted something... and by the way, it was in PRODUCTION!
Change Control Process

1. Issue Assigned to Developer
2. Identification of Offending Objects
3. Delivered Change?
   - NO: Risk to High
     - Tabled for Future Phase
     - Determined Level of Risk
     - Technical Development
     - Technical Validation
     - Resolution Logged in Ticket
   - YES: Identification of Affected Delivered Objects
4. Determine Level of Risk
5. Risk to High: Tabled for Future Phase
6. Case to Oracle: Metalink Ticket Logged
7. Delivered Product Bug?
   - YES: Develop Internal Fix?
     - NO: Case Closed; Await Patch
     - YES: Technical Development
6. Technical Development of Delivered Object Fix
8. Test Case Developed for all Affected Objects
9. Functional Testing
10. Issue Approved/Promotion to Production Granted
Change Control Process

Development Complete

Identification of Affected Objects

XMLP

Identification of Affected Objects

Copy XMLP Objects to SVN

Validate SVN TEST Copy with Diff

Remove Affected XMLP Objects

Copy XMLP Documents from SVN to TEST

WebCat(Answers/Dashboards)

Identification of Affected Objects

Archive Identified Objects From DEV WebCat to SVN

Validate SVN TEST “Shared” Copy of WebCat

Delete Affected Objects from TEST WebCat

UnArchive SVN copy of DEV to TEST

Migrated Objects Brought Online in TEST(Copy to SVN)

Issue Resolution Process

NO

Repository

Identification of Affected Objects

Take Offline Copy of Dev (Place in SVN)

QNA/Production Migration

Copy/Paste Logical/ Presentation Object(s) from Offline copy of Dev

FUNCTIONAL APPROVAL?

NO

YES

Prod Copy Placed in TEST(From SVN)

New Physical Object?

NO

YES

Take Offline Copy of Dev (Place in SVN)

Copy/Paste Physical Table from Offline copy of Dev

Re-Create Joins in Offline TEST

Promote SVN TEST WebCat/XMLP to QNA/PROD

Copy Repository(RPD File) to QNA/Production(Copy to SVN)
Change Control for Reports

- Use 4 standard environments to migrations
- Use catalog manager to move objects between environments
- Document/Performance driven process (Issues, Specifications & Change requests)
- Moves are coordinated and scheduled
- Backup/restore enabled
  - SubVersion
  - Short term/Revision history managed by Volume Shadow Copy services/Change capture script
  - Long term by Tivoli Hot Storage Solution
Challenge: Repo Changes

• I have a mess on my hands and have no clue as to what changed!
• Merge utility has ONCE AGAIN corrupted my Repo! 😞
• Repo? HUH? What’s that!? Should I be worried/concerned?
• Metadata management; how is that generated?
Challenge: What is a Repo?
Challenge: Repo Explained

Oracle BI Web
- SOAP Web Services, XML and URL Interface
- Oracle Interactive Dashboards
- User Profiling, Security and Session Mgmt.
- Cache Services (Web) & Connection Mgmt.
- SAW Bridge (J2EE/JSAPI)
- Web Catalog Service
- XML Framework

Oracle BI Server
- Logical SQL ODBC/ODBC (Logical Business Model)
- Load Balancer
- Session Management
- Intelligent Request Generation
- Cache Services
- Logical Request Generation
- Navigator
- Multi-Pass / Sub-Request Logic
- Fragmentation Optimization
- Aggregate Navigator
- Optimized Query Rewrites
- Execution Engine

Oracle BI Administration
- Metadata Management Services
- Multi-User Development Services
- Metadata Documentation Services
- Server Management Services

Externalized Authentication
- LDAP
- DB Authentication
- Custom Authenticator

Web Browser
- XML, HTML
- HTML, SOAP over HTTP/HTTPS
- Javascript for Usability & Interactivity

External Applications and Portals
- HTML, SOAP over HTTP/HTTPS

System Perf Monitoring / Metadata Interface
- ODBC, CLI, OCI, XML, MDX

Analytical and Operational Data Sources
Change Control for Repository

• Metadata changes are primarily driven by reports
  • Variety of methods are used to migrate metadata
    – Copy UDML from Source to Target
    – Manual development in target
    – Scripted full repository copies from source to target
• Backup/restore enabled
  – SubVersion
  – Short term/Revision history managed by Volume
    Shadow Copy services
  – Long term by Tivoli Hot Storage Solution
  – Migration scripts to create backups
OBIEE Security and Usage

- There are two approaches with security
  - Closed system
  - Completely wide open system (default)
- Security Strategy at FSU is a two step approach
  - Functional Requirements
    - What can the user see
  - Technical Requirements
    - What can the user do (italic and underlined)
- Explicit security is a caveat to both scenarios
OBIEE Security and Usage

• OBIEE Security is assigned based on a non-explicit model
  • Security is always implied as default(Open/Closed) unless otherwise specified
• User A logs into an “Open” system and is able to see everything a power developer could see as well as perform actions on such objects he/she can see
• User B logs into a “Closed” system and is unable to view or perform actions on objects he doesn’t have explicit access to.
OBIEE Usage Scenarios

- Self Service Report Viewer
  - Ability to Login to OBIEE & access Dashboards
- Ability to print/export to PDF/XLS
- Refresh Data
- Non-Employee consumer of reporting objects (dashboards)
- Typically used to allow former employees to print a timesheet for a small period
OBIEE Usage Scenarios

• Report Viewer
  • Ability to Login to OBIEE & access Dashboards
  • Ability to print/export to PDF/XLS
  • Refresh Data
  • “Send To” type functionality (IE, send to email.. etc)
  • Merely a consumer of reporting objects (dashboards)
  • Number of Rows returned limited

• Power User
  • Same Needs as “Report Viewer”
  • Increased access from a reporting content aspect
  • Number of Rows returned limit increased
  • Otherwise no added functionality
OBIEE Usage Scenarios

• Answers Report User/Developer
• Same Needs as “Power User”
• *Access to “Answers” application within OBIEE*
• Ability to save documents to “My Folders”
• Ability to save documents to departmental folders
  • Separate from structured reporting objects
• Restricted to Answers Subject area’s which are separate from structured reporting subject areas
• Ability to view contents of structured reports for best practice guidance
• Ability to utilize shared filters created by OBIEE Reporting Team
OBIEE Usage Scenarios

• OBIEE Report Developer (Internal ERP)
  • Same Needs as “Answers Report User”
  • Ability to save documents to shared/structured reporting folders
  • No Subject area restrictions other than non-deployed products
• Ability to create Dashboards and Prompts
• Ability to create shared filters for usage by campus report developers
• Ability to create/schedule/manage ibots
• Clear OBIEE Cache requirement
OBIEE Architecture

- OBIEE SECURITY PROCESS
Challenge: OBIEE Storage Mess

• To trash or NOT to trash?
• Should we just pile EVERYTHING in one directory or not?
• To many developers; not enough “personal space”!
• Employees are creatures of “habit” and have their OWN way of doing things; often times are 1st in line to sign up for “Prevent Change Pep Band”!
• Structure is never welcomed, but always needed to keep the gray hairs at bay!
OBIEE Storage Structure

• All Structured Reporting areas have the same folders for document storage
• Dashboards
• Filter
• Prompt
• Request
• Provides Separation of documents based on type regardless of report being developed
• Each Deployed PeopleSoft Functional Area has Parent Folder for Document Storage
• All Shared Document Storage is consistent in Design/Naming/Security/Structure of Objects
OBIEE Storage Structure

- Default Dashboard is Set via Init Block and Allows for Setting of Default based on:
  - Location
  - Department
  - Referring Application
  - Variable known as “PORTALPATH”

- Allows for Announcements about upcoming events such as system outages.
OBIEE Storage Structure

- Security is Set at each Dashboard/Object Level
- Developer Prompt (Allows Developers to turn on/off Logging Level of a dashboard for troubleshooting)
- Dashboard Main/Pages are used for securing who can “See” what dashboards
- Prompt/Request/Filter are all set to “Read Only” for All Groups which have rights within the Deployed PS Functional Area
OBIEE Variables

Variable Overview

- **Set Process**
  - Server Startup: `@{biServer.variables('Variable Name')}`
  - Repository Init Block: `@{biServer.variables('Variable Name')}`
  - Login/Init Block/SQL/Dashboard: `@{biServer.variables('NQ_SESSION.Variable Name')}`
  - Dashboard Prompt: `@{VARIABLE NAME (DEFAULT VALUE)}`
- **RPD Expression**
  - N/A
- **Answers Expression**
  - N/A
- **Delivers Expression**
  - N/A
- **Other (mileage may vary)**
  - N/A
- **Row Level Init (IE; Row level security, etc)**
  - NO
  - YES
OBIEE Dashboard Standards

• Typical FSU Dashboard Consists of a Minimum of 5 sections
• Consistent Look and Feel of all Structured Dashboards
• Provide Base Objects to Developers for Rapid Development
  – Pre-defined Header/Footer Code
  – Repository/Presentation Variables
  – Consistent Format of Data (Numeric/Dates)
• Security Administered Separately from Development Staff
• Ability to Re-Use objects from previously developed dashboards
OBIEE Dashboard Standards

Data contained within this report was last loaded on 3/23/2009 04:41:09 PM

I, [Print Name], CERTIFY THAT THE PERSONS NAMED HEREON ARE DUE THE AMOUNTS SHOWN FOR SERVICES PERFORMED FOR THE DEPARTMENT INDICATED DURING THE PERIOD STATED, INCLUDING LEAVE AND OTHER PAY ADDITIVES AND THAT THESE PAYMENTS CONFORM TO THE POLICIES ESTABLISHED BY THE FLORIDA STATE UNIVERSITY AND THE BOARD OF GOVERNORS. I FURTHER CERTIFY THAT I AM AN AUTHORIZED SIGNER FOR THIS DEPARTMENT AND THAT A PERMANENT, SIGNED COPY OF THIS DOCUMENT WILL BE MAINTAINED IN MY OFFICE FOR AUDIT PURPOSES. Errors in employee earnings should be noted by creating a Parature ticket for correction and detailing the Parature ticket number in the memo report below.

Signature: __________________________
Date: __________________________

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Hours Earned: 880.00
Total Earnings: 29,173.44
Number of Employees: 11
Lessons Learned

– Cache CANNOT be managed with a “One Size Fits All” Approach.
– Tree’s as delivered are Views; which can be heavily taxing on a DB; consider a Materialized View Alternative with MV Memory Pin.
– DW Objects are Delivered DB Agnostic and can be tuned further to meet specific db vendor needs
– Tis better to perform the calc in the metadata than weigh down developers with countless formulas.
– Consistent Drill Paths/Navigation
– Focus on data reconciliation early and consistently.
Future?

- Mobility Support (Oracle Indicators)
- Usage Tracking via Iphone
- High Level Transaction Details
- Current Available Budget
- Mobile Alerts