UC Merced DATA WAREHOUSE Initiative

History

- UC Merced's data warehousing efforts began in early spring 2006 when then Provost David Ashley charged Nancy Ochsner and Rich Kogut with the task of assessing the campus' information and reporting needs.

- Rich and Nancy met with 14 different groups, spanning most of the campus' academic and administrative units. The goal of these meetings was to identify information and reporting needs as well as campus integration points.

- Purchased Sungard's ODS to serve as the foundation for the DW. An ODS is a database designed to integrate data from multiple sources and to serve as an interim area for a DW. It provides a view of cleansed and formatted operational data, ensures higher accuracy and consistency in reporting, and supports a range of reporting tools. Starting with Sungard's ODS was significant because we could take advantage of the built-in linkages and processes with our Banner Student Information System (especially Registrations, Financial Aid, and Student Accounts/Cashiering).

- Provost Keith Alley continued the support for this effort by budgeting for a suite of Business Intelligence reporting tools to serve as the window to the DW. IT and IPA evaluated various BI tools, developed an RFP and, after a well-attended proof-of-concept demo to the campus community, just recently signed a contract with Cognos. We also talked to other UC campuses about their DW efforts and reporting tools.

What's a Data Warehouse? And Why is it Important?

- A DW is the **central repository for integrating** university information, designed to support analysis, decision-making, and various reporting requirements of the entire campus.

    - Because it is separate from the operational databases, it takes most of the **reporting load off the transaction systems** and makes reporting easier and more efficient. DW improves performance especially for complex analytical queries.

    - It gives **greater data access** to decision-makers, giving them the information in the way that they need it.

    - It is **subject-oriented**. Data are linked from different systems and organized for easier analysis. It is **driven by analytic requirements** and structured by aligned business areas. (Faculty Workload; Enrollment Management; Human Resources Management)

- The data are **non-volatile**. The database is never overwritten or deleted. It is static, read-only. For instance, each term's census enrollments would be appended to the DW.

- The data are **time variant**. Historical data are captured so that trends can be analyzed.

- The data are **integrated**. Ultimately, most or all of the campus' operational data could contribute to the DW. Even external data can be integrated into the DW.

- Data warehousing **fosters a culture of evidence, transparency, and data-driven decision-making.**

- It's a shared, common source for campus information that leads to **better quality data and consistency in definitions** and use of data (metadata).

- One measure of a successful DW would be the **ability to make better decisions**.

- Unlike an operational database which is designed primarily to support day-to-day operations (pay bills, register students, track employee sick and annual leave), the DW is designed to **support strategic decision making**.

- **Different DW users** have different data access and reporting needs. That's why the purchase of a suite of reporting and analysis tools was so important.

  - Some users need to access detailed data focusing on small subsets of the database.

  - Others need to be able to query and report on data from a broad array of data sets, looking at multi-year trends

  - Some need to use data for planning and forecasting, to identify financial or other risks

  - Still others need to monitor performance indicators to be sure that the campus is making progress in meeting its strategic goals.

  - The software we purchased will help us improve the reporting environment for all these types of users.

Where are we now?

- Cognos training and implementation
- MARS: Merced Academic Resources System
- Policies: data access, data usage, security set-up
- FERPA and other training modules for campus

Critical Issues

- Prioritizing campus data and reporting needs
- How to help other users (e.g., Raisers' Edge)
- Recognition of our roles; needs to be funded on an on-going basis; need Cabinet support
- Heavy reliance on functional offices/staff
    - Source data issues (Avoid Scipii!)
    - Data definitions/standards
- **Data governance**: Need to identify campus resource proprietors and resource stewards; need to develop campus policies and processes for data sharing