



OE RESOURCE REQUEST APPLICATION

University of California, Berkeley

I. SPONSORSHIP

A. Initiative

Initiative	IT Foundation		
Initiative Manager	Pamela Brown / Karen Kato		
Phone	2-7059 3-3371	E-Mail	phb@berkeley.edu kkato@berkeley.edu

B. Sponsorship

Sponsor Name	EDW - Erin Gore		
Sponsor Signature		Date	3-31-2011
Sponsor Names	Human Resources – Jeannine Raymond Budget & Finance – Erin Gore		
Sponsor Signatures		Date	3-31-2011
OE Program Office Signature		Date	

C. Give the title of the resource

Enterprise Data Warehouse (EDW) and Business Intelligence (BI) Projects – **HR & Finance**

II. PROBLEM STATEMENT/CASE FOR CHANGE

A. Identify and describe what needs the proposed solution is seeking to address.

Incrementally build upon the foundation of the existing data in the EDW to integrate data from new source systems.

- Improve data security, reliability and accuracy.
- Reduce data duplication and hosting costs of maintaining data in multiple systems.
- Simplify the data access request process by reducing duplicative data stores.
- Improve understanding of data by developing common definitions.
- Expose source system data issues for faster resolution.

Provide easy-to-use BI tools to produce reports and dashboards to:

- Facilitate quick development of ad-hoc reports to meet the growing campus analysis and visualization needs.
- Save analyst time by minimizing the need to integrate data locally.
- Save analyst time by developing complex metrics once and reusing them.
- Save analyst time by making ad hoc report creation simple.
- Improve quality of campus analysis by exposing data descriptions (metadata), using consistent calculations and certified reports.
- Allow users to start at the high level, identify exceptions/issues and drill down to the critical detail for improved response.

Reduce costs by eliminating or reducing support for multiple enterprise BI tools.

B. Describe the solution that is being proposed to meet the identified need(s).

The OE Initiative for High Performance Work Culture and the OE Initiative for Finance Management are both focused on improving and measuring campus results. This proposal supports that effort by producing certified reports, dashboards and metrics for the campus. In addition, this project provides significant cost savings to campus by reducing/eliminating support for multiple enterprise Business Intelligence tools.

Under direction from the OE Initiatives above, the Institutional Data Council and the OE Faculty Head, we are recommending the following project:

The EDW proposal in support of this initiative begins with enhancing and fully integrating the following major groups of data in the Enterprise Data Warehouse (EDW) :

- Human Resource employee verification, staff action, case tracking and workforce data
- General Ledger, Budget and Position Tracking
- Payroll (distribution, expense & leave accruals)

OBIEE dashboards and reports will be created for faculty and staff which will:

- Facilitate quick development of ad-hoc reports and save time for campus analysts.
- More easily expose data exceptions and provide drill-down functionality.
- Improve existing operational reports by eliminating redundancy and adding new performance metrics.
- New management dashboards will be developed to meet the needs of HR and Financial leaders.

C. Describe the alternate approaches you evaluated in the process of developing this proposal and why those alternatives were not selected.

- Continue to support and expand existing Financial and HCM Data Warehouse. This option was rejected because it does not allow for integration across subject areas (i.e. Student, HCM, Financial, etc.) and produces only localized reporting capabilities. Additional and unnecessary costs would be incurred to support multiple reporting platforms.
- Migrate existing Data Warehouse tables into the new Oracle Business Intelligence (OBIEE) application for reporting and analysis. This option would move the reporting to a new reporting platform but would still not allow integrated reporting and analysis across subject areas.

III. IMPACT AND STRATEGIC ALIGNMENT

A. Describe how the proposed solution aligns with the OE goals:

- Reduce administrative costs and enable the campus to direct more resources to teaching and research
- Advance an effective and efficient operating environment
- Instill a culture of continuous improvement that leads to high quality performance and outcomes

Continue to build reusable essential core components that will make adding new subject areas to the EDW more efficient. Provide easily-consumable data, reporting and dashboards to enable user efficiency. The efficiency gains will result in a better use of staff time that focuses on analysis, instead of data collection and clean-up and will provide more comprehensive analysis of data for campus decision makers. This will be accomplished through:

- Consistent and reliable certified data means less time validating data sources. The data integration and report work can be performed once and continually utilized by all.
- Improved accuracy of published data through certification of data, metrics and reports.
- Improved analysis and time savings by developing reports and dashboards that identify data exceptions and support drilling down into data for further analysis.
- Faster development of ad hoc reports by analysts through easy-to use tools and pre-built reports and metrics. This enables campus decision-makers faster access to ever-changing business questions.
- Automated workflow to seek access to EDW data, reports and dashboards. Consolidating data for reporting makes data access management easier to administer.

Shadow systems for data collection can be reduced and eventually eliminated as campus users see missing data added to the EDW and trust its accuracy. This is a hard savings of infrastructure and time in addition to improving data security on campus by reducing access points and focusing resources. The IDMG found numerous shadow systems on campus that require some infrastructure, but lots of time in cleansing and integrating data sets. By performing this work and exposing it in the EDW, time is saved all over campus.

Instill a culture of continuous improvement that leads to high quality performance and outcomes. Easier and more powerful access to integrated campus data will encourage greater use of data and more analytical thinking, driving a culture change rewarding factual analysis and devaluing anecdotal assessment.

B. Identify any other anticipated benefits in implementing the proposed solution.

The HR, Budget and Planning OE Initiative are depending upon the EDW/BI solutions.

C. Identify the risks of not implementing the solution.

- Inability to track goals through performance metrics.
- Lack of information causing reduced decision making capabilities.
- Reporting was never robustly implemented to go along with the HCM rollout, leaving workarounds, and inadequate reporting for the HR community, managers, and campus decision makers.
- Incurred additional cost of supporting multiple reporting platforms.

D. Describe the constituency that is intended to benefit from the proposed solution (e.g. students, faculty, staff, 1-many units)

This is a campus-wide solution that will benefit campus staff, faculty, researchers, and executive-level administrators. It will increase their ability to easily access consistent established answers derived from integrated campus-wide data. It will reduce the time spent by analysts integrating, validating, and cleaning-up data, and free them to spend more time on value-added work. Everyone making decisions on campus will be working with more accurate and consistent data, reducing doubt created by inaccurate and/or conflicting data, and reducing time wasted by such. Examples are UC Berkeley's cabinet (viewing financial trends), Advancement (more revenue for fewer dollars spent), students (student, department and UC trends) faculty (student and teaching trends), staff (integrated data from finance, student, HR, advancement etc.)

E. Describe the extent to which this proposed solution is a collaborative effort either within campus or with external partners.

This project will be a combined effort of input and resources from: The Office of Planning and Analysis (OPA), Human Resources, Budget and Planning and Information Services and Technology (IST).

Campus analysts and management representing the breadth of campus groups using the data under development will be included in data requirements, report and dashboard design and QA testing to ensure the deliverables are meeting the requirements of the campus.

F. If applicable, describe how the proposed solution may enable additional projects to be considered.

The EDW will become essential as a source of reliable data on which to assess current and future projects. It will be able to provide the reliable data needed for meaningful cost-benefit and performance analysis, and establishment of baselines. As other data-driven initiatives emerge they will benefit by the existence of the EDW foundational subject areas. As more and more data is added, people will increasingly rely on it to answer cross functional area questions rather than copying data and looking for the needle in a haystack. Over the long-haul, it could well prove to be the campuses biggest cost savings project.

G. What is the impact of the proposed solution on the existing systems and processes? Does it eliminate the need for existing systems and processes?

- This solution reduces the redundant reporting within the current BAIRS platform.
- Retiring Hyperion will reduce maintenance and hardware cost to support multiple reporting platforms.
- As completion of this project progresses, the need for localized data needs is reduced and their retirement is expected.
- Other Hyperion customers utilizing BAIRS against their own data (not data warehouse data) would need to replace their current reports utilizing Oracles BI publisher or other solution.

H. What is the impact on the proposed solution on the workload?

Profile/Impact in hours	Current Workload	1-time workload requirement	Ongoing workload requirement
Student	None	None	None
Staff	Run reports as needed	Training, requirements and testing if on project team. Online training is estimated at 2 hours for general users and an additional 4 hours of classroom time for advanced ad hoc users.	Estimate 5% efficiency gains for moderate users. Estimate 5-10% efficiency gains for frequent users of student, procurement, HR and/or financial data.
Faculty	Run reports as needed	Training is estimated at 2 hours for general users	No change - run reports as needed

IV. WORK PLAN AND PROPOSED SOLUTION DESIGN

A. Provide a statement of:

- Deliverables — results the solution must deliver to achieve the stated objectives.
- Constraints — factors that may limit the options for providing the solution (*e.g., an inflexible deadline*).

General Deliverables for All EDW Projects

- **Project Phases** - Projects will be broken up into small deliverables over the length of the project to better enable course correction of deliverables.
- **Data** - New data will be integrated with other subject areas in the enterprise solution allowing cross functional analysis and a consistent cross-campus view. Detail and summaries will be made available to support campus needs. See section 4C for details.
- **Reports & Dashboards** – New development for reports and dashboards will be performed in OBIEE Cal Answers. This solution will deliver certified and re-usable metrics that will measure goal achievement. It provides faster ad-hoc reporting development for campus analysts and drill-down capabilities for all users.
- **Security** - Utilize the recently deployed and flexible EDW security model to meet the expanding data security needs of the campus. Provides information that people need while protecting sensitive data.
- **Metadata** – Capture business and technical metadata and expose through reports and in mouse rollover in OBIEE Cal Answers.
- **EDW Access Request** – For all new data, work with the Identity Management team to utilize the EDW Access Request system, a web-based workflow that assigns security roles based on data proprietor approvals.
- **Tool Training** – Create online training for the OBIEE tool. Create online and classroom training for ad hoc report development in OBIEE.
- **Subject Area Training** – Create online and classroom training for new data, reports and dashboards. Provide tier 1 training to the Service Desk.
- **EDW Support** – Develop a Service Level Agreement (SLA) which defines roles, responsibilities, and processes related to ongoing support of the EDW and BI services.

General Constraints for All EDW Projects

- **Funding** – Project work can start when one-time work is funded and a source of ongoing funding is secured.
- **Project Resources** – EDW/BI projects require a great deal of time in concentrated blocks from data proprietors, functional subject matter experts and technical staff. External project teams will be utilized as much as possible to staff EDW projects and backfill or provide functional and technical expertise, but dedicated oversight is required by both functional and technical leads.

HR & Finance Deliverables:

- **Data** - Convert localized data structures to enterprise integrated solution.
- **Reports and Dashboards** – Develop business requirements for new metrics, operational reports and management dashboards in support of campus goals for HR and Finance. Review existing reports and enhance to satisfy business needs.
- **Hyperion IR Retirement** - Evaluate and recommend reporting solution for other departmental users.

- B. Provide a work plan for the proposed solution with high-level steps to complete the solution, including timeline. (Try to limit your plan to no more than seven steps.)

HR & Finance

	Milestone	Responsibility	Timeline
1	Project Funding Approval		
2	Functional Reporting Requirements & Business Definitions	Functional teams (Finance & HR)	Month 1 – Month 2
3	Data Requirements / Source System Analysis	IST Data Warehouse teams	Month 3 – Month 4
4	Data Architecture	IST Data Warehouse Architect	Month 3 – Month 4
5	ETL Development	IST Data Warehouse ETL team	Month 5 – Month 18
6	BI Development	IST Data Warehouse BI team	Month 9 – Month 19
7	Metadata Development	Functional teams (Finance & HR) & IST Data Warehouse teams	Month 9 – Month 19
8	QA Testing Training Development & Implementation Service Desk Support Communication	Functional teams (Finance & HR) & IST Data Warehouse teams	Month 13 – Month 21
12	Project Assessment		

- C. What are the data requirements for the proposed solution?

Source System(s) / Estimated # of Tables from source system/ Estimated tables for Data warehouse:

- BFS / 354 tables / 200 + tables
- HCM / 75 tables / 73 + tables
- PPS / 46 tables / 40 + tables

Additionally these tables will be used to create an organized subset of data used by OBIEE to present the data in a user friendly method.

- D. What are the technical requirements for the proposed solution?

This proposal will likely result in requiring:

- Additional database storage
- DBA participation to create tables, views, and performance tuning activities.

- E. What are the greatest risks for the proposed solution and the plan to reduce or eliminate the risks.

	RISK	MITIGATION PLAN
1.	One Time and Ongoing Funding	Seek OE one-time funds. Seek incremental ongoing costs from the revised look at the financial model which may include this either from common good funding, or from a more robust allocation to decision making and data infrastructure. If for some reason the financial model is not revisited and no additional funding is available, the funds allocated for enhancements will be utilized for baseline support until common good funding is secured.
2.	Functional and technical resources are not available and/or skilled.	Hire outside consulting to fill in gaps in skill set and resources.
3.	Campus resists using a new BI tool (OBIEE Cal Answers)	Curriculum design including the development of online and facilitation of classroom and drop-in training is essential. Developing support from change leaders who will utilize the certified reports is equally essential.
4.	Expectation Management / Project	Existing EDW management can concurrently oversee 2-3 large projects. Given

	Management	the perceived campus demand, the EDW projects include extra management support (project management, technical leadership).
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F. How does the proposed work plan allow for evaluation and course correction to ensure the outcomes meet the campus needs?

Each project will have a Project Manager, Project Sponsor and executive EDW Sponsor who will oversee the work effort. The project plans will be developed with milestones to ensure the data deliveries and basic report deliveries are on track.

V. CHANGE MANAGEMENT

A. What is the change management plan to successfully implement the outcomes of the proposed solution?

- Strong communication plan through list serves, updated websites, consistent updates on progress of projects and marketing quotes from thought leaders.
- Development of a solid training program: Forums to prepare the campus. Online, Classroom training for the tool AND the data and drop-in workshops. Advanced training for ad-hoc report development.

B. What incentives and/or disincentives are proposed to influence behavioral changes necessary for the successful outcome of the proposed solution?

- The ease of obtaining integrated information and identifying trend over time will be incentive for staff, faculty, researchers, and executive-level administrators to use a central repository of certified data and reduce the dependency on create their own set of informational data systems.

C. Who has been identified as the change leaders and implementers to carry out the changes necessary for the successful outcome of the proposed solution?

- Senior management in Controller's Office, Finance and Planning, Human Resources, Cabinet provide support for reviewing certified reports and data from EDW.

VI. FUNDING MODEL AND BUDGET

A. Could the proposed solution move forward with partial funding? If yes, describe the revised scope, including the associated savings impact.

This proposal has been developed with fully-costed estimates.

Partial funding of the following individual projects is possible by limiting the scope of data sources incorporated into the EDW. Based on input from functional owners and IST, the IDC would prioritize the data to be incorporated into the EDW.

B. What is the plan for sustainable funding to support ongoing operations of the proposed solution?

The EDW/BI function is seeking common good funding to cover the incremental ongoing costs for approved projects.

C. Please download and fill out the OE Resource Request Budget Template located at [location] and follow the instructions on the first worksheet in the workbook to complete the budget ant line descriptions. Include both completed sheets with the Resource Request.

VI. ASSESSMENT PLAN

Please use the table below to detail your metrics.

METRIC CATEGORY	SPECIFIC MEASURE	MEASURE BASIS	DATA COLLECTION METHOD	DATA COLLECTION FREQUENCY	FUNCTIONAL OWNER OF DATA COLLECTION	LARGER GOAL TO WHICH METRIC RELATES
FINANCIAL PERFORMANCE						
1	Hyperion IT Cost Savings	Project	Financial Reporting	Upon completion of project	IST EDW	
2	HR and Financial Analyst Time Savings	Project	Survey	Annual	OPA	
OPERATIONAL PERFORMANCE						
1	# Reports Run for HR & Finance		OBIEE Stats	Monthly	IST EDW	
2	# Users for HR & Finance		Database Stats	Monthly	IST EDW	
CUSTOMER SATISFACTION						
1	Data Accuracy, Reliability	Project	Survey	Annual	OPA	
2	Student, Procurement, HR & Finance Report Benefit	Project	Survey	Annual	OPA	