UCMERCED

BUDGET FRAMEWORK INITIATIVES: ACTIVITY-BASED COSTING

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OVERVIEW

As part of the Budget Framework developed in 2015 between the Governor and the University of California, UC Riverside committed to pilot Activity-based costing ("ABC") on its campus.

UC Merced and UC Davis are engaged in a scoping process to determine the feasibility of deploying a similar pilot study. UC Merced believes that the success of this project would include a multi-year effort that leverages the practical implementation and utilization of this analysis on the Merced, Riverside and Davis campuses. Ultimate success will be achieved when the analytical approach is proven to be useful from an operational standpoint, is scaled broadly across the pilot campuses and adopted at additional campuses.

UC Merced evaluated several aspects that will be required to deploy a pilot study, such as data requirements, time and effort, necessary expertise, and specific pilot academic programs. While there is potential to deploy a successful ABC pilot study at UC Merced, significant resource challenges would need to be addressed in order to commit to the study.

As a growing campus, UC Merced has to prioritize human and financial resources to continue its trajectory toward self-sustainability. UC Merced's commitment to enrollment and physical growth also continues to be a priority. Implementation of the ABC pilot study will require significant project management and information technology expertise that UC Merced does not currently possess. For these reasons, UC Merced will need to outsource technical expertise in order to successfully implement the ABC pilot study.

The cost of the pilot study has been estimated at $5.2 million. As the projected costs are outside of what the campus anticipated to invest in software and implementation costs for the next two years, UC Merced will seek financial assistance for to successfully implement this initiative.

With regards to time to completion, UC Merced has determined that given the complexity of this project, existing resources and competing demands, successful completion of the pilot project by the December 2017 Budget framework deadline cannot be met. In order to realize the benefits of the project, the campus anticipates that it would require a minimum of 24-36 months from the planning to implementation phase.

PILOT ACADEMIC PROGRAMS

For the selection of the pilot programs, UC Merced narrowed its focus to large programs that also reflected the diversity of its three schools.

UC Merced's programmatic nominations for the scoping analysis are:

- Psychology (School of Social Sciences, Humanities and Arts)
- Chemistry (School of Natural Sciences)
- Computer Science (School of Engineering)

These programs were selected in consultation with the campus Divisional Council of the Academic Senate and academic administration. Under an assumption that the pilot project will yield valuable insight into the resource requirements of campus programs, this approach will enable the campus to scale the analytical approach quickly.

DATA REQUIREMENTS

UC Merced's Information Technology ("IT") department reviewed the data elements required for ABC for this scoping study. Overall, it was determined that UC Merced collects the individual data elements required for the pilot study. However, the data needs for this project will require that several data source systems be integrated. As a result of the emergent nature of UC Merced's information architecture developed over the past 10 years, UC Merced's data architecture lacks considerable structure and standardized definition. Therefore the data extraction efforts will require additional time.

Success of the ABC pilot study will be dependent on the successful creation of an extraction platform and mapping modules, and will require substantial effort to remediate the shortcomings of UC Merced's current data architecture. As a result, our readiness to build on top of this architecture is limited and risks duplicate work effort, sub-optimized work effort, and invalid data if broad agreement and governance of data definitions has not been firmly established as the basic building blocks to accurately represent institutional units, activities, etc.

In addition to IT staff, significant interaction with data owners and subject matter experts will be expected in order to pull the correct data. In order to overcome these challenges, UC Merced has determined that it will require approximately 12 to 24 months to successfully design and build an integration platform that coordinates the source systems where the data resides. At least three full-time IT resources would be devoted to this effort.

UC Merced reviewed the broad data requirements and reached the following conclusions:

- ○ **Student Enrollment Data:** It was determined that the data would be accessible for the purposes required.

- ○ **Student Timetabling/Scheduling Data:** It was determined that the data would be accessible for the purposes required.

- ○ **Human Resources/Payroll Data:** It was determined that the data would be accessible for the purposes required. However, this data source, data set and data model will be altered considerably with the implementation of UC Path. UC Merced is scheduled for Wave 1 pilot release in March 2017. The resulting impact on a change to the data source system to a ABC pilot study will have to be quantified as we near the implementation of UC Path.

- ○ **Facilities/Asset Data:** It was determined that the data would be accessible for the purposes required. However, this data set is in the process of being fully validated by the data owners and is in great flux given shifting space allocations driven by UC Merced's growth state pending new capital projects.

- ○ **GL/Financial Data:** The ease of accessibility of this data is unknown at this time. It was determined that user input would be required to ensure the correct fields would be obtained. Assistance from UCLA would be required as this data is stored in a UCLA supported QDB database

COST ALLOCATION METHODOLOGIES

Activity-based costing requires that costs be allocated to each of the activities. Similar to UC Riverside's efforts, the campus would have to develop cost allocation methodologies. UC Merced would essentially create a parallel process (to the data requirements processes described above) to develop the methodology, create test cases and vet them through a campus process. Again, given that UC Merced has been in a state of growth, the cost of ramping up the University might skew initial evaluation of the costs. UC Merced would have to devote a financial analyst to this effort and estimates approximately 18 months from planning to implementation and integration with the ABC pilot project. The UC Merced Budget Office does not currently have the capacity to engage with campus stakeholders to develop the cost allocation methodologies. Therefore, the campus would have to outsource this project.

ABC MODEL DEVELOPMENT

In order to determine the cost and resources needed to develop the ABC analytical model, UC Merced intends to use an outside consulting firm. UC Riverside engaged Pilbara Group and Grant Thornton as the firms to develop their model. Based on UC Riverside's experience, the development of this model requires a dedicated project manager in order to successfully implement the pilot study. The associated costs with the development of the model assume that the current IT infrastructure would support the ABC model. If through the engagement of a firm to develop the model it is determined that additional improvements to the infrastructure are required, UC Merced proposes a contingency be established in the project cost to mitigate that risk. The timeframe for the model development is estimated at approximately six months.

PROJECT IMPLEMENTATION

In order to implement the scoping study, UC Merced will need to outsource various areas of expertise, as it currently has limited resources available. The campus does not have an established Project Management unit and a project manager is a key requirement for the development of the model.

In addition, UC Merced's Information Technology department has had significant attrition over the past year as it has embarked on a multi-year, organizational restructuring as part of UC Merced's strategic workforce plan. As IT re-establishes the workforce needed to service campus needs, the department will need to outsource the positions required to ensure that the data is made available for the success of the ABC project. At present, UC Merced's Information Technology department supports one full-time employee responsible for the management of the Operational Data Store. Staffing for institutional data analytics is located outside for the central IT organization and maintains the current data warehouse, ETL ("Extract-Transform-Load") functions, and reporting services.

In addition to direct IT resources, there are several IT projects that will also require considerable time commitment from functional subject matter experts and management staff; including UC Path, the redesign of the Operational Data Store, migration of the Banner Student Information System ("SIS") to a hosted service and the Phase 2 design of the Cross-Campus Enrollment System.

The implementation of these projects had been deemed a business priority in order to mend the data architecture flaws described above, to provide better service to the campus, improve the efficiency of the units served and to be able to have dependable systems and processes to run the University's business.

Furthermore, several of these systems are of the same type required to run the ABC pilot. As such, the coordination of these efforts at the same time will inevitably result in duplication of efforts and re-design of established processes. These tasks have been quantified in the timeframe for implementation of the ABC pilot study. Three full-time analysts would be required to manage tasks and to interact with the subject matter experts on campus and the consultants chosen to develop the cost methodologies and the ABC model.

ESTIMATED COSTS

The project implementation timeframe can range from 24 to 36 months. The implementation timeline would consist of key activities outlined below in *Table 1 - Summary of Cost*s, but does not account for precedent activities required to procure outsourced support. Accounting for these precedent activities would add an additional 6 to 8 weeks to the timeline.

The costs for outsourcing resources outlined in this document are based on estimates received from the vendors and fees identified in existing contracts providing comparable services.

In addition, costs associated with internal resources have been quantified to provide a comprehensive cost and an anticipated impact of the project on campus resources.

TABLE 1 – SUMMARY OF COSTS

Key Activities	Estimated Costs
Data mapping and extraction	$1,075,200
Cost Allocation methodology development	$540,000
Project Management	$2,500,000
ABC model development and implementation	$492,000
Campus Internal Consultation	$125,000
Other costs	$85,000
Contingency	$500,000
TOTAL	**$ 5,167,200**