The Kuali Project

[Noun]: Kitchen wok – humble utensil which plays an important role in the successful kitchen
www.kualiproject.org

28 February 2005

A proposal to the Andrew W. Mellon Foundation

By
Indiana University

Brad Wheeler
Associate VP & Dean

John (Barry) F. Walsh
Senior Director

Franklin Hall 116
601 E Kirkwood Avenue
Bloomington, IN 47405
812.855.3478 - bwheeler@iu.edu

In Partnership With

Cornell University
Joanne DeStefano
VP for Financial Affairs

The University of Arizona
Charles Ingram
Assistant Vice President
Financial Services

Michigan State University
David Brower
Assistant Vice President,
Chief Financial Officer and Controller

The University of Hawaii
David Lassner
Chief Information Officer

San Joaquin Delta College
Lee Belarmino
Assoc VP for Information Technology

National Association of College and University Business Officers (NACUBO)
James Morley
President

1. Executive Summary

The Kuali Project will develop a modular, open source financial information system, training materials, financial policy templates, and implementation guidance that are explicitly designed for the unique needs of higher education. The project is porting and extending a proven financial system design that has been in use for over 12 years and that is suitable for colleges and universities of all Carnegie classes. The project will be developed over 2.5 years using the Community Source model for pooling institutional and foundation investments. The $7.2M Kuali Project seeks $2,500,000 in matching funds from the Andrew W. Mellon Foundation to leverage $4,700,434 in college and university investments. The open source Kuali Project software and materials will ensure that colleges and universities of all sizes have economically-viable access to fiscal management tools that are designed for higher education institutions.

2. Project Motivations and Contributions

Prudent fiscal management, enabled by skills, policies, and efficacious financial information systems, is a necessity for colleges and universities. Accurate budgeting, forecasting, accounting for uses of funds, and providing information for decisions can affect an institution's ability to hire faculty, expand or contain degree programs, and ensure public trust. The costs of developing and implementing fiscal prudence can itself become a drain on the academic treasury through the cost of policy development and enforcement through personnel training and appropriate information systems. One size does not fit all, and institutions need guidance, best practice, and flexible tools to adapt to achieve their own particular missions.

During the past decade, institutions of higher education have invested many human and financial resources to replace aging and often "home grown" administrative applications with suites of vended software known as Enterprise Resource Planning (ERP) systems. Financial systems are offered as one major module of ERP software. Recent studies indicate, however, that many of these ERP implementations have been very costly to the academic treasury. They have also been disruptive as institutions adapt policies and processes to fit the software rather than use the software as a tool to achieve their own objectives.[1]

For example, in Indiana University's peer group, estimates of the implementation costs for an integrated ERP suite range from $60M to more than $120M, with a $15M-$40M range for any given major module. In addition, many campuses with mature legacy systems are finding that the new applications have actually *reduced* rather than enhanced the functionality used by administrators to manage colleges and universities. The inflexibility of the systems, particularly for the financial module, stems from adapting vended software that had its genesis in corporate finance to the very unique needs of higher education. This imposes enormous up front and on-going costs on the academic treasury.

The alternatives to buying off-the-shelf packaged financial software can be equally daunting. Institutions take on the full cost of building or extending their existing legacy financial system and solely bear all of the maintenance costs. Some institutions have chosen this path rather than conforming institutional processes to packaged software.[2]

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[1] Kvavik, R. B., Katz, R.N. (2002). *The Promise and Performance of Enterprise Systems for Higher Education*. EDUCAUSE Center for Applied Research, Research Study, 2002(4).
[2] Lightfoot, Ed & Salaway, G. (2003). A different kind of ERP: Extending and renewing legacy systems. EDUCAUSE Center for Applied Research. Research Bulletin, 2003(5).

The Kuali Project proposes an attractive and holistic solution alternative to these dilemmas for prudent fiscal management. We propose to pool institutional and Andrew W. Mellon Foundation resources to develop a complete package of fiscal management tools that serves the needs of all sizes of colleges and universities. The $7.2M Kuali Project seeks $2,500,000 in matching funds from the Andrew W. Mellon Foundation to leverage $4,700,434 in college and university investments.

Doing More With Less

Colleges and universities are under extreme pressure to deliver a broader array of services with constrained ability for resource growth from tuition, grants, endowment returns, and taxpayer subsidy. Accomplishing this requires efficacious IT systems that meet the needs of higher education *and* systems that are cost effective to acquire, implement, and evolve over the 10-15 year lifecycle of those systems. Implementation costs often comprise more than 80% of the initial cost of a system and represent a critical leverage point for reducing the educational funds devoted to the necessity of administrative systems.

> **Colleges and universities do not presently have a financial systems option that provides an economically sound approach to system acquisition, implementation (including training), and maintenance/integration costs over many years.**

This is a bold statement that is backed by considerable higher education experience in recent years. Many of the present commercial offerings for college and university financial systems are retooled corporate systems that do not fit the complex needs for fund-based accounting in colleges and universities. Many of the constructs of corporate accounting do not apply and frankly hinder effective fiscal practice for higher education. For example, higher ed needs both single year (annual budget cycle) and multi-year (contracts and grants) accounting for a complex array of distributed financial centers (e.g., schools, research centers, service programs, internal administrative services, etc.) that operate under a variety of centralized and decentralized revenue, expense, and authority schemes. Management of this data needs to be robust to fiscal year end closings, government-mandated grant accounting (e.g., NSF, NIH), and internal audit for compliance with GASB, FASB, and sometimes state standards. The current commercial offerings *do not have the capabilities to support the complex needs of colleges and universities without expensive implementation costs.*

Fit-gap analyses between current commercial offering and university needs document the following realities:

1. There are deep gaps that represent a fundamental design chasm between university accounting and corporate accounting functions and processes. Commercial products are marketed as common or tailored products to corporate, federal government, state governments, and higher ed. It is not possible to fix many of the major gaps in the design of the system without creating large gaps for other market segments, and this would be against the economic interest of the vendor that prefers to sell a single product line.

2. Closing these gaps requires changing college and university processes that may be detrimental or even impossible for an institution, changing the code of the application (customization); or "bolting on" additional side modules.

    - Evidence show that these gaps ultimately have to be closed one way or another for the conduct of the academy. For example, one major Big Ten institution that spent well over $100M on a leading ERP has seen its users invest in numerous, undocumented "shadow systems" in schools and centers to even obtain the requisite information required for operations and reporting. Another commercial financial system

implementation at a private university led to researchers going for over six months without any multi-year reports of their grant expenditures. The university scrambled to commit millions to write add-on modules to generate the reports and fill the gaps.

- Customizing the commercial code creates a recurring charge against the academic treasury. Every change – even seemingly innocuous ones – requires continuous analysis, testing, and revision of all customizations for every vendor upgrade to the software.
- While all systems are likely to face some customizations for the needs of complex universities (including Kuali), some estimates believe that up to two-thirds of these customizations for financial systems are necessitated by the genesis of the system being designed for corporate rather than university accounting needs. Thus, a system that is designed specifically for the needs of higher ed could dramatically reduce the number of customizations and their recurring demands on the academic treasury.
- When customizations or additional code is required, the cost and complexity of making such changes are far greater when vendors do not reveal their data model or source code over open source software. Even when colleges and universities are savvy enough to negotiate for source code access, major parts of related components are still concealed. Commercial software licenses also enjoin colleges and universities from sharing customized code with other colleges and universities. Thus *every* institution that needs various customizations often pays to write or procure consulting services to close the gap.
- Open interfaces between modules also represent a large cost of implementation. Financial systems are near the heart of all university operations, and by necessity, they obtain data from many feeder systems (e.g., payroll, student tuition billing, auxiliary service units, etc.). Open interfaces that have published Application Program Interfaces (APIs) are much less expensive to manage for integration with feeder systems over the years than closed systems where the APIs are only partially exposed and are constantly changing per a vendor's timetable.

3. Conversion Costs represent the large task of mapping existing institutional data to the data model of the new software.

    - Existing institutional data must be carried forward into a new system. To the extent that existing institutional data fits with the data model for a new financial system, data migration may simply be just a lot of transfer work.
    - If the new system has a data model that is not based on the specific needs of higher ed, then colleges and universities must engage in extensive data modification and conversion to map onto the new system while still maintaining audit integrity. A good data model fit can mean more than a 50% reduction in the conversion costs that are a large part of the overall implementation costs.

4. Consulting costs with specialized knowledge of proprietary software – often from the software vendor – represent an enormous implementation cost.

    - For some implementations, consulting costs can represent 30-45% of the overall cost. The prices for boutique consultants vary from $100 to $250 per hour based on market demand – which gives some indication of price elasticity in the real cost of providing the service.
    - Open source software with an open data model provides an enormous leveling effect for market-based consulting prices among vendors for academic contracts. This broadening

of the consulting and support market to expertise around open financial software can save the academic treasury $100,000's to millions of dollars.

5. Vendor-imposed forced software upgrades and product line revisions are extremely disruptive and expensive.

    - Colleges and universities would like to be able to implement a system and then use it with few modifications for a long period of time. Vendors often impose feature creep or a need to sell an upgrade. This imposition – often required – is a very disruptive drain on the treasury ($1-2M for some universities) that does not add value for the needs of the institution.
    - Corporate CIO advisors to colleges and universities (and higher education officers as well) are now counseling extreme caution in the former belief that single vendor, integrated systems are superior to best-of-breed solutions with open interfaces. Each vendor or system may have certain strengths that best solve college and university problems via simply integrating via interfaces rather than taking a monolithic, integrated approach.
    - Vendors may choose to merge product lines (or companies) for greater efficiencies that again impose disruptive costs on higher education.
    - There is considerable concern regarding the ERP marketplace consolidation today and the effects that "vendor risk" may impose university systems. Early signs from the Oracle-PeopleSoft acquisition suggest very expensive and highly undesirable costs being imposed on higher ed that in no way advantage colleges and universities.

All of these concerns are beyond the even basic cost of software licensing that can range from a few $100,000's to millions of dollars annually. Thus, an open source approach for a financial system that has its design genesis addressing higher education requirements can save colleges and universities hundreds of millions of dollars across the industry. With open source, colleges and universities can also share their software work across the community as is consistent with the higher ed value of knowledge sharing. The leveraged savings accrue primarily from implementation and maintenance cost savings over the life of a system more than just savings from the up front license.

Community Source…Solving Challenges Together

The Kuali Project is modeled on the organizational design of the Sakai Project. Its thesis is to pool college and university investments and leverage them with external resources to create a sharable solution that is of, by, and for higher education. As a community source project, Kuali will employ the development principles of open source software with the project management of institutional investments of cash and staff time. The Sakai Project, the Open Source Portfolio Initiative (OSPI), and others are perfecting the community source approach to pooling resources, knowledge sharing, leveraging technical and user support, and working with commercial companies to create attractive solutions for higher education. The software work products of community source are licensed for royalty-free use, modification, extension, or derivative works by institution, company, or individual using the Open Source Initiative approved Educational Community License.

Planning Grant Insights

The Kuali Project builds on the insights of the November 2003 grant from the Andrew W. Mellon Foundation to the National Association of College and University Business Officers (NACUBO). The planning grant report assessed four topics:

1. Higher education market readiness for an open source approach,
2. IT technical and system feasibility of an open source financial system,
3. Functional scalability, operational, and business requirements of such a system, and
4. Scope, timeline resources, and deliverables of an open source financial system.

In summary, the market research conducted in December 2003-February 2004 and completed in April documented:

- 25% of NACUBO survey respondents would likely be implementing a new financial system in the next three years.
- "Ambivalent affirmation" among financial officers for open source solutions, but to the extent that people really understand open source, they think it could be useful
- 53% had already implemented a new administrative system in the past three years, but 21% of respondents indicated likely need for a specific financial system module (e.g., contracts and grants, purchasing, etc.)
- 83% cited cost of vendor maintenance agreements as a concern
- 74% cited customization requirements to adapt package solutions as a concern.

The survey and an expert roundtable also observed a perceptual belief in the value of an integrated suite of ERP modules (HR, Student, Financial). The survey responses, investments, and actual behaviors were demonstrating that many were actually using a best-of-breed approach for the modules required to meet institutional needs.

The timing of the research preceded announcement of several 2004 open source projects for higher education, a flurry of educational articles in *Business Officer, EDUCAUSE Review,* and *Syllabus,* and greater adoption of open source in the corporate sector. As a whole, the research documented cautious interest and growing readiness for open source solutions.

Project Contributions

The Kuali Project will deliver a comprehensive set of tools for fiscal management for colleges and universities:

- Kuali Fiscal Officer Training Series
- Kuali Financial Policy Templates
- Kuali Modular Financial System Software
- Kuali Implementation and Migration Best Practices Guide

Kuali Fiscal Officer Training Series

The Fiscal Officer Training series is an essential tool for improving college- and university-wide understanding of prudent fiscal management. The series will be based on and adapted from the proven curriculum that has been used for several years at Indiana University. For example, one module is a 3.5 hour internal controls workshop. The materials will be available in template form for use and adaptation to the needs of colleges and universities.

Kuali Financial Policy Templates

Developing, communicating, and ensuring proper use of fiscal policies is also an essential part of overall fiscal prudence for colleges and universities. The Kuali Project will provide a template set of financial policies that are already in use at Kuali Core Partner institutions. These templates can then be used as the basis for communicating and implementing prudent fiscal policies that are tailored to the specific needs of colleges and universities. The policy templates will align with the Fiscal Officer Training Series and the operation of the Kuali Financial System Software to provide a complete tool kit for implementing fiscal prudence.

Kuali Modular Financial System Software

The Kuali software will be a highly modular set of financial system capabilities that serve specific needs for colleges and universities. This allows institutions to implement only those capabilities that are needed for the institution. A small college may only need General Ledger, Payables, and Budgeting where a large, multi-institution university may need everything. Its design for higher ed effectively precludes it use in corporate settings.

Kuali Core Modules:

Kuali Software Modules and Capabilities include a set of core modules that provide the necessary financial capabilities for smaller colleges and universities that do not need research tracking, labor reporting, or other more sophisticated capabilities. These modules alone create a lean administrative system which comply with fiscal management standards and obligations. These modules include

- Chart of Accounts/General Ledger/Transaction Processing
- Workflow
- Basic Decision Support/Reporting

Kuali Add-on Modules:

Colleges and universities of even modest size often choose to extend the core financial system with modules that service other needs. These modules can be added when and if an institution needs them, and it is typical that a major research university would use all of them.

- Accounts Payable
- Accounts Receivable
- Budgeting
- Capital Assets Management
- Endowment
- Enhanced Decision Support/Reporting
- Labor Distribution
- Purchasing
- Research Administration / Contracts & Grants

Core Module Descriptions

- **Chart of Accounts (CoA):** This is where an institution defines the way (level of granularity) by which they will track financial activities. Each transaction is coded with a "CoA string" that uniquely ties it to the appropriate entity in the institution. The CoA is also the way in which the financial "organization structure" of an institution is defined because of the complex mapping process that ties financial accounts to the correct fund group and organizational unit. It is this

feature that enables rollup of financial data to provide institutional financial reports. Kuali features a very flexible multiple charts of accounts capability that can accommodate the needs of any Carnegie Class institution as well as multi-campus institutions.

- **General Ledger (GL):** The General Ledger represents the official repository of financial information about the institution. It records all transactions and maintains balances at multiple levels of detail, for current and past fiscal years. It also contains balances for base and current budget so that budget versus actual analysis may be done. The multiple balances include accounting, internal and external encumbrances, and base and current budget. These balance types allow for budget to actual variance less encumbrances for full fiscal analysis to occur. The GL is source of the financial report for the institution.

- **Transaction Processing (TP):** Transaction Processing is the term used to describe the software components that are used to actually perform online, real-time financial transactions. Among these might be Budget Adjustments, Transfers of Funds, Journal Vouchers, Purchase Requisitions/Orders, Capital Asset entries, Accounts Receivable or Accounts Payable entries, etc. This is the heart of the Kuali initiative and where the bulk of the work is to be done.

- **Workflow:** Workflow is the piece of infrastructure software that enables the financial transactions discussed in TP above to be routed around through the institutions hierarchy for appropriate approval. This is what leaves the authorization trail for the life of the system. This Workflow engine can also be used to route electronic transactions for any other systems within the institution and for example, is used to route the 23 "e-documents" that front end the IU PeopleSoft HR/Payroll system.

- **Decision Support (DS):** This term describes the reporting and analysis environment used to extract data from the system and where financial reporting would take place. DS usually involves some kind of data warehouse capability and will be defined by each Core Partner according to their institutional practices.

Add-on Module Descriptions

- **Accounts Payable:** Accounts Payable is where invoices are processed for payment to vendors. Upon receipt, Kuali can route the payment request electronically to the responsible fiscal officer for their approval that in turn sets up the payment to the vendor. Upon completion of the payment, the General Ledger is updated to remove the Accounts Payable record.

- **Accounts Receivable:** Accounts Receivable is the module that tracks funds owed to the institution by various outside entities.

- **Budgeting:** Budgeting module facilitates an institution-wide annual budget construction process. It features a bottom up model where the budget is built first at the department level based on the campus guidelines and is then rolled up through schools and major units to provide the institutional budget for the year. Once this is approved by campus governance it is loaded into the General Ledger and becomes the basis for ongoing budget versus actual analysis throughout the year.

- **Capital Asset Management (CAMS):** Capital Assets Management is where all physical assets of the institution can be tracked. Depending on the level of detail desired by the institution, this may be very comprehensive or perhaps just tracks capital assets. Bar code scanners may be used to record and track assets in their physical locations.

- **Endowment:** This module is used to manage the various invested funds, their historical book and market value, and the use of the principal and earnings. Features will include investment pools, shares, and share information; data for the distribution of income, accumulated gains/losses, and fees; and principal/income account links.

- **Labor Distribution:** Labor Distribution is a sub ledger of the General Ledger that contains more detailed levels of information related to compensation than may be stored in the General Ledger. Typically this Ledger is mapped to both the Financial System and the Payroll System and represents a crosswalk between them.

- **Purchasing:** As is noted by the name, this is how members of the university community purchase goods and services. They create requisitions that are routed for approval using the Workflow engine and upon such approval become actual Purchase Orders to a vendor. This is the module where external financial commitments for those goods and services by the institution are recorded and tracked. When invoices are received for goods or services, the Purchasing System passes this information to the General Ledger as Accounts Payable (see below). Kuali will feature both web based and regular purchase capability

- **(Electronic) Research Administration (ERA) and Contracts and Grants (C&G):** These are the pre and post award research grant tracking systems used primarily at R1 institutions. In the case of Kuali, they are an integral element of the system, fully integrated with the budget and accounting system of the institution. Grants may be tracked across fiscal year boundaries.

Appendix F contains a very detailed list of the types of transactions and functionality for each module that is already in the base design.

Kuali Implementation and Migration Best Practices Guide

The final tool is an implementation and best practices guide for implementing the Kuali Tools. Every institution will face some form of migration from a legacy system, and this guide will greatly reduce the repetitive expenses that colleges and universities have historically paid to do system conversions. It is a knowledge transfer mechanism that completes the package of Fiscal Officer Training, Financial Policies, and Software to provide a complete set of tools for efficient realization of improved financial management.

Secondary Contributions

Beyond the open source software, the Kuali Project will provide an effective knowledge transfer and learning mechanism as the core institutions work very closely together in developing the Kuali Project deliverables. The insights from these collaborations will be represented in the Kuali Project materials and software that are freely available to colleges and universities (or anyone).

3. Project Execution

The Kuali Project is organized to achieve rapid work products on an aggressive timeline. Its organization, work processes, and governance mechanisms are patterned after the Sakai Project.

The Kuali software will be created with the following guiding principles to manage project scope:

- The baseline of the new system is the already proven FIS system from Indiana University with minimal change in design,
- that its financial system modules meet GASB and FASB standards,
- the system enables a strong control environment,
- thoughtful and timely changes are made to keep pace with advances in both technology and business, and
- that no one member bears the bulk of the cost for, or reaps the overwhelming majority of the benefit/profit from system development
- that an efficient governance and administrative structure is created and maintained to support the Kuali institutions with new or improved functionality, fixes, and service releases
- Kuali modules will have open interfaces for use with 'best of breed' approaches to choosing ERP solutions.

The Core Partner schools are all going to implement with the existing MF Cobol GL code, either because they already have such licenses or that in the larger scheme of things, a $20,000 license is not material.

The Kuali project will produce a license free version as part of the overall initiative and the current Kuali project plan contains an estimate (1,000 hours of development) of the work to convert this to a license free language such as PERL or Java, but it is not yet clear that the Functional Council sees this as a higher priority than other key functional elements. Accordingly, it might not make it to the top of the list for Phases I or II. Another alternative being considered is to suggest to one of the commercial partners expressing interest that they could establish their credentials by producing such a version of the GL Poster and Scrubber code.

Existing Software

The Kuali Project begins with a substantial "running start" based on prior work at Indiana University to port the proven FIS design from its mainframe origins to a new environment and J2EE platform. All of this existing intellectual property and work are being tendered to the Kuali Project to provide a large jump start to the work. This includes:

1. The Chart of Accounts, General Ledger,[3] Transaction Processing
    a. Already in production running under Unix on Oracle.
    b. The major Kuali work will be to convert the dozen or so reference table update e-Docs that maintain the Chart of Accounts.

[3] The existing GL Poster and Scrubber code runs very efficiently on MicroFocus Cobol that requires a third party, run-time license similar to other vended systems. The Core Partner schools all plan to implement with the existing MicroFocus Cobol GL code, either because they already have such licenses or that in the larger scheme of things, a $20,000 run-time license is not material. The Kuali project will produce a license free version of the GL Processor as part of the overall initiative. The current Kuali project plan contains an estimate (1,000 hours of development) of the work to convert this to a license free language such as PERL or Java, but consultations with the Functional and Technical Councils place higher priorities on other functional elements. Accordingly, it might not make it to the top of the list for Phases I or II. Since porting the GL processor from Cobol to another language is a very straightforward development task, this may be placed with another partner when a resource becomes available.

   c. Minor work will include some updates to the data model for additions to the Chart of Accounts and General Ledger.
2. The Purchasing Vendor File System
   a. "Electronic Procurement and Invoicing Center" is already in production in Java at IU with the vendor subsystem, pre-disbursement processor (consolidates and issues payments), requisition, purchase order, and integration with Chart of Accounts and General Ledger.
   b. In progress development for go-live before the end of 2005 includes B2B shopping, ordering, and payment; invoice processing; requisition processing, credit memo, and data warehousing. Is nearing production implementation at IU for 2005 and is already ported to J2EE platform.
   c. Major work for Kuali will be adding any gaps as identified by the Functional Council (see below).
   d. Minor work will be exposing some APIs for interface with any other ERP systems.
3. The Travel Management System (phase II)
   a. The back office management part has been developed in Java and is in production use at IU. Work is in progress for the front end screens for the traveler or his/her delegate to do travel authorizations and expense reimbursements.
   b. Major work for Kuali will be exposing sufficient APIs to allow adopting institutions to integrate with local travel provides. IU recently switched to Expedia.
4. Electronic Research Administration
   a. Two components, Route Sheet (grant creation/approvals) and Budget Construction, are already written in Java and in production use for pre-award at IU.
   b. Major Kuali work needs a number of compliance modules for Institutional Review Boards for Compliance matters and integration with Kuali financial modules for post award tracking/reporting.
5. Workflow
   a. OneStart Workflow has been in production use at Indiana University for 18 months. It is the interface for routing PeopleSoft HR transactions for approvals and commitment to the HR system and Electronic Research Administration routing and approvals.
   b. Major work is some retooling to make it Kuali ready for financial transactions and integration with the Kuali architecture. The U of Hawaii has already had a developer onsite at IU for several weeks in January to work side by side with the Workflow developers. This is a boost to knowledge transfer for additional Workflow development.

Indiana University is a PeopleSoft institution for Human Resources (including Payroll) and the Student Information System. IU already has in production daily integration feeds between the PeopleSoft systems and IU's financial system (FIS). This fact was particularly valued by the Kuali Partner institutions as many of them also use PeopleSoft or other vended ERP modules.

All of the above will require some work for conformance to the final Kuali Architecture from the Technical Council (see below), but development tools and frameworks are already resolved. This illustrates that the Kuali Project development begins with a considerable start on a system design and some coding of some modules. Implementation, migration, and user experiences with these modules also provide considerable insight for all four of the Kuali Project deliverables (training, software, templates, and implementation.

The system development also begins with proven, rigorous, and auditable software development and daily use processes for ensuring data integrity for a highly complex, concurrent, and distributed system.

Data integrity controls include:

1. Rigorous use of Database Management System controls for inserts, deletes, updates
2. Auditable log of transactions for each client session
3. Auditable log of approved transactions (pending ledger entries) processes against the General Ledger (GL).
4. Data reconciliation processes that look at control and hash totals of files sent between major application components.
5. Internal management reports for operations staff that provides systems assurance on transactions processed against the GL.
6. End user reports that present the data.

The financial operations staff perform daily reconciliations of the accounting cycle as well as periodic reviews of data GL and reference tables (look balanced accounts/transactions, proper attributes on key reference table values, etc

Core Partners

The core partners represent a small group of colleges and universities that are making large staff and cash investments in the Kuali Project. All core members agree to the following and have provided letters signed by high level institutional officers as part of this grant request.

Institutional Commitments

- Member must commit their matching staff resources (developers, etc.) to work under the direction of the project leadership. Tendered staff must meet specific skill needs of the Kuali Project.
- Core partners will commit to at least $500,000 of staff time and cash, though a smaller commitment is acceptable for smaller institutions.
- The OSI Approved "Educational Community License" (open source license allowing for commercialization) will be used for all work products under the scope of the Kuali initiative for which a member is counting matching contribution and any Mellon Kuali funding.
- Active participation on the Kuali Project Board, which will manage the overall project.

Cornell University has chosen to focus its efforts on the Endowment Module for Kuali. Cornell's unique experience and perspective as a private university makes this an especially suitable assignment for their lead. The existing FIS design does not have an Endowment module, so Cornell will be defining this as a subgroup of the Functional Council as a means to gather requirements from multiple colleges and universities. Cornell will work with the architectural and functional design of the Kuali Project. Like all Kuali Software, the Endowment Module could be adopted for use with any commercial or home-grown university system.

Organizational Structure

The Kuali Project organizational structure includes a Board of Directors, a Functional Council, a Technical Council, and specific leadership roles.

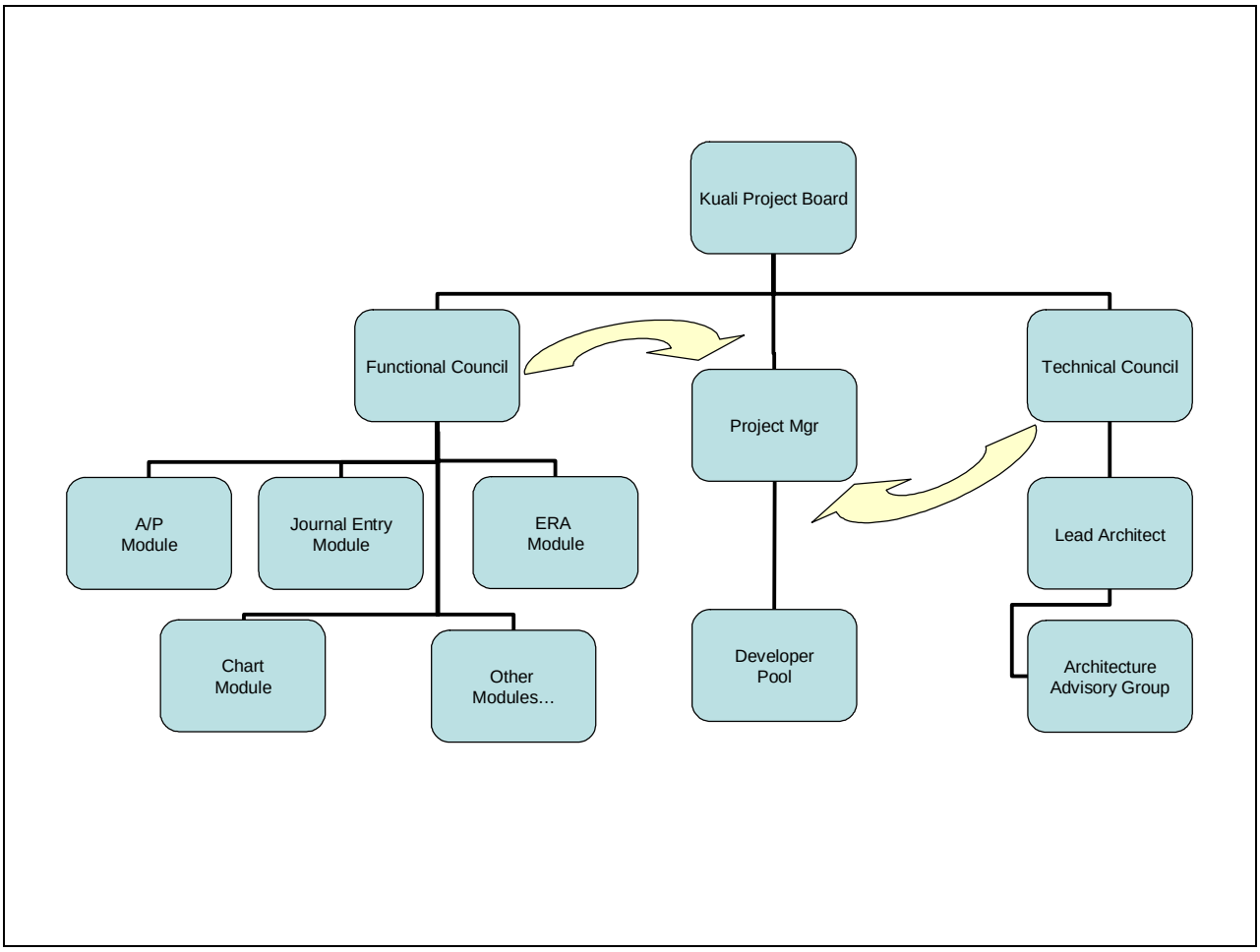

Figure 1 Kuali Project Organizational Structure

Board of Directors

During the two and a half years of the Kuali Project, the board will be comprised of a voting member from each of the investing institutions plus NACUBO.

- Brad Wheeler, Chairman, Associate VP & Dean if IT, Indiana University

- Lee Belarmino, Associate VP for IT, San Joaquin Delta College
- Bruce Alexander, Associate Director Administrative Systems, Michigan State University
- Joanne DeStefano, Vice President for Financial Affairs, Cornell University
- Charles Ingram, Finance Officer and Treasure, University of Arizona
- David Lassner, Chief Information Officer, University of Hawaii
- James Morley, President, NACUBO
- Barry Walsh, Senior Director of e-Business Services & Managing Director FMS, Indiana University

Ex-Officio Members of the Extended Board

- David Brower, Assistant Vice President, Chief Financial Officer and Controller, Michigan State University
- David Gift, Vice Provost for Libraries, Computing and Technology, Michigan State University

- Sally Jackson, Chief Information Officer, University of Arizona
- David Koehler, Director of Information Systems, Cornell University
- David Lyons, NACUBO (special advisor to the board)
- Kathleen McNeely, Assoc VP and Executive Director for Financial Management, Indiana University
- John Robinson, Chairman, r-smart group (advisor to the board)
- Elizabeth Taylor, Director of IT, Financial Services, University of Arizona

The board is responsible for monitoring all Kuali development tasks and seeing they are aligned and proceed as planned for the project. Board members also serve to ensure that any local impediments or conflicts at their institution are addressed in a timely manner. The board conducts its business and project oversight via weekly conference calls and quarterly face-to-face meetings as needed.

The board will also work with and administratively through the Functional Council, the Technical Council, and the Project Manager.

Functional Council

The Functional Council (FC) is comprised of a senior financial person from each core institution. The FC will provide overall project guidance regarding priorities and judgment calls regarding how Kuali software will work. It is chaired by a senior financial administrator who has the ability to call on appropriate staff to ensure that details are sorted out effectively for system design.

The FC will oversee Functional Module groups that are working on the detailed requirements for each module, e.g., A/P, Chart, ERA, etc. Each group will have a chairperson who is responsible for coordinating the group's work. This approach will also facilitate some universities joining Kuali as a non-core member to just co-invest in the work on a single module. They would interface at the Functional Module Groups. Each core member (and module investor) will appoint a person to each module group. David Lyons will work as a subject matter expert and go-between among the Functional Module Groups, the Functional Council, and the board.

The Functional Council members include:

- Dave Brower, Michigan State University
- Kathy Cutshaw, Hawaii
- Craig Dellorso, NACUBO
- Kathie Egami, University of Hawaii
- Joan Hagen, Indiana University
- Kymber Horn, Arizona University
- Henry Ito, University of Hawaii
- Steve Lutter, Cornell University
- David Lyons, NACUBO
- Mark McGurk, Arizona University
- Kathleen McNeely, Indiana University (chair)
- Arthur Mintz, Cornell University
- Vince Schimizzi, Michigan State
- Mary Wheeler, Cornell University

Technical Council

The core of the Kuali Project Software is a very large architectural design. The Technical Council (TC) is chaired by the Lead Architect (described below) with a representative from the Board, the Project Manager, a Lead Developer, and the Functional Council. The Lead Architect will work with an Architecture Advisory Group of lead architects from each core member. The Architect's role is to listen, discuss, reach consensus and eventually represent decisions to the Technical Council. The Technical Council is where trade-off decisions in architecture, programming realities, functional requirements, and the project schedule get resolved or summarized for the board.

Development Tools

Standards (Figure 1)

- Java 2 Enterprise Edition (J2EE)
- XML/XSLT

Tools/Frameworks

- Spring
- Struts/JSTL (or JSF?)
- Object Relational Bridge (OJB)
- jUnit
- jMeter
- Log4J

Legacy/Licensed for Phase I/II (or use Local Choices)

- **MicroFocus Run-time Cobol** license until GL Poster and Scrubber is ported to a license-free language. Priority for doing this comes from the Functional Council
- **SQL Report Writer** for sophisticated Decision Support Reporting. Many of the Core Partners use a commercial report writer from Hyperion called SQR. Institutions could use any SQL-based report writer of their choice, and many will already have a licensed report writer where the existing SQR-based reports could be tailored using any SQL-based reporting tool. The Kuali Project would like to begin shifting at least core reports (e.g., Monthly Operating Statement, Monthly Transaction Listing, etc.) to an open language. This is likely a phase III activity.

Project Manager

The Project Manager is the board's delegate to ensure execution of the project plan. The Project Manager develops, updates, and monitors the relationships of the many tasks across the project. There will be direct communications between the FC, TC, and Lead Architect as the project progresses on a daily basis. The Project Manager will also oversee the work assignments for the developers. Each core institution should designate a local lead for their tendered developers, and the Project Manager will work directly with that local lead most of the time though he may interact directly with specific developers as needed.

Lead Technical Architect

The lead architect convenes discussions related to a myriad of technical decisions that must collectively form a cohesive architecture. The lead architect has the responsibilities outlined in the Technical Council description, and ultimately must make the trade-off judgment calls to ensure overall project success.

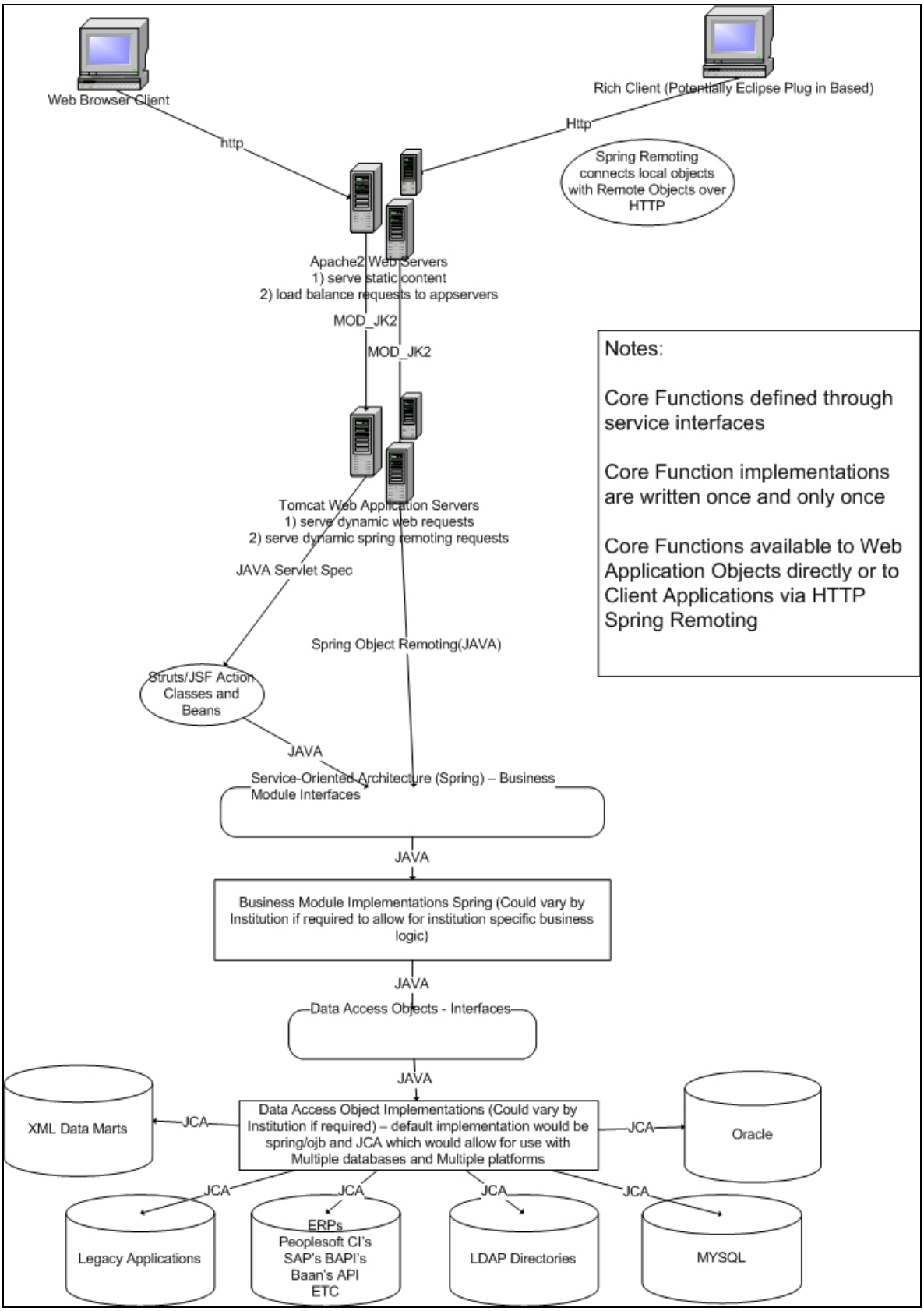

Figure 1 Technical Architecture

Relationships with Partners

The Kuali board has made purposeful plans for communicating with commercial vendors/partners, engaging a broad set of educational institutions, and clarifying the limitations of these relationships in the broader context of trends in higher education.

Commercial Vendors/Partners

Work products developed with Kuali Project resources will be available for adoption, modification, and reuse without fee subject to the Educational Community License. The Kuali Project will encourage development of commercial support in the model of the Sakai Commercial Affiliates and uPortal commercial partners. This approach will provide a marketplace for colleges and universities to acquire needed services from the commercial sector.

NACUBO

NACUBO will provide comment and guidance on the Kuali Project as it is developed. Their seat on the board and appointment of Dave Lyons as a Special Advisor to the Board from NACUBO provides the project with exceptional insight from NACUBO and its wisdom across many colleges and universities.

NACUBO will also provide conference and meeting planning for the Kuali Project. The project will subsidize the full cost of these leveraged services. NACUBO will also serve as the fiscal agent for partner cash contributions to the Kuali project.

Deliverables, Tasks, and Timeline

Figure 2 shows the proposed overall 2.5 year timeline for the Kuali Project:

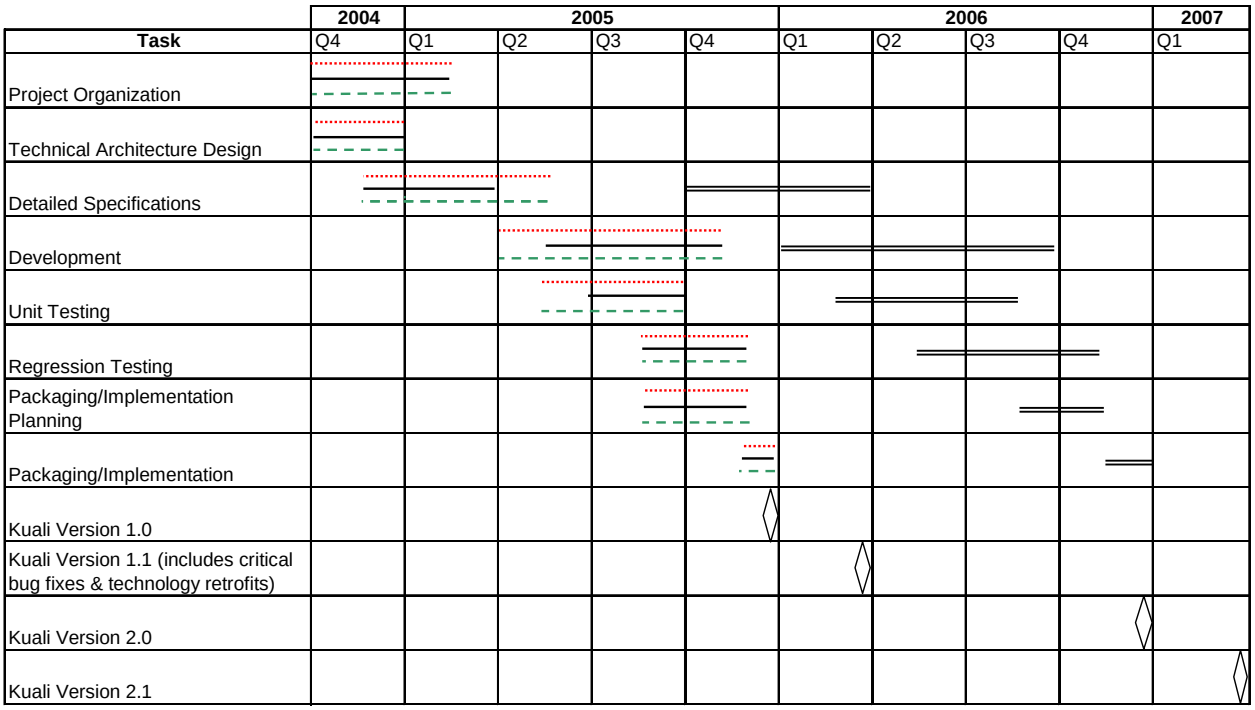

Figure 2 Timeline

4. Project Requirements and Budget

Project Resource Requirements

The Kuali Project has engaged in rigorous planning to scope the development effort to produce the Kuali Tools. The software development is the most complex component, and a detailed resource plan has scoped out the number of "man-months" required for each type of resource:

Details Omitted from Public Document

Institutional Contributions

The following table summarizes the institutional contributions from Kuali Core Partners. This list includes only costs for staff that have been fully tendered to assignment by the Kuali Board. It does not include significant investments of time by board members, functional subject matter experts, and other fractional staff. The budget is presented as a total for both years of the project.

Budgetary Details Omitted from Public Document

5. Kuali Project Software Adoption

Each of the Kuali Project Core institutions is investing in the Kuali Project to meet local needs. Since the migration of college and university financial records and processes is such serious matter, each institution will implement various Kuali modules on a timeframe that aligns with local needs. Some will implement all modules as they are ready for production use while others will implement specific modules according to local priorities. Each institutional Letter of Intent in Appendix B provides partner information. The following matrix provides an overall summary.

Details Omitted from Public Document

6. Post-Project Sustainability Plan

The period of the Mellon grant for the Kuali Project is two and a half years. During this period the Kuali Project Board will be responsible for the development and release of the Kuali 1.0 and 2.0 software. The focus of the Kuali Project Core team members must remain on the development and delivery of these software components. For the longer term, however, the Kuali Board recognizes two conditions that will be essential to the success of the Kuali community source effort:

1) Creating a community of adopters. The board must engage in efforts to build a community of adopters that will install the software at their institutions and will pass the knowledge and practices gained in doing so back into the community knowledge base. A community needs trained developers who can contribute to the open source base with fixes and extensions to Kuali.

2) Sustaining a community of adopters. The board must plan for long term sustainability in the Kuali community and for the Kuali software itself. Without an effective method of sustained support the promise of an alternative to current software choices will be short lived, and institutions will not choose to participate in the bootstrapping necessary for the development of a long term success. Because it will be very difficult for the Core Partner institutions to provide substantive implementation and ongoing support to adopter institutions, it is vital that a commercial support group be encouraged.

The Kuali Project will discuss possible organizational forms for long-term Kuali sustainability with additional colleges and universities. It is anticipated that Kuali sustainability and community development will follow the for-fee model of the Sakai Educational Partners Program. The shared partner services, such as communications, conferences, technical staff, etc. must be financially paid for by members through annual membership fees. Rather than develop a new organization from scratch, an initial Kuali Partner's community of practice will be formed in conjunction with NACUBO. NACUBO's broad membership of financial officers in colleges and universities make this a natural place to start a Kuali Community.

The Kuali Partners Community of Practice will be established during the first year of the project. A Kuali Pre-conference Workshop is scheduled for the July 2005 Annual NACUBO meeting. This will provide a timely forum for launching the Kuali Partners initiative.

7. Conclusion

The Kuali Project will produce a comprehensive set of tools to enhance fiscal prudence for colleges and universities. Materials for Fiscal Officer Training, Financial Policy Development, Training, and an Implementation and Best Practices manual can help colleges of all sizes "do more with less." The project involves the right set of partners including single and multi-campus research universities, public and private, and a smaller college that has a mission of serving in a largely Hispanic community, open licensing for commercial support, and NACABO, the professional association for college and university business officers.

The core partners are dedicating the right, high level functional and technical staff to the board and operational councils for the Kuali Project. Indiana University is ideal to lead the project based on its strong culture of rigorous financial controls. IU's experience as a co-leader of the Sakai Project, the Sakai Educational Partners Program, and the Open Source Portfolio Initiative also provide valuable insights for managing distributed, community source, development projects. The Kuali Project provides an effective vehicle for pooling the resources, needs, and wisdom of higher education to address one of the vexing challenges of higher education.

8. Appendices

Appendix A: Institutional Descriptions
Appendix B: Institutional Letters of Intent
Appendix C: Bios of Key Personnel
Appendix D: Software and Work Products License
Appendix E: Functional Features List

Appendix A: Core Partner Institutional Descriptions

Cornell University

Cornell University (CU), a private endowed university and the federal land-grant institution of New York State, was founded in 1865 in Ithaca. In the fall of 2003 Cornell had 20,334 students enrolled in seven undergraduate units and four graduate and professional units in Ithaca, the two medical graduate and professional units in New York City, and the medical unit in Doha, Qatar. It is a member of the Ivy League and a partner of the State University of New York. Twenty-nine Nobel laureates have been affiliated with Cornell as faculty members or students.

Not a newcomer to community development projects, Cornell led the Mandarin project for distributing software to desktops in the 90's, and recently contributed to and deployed the uPortal and Fedora. CU has also been involved in large administrative system replacement efforts, including the deployment of PeopleSoft HR/Payroll (1999), PeopleSoft Contributor Relations (2003) and PeopleSoft Student (expected 2005). CU has been delivering distributed java-based systems to support finance operations to campus while maintaining the core mainframe accounting systems since 2001. The distributed J2EE/Oracle tools include the Journal Entry Management System (2001), Payment Requests (2003), and Travel Reimbursement (2004).

Cornell views the Kuali project as an extraordinary opportunity to use these experiences to collaborate with like minded institutions to build and deliver everything required to allow institutions to successfully implement the financial software, including training material, financial policies, implementation instructions, and the software itself. Once development is complete Cornell intends to replace its current hybrid of financial systems with Kuali, thereby providing distributed access to critical financial operations with the OneStart Workflow tool on an inexpensive platform.

Indiana University

Indiana University (IU) was established in 1820 in Bloomington and now has eight campuses throughout the state. It serves 99,000 students as a major research university with an institutionalized tradition of excellent teaching. *Time Magazine* recognized IU as the 2001 "College of the Year Among Research Universities." IU has 116 academic programs ranked in the top 20 within their discipline, and the university has over 460,000 living alumni.

Under the IT leadership of Dr. Michael McRobbie, Vice President for IT & CIO, IU has completed a $232M IT Strategic Plan (ITSP) with a mission of achieving IT leadership in absolute terms. In addition to accomplishments in telecommunications, research computing, teaching and learning and security, the ITSP recommended a complete reengineering of all enterprise-wide information systems. Among these is a new Electronic Research Administration system designed to automate the pre-award process. ERA allows all submissions to be electronically completed and directly linked to the post-award process as well as a new Procurement System called EPIC (Electronic Procurement and Invoicing Center). EPIC includes electronic vendors, a pre-disbursement processor, B2B ordering, invoice processing, and an information environment. Although the Financial Information System was not included in the ITSP, due to the fact that the current system was fairly new and working well, the FIS experienced a major migration from Sybase to Oracle. Our university information systems have been comprised of a mix of vendor packages (PeopleSoft and SIRSI among them), in-house developed systems, and now community source systems, beginning with Sakai, the Collaboration and Learning Environment software. .

IU is keenly interested in collaborations that enhance better fiscal practice in higher education and leverage in developing software, training materials, and processes. We view application software sharing

as an essential element in our open source strategy to meet the growing functionality needs of IU stakeholders. IU has committed to an enterprise software development strategy based on applicable industry standards including the OKI OSIDs, IMS data specifications, service delivery through a personalized portal, and J2EE/Oracle/Linux environment.

IU currently has deployed an enterprise-wide portal, OneStart, for its eight campuses. It is a service delivery portal that is already used by administrative systems with course management and other services to be expanded during 2004. It has a workflow capability, OneStart Workflow®, that is used to route digital transactions among users and record various sign-off's. OneStart was designed with roles and a highly decentralized publishing/control structure. It is not currently OKI-based. There are some important features in OneStart that are essential for IU's overall services delivery strategy, and IU is deeply interested in seeing those in uPortal's JSR 168 release.

Michigan State University

Michigan State University (MSU) has been advancing knowledge and transforming lives through innovative teaching, research, and outreach since the mid-19th century. Founded in 1855 as the nation's first land-grant university, MSU served as a prototype for 69 land-grant institutions established under the Morrill Act of 1862. Located in East Lansing, three miles east of Michigan's capitol, it was also the first institution of higher learning in the United States to teach scientific agriculture.

MSU's enrollment includes students from all 83 counties in Michigan, all 50 states in the United States, and about 125 other countries. Students can select from more than 200 programs of study offered by 14 degree-granting colleges and an affiliated law college. In the fall of 2004, MSU students numbered 44,836 total (35,408 undergraduate and 9,428 graduate and professional), with approximately 4,500 members of the faculty and academic staff, and nearly 6,000 support staff employees. MSU sponsored research of over $300 million in 2003-04 and is the home of the National Superconducting Cyclotron. MSU's total revenue for 2003-04 was 1.5 billion, with operating revenues of $936 million (63.8 percent). Its 5,200-acre campus includes 2,000 acres in existing or planned development.

The year 2005 marks MSU's 150th anniversary, an event that MSU will celebrate not only by honoring its history, but also by facing its future with confidence. A member of the Association of American Universities, the National Association of State Universities and Land-Grant Colleges, and the Big Ten athletic conference, MSU has evolved from a major U.S. public university into an internationally esteemed university with a strong global reach. This evolution reflects the increasing complexity and cultural diversity of society, the world's greater interdependence, changes in both state and national economy, and the explosive growth of knowledge, technology, and communications. MSU fosters a strong international focus by having the third largest undergraduate study-abroad program in the nation. MSU strives to discover practical uses for theoretical knowledge, and to speed the diffusion of information to residents of the state, the nation, and the world. In fostering both research and its application, this university will continue to be a catalyst for positive intellectual, social, and technological change.

NACUBO

Established in 1962 and located in Washington, D.C., NACUBO, The National Association of College and University Business Officers, has provided unparalleled professional development opportunities, a vibrant community of colleagues, and effective advocacy for its more than 2,100 member institutions representing more than two-thirds of the nation's colleges and universities. NACUBO is committed to defining excellence in business practices and meeting the unique needs of all types of higher education

institutions: Research Universities, Comprehensive and Doctoral Institutions, Small Institutions, and Community Colleges.

San Joaquin Delta College

Located in Stockton, in the heart of the California Central Valley, San Joaquin Delta College enrolls an average of 27,000 students each year and serves as a major area resource for post-secondary education and job training. The diverse student body is afforded access to the latest technology, state-of-the-art facilities, and dedicated faculty to guide them into their future careers. All of the academic programs are developed and inspired in response to constantly changing needs of our global economy. The College is a leader among the California Community Colleges in offering training and education for success in today's careers.

University of Arizona

The University of Arizona, Arizona's First University, was established in 1885 – nearly three decades before Arizona became a state – when the thirteenth territorial legislature approved $25,000 for building the University of Arizona in Tucson, Arizona. The first classes convened in 1891, with 32 students and 6 teachers. The University developed in accordance with the Act of Congress of July 2, 1862, knows as the Morrill Act. This legislation created the land-grant colleges and enabled the institution to obtain federal funds for its original schools of agriculture and mines. The 40-acre campus has now grown to 362 acres, 174 buildings, nearly 35,000 students and 12,000 faculty and staff.

Located in the heart of the Sonoran Desert, one of America's oldest continuously populated regions, the UA has emerged as a leading student-centered research university, offering unique opportunities for students to learn in innovative ways in state-of-the art facilities.
The UA is the state's only university to belong to a small cadre of top research universities in the U.S. and Canada-the Association of American Universities.

In its most recent report the National Science Foundation ranks the UA 16th among public universities for research funding. More than a dozen of our graduate programs are ranked in the top 10 according to *U.S. News and World Report* and 13 science programs consistently rank in the top 10. Boasting these same distinctions are 10 liberal arts programs. We lead all public and private universities in NASA funding for space exploration, more than the next nine top NASA/JPL funded universities combined.

Our faculty members are world-renowned experts in fields such as optics, astronomy, engineering, business, medicine, dance, philosophy, literature and biotechnology. Our staff are among the most dedicated in the state. Our alumni are loyal, active, generous and accomplished.
Agriculture, engineering, medicine and science highlight our externally funded research endeavors and we are equally distinguished in many areas of the arts, humanities and social sciences. The UA is a significant participant in the NASA Cassini mission to Saturn, having more scientists involved in discovering the secrets of one of Saturn's moons-Titan-than any other university in the world. We were selected to lead the 2007 mission to Mars. Consistently ranked at the top among NASA grant recipients, we are number one in space research. Here on earth, we are unlocking the code to rice and corn genomes to feed the world. The Arizona Cancer Center is the state's only comprehensive center dedicated to patient care, research and education. We are partnering with the City of Phoenix and others to build a medical campus in Phoenix to train physicians and pharmacists to meet critical shortages in one of our nation's fastest growing states.
Diversity is an important part of our heritage and an important reason for our success. The UA is a community that nurtures and empowers those who are first in their families to attend college. We honor the wide range of background and experience that make up our campus community.

Our mission-to discover, educate, serve, and inspire forms the foundation on which our core values rest: We aspire to integrity and excellence in all we do. As an academic community connected to our region and cognizant of the power of partnerships, the UA is committed a diverse and inclusive community that is discovering and using new knowledge to transform our state, the nation and the world.

Knowing the power of partnerships, and being committed to inclusive communities, UA is particularly interested in the Kuali project that will both improve fiscal practices and leverage many campus' resources in the development of software, training materials and processes. The open source strategy makes sense when functionality needs are increasing at the same time vendor-provided solutions are running in the multi-millions of dollars. By working with other like-minded institutions, we believe we can transform the way higher education develops solutions to business problems through technology.

University of Hawaii

The University of Hawaii (UH) comprises all public postsecondary education system in the State of Hawaii. It is made up of a major research university, two baccalaureate campuses, seven community college campuses and five education centers -- all distributed across six islands throughout the 50th state. The flagship research campus is the University of Hawaii at Manoa. The UH system also includes the 3,000-student University of Hawaii at Hilo on the island of Hawaii and the smaller University of Hawaii-West Oahu on the leeward side of Oahu. There are four UH community college campuses on Oahu and one each on Maui, Kauai, and Hawaii, making college classes accessible and affordable and easing the transition from high school to college for many students. The education centers are located in the more remote areas of the state, and support the rural communities via distance education. All ten UH campuses are accredited by the Western Association of Schools and Colleges (WASC).

The University of Hawaii is organized under one Board of Regents and one President. The campuses differentially emphasize instruction, research, and service. The system's special distinction is found in its Hawaiian, Asian, and Pacific orientation and international leadership role. Common values bind the system together: aloha; academic freedom and intellectual vigor; institutional integrity and service; quality and opportunity; diversity, fairness, and equity; collaboration and respect; and accountability and fiscal integrity.

Financial management information systems are centralized at the University of Hawaii. There is one CFO, one Controller and one financial management information system. The current information system is a version of Information Associate's FRS+ software that was rewritten by Software AG in Natural to use the Adabas DBMS in an IBM mainframe environment. The system has not been supported by any vendor since the late 1990s, and the University of Hawaii has self-maintained this environment on its own since then including Y2K remediation and all necessary GASB updates. The University also uses uPortal (through the SunGard SCT Luminis product which is integrated with its Banner Student Information System) and is a SEPP member.

Appendix B: Institutional Letters of Kuali Core Participation

Signed versions of these letters are appended as PDF files. They are included here for ease of reading.

Details Omitted from Public Document

Appendix C: Bios of Key Personnel

Kuali Board (Voting Members of Official Core Partners)

Bruce K. Alexander - Associate Director, Administrative Information Services at Michigan State University. Mr. Alexander serves as Project Director for the University's Financial and Human Resource Information Systems Renovation Project and as Associate Director for Administrative Information Services where he is responsible for systems, workflow, and database development across the full spectrum of the University's central administrative functions. Mr. Alexander has over twenty-five years of experience in administrative and research computing. Mr. Alexander holds B.S. and M.A. degrees from Michigan State University.

Mr. Alexander's information systems career includes experience in applications development, database administration, data warehouse, end user computing, help desk, local area networking, office automation, and business process workflow development. He is active in a number of higher education information technology organizations including Educause, where he is past chair of the Member Information Services Committee, and CUMREC - the Higher Education Administrative Computing Conference, where he serves as a Director and Board Secretary. Mr. Alexander also serves as institutional representative on several Big 10 and CIC information technology working groups.

Mr. Alexander has presented papers and participated on panels at Educause, CUMREC, the American Sociological Association, the CIC TechForum, the Michigan Association of College Registrars and Admissions Officers, the Midwest College and University Personnel Association Regional Conference, and the Association of University Real Estate Officers National Conference.

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Lee Belarmino serves as the Associate Vice President of Information Technology at San Joaquin Delta College and is responsible for all information technology services. Under his leadership, the Information Services Department designed and developed a Student Information System (*System 2000)* which was a winner of the prestigious DB/Expo Realware Award, and winner of Development Magazine Trend's "Innovator of the Year Award". Delta College was recently acknowledged as a top "digital-savvy, cutting-edge" community college in the nation by the Center for Digital Education. Previously, Mr. Belarmino was Vice President of a large Silicon Valley development company that provided services to the international banking community and the aerospace industry.

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Joanne M. DeStefano - Vice President for Financial Affairs and University Controller Joanne M. DeStefano is Cornell University's chief accounting and reporting officer. In this capacity, she is the official custodian of the university's financial records, responsible for the preparation, maintenance, and interpretation of both internal and external financial reports and analyses, including audited financial statements, federal indirect cost submissions, and federal and state tax returns. She also oversees the creation and development of all university financial policies and procedures. Units that report to her

include the Accounting Office, Bursar's Office, Cost Analysis Office, Payroll Office, Purchasing Office, Tax Compliance Office, and the University Policy Office.

Joanne holds a B.S. from Syracuse University (1978, Accounting), and an M.B.A. from Cornell University (1997, Finance). She came to Cornell in 1990 as General Accounting Manager for the Contract Colleges and has since held a number of progressively responsible roles in the Finance Division. Prior to joining the university, Joanne worked in the corporate sector, as Controller for Racemark International, Inc. and as Accounting Manager for Schlumberger Inc. She is also a member of NCURA, COGR, and NACUBO.

Charles Ingram - Assistant Vice President for Financial Services. As Financial Officer for the University of Arizona, Mr. Ingram is responsible for receipting (Bursar), accounting (Comptroller, financial statements, Tax compliance) and disbursements (Accounts Payable, Payroll, Travel) for campus. Also reporting to Mr. Ingram is the Investment/Treasury function, Indirect Cost proposal/negotiation with the Federal Government, Capital Finance Debt Management, Fixed Assets and the Information Technology Services team supporting the financial services function. Mr. Ingram has a Master's degree in Organizational Management, is a Board member of WACUBO, and has been in higher education for 21 years. Mr. Ingram also served as the Associate Budget Director for several years, and is known throughout the campus community for his management abilities, business acumen and change management skills. In the last four years Mr. Ingram has successfully led the Financial Services Office through a culture change that has resulted in a stronger customer service organization with employees that are now more skilled, more communicative and better able to provide excellent financial services in support of the University's mission.

Dr. David Lassner serves as the first Chief Information Officer for the University of Hawaii system, which is comprised of 10 campuses and 5 education centers on 6 islands. In that capacity he is responsible for voice, data and video services, management information systems, academic computing support and distributed learning technologies. David is also a member of the University's Graduate Faculty and has taught online and in person in Computer Science, Business, Communication and Education.
David plays an active leadership role in a number of national and international ICT organizations. He is Chair of the Internet2 Applications Strategy Council and a member of the Board of Directors for Internet2. David was a founding Steering Committee and current Chair of the Executive Board of WICHE's Western Cooperative for Educational Telecommunications. He is active in EDUCAUSE, serves on the Board of Governors of the Pacific Telecommunications Council and on the Board of Directors of Hawaii's High Technology Development Corporation where he chairs the Federal Programs Committee. He has been principal investigator for several NSF grants and is currently the Principal Investigator for the University of Hawaii's 10-year, $181 million dollar contract to operate and manage the Maui High Performance Computing Center.
David earned his A.B. summa cum laude in Economics at the University of Illinois at Urbana-Champaign, where he also earned an M.S. in Computer Science as a University Fellow. He spent a year as a Research Fellow at the East-West Center in Honolulu and earned a Ph.D. as a member of the first class of the University of Hawaii's interdisciplinary program in Communication and Information Sciences, which is now 20 years old.

James (Jay) E. Morley, Jr. has served as NACUBO president since 1995. In the role, he has spearheaded efforts related to tax reporting requirements, college costs, total quality improvement, and institutional student aid. Before assuming the NACUBO presidency, Morley was senior vice president (1987-95) and vice president and treasurer (1985-87) at Cornell University. Morley has also served as

vice president at Rensselaer Polytechnic Institute (1978-85), where he is a 1962 alumnus in mechanical engineering, and Rider College (1976-78). He began his career in higher education as comptroller of Syracuse University (1972-76) and was a management consultant at Ernst and Ernst in New York from 1969-72. He earned his M.S. in accounting at Syracuse. Morley was on active duty in the United States Marine Corps from 1962-67 and holds the rank of colonel, retired in the USMC Reserve. He has chaired the board of the Emma Willard School in Troy, New York since 2000 and has served on the board since 1994. He has been on the board of the National Grange Mutual Insurance Company since 1994, chairing the audit committee. He has served on and chaired or been president of several other boards, including the United Educators Risk Retention Group; the Tompkins County Foundation; Citizens Savings Bank, School, College, and University Underwriters, Limited (SCUUL); and Challenge Industries. Morley is the 1993 recipient of the Distinguished Business Officer Award, NACUBO's highest honor. He also served on the American Council of Education board from 1997 to 1999.

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John F. (Barry) Walsh received his BS in Electrical Engineering from University College Dublin, Ireland and his MBA in Finance and Organizational Behavior from The Kelley School of Business at Indiana University. He has experience in US and international industry, with assignments in Engineering, Marketing, Finance, Manufacturing, Purchasing and Materials Management. Since 1984, he has been at Indiana University, where he currently has appointments in both the CIO and CFO organizations. Information Technology Responsibilities include: IU's enterprise portal strategy; IU's Course Management Systems and e-Portfolio development/implementation; E-business activities at IU; Development and management of all fiscal and procurement systems; Enterprise Application Integration Financial line management responsibilities: Payroll; Accounts payable; Decision support services; Customer service; Strategic IT planning for the finance function. Mr. Walsh is the co-author of a book on the subject of implementing financial information systems in organizations and a frequent speaker at conferences and seminars dealing with emerging technologies. He is a past member of the NACUBO Board of Directors. He is currently the Director of the Educause Management Institute and a faculty member of the WACUBO Business Management Institute. Mr. Walsh also consults to institutions on the above topics.

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Dr. Bradley C. Wheeler serves as the non-voting Chairman of the Kuali Board. He is the Indiana University Associate Vice President for Research & Academic Computing and Dean of IT for IU-Bloomington in the Office of the Vice President for IT & CIO. Through leadership positions as vice-chair on the Sakai Project (collaboration and learning) and PI for the Open Source Portfolio Initiative, he is influencing a national Community Source movement for shared software development among colleges and universities. As an Associate Professor of Information Systems at IU's Kelley School of Business, he teaches MBA courses on Executive Leadership of IT Strategy. He has taught e-business and e-learning courses for corporate/academic audiences on six continents and in 26 countries.

Extended Board (Including Advisors)

David Brower is Assistant Vice President, CFO and Controller at Michigan State University, where he oversees the Office of Contract and Grant Administration (both pre and post award); the Investments and Endowments Office; the Office of Risk Management and Insurance; the Controller's Office, including the University Travel Office; and University Services, including Purchasing and Accounts Payable, Stores, Mail Processing, Office Services, Inventory and Surplus. Mr. Brower has over 25 years of experience in financial administration at Michigan State and, prior to joining Michigan State in October 1979, he worked in public accounting for over eight years with the Public Accounting firm of Ernst and Ernst (now Ernst & Young). Mr. Brower holds a Bachelor of Arts degree in Accounting and a Masters of Business

Administration degree in Finance, both from Michigan State University. He became a Certified Public Accountant in the State of Michigan in 1973.

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Chris Coppola (Advisor to the Board) is President of the r-smart group, the leading provider of open source solutions for education. He co-founded the Open Source Portfolio Initiative and currently serves on its Board. Chris is a champion for innovative technologies supporting education, having designed, engineered and managed the development of eLearning software for colleges and universities. Chris' experience with proprietary software has led him to embrace open source software as a more effective means to increase innovation, expand collaboration among schools and corporations, and more effectively leverage technology spending.

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Craig S. Dellorso has served as NACUBO's CIO since 2002. In this role, he has reshaped the way that NACUBO implements and uses technology. He has implemented a complete integration of multiple disparate systems into a new Web-Based Association Management System that pulls all critical information into one easily accessible database. His efforts have increased benefits and services to both NACUBO Members and staff, while reducing the overall cost of Information Technology for NACUBO. Before assuming his role at NACUBO, Dellorso was General Manager at mindSHIFT Technologies Inc. and Vice President, Technology Practice at MBA Management. He earned his B.S. in Oceanography at The United States Naval Academy, and served on active duty in the Navy as a Naval Supply Corps Officer from 1987-1994. During his tenure in the Navy, Dellorso served on the Staff of then Chairman of the Joint Chiefs of Staff, General Colin Powell from 1990 -1993. He received his MBA from Marymount University, 1999.

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David A. Gift, M.S., S.M. is Vice Provost for Libraries, Computing and Technology, and Adjunct Assistant Professor of Radiology, at Michigan State University. An alumnus of MSU, with degrees in Physics (B.S.) and Computer Science (M.S.), David also is an Alfred P. Sloan Fellow of the MIT Sloan School of Management (Master of Science in Management, S.M.). He has served most recently as Assistant Vice President for Integrative Management, and prior to that as Assistant Chairperson of Radiology, and Interim Director of Strategy and Implementation for MSU's Faculty Group Practice. He has taught and contributed to curriculum development in MSU's Colleges of Human Medicine, Osteopathic Medicine, Eli Broad Graduate School of Management, and the University Graduate School, and has facilitated curriculum-related regional professional focus group events for the MSU College of Law. He has served as a founder and member of the Board of Directors of four University medical joint venture corporations; and is currently a member and chair of the Board of Directors of Merit Network, the multi-university consortium for Michigan educational and research Internet services.

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Sally Jackson - Professor of Communication and Vice President for Learning and Information Technologies & Chief Information Officer. Dr. Jackson received her Ph.D. in Speech Communication from the University of Illinois at Urbana, and was a faculty member at the University of Nebraska-Lincoln, Michigan State University, and the University of Oklahoma before joining the University of Arizona faculty in 1991. Her central research interest has been argumentation, an interest that often finds extension into other areas such as research methods and statistics. She is the creator of POLIS, a web application for incorporation of argumentative dialogues into online instruction. As Vice President for Learning and Information Technologies & Chief Information Officer, Dr. Jackson is responsible for shaping the University's response to the dramatic changes occurring in communication technology. She maintains very close collegial relationships in the Communication Department and participates in its

teaching and research programs.

David Koehler has held positions in administrative computing in Higher Education for over twenty years. He has been a director at Stanford University and Princeton University. He is currently the Director of Information Systems at Cornell University. He has a Bachelor of Science in Engineering, a Master of Engineering, and a Master of Business Administration from Cornell University. He has been actively involved in national higher education organizations including five years as chair of the Java in Administration Special Interest Group (JA-SIG) Board of Directors and as a member of the EduCause Advisory Group on Administrative Information Systems and Services (AGAISS).

David Lyons (Special Advisor to the Board) was vice president for business and finance and treasurer of the Rockefeller University until his retirement. He is currently a NACUBO Senior Fellow. He was the functional author of the IA financial system for higher education (FRS) and has provided leadership of a number of significant financial system development projects. He has served on the boards and taken a leadership position in the affairs of the Council of Governmental Relations (COGR) and the National Association Colleges and University Business Officers (NACUBO). He was a member of the Financial Accounting Standards Advisory Council (FASAC) of FASB and chair of its Nonprofit Institutions Committee and chair and member of advisory committees for FASB and the AICPA.

Kathleen T. McNeely is Interim Assistant Vice President and Executive Director of Financial Management Services Indiana University. She has been with Indiana University since 1982 in various financial administrative positions. Kathleen's responsibilities include Accounting, Tax Compliance and Reporting, Financial Reporting, Capital Assets, Contract and Grant Administration, Payroll and Cost Accounting. Kathleen was a member of NACUBO's Accounting Principles Council from 1997 to 2003, serving as chair in 1999. She is the 2003 recipient of NACUBO's Daniel D. Robinson award, which recognizes individual excellence and leadership in the advancement of college and university accounting and reporting. Kathleen is a frequent speaker at conferences and seminars dealing with accounting standards, internal controls, fund accounting and other fiscally related topics. Kathleen holds a B.S. in Finance from the Kelley School of Business at Indiana University and a Masters in Public Administration with a Finance concentration from Indiana University.

John Robinson (Advisor to the Board) - Chairman, the r-smart group John is Chairman of the r-smart group. The mission of his company is to be the leading "commercial" partner in the open source/community source movement in higher education. Having founded Information Associates, Inc. and TRG, his qualification and proven performance as a provider of service to higher education has been a recognized standard. It follows that he and his associates would be the logical group to lead the open source movement as they recognize and have practiced the value of collaboration amongst the college/university community, systems designed by industry people for the industry, proper implementation processes which result in effective installations, and the value of bringing the community of functional and technical experts to support one another. The r-smart group continues to add colleagues who have excelled in these regards throughout the years.

Elizabeth Taylor - Director of Information Technology Service, Financial Services. Ms. Taylor plays a significant role in the implementation of technology in general and eBusiness specifically within the Financial Services domain. Liz and her staff of professionals are involved in all aspects of IT, from desktop support through developing and implementing web-enabled eBusiness projects including the

support of several enterprise systems. Ms. Taylor also serves as the chair of the Technical Advisory Board for Financial Services, whose scope includes defining and measuring IT projects, monitoring resources, projects and measuring business effectiveness of IT in the organization. Recent projects include implementation of an IT project measurement tool, as well as several major eBusiness projects including eDeposit, eRFAA, eDDF, and eTravel. Ms. Taylor received her MIS degree from Purdue University and has worked at the University of Arizona for nearly 18 years in various IT positions.

Technical Leadership

Richard Barber (Technical Advisor) has been a pioneer of development and implementation of financial systems for some 35 years. During this period, he was vice president of Information Associates and TRG. His responsibilities included developing, installing and managing the entire development process for IA for 20 years. This included personally installing some 50 financial systems into a wide variety of colleges and universities internationally. His major contributions have been his accurate assessment of the needs of the institutions and his ability to cause the company respond to their needs. The results were efficient systems, effective installation processes and low cost and satisfied ownership among some 500 institutions. Richard is a problem solver, an innovator and a practical development manager.

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Laura Kress received her BS in Decision Sciences from the Kelley School of Business at Indiana University. Upon college graduation, Laura worked for 10 years at Electronic Data Systems at various General Motors locations in Indiana as a software developer working on a variety of assembly line and production support systems, as well as administrative financial systems. Upon leaving EDS, she took a software development position at Indiana University working for the Fiscal and Procurement Systems team in the University Information Systems division supporting and enhancing legacy mainframe applications and the Financial Information System (FIS). Since 2002, Laura has been working as a Systems Development Manager for the team and has led several projects including the integration of the FIS with Peoplesoft HRMS, the migration of the Labor Ledger System from the mainframe to Unix platform, and the development and implementation of several payment processing systems. She is currently working as the project lead for the development and implementation of the new Purchasing/Accounts Payable system for the University.

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Mark Mara, Director, Advanced Technologies & Architecture for Cornell University. Mark is a graduate of Cornell's Civil Engineering school. He has been working in information technologies for the last 33 years, 25 of those at Cornell University. He has been an advocate of loosely coupled architectures for most of that time.

Mark has been a developer and project manager for Payroll and Student systems at Cornell. He introduced microcomputers to the administrative departments and later built and ran an organization dedicated to developing applications for that hardware. He was responsible for the first message oriented architecture deployed at Cornell, Mandarin, and later for the move to CORBA. He was the President/CEO of Project Mandarin, Inc., a consortium of 26 institutions, using Mandarin technology.

As Director of Integration and delivery he was responsible for the infrastructures services supporting Cornell's administrative applications. These services included central authentication and authorization, directory services, software distribution, data delivery, DBA services and the university portal.

He is now involved in rolling out a service-oriented architecture (SOA) implemented with web-services. He is currently the Director of Advanced Technologies & Architectures (ATA). This division is charged with; exploring emerging IT technologies and architectures, recommending IT technical and product architectures and educating University units on suitable designs patterns and strategies leading to effective utilization of IT resources for faculty, staff, students and others.

Brian J. McGough is Principal Systems architect for University Information Systems at Indiana University. He has been with Indiana University since 1998 in various technical positions. Brian's responsibilities include being the lead of the OneStart workflow project, establishing standards and guidelines for UIS development, assisting with various projects, and representative Kuali technical architect for Indiana University. Brian is a frequent attendee and speaker at conferences and seminars dealing with systems in higher education. Brian holds a B.S. in Computer Information Systems from the Kelley School of Business at Indiana University and in progress towards a Masters in Computer Information Systems from Indiana University.

Jeff Morris is the principal systems analyst of the current Financial Information System, and also works on various other systems at Indiana University. He has 10 years of experience with the current system, and has worked at IU for 12 years. He graduated from Indiana University in 1995 with a B.S. in computer science and a minor in mathematics. He is on the board of the North American Uniface User Group.

Anthony (Tony) Potts – (Technical Advisor) After completing a degree at ASU, Tony began a career as a computer book author. He then co-founded a long-distance learning solutions company which was eventually sold to SCT. Now, as CTO of the r-smart group, he has the enviable position of leading an incredible team of developers. Tony's strength is focusing on identifying strong technical team players and pushing the limits of architectural design.

Jay Sissom is a systems analyst in University Information Systems at Indiana University. He is currently the lead programmer of the purchasing and accounts payable portion of the Kuali project. He has been a frequent speaker at higher educational conferences dealing with applications design, development and architecture. Jay holds a B.S. in Information Systems from Kennedy-Western University.

Appendix D: Software and Work Products License

The Kuali Project will operate under the following Open Source Initiative approved license:

Educational Community License 1.0
http://opensource.org/licenses/ecl1.php

The following text should accompany all copies of the Kuali Software:

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Appendix E: Existing FIS Functionality by Module

A. Charts of Accounts/General Ledger/Transaction Processing

1. GASB/FASB compliant
2. Support for cash, modified cash, or accrual based accounting
3. Drill down capabilities on entries to view supporting detail *
4. Unlimited years of transaction data
5. Flexible user defined account structure
6. Flexible object code structure
7. Sub-account and sub-object code
8. Current month, year to date, and project to date versus budget
9. Project accounting
10. Flexible month-end and year-end closing
11. Date stamps on fields to maintain history of changes in table format
12. Additional attributes and tables to identify org "levels" for ease in running reports at same level *
13. Systematic process for closing out accounts that includes moving balances and eliminating bad encumbrances *
14. Transaction reversals *
15. Interface processing
16. Indirect cost reallocation
17. Business rules to eliminate cash and fund balance offsets to maintain self-balancing accounts
18. Financial reporting
    a. Balance sheet
    b. Income statement
    c. Statement of cash flow
    d. Statement of changes in financial position
    e. Actual versus budget
    f. Weekly and monthly transaction listing
    g. Enhanced reporting ability for project, grant , and endowment management *
    h. Multiple fiscal year reporting
    i. Daily trial balances
19. Financial electronic documents
    1. Budget adjustment
    2. Cash receipt
    3. Cash disbursements
    4. Auxiliary voucher
    5. Distribution of income & expense
    6. General error correction
    7. Indirect cost adjustment
    8. Indirect billing
    9. Journal voucher
    10. Non-check disbursement
    11. Service billing
    12. Transfer of funds
    13. Recurring entry documents

A. Integrated requisition, purchase order, and accounts payable
B. Validates available budget at requisition entry
C. Allow unlimited partial payments on open purchase orders
D. Manual/automated encumbrance entry

E. Controlled checking and processing of due-to and due-from transactions

B. Accounts payable
   1. Vendor maintenance, maintain detail profiles of vendors, discounts available, notes
   2. Voucher maintenance
   3. Record invoice and credit from vendors
   4. Quick check function, for fast production of checks
   5. Support for multiple check accounts with different check formats *
   6. Void processing with automatic reversal
   7. Multiple address for vendors
   8. Define schedules for recurring payments, controlled by number of payments, and/or start/stop dates
   9. Production of 1099 reports
   10. Check reconciliation
   11. Processing of manual checks
   12. Electronic funds transfer
   13. Pay multiple invoices with a single check
   14. Make partial payments on invoices
   15. Cash flow projections
   16. Select invoices to approve or pay based on user criteria
   17. Calculate and record vendor discounts
   18. Currency conversion *
   19. Supports multiple payment plans *
   20. Notification of reaching vendor limits *
   21. Support travel payments
   22. Track transaction by vendor
   23. Invoice payment, select all invoices, select invoice individuality, or use pay criteria for paying invoices
   24. Automatic warning when payments are due
   25. Bank reconciliation
   26. Default payment terms
   27. Fiscal and calendar year totals
   28. Void check processing

C. Accounts receivable
   1. Electronic documents
      a. Cash control
      b. Credit memo
      c. Customer information
      d. Customer bill
      e. Organization accounting defaults
      f. Organization options
   2. Billing entry and maintenance
   3. Customer entry and maintenance, customer profile
   4. Payment processing
   5. Application of payments
   6. Electronic invoicing *
   7. Web payments *
   8. Ability to add late fees or automatic percent charge after certain date *
   9. Collection notes and associated data groups for reporting *
   10. Generate customer statements
   11. Record receivables, receipts, credits
   12. Place credit hold on customer

13. Integrated with general ledger
14. Accounts receivable summary report
15. Aging and detail ledger reports

D. Budgeting
1. Report on budget versus actual
2. Track budget adjustments throughout the fiscal year
3. Allow fiscal year and project year budgets
4. Create new year budgets from current and previous year

E. Research Administration/Contracts and Grants
1. Electronic documents
   a. Award
   b. Award diary
   c. Proposal
   d. Proposal diary
   e. Proposal research risk
   f. Agency
   g. Project director
   h. Subcontractor
2. Proposal preparation
3. Pre-award
4. Process management
5. Support for multi-year, multi-organization project and programs *
6. Maintain agency, subcontractor, and vendor tables

F. Purchasing
1. Vendor and address maintenance
2. Multiple addresses for a vendor
3. Post encumbrance to general ledger
4. Integrate with accounts payable and general ledger
5. Enter unlimited items per purchase order
6. Support recurring purchase orders *
7. Electronic or printed purchase orders
8. Receive full or partial shipments and record as items arrive
9. Distribute and invoice across funds
10. Validate funds available at requisition time
11. Ability to copy information from previous purchase orders
12. Ability to process blanket and standard purchase orders
13. Support vendor terms and conditions
14. Support vendor catalog *
15. Allow for splitting line items to multiple account codes
16. Automatically calculate sales tax, use tax, and freight *
17. Bid processing
18. Allow shipping of order to multiple locations
19. Matching of invoice and purchase order
20. Receiving report
21. Back order report

G. Capital Assets Management
1. Electronic documents
   a. Add asset
   b. Add payment
   c. Asset retirement
   d. Asset security

e. Asset transfer
f. Equipment loan and return
g. Fabrication request
h. Asset merge
i. Bar code inventory
j. Capital asset builder
k. Capital asset maintenance
l. Insurance maintenance
m. Location maintenance
n. Pre-asset tagging
o. Separate an asset
p. System manager maintenance
q. Tag an asset

2. Maintenance of assets
3. Inquiry into asset database
4. Bar code inventory processing
5. Depreciation (IRS standard and custom)
6. Space management
7. Sub-accounting functionality in capital asset builder *
8. Ability to decentralize capital asset builder to departments for creation of assets below threshold *
9. Support transfer-in document for assets coming into organization *
10. Create historical asset transactions
11. Track depreciation over multiple years
12. View summary of all transactions generated for a particular asset
13. Record notes on asset
14. Ability to store a photograph of the asset
15. Provide the next scheduled maintenance of the asset
16. Warranty information
17. Integration with purchasing and general ledger

H. Workflow
1. Provides a workflow engine that can be used for all application
2. Electronic forms

I. Labor Distribution
1. Electronic Forms
a. A21 recreate document
b. Benefits expense transfer
c. Budget construction
d. Instructional effort reporting
e. Payroll accounting distribution @
f. Salary expense transfer
g. Labor-job maintenance @
h. Labor-position maintenance @
2. Labor ledger
3. Calculate salary foundation
4. Budget construction and salary setting
5. Appointment funding transaction @
6. Encumbrances @
7. Position management @
8. Labor reports
9. Effort certification

J. Decision Support

1. Data architecture
2. Information delivery architecture
3. Layered set of services
4. Drill down capability [*]
5. Performance metrics functionality [*]

[*] Possible enhancements that may be implemented during the conversion.
[@] Functions done by HR system (not part of the financial system)