



A Flexible Financial System



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You've heard about community source. Now find out how the Kuali system operates to make financial processes more efficient and user friendly.

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The fifth annual Kuali Users Conference, which attracted attendees from more than 150 higher education institutions in North America, has just concluded. Sessions included “Implementation Tips and Tricks”; “Enhancements to the Endowment and Research Administration Modules in the Next Release”; and three roundtable forums for users from public and independent research universities, independent liberal arts colleges, and community colleges in which participants shared information about the application on their campuses.

Is this a pipe dream or a probable forecast for the future of higher education financial information systems? For the Kuali Project founding partners, this scenario depicts the collaboration that will truly be possible as part of the project—a community source initiative to create a comprehensive financial information system for higher education.

The vision began at Indiana University (IU) six years ago when administrators were considering alternatives for replacing the existing financial information system. Possibilities included retooling the system, buying a vendor package, or partnering with like-minded colleagues to develop a system that would serve many institutions' needs. Other collaborations such as Sakai, uPortal, and the Open Source Portfolio were demonstrating the success of community source approaches, but this had not yet been tested for delivering a core administrative system.

Although many of IU's peers had selected proprietary enterprise resource planning systems (ERPs) from vendors, the uncertainty in the industry, the lack of control over maintenance costs and upgrades, and the inflexibility of the features for higher education made that choice less attractive to Indiana for replacing its legacy financial information system. In a study conducted by Robert B. Kvavik and Richard N. Katz for the EDUCAUSE Center for Applied Research, *The Promise and Performance of Enterprise Systems for Higher Education*, 69 percent of the respondents who had implemented ERPs perceived that central, departmental, and college workloads increased significantly. In addition, respondents from doctoral institutions believed that students and faculty saw fewer benefits than those achieved by other Carnegie Class institutions. With these facts in mind, IU turned away from the ERP option and contacted other institutions in need of a financial system. Thus the Kuali Financial System was born.

The system's overall design is based on a higher education business model. The data structures, transaction interfaces, and back-office processes are built to accommodate how higher education institutions are structured. However, there is sufficient flexibility in the design for each institution to tailor the system to its needs without requiring major modifications. Use of web portals means that transaction interfaces can be tailored to specific types of users, and the workflow engine provides significant flexibility for routing and approvals. A college or university implementing Kuali can plan to do as much or as little re-engineering as it chooses; changes won't be forced on users because the system was built on a manufacturing or health care business model, for example. Consider the merits of the system and how your institution might benefit from Kuali's shared approach.

Functional Features

IU's financial information system was selected as the basis for the Kualu Financial System because Indiana is regarded as a leader in fiscal administration. The system has been employed for more than a decade on all seven campuses, some of which would stand alone as Carnegie Class–Research I institutions and others that are similar in size to small liberal arts institutions or community colleges. IU's central administration, its campus-based fiscal officers, and external reviewers of the system have continually endorsed this system's design. The design has been extensively studied by the Kualu partners and others, and it has been chosen over the complexities of other commercial offerings. The following features will be incorporated into the Kualu system:

Flexible chart of accounts. The Kualu chart of accounts is structured so that campuses or units can have different values within their chart tables. Revenue and expense object codes can be tailored to the specific charts. Academic units that do not track “costs of goods sold” will not trip over these choices in the object code table. Auxiliary units that do not bill or collect tuition revenue will not have to scan through those values to find sales revenue codes. In addition, the structure provides an unlimited hierarchy of work groups relating to higher-level organizations. There are also a significant number of data values available for units to classify transactions for internal financial management. Institutions can add custom attributes for reporting purposes to any existing attribute table.

Currently the adaptability of the chart of accounts and related attributes enables IU to create all three of its GASB-required financial statements. It also allows administrators to generate a balance sheet and income statement for any organization in the hierarchy at any time during the year. Imagine being able to prepare required GASB “segment reporting,” take a picture of the financial status of auxiliary organizations, or provide the dean with a report on the total travel expense across all funds within a college.

With the table-driven data structure, institutions can add attributes as the need arises. Many of us remember the ordeal in the mid-1990s of adding attributes to our mainframe systems to comply with the FASB requirements of SFAS 116 and 117. Called *extended attributes*, the tool for adding tables and values is easy. Associating the new values with existing data remains somewhat time consuming, although Kualu will deliver global maintenance tables, facilitating the association of new attribute values to existing data in user-defined groups.

The extended attributes also permit users to include concepts that may be contained in other nonfinancial systems, such as student records or human resources. This will allow financial and nonfinancial data to be linked, a feature that is especially appealing with the current reporting environment focused on managerial analysis and decision support. Finally, all of the Kualu data structures are designed to be understood by the casual user, with definitions and explanations contained in an accessible data dictionary. No hidden meanings are embedded, which will lead to better understanding and transparency of financial data.

Distributed access. With IU's seven campuses and hundreds of organizations, an essential component of the financial system is giving department personnel the means to initiate transactions from their desktops. Data are entered once into “transaction documents,” and the initiator receives immediate feedback on the validity of the data and whether the transaction complies with all business rules. Past transactions can be retrieved and made into templates or retrieved and reversed. New Kualu features will enable initiators to upload values into transaction documents from predefined spreadsheet templates, using the power of spreadsheet programs to enter, sort, copy, and sum data.

Robust workflow engine. Every account within the Indiana financial system has a fiscal officer responsible for the accuracy of the transactions within that account, and as such, nearly all transactions are routed to that person. Fiscal officers can delegate

How Kualu Came to Be

The Kualu Financial System project developed from work begun with a planning grant from the Andrew W. Mellon Foundation to NACUBO. The preliminary work assessed higher education's readiness for a community source financial system project and its applicability across colleges and universities. After more than a year of evaluation, partner coalescing, and preparatory work, Kualu received a \$2.5 million grant from the Mellon Foundation to help complete the software development. The grant also covers creation of a fiscal officer training series and financial policy templates to accompany the software. Founding partners are Indiana University, the University of Arizona, the University of Hawaii, Michigan State University, San Joaquin Delta Community College, Cornell University, NACUBO, and the r-smart group (see Figure 1).

Kualu provides an alternative to the buy or build-it-yourself dilemma. Community source describes a model for the purposeful coordination of work in a community. It is based on many of the principles of open source development

approval authority to both primary and secondary approvers. An organization can specify extra routing, and units or central administration can establish predefined “special conditions” for some or all documents. For example, a college can specify that all budget adjustments be routed to the dean, or the central research administration office can stipulate that any transaction involving a contract or grant account be routed to a central post-award office. The workflow engine also accommodates specialized routing based on the dollar value of the document. Ad hoc routing—for both approval and FYI purposes—is also available. All of the routing rules are configurable at the unit level. The XML-based workflow engine delivers a single action list for users, presenting in one queue all of the transactions awaiting approval.

For small institutions, the workflow tool provides an audit trail of approver actions. This trail can facilitate a post-transaction review in situations where there aren't enough department staff to accommodate a complete separation of duties when the transaction occurs. The special conditions routing, invoked based on various characteristics of the transaction or attributes of the accounting string used in the transactions, can be established once and systematically applied. This can be useful in situations when staff are filling in for others.

Imagine learning through the documentation of your internal controls that another level of review is required for expense reimbursements to employees. Rather than trusting your departments to route the transactions appropriately or reprogramming your payment request voucher process, you can specify in one step that disbursement vouchers created for reimbursing employee expenses must be routed to the unit's centralized business service center for approval.

Another possible scenario: As part of the Sarbanes-Oxley subcertification process, your deans request to be informed of all transactions above the college's materiality level. In one step you can select “FYI routing” to the dean for all transactions affecting the college accounts above a specific dollar amount. The information that is routed includes the transaction itself, the initiator, all review actions (pending and final), any electronic attachments, and any notes that have been appended along the way. Information routing does not delay the transaction in the approval or posting process.

Scalability. There is no limit to the number of users, accounts, data values, transactions, or custom attributes contained in the Kuali Financial System—select as few or as many as necessary. Two of IU's campuses are major research institutions; others are similar in size to a liberal arts college. IU's medical college is also a financial information system user.

efforts but relies more explicitly on defined roles, responsibilities, and funded commitments by community members than some general open source efforts. The project operates under a board of governance comprised of voting and nonvoting representatives from each of the partner institutions, NACUBO, and the r-smart group.

The Kuali Board of Directors is composed of representatives from each founding institution. Systems developers and technicians provide the expertise for the technical council and architecture advisory group. Developers and programmers from the partner institutions make up the development team. Key to the software's usability is the creation of the functional council, whose members represent the functional users of the Kuali Financial System from all of the partner institutions. System design decisions and enhancements must be approved by the council. Subcommittees of subject matter experts from each partner institution have been formed to review and analyze the features of each module.

Figure 1 Kuali Founding Partners

Institution	Public/Independent	Campuses
Cornell University	Private Land Grant	3 Total 1 – Research I 2 – Medical Colleges
Indiana University	Public	7 Total 2 - Research I 3 - Masters Colleges 2 - Baccalaureate General
Michigan State University	Public Land Grant	1 – Research I
San Joaquin Delta Community College	Public	1 – Community College
University of Arizona	Public Land Grant	1 – Research I
University of Hawaii	Public Land Grant	10 Total 1 - Research I 2 - Baccalaureate Colleges - Liberal Arts 7 - Associates Colleges

Modular design. The Kuali system will be delivered as a modular, pluggable design with generic interfaces between functions (referred to as *clean handshakes*) so that institutions can implement only those modules that meet their needs. It is based on a contemporary architecture of applications—a set of distributed, loosely coupled components that provide distinct business services.

Small liberal arts or community colleges may not be interested in the capital assets module that delivers the inventory and space requirements for large research institutions' *OMB Circular A-21* compliance. Some colleges that have recently installed vendor financial packages may be interested in the endowment module only, which will be based on the Indiana University Foundation's endowment and trust accounting system. Other campuses with vendor human resources and payroll systems may see the value of the labor distribution module. The clean interfaces make possible an unlimited number of combinations for implementation of the various modules.

Project Sustainability

The software will be available (see Figure 2) for free from www.kualiproject.org, enabling any institution to use or modify it without joining the community or paying a fee. However, the Kuali board recognizes the community's potential to sustain the evolution of software over time and create member-to-member knowledge sharing regarding implementation and use. Therefore, plans are underway to create a Kuali Partners Program that will be self-funded and open to the higher education community and other interested parties to sustain and evolve the software through use of its resources and coordination of partner efforts (similar to the Sakai Educational Partner's Program). NACUBO will assist in developing this community by organizing Kuali educational/developer conferences, managing community and technical staff, and facilitating other activities to promote knowledge sharing among Kuali software institutions.

There is also an important role for commercial service providers. Some institutions may choose not to dedicate in-house resources to implement or maintain their financial system. The r-smart group has already committed to providing commercial support for colleges and universities that need software integration services for the Kuali Financial System modules. Plans are in the works to establish a commercial affiliates program for other companies that offer these services, as is already the case with uPortal, OSP, and Sakai.

The six Kuali partners plan to implement the software, and many will provide internal resources for maintenance and enhancements. The beauty of this community effort is that enhancements developed at one institution can be made available to all users. Institutions that implement the system will have access to a broader network of ongoing support with the combination of the formal Kuali Partner's Program, the commercial service providers, and the informal network of users.

Figure 2 Project Modules and Phases

Phase I	Phase II
Chart of Accounts	Accounts Payable and Purchasing
General Ledger and eDocuments	Accounts Receivable
Workflow/Routing	Budget
Decision Support and Basic Reporting	Capital Assets
	Endowments
	Grants Management (Pre- and Post- Award)
	Labor Distribution

The modules of Phase I are scheduled for availability by second quarter 2006; Phase II modules are planned for release by June 30, 2007.

Putting the Plan Into Action

For financial staff, system developers, and analysts at the founding institutions, the future is today as we develop and test the delivered Kuali system and plan for implementation at our institutions. Those activities include

- tailoring the Kuali chart of accounts to institutional needs,
- discussing best practices for transaction routing,
- describing the organization hierarchy,
- assessing the decision support environment, and
- identifying financial system interfaces.

Cornell University plans to conduct conference room pilots within the next 12 months, during which time the Kuali Phase I modules will be loaded on user laptops. A limited number of central and campus power users will convene to conduct all of the Phase I processes with Cornell data, business rules, permissions, and routing instructions. The objectives of the exercise are to

- learn the software by using it,
- differentiate configuration and customization needs,
- learn the new language/terminology,
- model business processes based on what's learned,
- generate discussions on business practices,
- ensure that the organization can be ready and properly equipped for adopting the software,
- identify training and communication needs that will be required closer to implementation, and
- identify all future resource requirements.

While the founding partners haven't begun to plan the first Kuali Users Conference, we know it will occur in the not-too-distant future. The staff working on this project are committed to the effort, excited about the features of the system, and energized by the community of colleagues who will make this the best financial system serving the higher education industry.

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Resources

- To find out more about the Kuali project, visit www.kualiproject.org.
- To read more about the technical aspects of Kuali, go to www.nacubo.org and access these archived *Business Officer* articles: "An Open Mind on Open Source," by Karla Hignite (August 2004), and "Community Source Springs Forth," by Anna Jackson (May 2005).