**North Carolina State University**

**Financial System Overview**

By

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# Executive Summary

***Overview***

The purpose of this document is to provide an Overview of the Financial System at North Carolina State University in use as of September 2009. The first PeopleSoft module was used in a production setting by NC State in October of 1998, with the major Financial System going live in May through July of 1999 as part of the Year 2000 solution.

This document provides an outline of the Enterprise Resource Planning (ERP) Financial System and modules currently being utilized with an emphasis on the major changes and customizations and ‘bolt-on’ applications that NC State University has developed.

 ***System Overview***

Currently the Financial System at North Carolina State University is on Application Version 8.9 (PeopleTools Version 8.48). Seven modules have been implemented, and the Asset Management module has been purchased but not yet implemented. The following is a list of modules that have been implemented at North Carolina State University:

* Accounts Receivable
* Accounts Payable
* Billing
* e-Procurement (NC State MarketPlace)
* General Ledger
* Procurement Cards (PCard is part of Supply Chain Management)
* Purchasing (Supply Chain Management)

 ***System Changes***

*It is* estimated that the Financial System has been customized at approximately **5.8%.** This estimate is based upon a comparison of the modules in use as well as changes made to the records, fields, and pages within the Financial System. Please refer to Table 2 on page for additional details on this estimate.

It is important to note that customizations are classified in two distinct ways, customizations to the base (delivered or ‘vanilla’) product and “bolt-on” applications or processes. Much of the customizations to the base product have been made to the decentralized campus data entry points of the System in order to streamline data entry and provide additional controls. In order to leverage the Financial System, many ‘bolt-on’ applications have also been created that leverage the infrastructure, processes, and data already contained in the System. Please refer to the following pages for an overview of the Financial System at North Carolina State University and a high level summary of the enhancements that have been implemented.

# NC State University Financial System Overview

## Background

In March 1996, a project team comprised of Central Office and Campus Representatives was organized by the Chief Financial Officer and the Chief Academic Officer and charged with the responsibility to develop a Request for Proposal (RFP) to replace the existing legacy Human Resources (HR) systems.

In March 1997, based on a thorough review of each bidder’s proposal against very specific criteria, the team unanimously recommended that NCSU purchase the PeopleSoft HR system. Since PeopleSoft discounted the Financial and Student Administration (later named Campus Solutions) systems a review of these systems was completed and NCSU purchased these applications as well. Implementation of the HR and Financial Systems began in summer 1997. The following timeline outlines the major PeopleSoft Implementations and Upgrades at NC State from 1998 through 2009.

Table 1 – Timeline of Implementations/Upgrades \*


## \*Note that the Financial System is currently schedule to upgrade to version 9.1 in March 2012, HR and Student are expected to upgrade in October 2012.

## Current Financial System Version and Modules

Currently the Financial System at North Carolina State University is on Application Version 8.9 (PeopleTools Version 8.48). As of September 17, 2009, the Financial System is delivered to 19,909 (employees plus grad students) with a Financial Self Service role that allows them to be included in the review of MarketPlace (E-Procurement) purchases. In addition to the Self Service Role, 3,891 customers have additional security specific to the Financial System that allows more detailed inquiry and/or update capability.

Customers access the Financial System through integration with the Oracle/PeopleSoft Enterprise Portal (MyPack Portal) that is currently on Application Version 9.1 (PeopleTools Version 8.51). In addition to the Financial Production System (where transactions are entered and processed), there is a Financial Reporting instance (where much of the reporting occurs) and at least six non-production instances exist (Training, Development, Quality Assurance, Pre-Production, Load Testing, and a Vanilla System). Note, that during upgrades, additional instances must be created in order to upgrade the systems.

The following PeopleSoft/Oracle modules have been implemented and are in use at North Carolina State University:

* Accounts Receivable
* Accounts Payable
* Billing
* e-Procurement (NC State MarketPlace)
* General Ledger
* Procurement Cards (PCard is part of Supply Chain Management)
* Purchasing (Supply Chain Management)

Note, NC State has purchased the Asset Management module but due to timing and resource constraints has not yet implemented that module. Preliminary plans established before September 2009 had scheduled that the Financial System would be upgraded to Version 9.1 (PeopleTools 8.5) including the implementation of the Asset Management module in April 2010. Due to recent collaboration plans involving UNC-CH and NC State University that schedule will need to be reviewed and possibly modified.

## Financial System Customizations

While a detailed Fit-Gap Analysis that lists all customizations that NC State has made to the Financial System in the eleven years of running the PeopleSoft/Oracle Financial System is outside the scope of this document, it is important to recognize that significant changes have been made to portions of the Financial System. These changes were made in accordance with the Administrative Systems Governance Structure established by the Administrative Systems Steering and Management Teams. The changes were implemented as a result of customer service benefits, productivity enhancements, or regulatory requirements. For additional information on the Administrative Systems Governance Structure of NC State University, please review the information contained in the Steering and Management Team Charge at the following URL: <http://www.fis.ncsu.edu/EADS/SteeringInfo/index.html>.

Financial System Customizations are classified in two distinct ways, customizations to the base (delivered or ‘vanilla’) product and “bolt-on” applications or processes. Customizations (or enhancements) to the base product are necessary at times due to the categories above (customer service benefits, productivity enhancements, regulatory requirements) but are typically more invasive when upgrading or applying maintenance to the Financial System. NC State University has often chosen to leverage our Enterprise Resource Planning (ERP) System through the use of “bolt-on” applications to the delivered system. These “bolt-on” applications leverage core infrastructure (hardware, network and application security) and interfaces in an extremely efficient manner that leverages the investment made by NC State University in the core systems. These “bolt-on” applications are typically designed using new NC State pages, fields, tables, and code with very minimal customization to the delivered product in order to minimize the impact of vendor supplied maintenance and upgrades.

The chart below shows an estimated number of new or customized objects that are contained in the Financial System.

Table 2 – Number of changes or additions to the NC State University Financial System

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | **Records** | **Fields** | **Pages** | **Total Objects** |
| **Description** | **Number** | **Percent** | **Number** | **Percent** | **Number** | **Percent** | **Number** | **Percent** |
| Base System |  57,477  |   |  79,039  |   |  15,926  |   |  152,442  |   |
| Modules Used from Base  |  22,045  |   |  24,948  |   |  6,582  |   |  53,575  |   |
| Customized |  488  | 2.21% |  167  | 0.67% |  244  | 3.71% |  899  | 1.68% |
| NC State Added (Bolt-On) |  779  | 3.53% |  1,190  | 4.77% |  242  | 3.68% |  2,211  | 4.13% |
| Modified |  1,267  | 5.75% |  1,357  | 5.44% |  486  | 7.38% |  **3,110**  | **5.80%** |
| *\*Note that there are other object types other than Records, Fields, and Pages that make up the Financial System and* |
|  *have been modified, however these types are indicative of the level of customization for the Financial System.* |

### Moderate to Major Customizations to the Base Product

Listed below is a brief description of the moderate to major customizations and Bolt-On Applications to the Financial System that have been implemented or are currently being developed:

* **General** (All modules that allow decentralized data entry by campus departments)
	+ **Streamlined Data Entry pages** (including adding restrictions to chartfield data entry). Significant modifications were made to Journal Entry in GL, e-Procurement Requisition Entry in Purchasing, and Invoice Entry in Billing. Journal Entry changes were required to control data entry access by user and process actions by user. The Billing Invoice Entry area was modified to simplify data entry for simple invoices.
	+ **Departmental Level Security** (OUC Security). Department Level Security, also referred to as Organizational Security or OUC Security, is a significant customization to the Financial System that was contracted with PeopleSoft consultants as part of the original implementation of the Financial System. Departmental Level Security controls the ability to enter (but not inquire) on transactions by users for single or multiple organizations across campus. This customization was made to the following decentralized campus entry points: Accounts Payable (Voucher Entry), Purchasing (Requisition and ePro MarketPlace entry), and General Ledger (Actual and Budget Journal Entry).
* **Accounts Receivable**
	+ Enhanced the Aging process to create different report breakouts for the different business units.
	+ Enhanced the entry of Distribution Codes in order to control the format of the code and to populate the chartfields based on the Project Attribute bolt on.
	+ Modified Invoice and Payment Posting process for performance.
* **Accounts Payable**
	+ Added ePayables attributes to Vouchers and incorporated (Bank of America) ePayables Payment Processes to allow the payment and reconciliation of Invoices with Purchase Cards.
	+ Added integration to Documentum imaging system in order to display invoice images.
	+ Added U.S. Residency Status fields and added additional attributes to vendor records
	+ Added additional security to bank account/1099 information
* **Billing**
	+ Enhanced the Invoice Printing process to display an NC State desired format and to streamline the process which creates the printed version of the invoice.
	+ Added edits to the entry of Charge Codes to ensure the integrity of the data between Billing and Accounts Receivable.
* **e-Procurement (NC State MarketPlace)**
	+ Customized auto-sourcing functionality for purchase order processing to prevent large dollar orders from being automatically dispatched after purchase order creation in batch.
	+ Added additional functionality to delivered vendor integration to allow the passing of additional information in support of “User” specific shopping sessions (e.g. User creates favorites on vendor site and nobody else sees or modifies them).
	+ Significant streamlining of data entry to hide or default options that are not supported by vendor sites or NCSU business processes (e.g. Multiple “Ship To” addresses per line item).
* **General Ledger**
	+ Added new functionality to the Allocation Process to be able to use it for the F&A Calculation Process.
	+ Added new functionality to the Summary Ledger Process to be able to create Encumbrance Summary Ledgers.
	+ Enhancements to Account and Department chartfields such as long description, NCAS Account tracking, and Financial Statement Classification categories.
* **Procurement Cards (PCard is part of Supply Chain Management)**
	+ Created processes to force the reconciliation/processing of transactions at month-end
	+ Streamlined the PCard administration processes
	+ Added functionality to transaction load processes to search for Purchase Order numbers in multiple fields on each transaction.
	+ Added functionality to transaction load processes to assign Account codes to transactions based on Merchant Category Codes (MCC).
	+ Added functionality to transaction load processes to load and validate Project Id’s passed by vendors in ghost card transactions.
* **Purchasing (Supply Chain Management)**
	+ Added expiration date fields on Purchase Order pages to prevent early closure
	+ Streamlined batch process for Purchase Orders to close ePro MarketPlace PO’s with trivial remaining balances.
	+ Added code to force entry of defaults on requisitions
	+ Added code to require one vendor per requisition (instead of multiple).
	+ Added code to mimic part the delivered Matching processes (e.g. not allowing over payment of Purchase order lines, etc.).

### Bolt-On Applications or Processes

* **Project Attributes**: Allows Campus and Central Offices to establish Project Id’s with related information based on funding type. Additional functionality includes NCAS Reporting, Grants Reporting, Foundations & Endowment Reporting, PI Tracking, Chartfield Setup Control, and Inactivation Rules.
* **Email notifications**: Several processes have been created that send email notifications to campus customers and vendors. Examples of the email notifications include payment advice notification, and e-Procurement (MarketPlace) escalation emails.
* **Post Award Contract & Grants**: Has the following functionality-F&A Calculation, Billing, Revenue Recognition, and Closeout Process.
* **Travel Reimbursement**: Allows for reimbursement of trip expenses and calculates allowed meal per-diems. Integrates with Vouchers [Accounts Payable]
* **Travel Authorization**: Allows for budgeting and formal approval of travel prior to trips. Workflow is leveraged and defined by campus departments. Integrates with Travel Reimbursement [Bolt-On]
* **Capital Improvement System**: Allows for the Budget Office and Facilities Budget Office to track and monitor construction and repair and renovation funds received from the state.
* **Procurement Card Request**: Delivered functionality for managing employee purchase card requests is almost nonexistent. This self service bolt-on allows for employee credit card requests to be sent through workflow approvals and then rolled straight into the Pcard module. Also allows card holder to track transactions and generate reports on activity for cards assign to them.
* **Interdepartmental Transactions**: Allows campus customers to transfer funds, journal transaction, and charge for services across departments. It has special workflow routing.
* **OIT Billing**: Allows the OIT Unit to track and create charges for Local Area Network (LAN) and Disk usage by campus.
* **System Access Request (SAR) Workflow Routing**: Created in order to allow campus customer to inquire, select, maintain, and create groups within the Financial System in order to maintain electronic routing utilized by the Financial System.
* **Campus Reconciliation Tool:** Custom process that allows campus customers to review and reconcile their accounts within the Financial System. Note that development is currently in process for this functionality.

## Additional Considerations

* **Reporting**. As with most Financial Systems, reporting is a key component and requirement of the Financial System Customers. NC State utilizes a combination of tools to satisfy extensive reporting requirements as follows:
	+ Customized Campus Reports: Highly customized reports developed by NC State called the Wolfpack Reporting System (WRS)
	+ Customized Central Office Reports: Highly customized reports developed by NC State for the following areas: Foundations Accounting, Endowment Tracking, and Controller’s Office for Year End Reporting.
	+ Queries: Currently there are 3,927 custom production queries and 4,917 custom reporting queries
	+ Crystal Reports: A relatively minor but custom built Crystal reports are in existence.
	+ nVision Reports: A very small number of nVision reports exist for select Central Offices. Note that the majority of these reports have been replaced with other reporting mechanisms.
* **Application Security:** Application Security is granted through integration with Sun’s Identify Management System (SAR).
* **Controlled Budgeting:** Due to historical issues and process impacts of controlled budgeting functionality, NC State has chosen not to utilize controlled budgeting and has gained improved performance by disabling the budget checking feature on small purchase voucher transactions.
* **Pre-Encumbrances:** NC State utilized Pre-Encumbrance and Encumbrance entries for many years. Due to complexities with liquidations between Pre-Encumbrances and Encumbrances, Pre-Encumbrances entries have been disabled.
* **Workflow/Approval Routings**: Note, while workflow routing isn’t technically considered a customization, it is important to realize that the workflow routings and rules have been established and integrated very carefully with the following modules:
	+ Accounts Payable (Voucher College Approval, State Agency ‘CMCS cash transfers’ vendor processing, COPS Capital Improvement vendor processing, ePayables vendor processing, conflict of interest approvals, Voucher Auto-Approval processing based upon account codes and amount, PO Voucher/Credit Memo Auto Approval for Central Office customers).
	+ Actual and Budget Journals(Journal College Approval, Contract and Grants Approval, Foundations Approval, Budget Approval, and Controller’s Office Approval)
	+ Requisitions (Requisition College Approval, Special Commodity/Hazardous Materials Approval, Budget Capital Improvement Approvals)
	+ eProcurement/MarketPlace: Combination of Accounts Payable and Requisition workflow rules
	+ Inter-Departmental Transactions (IDT’s): Customer Approval, CALS Approval, Foundations Approval, Budget Approval, and Controller’s Office Approval
	+ Contracts and Grants (C&G) Electronic Closeout: CBO Approval, Bookkeeper Approval, CBM Approval, TEARS Approval, and C&G Approval)
* **Imaging:** Currently NC State University leverages imaging capabilities utilizing InputAccel and Documentum. There is a strong desire to enhance and grow this functionality to integrate with other aspects of the Financial System. Currently imaging is being used in the following modules:
	+ Vouchers
	+ Travel Reimbursement Requests
	+ Procurement Cards
	+ Capital Improvement System (Bolt-On)
	+ Contracts & Grant E-Closeout Process (Bolt-On)
* **System Integration:** Integration with the other key ERP Systems (Human Resources, Student Information System) and external systems is critical for processing. Much of the integration is completed through Application Messaging which is a delivered process provided by Oracle/PeopleSoft and custom processes. The major integration points are:
	+ Financial System to Human Resources: Chartfield information (Accounts, Departments, Projects, etc) [General Ledger]
	+ Human Resources to Financials: Payroll Expenditure Journals and Payroll Encumbrance Journals. [General Ledger]
	+ Student Information System to Financials: Student Refund and Financial Aid processes that generate payments and financial transactions. [Accounts Payable and General Ledger]
	+ External Files: Foundation Deposits, Student Loans, and Service Unit Billings generate journal transactions that are processed in the Financial system. [General Ledger]
	+ The Accounts Payable (Voucher) System has custom interfaces created to Facilities and the Library systems. [Accounts Payable]
	+ EDI interfaces have been established with Wachovia Bank for payment disbursement processing (direct deposit as well as check distributions). [Accounts Payable]
	+ Employee Bank and Address Information synchronization with the HR System. [Accounts Payable]
	+ Student Vendor synchronization with Student/HR data. [Accounts Payable]