

Information Systems Audit

Banner: Administrative Services System

The University of Montana–Missoula

February 2010

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LEGISLATIVE AUDIT DIVISION

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February 2010

The Legislative Audit Committee of the Montana State Legislature:

We conducted an Information Systems audit of Banner which is maintained and operated by The University of Montana–Missoula to assist in the administration of financial, human resource, student and financial aid records. The intent of the Banner audit was to identify and test key controls over the application's Finance and Financial Aid modules to ensure the modules are operating as intended. This report outlines conclusions from our review and contains no recommendations.

We wish to express our appreciation to The University of Montana–Missoula for their cooperation and assistance.

Respectfully submitted,

/s/ Tori Hunthausen

Tori Hunthausen, CPA Legislative Auditor

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	The University of Montana–Missoula	A-1

APPOINTED AND ADMINISTRATIVE OFFICIALS

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Montana–Missoula	Teresa S. Branch, Vice President for Student Affairs	
	Robert Duringer, Vice President for Administration and Finance	
	Jed Liston, Assistant Vice President for Enrollment Services	
	Mick Hanson, Director, Financial Aid	
	Mark Pullium, Director, Business Services	
	Julie Cannon, Assistant Director Student Account Services, Business Services	
	John McCormick, Associate Director, Business Services	
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REPORT SUMMARY

Banner: Administrative Services System

The Banner system is used by The University of Montana–Missoula (UM) to assist in the administration of financial, human resource, student, and financial aid records. Banner consists of baseline functionality, as delivered by a third party vendor, and customized functionality through modifications developed by UM. Banner is maintained by UM departments responsible for data (Financial Aid, Registrars Office, etc) with hardware and modification support handled by UM's Department of Information Systems and Technology. Within the department, hardware support is provided by Central Systems Support Services while modification support is provided by Enterprise Information Systems.

The Banner system consists of four modules:

- Finance manages UM financial data including budget, accounts, ledgers, purchases, and payments.
- Human Resources manages UM employment information and payroll processing including job and employee information, taxes, benefits, and deductions.
- Student Services manages UM student academic information including admissions, class registration, course information, rosters, grading, and enrollment status of students.
- Financial Aid manages the UM student financial aid process from the receipt of the student's financial aid form through needs assessment and award issuance.

To help determine system risks, we reviewed system processes and changes, and considered prior audit testing and Banner delivered processing. Although our risk assessment covered the entire UM Banner system, this audit focused on high risk areas of the Finance and Financial Aid modules. Audit work was conducted to ensure:

- access to Banner functionality is limited to users with identified business needs
- modifications to Banner follow UM change management procedures
- select Banner processing controls function as UM management intends

This report discusses the work performed during this audit. Overall, we did not identify any significant control weaknesses. We noted access is limited, change control procedures are followed, and select processing controls function as intended. As a result, there are no recommendations in this report.

Chapter I – Introduction and Background

Introduction

Information Systems conducted an audit over controls residing within the Banner system at The University of Montana–Missoula (UM). The intent of the Banner audit was to identify and test key controls over the application to ensure the system operates as intended. In addition to this report, we provided an internal memorandum to Legislative Audit Division (LAD) staff providing detailed control information to consider during other audit work.

Background

The Banner system is used by UM to assist in the administration of financial, human resource, student and financial aid records. Banner consists of baseline functionality, as delivered by a third-party vendor, and customized functionality through modifications developed by UM. Banner is maintained by UM departments responsible for data (Financial Aid, Registrars Office, etc,) with hardware and modification support handled by UM's Department of Information Systems and Technology. Within the department, hardware support is provided by Central Systems Support Services while modification support is provided by Enterprise Information Systems.

Banner is made up of four modules: Finance, Human Resources, Student Services, and Financial Aid. Within each module are subsystems providing different functionality to Banner users.

The Finance module manages UM financial data including budget, accounts, ledgers, purchases and payments. It includes the following subsystems and functionality:

- Accounts Payable processes invoices, maintains vendor data, calculates discount and payment schedules, and manages tax disbursements.
- Purchasing manages both immediate purchases and purchases requiring a bid process.
- Accounts Receivable maintains charge and payment information for individual accounts, including student accounts.
- Posting moves transactions from all functions into UM ledgers.
- Capital Assets Management maintains assets over \$5,000.

The Human Resources module manages UM employment information and payroll processing including job and employee information, taxes, benefits and deductions. It includes the following subsystems and functionality:

• Employment – manages employee information, job profiles, and benefit information.

Payroll - manages time entry, approval and payroll process.

The Student Services module manages student academic information including admissions, class registration, course information, rosters, grading and enrollment status of students. It includes the following subsystems and functionality:

- Admissions tracks potential students and manages student admissions.
- Registration manages student registration and grades.

The Financial Aid module manages the student financial aid process from the receipt of the student's financial aid form through needs assessment and award issuance. It includes the following subsystems and functionality:

- Financial Aid Drawdown process to download federal financial aid forms for integration into Banner.
- Satisfactory Academic Progress process for ensuring students maintain federally required academic levels to receive financial aid.
- Verification process for ensuring students are completely and accurately filling out financial aid forms.
- Packaging process where a student's financial aid need and eligibility are determined and financial aid is made available and awarded to students.

Additionally, Banner interacts with an online portal, CyberBear, for faculty, staff, and students to access and update Banner information online. It does not store data and serves as an access point to the modules described above.

Although our risk assessment covered the entire UM Banner system, this audit focused on high risk areas of the Financial and Financial Aid modules.

Audit Objectives

This Information Systems audit addressed the following objectives:

- 1. Ensure access to select Banner functionality is limited to users with identified business needs.
- 2. Ensure modifications to Banner follow UM change management procedures.
- 3. Ensure select Banner processing controls function as UM management intends.

Scope and Methodology

To help determine system risks, we reviewed system processes and changes, and considered prior audit testing and Banner delivered processing. In addition to the high risk areas of the Finance and Financial Aid modules, we also reviewed system modifications and followed-up on Banner security from a previous audit. Finally, we provided detailed control information to LAD audit staff for use in other audit work.

Audit methodologies included interview of staff, query and analysis of Banner data, review of Banner documentation, and observation of Banner and UM staff operations. We evaluated the control environment using state law and policy, UM Security Plan and federal law. The audit was conducted in accordance with Government Auditing Standards published by the United States Government Accountability Office (GAO).

UM Banner Security

We performed an Information Systems audit in 2008 over UM compliance with its Security Plan. Based on our work, we identified seven areas warranting management attention. In addressing our fourth objective, we determined UM has either addressed or is addressing all identified areas. The seven areas included:

- 1. Environmental risk within the UM data center
- 2. Physical access to the UM data center
- 3. Desktop security implementation
- 4. Keeping the Banner Security Plan up-to-date
- 5. Incomplete user access requirements in the Banner Security Plan
- 6. Incomplete user profile segregation of duties in the Banner Security Plan
- 7. Undefined user privileges in the Banner Security Plan

Management Memorandum

During the course of our audit, we identified the following three areas warranting management attention:

- 1. Student Fees Certain student fee reconciliations were in place but could be strengthened.
- 2. Satisfactory Academic Progress (SAP) SAP flags prevent students from obtaining financial aid. The flags can be manually removed; however, minimal monitoring occurs and could be strengthened.
- 3. Time Approval UM policy only requires one signature for payroll time approval allowing individuals in three of 141 UM departments to approve their own time. UM policy could require a second approving signature for all time approvals.

Although not included as recommendations in this report, our suggestions were presented to UM for its consideration.

Chapter II – Select Banner Access

Who Can Access University Information?

Automated systems store one of an organization's most valuable assets – data. These systems are often critical in supporting the organization's functionality. In order to protect the system and data from unauthorized activity, access should be controlled. Controlling access allows employees to complete assigned job responsibilities while increasing security over confidential information. The University of Montana– Missoula (UM) relies on user access controls in all components of Banner. To obtain access within Banner, a user must complete a Banner Account Request form and obtain necessary approval. The forms are routed to Banner security personnel for access assignment. To satisfy our first audit objective, we reviewed select user access in the Finance and Financial Aid (FA) modules.

Finance Module

Vendor Data

To make payments on purchases, Banner requires vendor information to exist in the system and an invoice to be created and approved. Since vendor payments are generated using information stored in Banner, access to vendor data should be controlled to prevent unauthorized changes. To ensure vendor data access is limited to users commensurate with job responsibilities, we queried Banner to obtain a list of users with rights to add or modify vendor data and compared the results with information from Accounts Payable (AP) management regarding job duties. We determined access to vendor data is limited to users with identified business needs.

Invoice Creation

Invoices are manually entered into Banner either by UM department personnel or AP staff in Business Services. Invoice creation includes adding vendor information stored in the vendor table. Once created, each invoice is to be approved prior to payment; if not approved, the invoice is not paid. Any individual having access to update vendor table data and create and approve invoices has the ability to create their own payments. To ensure controls prevent any individual from having access to all three functions, we obtained a list of individuals with the ability to enter and approve invoices and compared it with the list of individuals having update access to the vendor table. We determined controls enforce segregating the ability to enter and approve invoices and update vendor information.

Student Fees

Banner's Accounts Receivable (AR) subsystem tracks all UM customer accounts, both student and nonstudent. Student fees are generally managed by AR staff in Business Services, while nonstudent fees are managed by UM Treasury personnel. Since student fees make up the majority of AR transactions, we reviewed AR staff access to change or remove student fees. We obtained a list from AR management specifying staff with the need to change or remove student fees and compared it to the list of individuals we obtained through query of Banner. Both lists matched, indicating all individuals with rights in Banner to remove student fees have an identified business need.

Financial Aid Module

Satisfactory Academic Progress

In order to receive federal financial aid, U.S. Department of Education (DOE) regulations require students to meet both quantitative and qualitative measurements. This is called Satisfactory Academic Progress (SAP). At UM, SAP is passing 70 percent of classes attempted with a cumulative minimum GPA of 2.0. The University monitors student progress and relies on Banner to flag SAP violations. If a student does not meet any of the SAP requirements, Banner will flag the student account and prevent any further processing of financial aid eligibility. The flag must be manually changed in order for the student to be eligible for FA.

We reviewed how SAP policies are entered into Banner to ensure controls prevent unauthorized SAP policy changes. Our audit work determined SAP policies are part of Banner's programming code and changes must follow UM's change management policy and procedures. We reviewed the code for the 2008-09 school year and observed the rates match UM requirements.

Verification

Banner's financial aid process begins with importing financial aid forms from the DOE. The DOE requires UM to verify a percentage of the forms to ensure students are completely and accurately filling out the forms. To ensure this occurs, DOE flags a sample of up to 30 percent of financial aid forms for verification. Once a student's form is flagged in Banner, financial aid cannot be received until the student supplies FA evaluators with the required verification documentation. Once all the documentation has been submitted to the FA office and confirmed by the evaluators, the Banner record is updated by marking the documents as collected. The flag can then be removed and the form will continue being processed.

We reviewed access to determine if verification flag removal is limited to FA evaluators only. We obtained a list of evaluators from FA management and compared it to a list from Banner of individuals with the ability to remove verification flags. Both lists matched, indicating only FA evaluators can remove the verification flag. In addition, we reviewed the ability to mark documents as collected in Banner to ensure it was segregated from the ability to remove the verification flag. Any individual with access to both could mark documentation as collected and remove the verification flag, even if no documentation was received. This potentially allows a student to receive financial aid without completely or accurately filling out their financial aid form. Our review identified FA evaluators could perform both tasks; however, FA management asserted the access was needed to perform job requirements. To compensate, we determined FA staff perform random file checks to ensure all DOE required documentation is in the file. As a result, verification controls exist to ensure documentation is only being marked as collected.

Cost of Attendance

Key to determining student financial aid is the base Cost of Attendance (COA). The COA is how much it will cost a student to attend UM, depending on student status. Banner compares the COA to student expected family contributions (income, etc.) with the difference being the student's need. The FA Director initially determines the base COA and manually enters it into Banner. To ensure controls prevent unauthorized COA changes in Banner, we reviewed a list of individuals with access to change the COA. Our work identified 21 individuals with the ability to change the COA. According to FA management, the access is needed in specific cases where additional costs are identified. However, the access does not allow the base COA to be changed. For example, if the base COA for a full-time student is \$1,700 for a semester, but books will cost an additional \$700, the new total COA can be changed to \$2,400. However, when the addition is made, the base COA (\$1,700) is not changed. We reviewed instances where additional COA appeared and determined, in each instance, the base COA was not changed.

CONCLUSION

Based on audit work, we conclude access to select Banner Finance and Financial Aid functionality is limited to users with identified business needs.

Chapter III – Select Banner Modification

How Has Banner Changed?

Banner is a commercial-off-the-shelf system. When a system such as Banner is implemented, system functionality is considered delivered, or baseline. However, the system may not perform as expected or needed by the implementing organization, thus requiring system modification. To ensure modifications operate as intended and do not have adverse impact, The University of Montana–Missoula (UM), has implemented change control procedures to request, develop, test, and implement modifications to Banner functionality. To address our second objective, we reviewed modifications to Banner's Finance and Financial Aid modules to answer the following questions:

- Was Banner baseline functionality changed?
- If so, does Banner still function as UM intends?
- Did modifications follow UM's change control procedures?

Finance and Financial Aid Modules

Overall, Banner Finance provides a financial management system allowing the ability to track, maintain, and process UM financial data while Financial Aid (FA) manages the student financial aid process from the receipt of the student's financial aid form through needs assessment and award issuance. We identified 232 UM modifications to Banner since the last UM Banner audit (December 2007). Our review focused on modifications with the highest level of impact to the system as determined by UM. The modifications were rated as high, medium, or low based on the following:

- High have the greatest amount of impact on Banner and generally change Banner's baseline functionality.
- Medium generally do not affect Banner's baseline functionality, but may change how previous modifications perform.
- Low have the least amount of impact on Banner functionality, generally consisting of changes to reports such as what shows in a report or what can be seen in a report's description fields.

Of the 39 modifications UM identified as having high impact on Banner functionality, 10 were in Finance and 8 were in FA. Examples of the 18 modifications include:

- A new pharmacy code was added to Banner processing.
- UM added an additional type of journal entry transaction entered into Banner.
- Student deferred payment plan request forms were modified to allow deferred payments through CyberBear for any semester except summer.

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- UM's max credit rules (maximum amount of financial aid any student can receive) are more stringent then the federal standards, so Banner's rules were adjusted to meet UM's rules.
- Student financial aid notices were adjusted to no longer show lender identification numbers.

Although the modifications affected Banner processing, our review indicated system functionality remained as expected. UM's change control procedures include documenting modification requests, testing each modification, and signing off when testing is successfully completed. Acceptance of the modification and signing for each modification put into production must also be documented. We reviewed documentation for all 18 modifications and determined each followed UM's change control procedures.

CONCLUSION

Based on audit work, UM has modified Banner's baseline functionality; however, system functionality remained as expected. Furthermore, select modifications followed UM's change control procedures.

Chapter IV – Banner Processing Controls

How Does Banner Process Data?

The University of Montana–Missoula (UM) maintains data and information from students, vendors, employees, etc. In order to be usable, the data and information must be stored in a structured fashion. To do this, the system performs mathematical and logical operations, or processes, on the data. Processing controls ensure Banner functions as expected. To address our third objective, we reviewed specific Banner processing controls to ensure operations occur as expected.

Finance Module

Purchasing Payments

The purchase and subsequent payment for goods and services obtained by UM occurs within the Accounts Payable (AP) and Purchasing subsystems. UM purchases may be paid through multiple methods; following are the two most common:

- 1. Direct Payment Generally AP departmental personnel enter vendor invoices in Banner. Once invoices are approved, Banner processes them for payment. This is the most frequent form of purchasing payments.
- 2. Bid Process In this process, a requisition is created and approved in Banner. Then a Request For Proposal is created and released, bids are received, and the winning bid is approved by the initiating department. Subsequently, a purchase order (PO) is created and approved which also attaches (encumbers) the initiating department's funds to the PO. When payments on the PO are made, an invoice is created and paid based on PO data. This process is generally used for large dollar amount purchases.

We reviewed invoice payments for fiscal years 2008 and 2009 to ensure controls prevented payments from exceeding invoice amounts. We queried Banner for all payments and related invoices for both fiscal years and performed data analysis comparing query results. All payments were equal to the amounts on the related invoices.

Purchase Order Invoicing

To ensure controls prevented invoice amounts from exceeding originating PO amounts, we queried Banner to obtain both amounts for fiscal years 2008 and 2009. Our data analysis identified 740 invoice amounts larger than the originating PO. According to AP management, invoices can be changed to account for:

- Added fees fees not accounted for in the original PO.
- Shortages UM did not receive or use the full amount on the original PO.

- Overshipments occasionally a vendor will overship on a PO and UM will keep and pay for the overshipment.
- Shipping occasionally UM will need an item faster than through normal shipping which will cost more than stated in the PO.

Additional work identified controls in place requiring approval by either the Purchasing or AP manager before invoice changes are made.

Required Invoice Data

Department funds are attached to payments based on a department identifier (index number) entered during the creation of an invoice or PO. To ensure this number is required, we observed AP and Purchasing staff attempt to process invoices and POs with a closed, invalid, or missing index number. In each case, Banner would not allow the invoice or PO to be completed.

Invoice Approvals

Banner requires invoices to be approved prior to payment. UM's primary methods of approval are:

- AP and Purchasing management signoff in Banner
- UM staff approve the invoices they enter (implicit approval)

When management approval is required, Banner will not allow an invoice or PO to be completed and processed for payment without approval. However, with implicit approval, UM staff can create and approve their own invoices as long as the invoice is under a set dollar amount. Because implicit approval potentially allows an invoice to be created, approved and paid to the same individual, we reviewed related controls. AP management asserted they receive a monthly report listing invoices created, approved and paid to the same individual. Management researches each invoice listed on their report and documents the results. We queried Banner for invoices created and approved for fiscal years 2008 and 2009, as well as who received payments for those invoices. Our data analysis identified 35 invoices created, approved and paid to either the same individual or an individual with the same last name. AP management stated there are specific circumstances where this would be an approved activity. For example, UM employees are paid as vendors for reimbursement of approved departmental purchases. From our results, we selected the month with the most invoices (January 2009) and confirmed AP management's monthly report results matched ours. We also observed management's research for each invoice was documented.

Financial Aid Module

As mentioned in Chapter II, the Cost Of Attendance (COA) is the student cost for attending UM. FA management manually calculates the COA and keeps a hard copy of the results. The COA is manually entered into Banner. A comparison of the figure in Banner with the calculated cost is performed to ensure the COA was entered correctly and, if correct, will indicate their review on the hard copy. We compared the COA for the 2008-09 school year; the figures in Banner matched those on the hard copy. We also observed notation on the hard copy indicating the comparison was performed.

CONCLUSION

Based on audit work, we conclude select Banner Finance and Financial Aid processing controls function as UM management intends.

University Response



The University of Montana—Missoula



21 January 2010

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RECEIVED JAN 2 1 2010 LEGISLATIVE AUDIT DIV.

Dear Ms. Hunthausen:

We thank the Legislative Audit staff for their professional work on the Banner Administrative Services System Audit. While conducting the audit, we found the Legislative Staff thorough and that they dealt with important controls and security of our administrative systems. The University will address the identified areas of concern as present in the management memo. We appreciate the cooperative efforts made by the audit team and thank those involved for their assistance.

Sincerely,

Dennion

George M. Dennison President

GMD/cc Denlet4108

c: S. Stearns, Commissioner of Higher Education