ITEM 127-121-R0505

TO: BOARD OF REGENTS

FROM: LAURIE NEILS,

DATE: MAY 4, 2005

RE: MUS DATA WAREHOUSE

The attached Board item relates to the expansion of the data warehouse capabilities in the Office of the Commissioner and the ability of the members of the Board of Regents to obtain management reports electronically (or on the web) in a timely and consistent manner.

When the Board of Regents approved the implementation of SCT Banner for all the Montana University System campuses in November 1997, many of us believed that our data retrieval dreams would come true. We then learned that an "integrated enterprise university system administrative information system" with "seamless integration among financial, human-resource, and student records systems" meant something different than some of us had envisioned.

Our vision was then expanded to include a "Data Warehouse", which the Regents approved in September 1999. We started small with Phase I and II that dealt with student records and enrollment and had plans to expand the warehouse to include finance, human resources, and financial aid in a later phase of the project. The product we purchased allows an electronic enrollment report for the Montana University System campuses to report to the Commissioner, and access to other student data and records through Access software. Although management reports were supposed to be part of the purchased product, for a number of reasons the canned reports were not very useful.

The reality of the dream for data retrieval is that our campuses have the capability, but the Regents and your staff for the most part do not. In order for you (or anyone else) to obtain information from the MUS Student Data Warehouse, you have to go through the data gatekeepers (either Kevin Turner or me) to write Access queries. In order for you or your staff to obtain data for the reports identified in the attached document, we have to go through the campus data gatekeepers.

I am not attempting to point the finger of blame toward anyone. Probably more than any other reason, the problem lies in the lack of manpower and technology expertise in the Office of the Commissioner. The Commissioner has had to assign the central MUS

responsibility for these projects to a staff member who already had a full-time job in a different area. The Commissioner has never had a staff information technology expert to rely upon.

Here's a real life example for you. A reporter calls and asks for a report that lists each Montana University System employee that makes more than $75,000 per year, by campus, by funding source.   Even though you, the Regents, approve these salaries through Board items, we your staff do not have a system that consolidates these salaries into an electronic file somewhere with other salary enhancements, or even other compensation. So, we call or e-mail the campuses and tell them the data we need and the deadline by which we need it, usually at least a week. When we get the data from the campuses, we put the data into a spreadsheet and turn it into a system report.   That is a best-case scenario that assumes we don't need to call the campuses back to get more information or change some of what was submitted.   Not very efficient, for the campuses, or us is it?

Another real life example that is closer to home for me is the compilation of the annual operating budgets. The campuses submit the forms to your Director of Budget and Accounting by retrieving the data from their campus system. The forms come to OCHE either in hard copy or the electronic submission of Excel spreadsheets. Then, your staff spends many hours manually verifying and analyzing the data and cross checking data, re-keying data into the summary reports, formatting reports, and creating some pretty charts and graphs.   For the actual expenditure data reported for the previous fiscal year-end, your staff really has no good way to verify the data. Nor do we have a good way to verify that the amounts you authorize for spending in the operating budgets are the basis for (and the limits for) campus budgets established on Banner.

Immediately after the Banner systems were fully implemented the campuses did spend quite a bit of time training OCHE staff and staff from the Legislative and Executive branch agencies on how to access and retrieve information from Banner Finance on the MSU and UM systems. However, OCHE uses the state's PeopleSoft product for it's accounting system and it was time consuming and extremely difficult to become familiar with campus accounting systems that we don't use routinely. What we would have had access to would be campus specific data and not system data or reports –and the data would be from the finance system only.

The Legislative Branch agencies created finance Banner Interface Project (BIP) that is housed on the MUS Student Data Warehouse server. The campuses worked diligently with the legislative staff to reconcile the data and to map out where the needed data is stored on Banner. As hard as campus folks worked on the BIP project there is not widespread utility in the product. Legislative Audit mainly uses the system. The reports in an operating budget format that Pam Joehler requested from BIP (in Pam's previous work life) were never accurate or useable.

On October 6, 2004, the Board of Education heard from Jay Pfeiffer about the Florida Education and Training Placement Information Program. What Jay helped create was a

data warehouse with some great front-end reporting capabilities.   Florida brings in data from high schools, vocational centers, community colleges, public universities, independent universities, federal programs and state programs into a central data warehouse, does some matching and other data machinations, and spits out interesting and useful reports. Mr. Pfeiffer has expressed a willingness to help us create a similar model for Montana.

The University of Montana has created a finance data warehouse and front-end reporting tool that works very well for all the UM campuses. They are currently working on Human Resource and have piloted some payroll reports and have done preliminary work on student records and reports. UM will give you a demonstration of their finance data warehouse reports at the May Administrative/Budget Committee meeting.

UM and Florida have similar models for data warehouses. However, these are not the only possible solutions. MSU has looked at other technologies, including a purchased product from SCT.   The Regents can create a warehouse with front-end management reporting capabilities regardless of the warehouse environments on the campuses.

The current ability of the Regents and the Regents staff to efficiently access timely and accurate campus data is seriously deficient. Important work on evaluations of quality and performance measures will be more accurate and more easily updated with the implementation of a Regents Data Warehouse Information and Report System.   Other entities such as the U.S. Department of Education, the Office of Public Instruction, and Workforce Development coalitions are swirling around us working on their own data warehouse needs. It won't be long before they will be asking the Regents for system data to feed into their warehouses as well.

Data Element	How campuses obtain data	CHE's Method of Obtaining Data	How CHE uses data
Finance			
Budget data	Banner finance	Campuses submit hard copy or excel/word documents	re-keyed into reports at OCHE
Fiscal data	Banner finance	Campuses submit hard copy or excel/word documents	copied or re-keyed into reports at OCHE
adhoc fiscal data	Banner finance	call or e-mail campuses for data	copied or re-keyed into reports at OCHE
Tuition/fees	Banner finance/other campus records	Campuses submit hard copy or excel/word documents	copied or re-keyed into reports at OCHE
Fund balance/cash balance reporting	Banner finance	Campuses submit hard copy or excel/word documents	copied or re-keyed into reports at OCHE
Athletic Reports	Banner finance	Campuses submit hard copy or excel/word documents	copied or re-keyed into reports at OCHE
Information on student fees	Banner finance	Campuses submit hard copy or excel/word documents	copied or re-keyed into reports at OCHE
Human Resource			
Board salary items	Banner HR	Campuses submit hard copy or excel/word documents	campus documents scanned
Payplan costs	Banner HR	either call campuses for data or do an aggregate salary projection based on operating budget totals	verify payplan bill funding/allocate to campuses/labor negotiating
Employer benefit costing	Banner HR	same as payplan	legislative fiscal notes/labor negotiating
Adhoc salary lists	Banner HR	call or e-mail campuses for data	
Student			
Enrollment	Banner Student	Data Warehouse	directly from warehouse to Excel
Other student data: Gender; Race	Banner Student	Data Warehouse/IPEDS	directly from warehouse/IPEDS
Graduation data	Banner Student	Data Warehouse	directly from warehouse to Excel or Access
Transfer data	Banner Student	Data Warehouse	directly from warehouse to Excel or Access
Course data	Banner Student	Date Warehouse	
Transfer student survey	Student satisfaction surveys	Campuses submit excel/word documents	Reformatted into reports at CHE
College Preparatory report	Gather based on CHE directions	Campuses submit excel/word documents	Reformatted into reports at CHE
Credit by Exam report	Gather based on CHE directions	Campuses submit excel/word documents	Reformatted into reports at CHE
Financial Aid			
Loan Data	Banner Student/FAFSA	Guaranteed Student Loan Program	Average Student Debt reports
Aggregate student financial aid data: grants, fee waivers, scholarships	Banner Student	call or e-mail campus financial aid offices	Fact Book data/reports to regents
Aggregate Family Income data	Banner Student/FAFSA	have not compiled system reports	
Overlapping Segments			
Distance Learning report	Gather based on CHE directions	Campuses submit excel/word documents	Reformatted into reports at CHE
Diversity report	Banner Student/HR; gather based on CHE directions	Campuses submit excel/word documents	Reformatted into reports at CHE
Accountability report	IPEDS; Banner Student; Graduate Employment Surveys	Data Warehouse; national reports	Reformatted into reports at CHE
Adhoc student/faculty data	Gather based on CHE directions	campuses submit information, usually electronically	Reformatted into reports at CHE