



Minnesota
STATE COLLEGES
& UNIVERSITIES

**Minnesota State Colleges and Universities
RDB to Oracle Conversion Meeting**

MEETING NOTES

April 1, 2008

10:00 AM – 12:00 PM

Conference Room 1837, UBS Building, St. Paul

NEXT MEETING: Date: April 22, 2008

Time: TBD

Location: ITS Conference, Brainerd, MN

ATTENDEES:

Joanne Chabot, Mark Malecek, Glen Guida, Art Leible, Ken Ries, John Rohleder, Mike Janke

Via ITV: RaNae Thompson, Najam Saeed, Les Bakke, Russ Hanson, Ilya Yakolev, Sean Ellery, Clint Forseth, Larry Shafer, Nancy Gerber, Wade Nelson

1). Review/Adjust Agenda: Glen requested input from the group regarding timing and scheduling of the conversion. What other projects will be affected by this conversion? We will also share how the process is going and discuss what campus staff needs to do to prepare for the conversion. These items will be added to agenda item #3.

The Presidents have asked for information on the Conversion. There is enough system-wide concern that we will want to carry information forward. This is a technical subject which is difficult for non-IT staff to grasp. They often don't feel that it relates to them. This will require some communication planning.

2). General / Housekeeping

3). **RDB to Oracle Conversion**

Dependencies and Requirements:

We have been using a tool called Log Miner for many years. It is a third party product that allows us to mine data from an RDB Database to an Oracle Database. It helps us support the warehouse environment. This tool is also the foundation for this migration effort. We are log mining real time into Oracle. So we have the database replicated already in Oracle. For the change-over, it is not required that we move the information from RDB to Oracle because it is already there. But what is our assurance that everything is there? We have developed assurance reports that allow us to verify accounts. If we are not comfortable with some aspect of a table we can selectively refresh information whenever we want.

Another dependency is the Seamless Core. This is the combination of multiple entities into one. Last July, Ra Nae's team did a formal recording of the business aspect of Seamless Core. They also created a flipbook that includes guidelines of how to handle the core data. Regional meetings were also held throughout the state as well as campus visits. We discuss Seamless Core at all available opportunities. The Seamless Core project is important to the RDB-Oracle conversion because in the current state, people can update their non-core data themselves. This project intersects with the

implementation of RDB-Oracle because other people will be able to update this information. Seamless Core does not allow everyone to see anyone's data. Data can only be viewed by people at a particular campus if the person is directly affiliated with that institution.

Many institutions trust their students to update the information. The problem lies in reminding them to do it. There is a project that prompts the student to verify their information once a year but it does not force them to do this.

We need to keep talking to campuses about the RDB-Oracle Migration so they know to expect changes. We will also need to introduce better auditing. From a database perspective, we will be positioning ourselves to do this.

Major Milestones of the RDB-Oracle Conversion Project:

- The foundation and infrastructure need to be in place to support this activity. This started many years ago when Sun donated a server to us. This got us into the new technology EK25 server. The foundations are there. We are trying to balance things out now.
- After this came the migration of the replication users into the Oracle world. We had an RDB specific tool that replicated production into an environment that allowed access at the campuses. We have been using this for 8 or 9 years. Campuses are using this with ODBC.
- As a part of the migration, the CAP project required some security events to occur at campuses. This was not a requirement for the migration project but the timing was right.
- Third Party Products: Uniface – The version we are using has not been supported for about 2 years but we do not need a lot of support for this. However, database and operating systems are climbing and the products have to line up. Uniface has been pressing us to move to version 8. Version 7 does not support the right database drivers that we need to use. Version 8 of Oracle was very different than Oracle 10G that we are on now. The difference that would impact us the most is the data types that didn't line up correctly. This would cause a lot of problems for us if we didn't bring up a different version.

Ilya Yakolev has been telling his users that this migration consists of 3 projects:

1. Migrate the database
2. Migrate the operating system
3. Migrate the Uniface application

This is accurate. We are trying to cut down risk. We do not want to convert to Uniface 8 and Oracle at the same time. We would prefer to go to Uniface 8 against RDB first to make sure it works and then point it towards Oracle. Unless there was an emergency, it would be too risky to convert to Uniface 8 and Oracle at the same time. We have limited support from the vendor. There are very few organizations in the US that use Uniface and none with our combination of infrastructure.

Why are we still on Uniface?

-We would like to be off Uniface. We have a project to get off of it called the J2EE Conversion. This is a very long project. There are two parts to this: 1. the client/server technology is very different so there is a lot of re-engineering that needs to occur. We know we cannot get the modules rebuilt fast enough so we have to deal with Uniface for at least the next

two and a half years. We do have some options with Uniface. We assumed that the Uniface product was going to work but it had bugs. We found multiple problems areas. Even if we were to stay on Uniface 7, it is still a migration effort because we have to test the Uniface with an Oracle back-end database. One of our strategies is to introduce parts of our application to the Oracle world sooner rather than later. For example, most of our read-only reports that users click on from their Uniface session have been converted to run in Oracle. We are able to watch the load on the Oracle server and monitor the hot spots and bad queries. The newer web applications are also running in Oracle.

-We are hoping to introduce our client server to Oracle. Uniface is a powerful product that has served us well but it is risky and we need to move away from it. It gives us the ability to point any of the objects to different databases. For example, we can move views from Uniface to Oracle. We can start putting more load on it and more of our client server load will be presented. Right now, Uniface is updating Oracle. We are log mining from RDB to Oracle, so in effect, all of the update transactions are already occurring in Oracle.

-Read-Writes cannot be switched until after the conversion.

-Road Map for the RDB – There is a roadmap that the Systems Development Steering Committee maintains but it is more of an umbrella document. We need to focus more on things that are specifically oriented with this project. A major concern is the Uniface upgrade. We are not confident in our ability to do this just yet. We do not have a roll out date set. This is one of the key bullets that we need to take a look at. When will we be confident that this will be successful? The problem that occurred when we rolled Uniface 7 out in Moorhead was tied to the volume of users on a specific connection. It first affected Moorhead and Bemidji State when it hit 200 users on one database. It then started to affect the entire region. Compuware is working with HP to troubleshoot this. Compuware develops for Unix first. VMS is an afterthought. So there may be issues that we don't know about. Their test environment does not even include a dual core processor type system which is the only place that this problem occurs. So we can't replicate this problem environment in our development environment. We are spending too much time troubleshooting and telling the vendors where the problems are.

Option #1 would be to keep version 7 going. As a secondary task after the conversion, we could look at Unix configuration which is more widely supported. Uniface has not provided much support anyway. If we could survive on 7 for the next year, we could get to a more main stream place for Unix.

Option #2 would be to stay on Uniface 7 but start planning on moving to Uniface 8 on Unix only and get off of VMS.

How much access do we have to the guts of the application if support fails?

-We don't really have access to the source. We built the systems that are running on it so we have access to them but we would have to rely on Compuware if issues regarding Uniface 7's inner guts arise. If we need to upgrade the operating system for some reason and Uniface 7 stops working, we would be in trouble.

Possible Paths:

Current:

<u>Hardware</u>	<u>OS</u>	<u>APPS</u>
GS1280	VMS	Uniface 7, Cobol, RDB
E2K	UNIX	Oracle

Future:

Option 1

E25K	UNIX	Oracle
GS1280	VMS	Uniface 7, Cobol

Option 2:

E25K	UNIX	Oracle
?	UNIX	Uniface 8, Cobol

-Our VMS support consists of people who are nearing retirement age. This may not be a reasonable future option for us.

-Our lease for the GS1280 ends in November. We can extend it but support for it ends in 2011. We will be utilizing this less and less.

-If we went with option #1, we could stay on it for a couple of years while we migrated off of J2EE. If we feel that we will need to be on Uniface for more than a couple of years, we should look at option #2 which would give us more longevity. It seems like option #1 is preferred: To stay on Uniface 7 until after we convert to Oracle and then revisit the roadmap. We may end up moving to option #2 depending on the pace of the J2EE conversion.

-Mike Janke stated that Uniface 8 would require a Solaris or Linux driver that connects to RDB. To stay on Uniface 7 would be less risky since it would stay on an Oracle 9 driver. We may want to do a joint meeting with the Infrastructure Committee to discuss hardware and operating system issues in more detail.

-If we go with option #1, there may be some concern about the amount of work we have put into Uniface 8 testing already. But this won't go to waste, just put on hold. Depending on when we do the Oracle conversion, it may be only a month to six weeks later that we convert to Uniface 8. The public's conception will be that we are taking a path that minimizes a risk for now while we complete some very complex migrations. We will take the next step when we have more flexibility in the case of failure.

-Possible Dates for the Oracle Conversion: We are thinking about a date in October. This summer is not an option because of the D2L conversion. We will put October 4th out as our tentative selected date.

-We brought Oracle's Insight consultants to evaluate our progress in this project. They told us that we are on the right track and affirmed that we have not missed anything major.

4.) **Communications Planning:** This group will meet again on April 22nd at the IT Conference to make a final decision on Uniface 7 and take a look at the driver ability. Minutes from this meeting will go out to the CIO list. We will solicit feedback about the tentative October 4th date.

Ra Nae suggested that this group attend her Seamless Core presentation at the ITS conference (at 2:30 on April 22nd.) Ken will communicate coordination plans between the two meetings to everyone who should be attending. This presentation would be a good opportunity to hear feedback from users.

5). Closing

Next Meeting: April 22nd, 2008.

Meeting notes submitted by Smitha Pennepalli, Smitha.Pennepalli@csu.mnscu.edu.