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MAINTENANCE ENGINEERING MIGRATES UNISYS LINC TO WINDOWS SQL

Maintenance Engineering, Ltd. (M.E.) was founded over 30 years ago in Fargo ND. The commercial lighting company provides a product that all businesses need, plus solves the early burnout problems most businesses experience with their current lighting.

Maintenance Engineering, Ltd. administrative headquarters are in Fargo ND and they have significant distribution and test facilities in Chicago. The company delivers lighting solutions nationwide and now with the Duro-Test organization in Canada is able to deliver the same levels of quality into Canada too.

THE SITUATION

In 2003 Maintenance Engineering (M.E.) identified they had an IT opportunity; their mainframe was approaching the time for replacement.

In 2004 M.E. realized they needed to replace their existing Unisys mainframe system, an NX5601-51 rated at a little less than 1,000 RPMs (40 MIPs), in a measured way taking into account all the interfaces and complexities that comprised their mainframe enterprise systems. The mainframe was crucial to their organization and most business process departments depended on it for data processing and reporting. The mainframe ran significant corporate enterprise business systems. These systems were fundamental and

critical to the business at M.E. The organization had large Hand Coded LINC applications that processed and supported their Order Processing, Billing, Cash Collection and Accounting systems. These applications consisted of approximately 750,000 lines of LINC code, originally written some 10-15 years ago and much evolved since that time with many modifications and enhancements provided over the years. This is a typical situation for so many mainframe users today.

“OUR IT PEOPLE LIKE THE SPEED AND THE OPPORTUNITIES TO PROVIDE MORE FUNCTIONALITY TO THE END USERS SYSTEMS. OUR END USER MANAGERS LIKE THE RESPONSE TIME SPEED AND THE ABILITY TO ENHANCE OLD LEGACY SYSTEMS.”

M.E. had had a long and happy experience with their Unisys mainframe technology and the people that supported them. Their systems were extremely reliable. The mainframe operating system and database, MCP & DMSII, had been ‘Rock Solid’ for years for M.E.

M.E. had, over the years, integrated their LINC systems into a variety of tools and technologies, DEPCON and the Cypress Printing System being the main technologies. Cypress was used for Report Distribution and the creation of Graphical Forms for specialized reports and documents,

DEPCON was mainly used for automated email distribution. Before Asysco's Migration Technology (AMT) LION was implemented M.E. had not committed to any major mission critical SQL based solutions.

THE NEED

The need was to replace the existing mainframe system that was going out of support with the mainframe supplier. This called for renewal of some form. The options M.E. had to choose from were mainly the usual ones to be expected.

1) Keep the existing applications and acquire a replacement mainframe

This option was reviewed, evaluated and costed out in full. This option created the least disturbance and least level of effort to implement. On the other hand it provided least flexibility in terms of modernizing the critical business systems. It also ended up being the most costly solution, both short and long term.

2) Conversion of the existing systems to a new operating system platform, Windows.

Conceptually, this was a very tempting option as it had been agreed internally that the legacy systems were delivering excellent value to the user departments and that the IT department was in a good position to maintain and enhance the system using their in depth experience of the application. The main attractions of this solution would be an industry standard Open database and the ability to easily 'Modernize' the converted application. The ability to Modernize and take the legacy applications forward became the main criteria that would be used to benchmark any proposed solution. Clearly an easy transition to the new operational system and the new development language was also a critical dependency. This approach would also satisfy the growing desire to centralize IT resources on fewer Operating System platforms. It would also allow M.E. to get away from the inherent restrictions that MCP & DMSII brought.

3) Rewrite the applications for a new operating system platform, Windows/Unix

This option was not reviewed in any depth as it was clear very early on that the resources required to build and test, and the inherent costs, would be too significant to justify.

4) Replace with packages

M.E. felt they did not have the time or the inclination

to search the market for application packages then identify the modifications necessary to bring it to the level of their business requirements, install and train on it and do all the work involved in data conversion in the time available. From previous experience M.E. felt the costs would certainly outweigh the benefits and would inevitably leave them in a position of losing existing valuable capabilities.

M.E. identified an organization with a specialized technology focused on Unisys LINC translations that was potentially capable of delivering the M.E. conversion required. M.E. saw a move to 'OPEN SYSTEMS' with a High Quality IDE, if it was technically feasible at an appropriate cost level for them, as being the most highly desirable solution. M.E. wanted to get the benefits of Openness and Modernized applications, not just for the obvious budget savings. It was important to M.E. to provide systems that would be easy to maintain and support in the coming years, it was also important to provide these on a 'Standard' platform that was easily maintained and easily supported and that offered access to the many industry standard database applications, business & management, and support tools available in the SQL market place. Additionally M.E. wanted the capability to move their applications into new GUI environments and have the valuable possibilities of WEB and .NET deployment available to them.

THE SOLUTION

M.E. reviewed the main two options, 1 & 2, in depth and decided the Conversion Option (2) was the preferred solution for them, offering many benefits in both the immediate and long term future:

- SQL Database technology.
- The removal of the limitations of the mainframe LINC language.
- The availability of competition for hardware and software suppliers.
- Readily available resources to support the hardware and software.
- Ability to implement .NET web resources.
- Significant cost saving into the future.
- Improved work environment for IT staff as a result of working with new technologies.

The solution selected was AMT-LION of Asysco. The database implementation selected was Microsoft SQL Server 2000 because of its ease of implementation and

low maintenance burden as well as its general value profile. AMT-LION performed well on this database too.

Asysco was invited to present AMT-LION and the Asysco Methodology. After a day of presentations, demonstrations with hard and detailed questioning M.E. felt the solution was viable. User reference calls were made with highly positive results. The decision was made that the AMT-LION architecture would support M.E.'s needs.

Asysco then came in and conducted an on site discovery process to define the full scope of the project. This encompassed the whole project of decommissioning the mainframe. All integration issues were explored and defined. All LINC & WFL code running on the mainframe was documented and a solution for the new platform defined. Complex end of day/week/month/year WFLs were to be converted by AMT-LION and implemented as VB Scripts. The LINC applications were to be converted by Asysco into AMT-LION Developer language.

frame platform 'products'. The mainframe Cypress product (SPOOL) was to be replaced with the new CYPRESS WIN-TEL product. No structural changes to the systems were required. There was an additional migration effort required to move the mainframe SPOOL functionality to the new CYPRESS print system. This was undertaken by CYPRESS themselves under the project management of M.E.

The servers configuration suggested was:

- 2 dual processor servers for the Database Server
 - 1 for production and 1 in hot standby,
 - With 2 Gb of memory and RAID 10 disk
- 3 single processor servers for Application Servers,
 - With 1 GB of memory
- 1 dual processor server of the Testing Database Server
- 1 dual processor server of the Testing Application Server.

The final project plan was then given close review and the final, revised cost justification was presented to top management for final approval.

THE PROCESS

Asysco worked off site, at Asysco headquarters, to complete the initial conversion process. M.E. ordered up the required hardware, Asysco then came on site, at M.E., and delivered the converted code to M.E. Training was provided for the Operations staff in the running of the AMT-LION environment and AMT-LION developer training was delivered to the IT staff. This training was completed in 7 business days. The implementation of AMT-LION was then conducted as scheduled. Asysco then worked hand-in-hand with M.E. to support the testing process and the implementation of the integration issues.

M.E. went live April 2005 with a newly converted system leaving the proprietary mainframe and LINC environments behind.

THE FINAL RESULT

All applications are off the mainframe. The mainframe is decommissioned. The savings are starting and the new development environment is already allowing modernization to proceed. The User Departments are all pleased with the results as are the developers and technical support personnel. M.E. has made the change they initially thought was not possible. The systems run very much faster now on AMT-LION than they did on the mainframe and are currently running at about 20% utilization. End of day and end of month processes run nearly 6 times faster.

Responsibilities were defined and a project plan created. A configuration was designed that would support the needs of the application and the needs of M.E. for resilience etc.

Solutions were found for all the DEPCON & Cypress main-





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Anne Kuzas, IT Manager makes the following comments:

Did the conversion exercise deliver the results you were looking for?

Absolutely! – the final product was just what we were expecting.

Is the system easy to use?

Yes – especially for implementing new screens/reports – the speed is amazing.

Does the system bring additional value over and above the original mainframe implementation?

Yes – speed – ability to create new up-to-date screens for our end users – Productivity is improved due to the increase in speed of screen refreshes and report runs.

Would you go back to your old system?

Absolutely not!!!

Do your developers feel comfortable with AMT-LION after all those years of Unisys MCP, DMSII & COBOL?

How long did it take to start using it?

We are still learning and becoming familiar with the developer tool – it is a learning curve but they view it as a new opportunity.

What do your users like about AMT-LION?

Speed and the ability to do more GUI screens – Printer output is significantly easier to read with a more professional appearance.

What do your IT people like?

The speed and the opportunities to provide more functionality to the end users systems.

What do your end user managers like?

The response time speed and the ability to enhance old legacy systems.

CUSTOMER

Maintenance Engineering (M.E.) is a commercial lighting company that provides a product that all businesses need, plus solves the early burnout problems most businesses experience with their current lighting.

SECTOR

Commercial

PROBLEM

M.E. needed to replace the existing mainframe system. They wanted to get the benefits of openness and modernized applications for budget savings. It was also important to provide systems and a platform that would be easy to maintain and support. M.E. was also looking for a solution that offered access to the many industry standard database applications, business & management, and support tools available in the SQL market place.

SOLUTION

Asysco's Migration Technology (AMT) LION helped M.E. to make a smooth transition from their mainframe environment to the Microsoft Windows platform. The solution helped M.E. to realize cost saving. The systems run very much faster now on AMT-LION than they did on the mainframe and are currently running at about 20% utilization.