



Intelligent energy for a greener planet

Rolling Out Maximo at Northland Power

Presentation for CanMUG by Richard Heiden

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Agenda

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- Personal Introduction
- Maximo at NPI
- Workday brief intro
- Project scope and integration methodology
- Integration points
- Challenges
- Summary

Northland Power



Northland Power is a power producer dedicated to developing, building, owning and operating clean and green power projects in Canada, Europe and other selected jurisdictions.

Established in 1987, NPI is one of Canada's first independent power producers, being publicly traded on the TSX since 1997 (NPI). NPI currently operates facilities that generate 1,754 MW of electricity, with an additional 332 MW (282 MW net to Northland) of generating capacity under construction.



In Canada:

- 8 Thermal generating sites (natural gas and biomass)
- 4 On-shore wind generating sties
- 13 Solar generating sites

Europe:

- 1 Offshore generating project (Gemini)
- 2 Onshore wind generating sites

In development:

- 2 Offshore generating projects in advanced construction (Europe)
- 2 Offshore generating projects in development (Europe)
- 1 Pumped storage project in development (Canada)



Introduction

Me - Richard Heiden

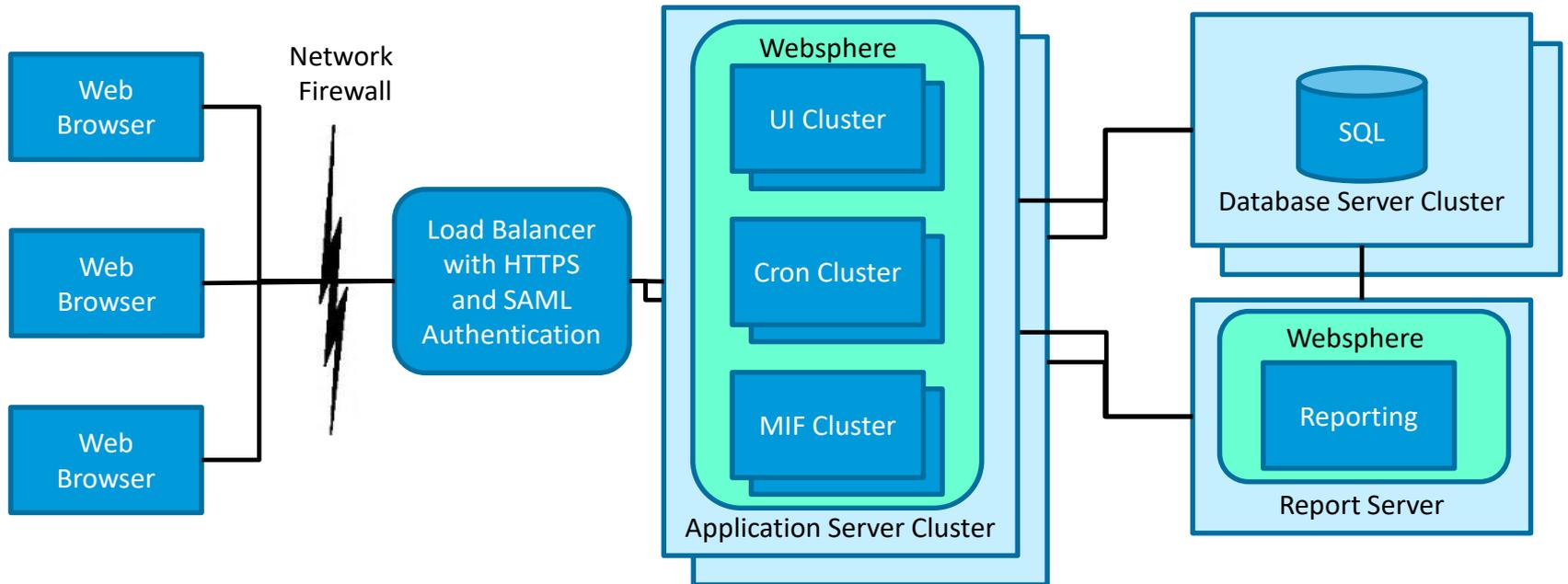
- Maintenance Manager at Northland's Kingston Generating Station
- Also, corporate Maximo Administrator



Maximo at NPI

- Maximo in use since 2010 – 7.1
- Started at The Thorold Cogeneration Station only
 - With integration to Financial package (Accpac)
- Leveraged to North Battleford and Spy Hill Stations in 2011, but without integration
- Upgraded to 7.5 in 2013 and rolled out to 13 Solar stations
- Embarked on a corporate ERP project in 2015
 - Chose Maximo/Workday combination as the ERP solution
 - With integration between the two
 - Maximo 7.6 on premise chosen (7.6.0.4)
 - Workday is cloud/SaaS based
 - Layered SAML Authentication over LDAP for both systems
- Rolled out Maximo to other thermal and wind stations
 - Two sites were using Cendec, others were Excel based or net-new
- Go-Live was 03 October 2016
- 137 Active users
- Exceptions:
 - Chapais in northern Quebec
 - Kingston – using stand alone Maximo 4.1 since 2001
- Roll-out was done in-house with resource support from Createch
- Creative license model set up by Createch

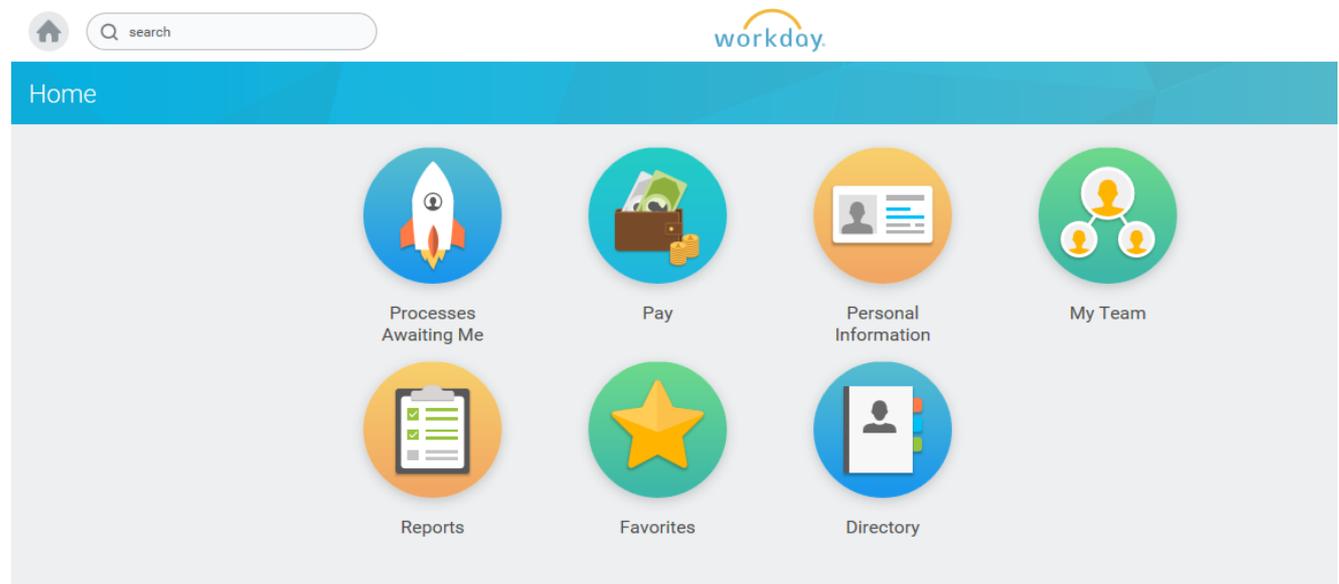
Maximo at NPI



Workday – Brief Intro



- Cloud based, subscription only financial management and human capital management system
- Launched in 2006
- Founded by same people who formed PeopleSoft after Oracle took over
- Predominantly (originally) an HR system but moving into financial and other areas as an ERP
- No relational database for application data – application structure and data is in memory on the application servers and objects and relationships are defined by metadata
- Customization is not allowed
- Must use pre-built web-services or EIB (flat files) for integration in/out
- Workday is good for financial management and HR management but has no asset management functionality

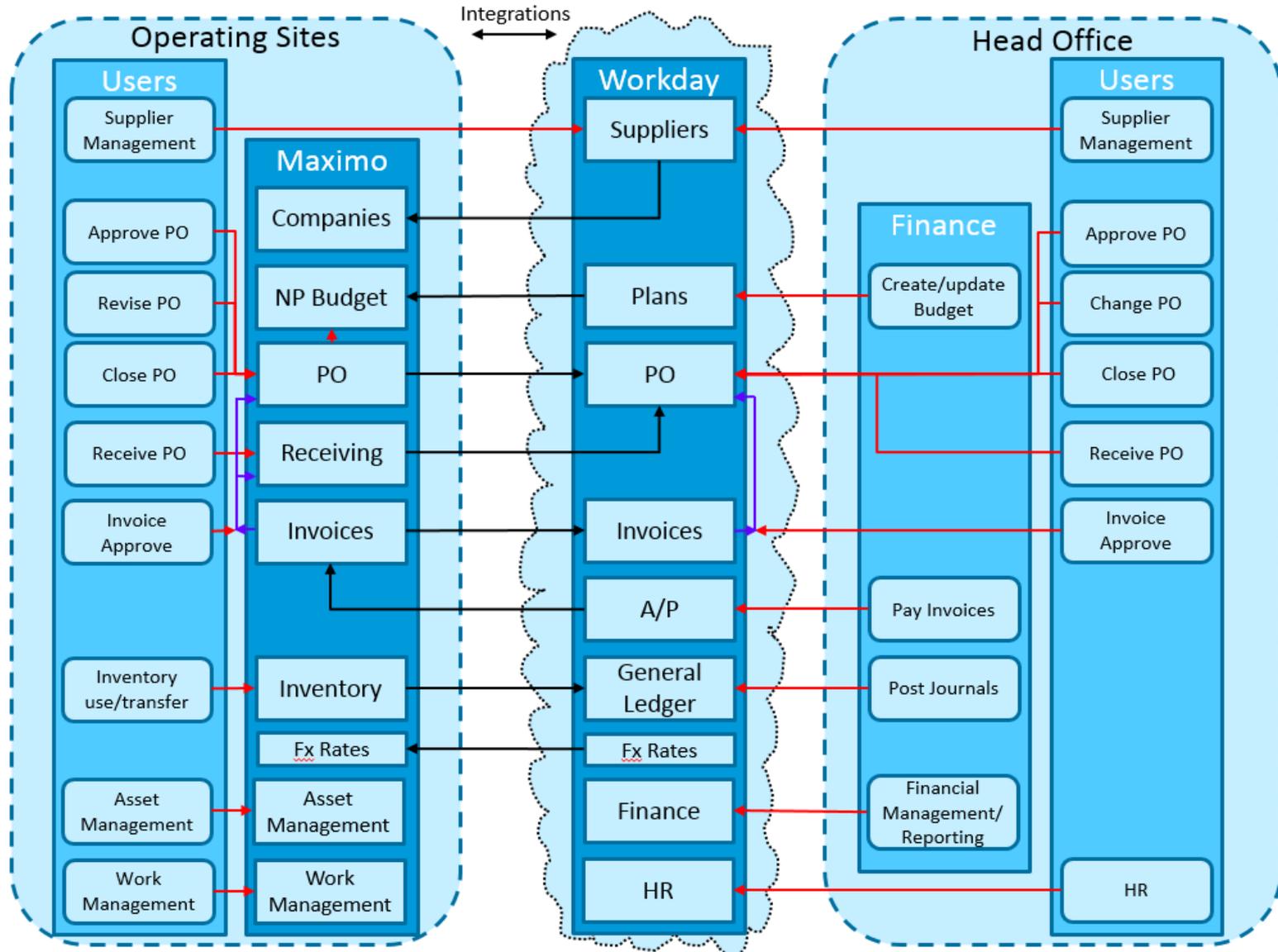


Project Scope and Integration Methodology



- Workday would be the master system for Suppliers (vendors) to maximise control of the Supplier list
- Budget control would be managed from Workday and sent to Maximo
 - In Maximo we have a custom Budget app and PO's are validated against remaining budget on approval
- Purchasing (PO, Receipts, Invoices) would be done in Maximo for the Operating Facilities; and also in Workday for Head Office functions (Finance, HR, IT, Development and Construction);
 - Workday would be the master system for finance and reporting
 - All AP would be managed from Workday
- Inventory, Asset Management and Work Management would remain as Maximo-only functionality
- All integrations would be in real-time, using web-services
- System data would remain in-sync at all times through live, real time integration
- Resourcing for this work was again provided in-house and with support from Createch personnel and with Workday resources

Integration Points



Integration Points - comments

- Workday Public Web Services were used for integrations out of Workday
 - Workday provides a fairly comprehensive set of web services for integration in messages
 - Not possible to build custom web services – can only use what is offered by Workday
- Web services for Maximo-In messaging were custom built and deployed in MEAWEB
- In reality most, but not all, Integrations are synchronous real-time
 - User is interrupted if error occurs
 - Transaction stops
 - Data Save not performed
- Synchronous was not possible with all integrations because of differences in the way the two systems work:
 - Service Receipts/Voids are queued
 - Inventory Journal entries are sent synchronously, but never error because journals are background processed in Workday – all messages are accepted initially. In order to determine if an error occurred a second call is required to determine message status

Challenges

Saying we will integrate in real time and doing it are two very different things

- The two systems do not work the same way in all cases, so integrating data is not always straight forward:
 - For Example – when revising a PO in Maximo we effectively create a new PO, and we can delete a line and re-use the line number.
 - In Workday the PO gets a version number but is the same PO record. A line can be “Cancelled” but not deleted and so the number cannot be re-used
 - Also, when adding new lines in a PO revision, Workday auto numbers the line, regardless of how they are submitted in the web-service call. Then we have to ask Workday what the new line numbers are and re-number in Maximo to suit (i.e. multiple calls and more chance for errors)
- Integrating synchronously can cause problems because we don’t really control the order things are processed – especially since not all calls are synchronous.
 - We have two asynchronous integrations – Service Receipts and void service receipts – these messages are fed through a sequential queue and errors stop processing and must be dealt with by an administrator
 - Why would we do this??? Receipt as a transaction vs receipt as a document
 - Creates situations where a queued transaction may get stranded if PO gets closed before the admin corrects an error

Challenges

- Synchronous live error messaging makes it hard to close out all error sources – users get the errors and can self correct – but no record of the errors
 - We now save web service calls, so save the message, but not the error
- Populating the go live transitional data was challenging as it had to be manually converted and forced into Workday in the short Cut-over timeframe
- There are some issues with Websphere in a clustered environment – JMS disconnect if the database changes nodes and cannot auto reconnect – can only be resolved with a Websphere patch
- Web-service for PO change Order (Revise PO) was not available from Workday until late in the project, and then did not behave exactly as expected

Summary

- Maximo 7.6 and Workday rolled out as a corporate ERP
- 137 Active Maximo users at 22 Sites
- 16 Integration Points
- To date 25,000 messages successfully processed since go-live
- Integrations are Live and synchronous (for the most part)
- Integration points mostly live
- Some integrations use multiple calls – this was more complex and challenging to set up but necessary – was successfully performed
- All attachments to PO's and Invoices are transferred to Workday via the integration
- Typical message send/acknowledge time is <2 seconds (without attachments)
- Number of errors has been successively falling since go-live as we close out logic holes in the integration and as users start to understand what works and what does not.
- Overall – a very successful project



QUESTIONS / COMMENTS

