Shake Off the E-Business Suite Attachment Blues – Automatically Convert EBS Attachments into WebCenter

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Introduction

This paper presents the details of how to convert, and automatically index all types of attachments stored in the E-Business Suite Attachments Framework into WebCenter Content. It also provides an overview of how E-Business Suite and WebCenter can be integrated with each other.

At the end of the paper, the reader will be able to:

- Explain the E-Business Suite Attachment Architecture
- Identify the limitations of E-Business Suite Attachments
- Explain WebCenter Content Profiles
- Identify WebCenter Content Search Options
- Follow steps to convert documents daily
- Share the benefits derived from WebCenter and E-Business Suite integration

Background

When a user creates transactions in E-Business Suite (EBS), such as a requisition, purchase order, inventory receipt, GL transaction, or AP Invoice, there is a requirement to associate supporting documentation with each transaction. Many times the supporting documents are saved for future reference as “search only” files, and other times supporting documents must be reviewed during an approval process. Either way, using attachments in E-Business Suite is a way of life.

This session explores and provides a case study example of why and how LA Metro decided to continue to use the E-Business Suite User Interface to create attachments and then automatically convert them into WebCenter Content, still providing attachment functionality in E-Business Suite, but adding the full life-cycle management features of an enterprise content management system as well.

Key Requirements

The following requirements were identified as imperative for LA Metro:

- Maintain the ease of use provided by E-Business Suite Attachments functionality.
• Expand access to supporting documentation from other modules.
• Eliminate unnecessary keying.
• Automatically attach documents received via a variety of methods or systems.
• Expand functionality to include Document Management and Records Management.

Technical Discussions and Examples

ATTACHMENTS EASE OF USE IN E-BUSINESS SUITE

E-Business Suite users are able to create a transaction in E-Business Suite then navigate to the attachment / paperclip functionality and browse, cut or paste content to create attachments very easily in the form of a Short Note, Long Note, Microsoft Office Document, Scanned Image, or other type of document.

The end users at LA Metro did not want to lose this easy-to-use method of attaching documents and wanted to avoid keying more information when attaching documents (e.g. double keying information).

Attachments Screen in EBS

ACCESS SUPPORT DOCUMENTS FROM OTHER MODULES

AP Invoices entered in EBS at LA Metro are subject to an
approval process. This involves sending an email notification to Approvers that can be used to approve or reject each invoice. This email also includes a single hyperlink to electronically view supporting documentation. If there are multiple attachments, the preferred approach was to send only one hyperlink to access all related attachments.

Rather than populating the attachment web URL with a call directly to a single document, a search URL was provided which returns related documents in a Result Set. The Result Set describes each document type that has been returned, providing one-click access to any supporting document.

**EBS Attachment Screen (Main Tab)**

Notice the Source is a search URL rather than a document ID.

**Search Result Set showing all related documents**

Select a document to view in the viewer.
ELIMINATE UNNECESSARY KEYING

The key to eliminating unnecessary data entry, or keying is, understanding the layout and file structure of the E-Business Suite Attachment Framework (to automatically pick up transactional information) and understanding WebCenter Content (to automatically index the data values read from E-Business Suite).

In E-Business Suite the concept is simple. There are three header-level tables that provide information and allow us to understand how the system works.

E-BUSINESS SUITE ATTACHMENT STRUCTURE

Major E-Business Suite Attachment Tables:

- **FND_Documents** – Provides generic attachment properties including a media type such as Web Page or Short Text, along with any document path or URL to access the document.

- **FND_Attached_Documents** – Provides the primary key to the transactional table to which the attachment is associated such as the AP Invoice ID or PO ID. This allows access to the data in the transaction table.

- **FND_Document_Entities** – Provides a list of the Document Entities or transaction types such as AP_INVOICES or PO_HEADERS. This table also identifies the table of the primary key found in the FND_Attached_Documents such as AP_Invoices_All.

An attached document can be one of the following types:

- **Short Text** – Text stored in the database containing less
than 2,000 characters. These documents are found in the FND_Documents_Short_Text table in E-Business Suite.

- **Long Text** – Text stored in the database containing 2,000 characters or more. These documents are found in the FND_Documents_Long_Text table in E-Business Suite.

- **Image** – An image that Oracle Forms can display, including: bmp, cals, jfif, jpeg, gif, psd, pcx, pict, ras, and tif. These documents are found in the FND_Documents_TL table in E-Business Suite.

- **OLE Object** – An OLE Object that requires other OLE server applications to view, such as Microsoft Word or Microsoft Excel. These documents are found in the FND_Documents_LOB table in E-Business Suite.

- **Web Page** – A URL reference to a web page which you can view with your web browser (such as WebCenter Content). When using a URL or Document File Path the document is accessed by calling the URL or browsing to the file path.

**EBS Accounts Payable Attachments Logical Model**

**WebCenter Content Structure**

In WebCenter Content the model is user-definable and straightforward. LA Metro used WebCenter Imaging which allows you to either import your profile structure or manually type one in. The setup is performed in WebCenter Content UCM where the index values, profiles and profile rules are...
WebCenter Imaging Application (Profile)

WebCenter Content Index Fields are automatically created by the Imaging Application.
The Data Conversion Process

This section outlines the steps taken to convert data on a daily basis.

1. Select the documents that needed to be synchronized to WebCenter from E-Business Suite AP_Invoices. An example select statement is “Select document_id, PK1_value from fnd_attached_documents where entity_name = AP_INVOICES and document_id not in Content Server ebs_docid”. After converting a document, store the ebs document id in the Content Server to prevent it from being converted again.

2. Create a temporary table called ast_ebs_doc_actuals to store the document ids of the documents being converted.

3. Retrieve the header information from the ap_invoices_all table using PK1_value retrieved earlier. An example select statement is “select invoice_number, invoice_date, invoice_amount, vendor_id, from ap_invoices_all where transaction id = PK1_Value”. These values are also written to the temporary table.

4. Retrieve the supplier name from the ap_suppliers table and then write the supplier name to the temporary table.

5. Select all the documents being converted, along with the document index fields and path to the document stored in E-Business Suite, and call the update API in Content Server passing the proper field information for each document.

6. Upon successful completion of writing the document to the Content Server, call an update in the fnd_attachment system in E-Business Suite and change the URL to the WebCenter URL.

7. Finally, mark the document as completed in the temporary table and save the data for a period of time as an audit trail.

This process eliminated the need to have an end user re-key any information into an upload form and only provided accurate, validated metadata to ensure the index values in the Content Server were complete.

Automatically Attach Documents Received via Other Methods

The E-Business Suite adaptor for WebCenter Imaging has a web service that calls the E-Business Suite procedure to create attachments. In WebCenter Imaging the procedure is called after...
an AP transaction has been created in E-Business Suite. Once
the AP transaction is created in E-Business Suite the attachment
creation process inserts the proper information into E-Business
Suite to associate the WebCenter URL with the transaction.

LA Metro required documents received days or weeks after the
invoice to automatically be added to the system and be related to
the existing invoice transaction. Other documents, including
scanned, emailed or faxed items went to the Oracle Document
Capture (ODC) index station to be indexed. As long as the new
document had enough information to identify the E-Business
Suite Attachment primary key, it could be sent through the
existing integration process to be created as an attachment.

In ODC, two database lookups were created to assist in assigning
the proper index values to the incoming documents. One
database lookup was keyed off of the vendor name; allowing the
user to index the vendor number and site. The other database
lookup was keyed off of the invoice number and allowed the
user to select the proper invoice number and voucher number for
the supplier.

Example Document Capture Database Lookup
Example: Document Capture Lookup Hit List

Example: Document Indexed through a Database Lookup

Once the information was indexed the document could be processed through the system and any subsequent attachments added automatically.

**ADD DOCUMENT AND RECORDS MANAGEMENT FUNCTIONALITY**

Once the documents are stored in the Oracle Content Server, all the standard features of Content Server can be used.

- **Document Management** – Check-in, check-out and versioning.
• **Web Content Management** – Pushing appropriate content out to the web for self-service.
• **Records Management** – Leveraging retention and records policies.
• **Search Assess from External Systems** – Where appropriate Content Server / Imaging searches can be enabled from other applications within your organization.
• **Document Audit Trails** – A trail of all activities associated with a particular document.
• **Appropriate Security Access** – Enforced for sensitive content.

### Appendices

#1 – **WebCenter AP Automation Adaptor for E-Business Suite in JDeveloper**
#2 – Modifications in JDeveloper to the Adaptor Invoice Synchronization Composite

Summary

Please add summary.
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