

**RETHINKING HR BUSINESS PROCESSES –
USING BPEL, IAM AND DRM**

A WHITE PAPER

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RETHINKING HR BUSINESS PROCESSES

EXECUTIVE SUMMARY

This paper discusses new ways of lowering HR operating costs, improving productivity and enhancing HR document and business process security. The process requires three components:

- BPEL – Business Process Execution Language
- IAM – Identity and Access Management
- DRM – Digital Rights Management

A practical HR example is used to illustrate what each of these three components are. The benefits of the example are then described. The paper concludes by indicating that the business process changes can be implemented in 30-90 days using off the shelf products from Oracle and Adobe.

INTRODUCTION

As the VP HR you're looking at ways of lowering your operating costs. Ask yourself these questions:

1. Do you have paper based HR forms being exchanged within the enterprise requiring approvals?
2. Do you have paper based HR forms being exchanged between your enterprise and other outsourced providers?
3. Do you have electronic HR forms that are being manually emailed within the enterprise for approvals?
4. Do you want to reduce the HR business process times?
5. Do you want to increase the security for the HR business processes?

If the answer is yes to any of these questions, you need to be considering using BPEL, IAM and DRM:

- BPEL – Business Process Execution Language
- IAM – Identity and Access Management
- DRM – Digital Rights Management

This paper will show you how in 30-90 days you can implement new ways of conducting human resource business processes to:

- Reduce overall operating costs.
- Automate portions of the business process.
- Reduce the time it takes to complete business processes.
- Provide enhanced document security throughout the business process.
- Reduce the costs associated with your outsourced providers.

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The paper will also show how all of this can be done using off the shelf products from Oracle and Adobe. To do so, let's use an HR business process example to:

- Illustrate and explain the components of BPEL, IAM and DRM
- Show a practical example of how the new business process works
- Demonstrate the benefits

EXAMPLE: HR BENEFITS ADMINISTRATION

Your current HR Benefits business process is cumbersome. Employees fill in some forms online using their browser with the information being input into the HR Management System. Benefits calculations are done by an HR employee who queries two different databases (Oracle and DB2). The approval process involves someone in the HR department. Some of the forms are then faxed or emailed to the benefits providers. How can this be streamlined using BPEL, IAM and DRM?

The first step is to lay out the business process. The business process is first mapped out using BPEL (Business Process Execution Language). This is a globally recognized protocol allowing business processes to be defined using web services (http://www.oasis-open.org/committees/tc_home.php?wg_abbrev=wsbpel).

Web services are the ability to operate cross-platform and cross-application without having to recode and develop new API's (http://www.oasis-open.org/committees/tc_cat.php?cat=ws). They use XML documents and internet protocols which all major suppliers now support.

Oracle has a BPEL server that allows you to graphically lay out the business process and define the interactions with different applications and databases as well as provide for human interaction. The skills required for BPEL could be performed by most business analysts.

The business process involves employees filling in forms. The problem with the existing browser HTML forms was they don't look like the printed original form. It's decided to use Adobe's LiveCycle for this. These forms look like the printed original form and can be filled online.

LiveCycle uses XML. This is an open standard that allows different applications to talk to each other without having to design an application interface. In this example, it means that information entered into the online LiveCycle form is easily transferred by BPEL into the HRMS system via XML.

Next in BPEL, a query process is written for the Oracle and DB2 databases. These queries take the information from the form the employee fills in. It applies this to the databases and reports the resulting information.

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Next step is to approve the benefits information. BPEL will forward the resulting query information along with the form the employee filled in to a specific role or person in HR. The role or person would be selected out of the identity and access management system (IAM).

Next in BPEL, if the benefits are approved, then BPEL will automatically present the HRMS with the relevant information in XML.

Following this, BPEL would query the data and work with LiveCycle to produce a benefits form to be sent to the outsourced benefits provider.

In the identity management and access management (IAM) and in LiveCycle software, policies are created for these document transfers. The policies state the role of the human resource person or, the HRMS system able to create the documents and send them to the outsourced benefits provider. The roles of the outsourced benefits provider are also defined. This will be used to evaluate incoming documents from the outsourced benefits provider.

Digital rights management policies are defined for the documents. These indicate who can view the files, who can edit the files and version control for the document.

In BPEL, the documents are then identified as being sent out to the outsourced benefits provider web service. A web service is quickly deployable by the outsourced benefits provider. It allows for them to securely receive XML documents from your enterprise.

Further, a manual override process is also crafted in BPEL allowing for exception management. In this case, specific roles in HR are defined as being able to implement changes to the benefits documents manually and then to send them to the outsourced benefits provider.

Let's take a look at what the new business process looks like in operation.

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In Operation

Employees fill in the online benefits form. The online form looks just like the printed form. When they click OK, the form information is then automatically extracted out of the form and two queries are automatically sent to the Oracle and DB2 data stores. The resulting information plus the employee filled in form are then sent to the HR person playing the approval role. They review the information, approve it and digitally sign the form.

BPEL then extracts information out of the approval and automatically provides this to the HRMS. BPEL queries the HRMS and extracts information which is then inserted into a form for the outsourced benefits provider. The form is digitally signed by either the person who has approved the form or by the enterprise.

BPEL encrypts the form. It is then sent to the outsourced benefits provider's web service. At your enterprise firewall, the document is examined by the identity and access management system to see if the person or application sending out the form is approved to do so. Since it is the HRMS actually sending out the form, it checks to see if the HRMS is authorized. Since it is, the IAM releases the form out of the firewall and it goes to the outsourced benefits provider web service.

There the outsourced benefit provider decrypts the form using your enterprise's public key and extracts the information from the LiveCycle form and inserts it into their own applications. This can be done automatically or manually depending on their systems.

If either the outsourced benefits provider or your HR department wants to make changes, the following occurs. The person making the changes must be approved by the LiveCycle and IAM management systems. If they are authorized, then the changes are made with version control in the documents.

When the outsourced benefits provider sends back form information to your enterprise the reverse occurs. The forms are received by your enterprise web service. The documents are stopped at your enterprise firewall and examined to see if the proper authorization is in place to accept them. The form information is then decrypted using the outsourced benefit's provider public key and either the information is automatically extracted and inserted into your HRMS or the document is routed to the appropriate HR person for approval.

Manual document creation is allowed for certain roles in the HR department. The user would click on a button in either the HRMS or on a web page. BPEL would kick into action and route the form for approval if required or then send the form to the outsourced benefits provider.

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BENEFITS

The benefits illustrated in the above example are:

- Automated many parts of the benefits process
 - Reduces labor costs
 - Reduces time to complete the benefits process
- Could totally automate some processes
 - In the example above, if the benefits change made by an employee was within their authorization rights, the entire process could be automated with no human intervention
- Standardized look and feel of documents
 - Users can use documents that look like the printed documents
- Quickly integrated with your HRMS
 - Use XML to extract the information from the electronic document and pass this to the HRMS
- Integrate with different data stores
 - BPEL allows you to make queries to any type of data store
- It was cheap to install web services for the outsource benefits partner
 - Off the shelf software incorporated into most suppliers products
 - Didn't matter what operating system or application coding was being used by the enterprise (XML and IP eliminate the compatibility problems)
- Enforced approval levels automatically
 - Used the identity access management system, combined with the HRMS and DRM to determine who could approve the documents
 - BPEL coordinated the process by sending the forms and letting the HRMS handle most of the internal work
- Used strong security
 - Digitally signed management signatures where required
 - Encrypted the documents being sent over the internet to the outsourced benefits partner
 - Enforced document security at the firewalls
 - Enforced security policies at the firewall to make sure that the applications involved could send the documents out of the firewall
 - Enforced security policies at the firewall to make sure the outsourced benefits partner were able to receive and send in documents
- Allowed for manual exceptions
 - BPEL provided a way for manual exceptions to be made
- Version control used on modifications of documents
 - Used DRM version control to control the security over the benefits documents changes ensuring that only certain roles within the enterprise could make the changes
 - Outsourced benefits partner could use version control if the enterprise required them to change their documentation

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- Used off the shelf products from Oracle and Adobe to set up the process quickly
 - Oracle's BPEL server
 - Adobe's LiveCycle
 - Oracle's Identity (Identity and Access Management)
- Can be deployed in 30-90 days
 - If you have an IAM infrastructure already in place, the deployment can be very quick
- LiveCycle can eliminate most paper based forms
 - Preserve the look and feel of the forms but get rid of the paper
 - Reduce handling and processing costs

Note that the BPEL process can also adapt for outsourced partners who don't have web service systems. For example, the forms could be automatically emailed or faxed to the partner. The resulting returning information could then be routed to a specific role for review and/or manual processing of the information.

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CONCLUSION

As the VP HR, you now have new tools with which to quickly reshape your HR business processes. BPEL provides the business logic toolkit to construct simple or complex business processes using web services.

Adobe's LiveCycle provides the digital rights management for your electronic forms. The forms can resemble the paper based versions. The data entered into the forms can be easily extracted and instantly passed onto different applications via XML. Further, the authorization logic for who can create, view and edit the forms is being derived from your enterprise identity management system. Version control of the documents is also provided via LiveCycle.

Enterprise security is enforced via identity management and access control system. It is driven by security policies established in the IAM as well as in LiveCycle. All HR documents entering or leaving the enterprise can be examined to determine if the document should be allowed in or out and if the person or application sending or receiving it is authorized to do so.

Save time and money on a recurring basis by rethinking your business processes. Improve productivity. Enforce enterprise HR security standards.

BPEL, IAM and DRM also leverage existing infrastructure. Most enterprises now have enterprise directories and identity and access management systems. Oracle is an industry leader in the identity and access management space.

Almost all enterprises are currently using Acrobat reader and Adobe PDF documents. LiveCycle can be added at a reasonable cost and quickly implemented within 30-90 days.

Most enterprises also have limited PKI ability. This allows them to digitally sign the documents.

The cost of deploying BPEL servers is very reasonable. The time to deploy new business processes can be on the order of 30-90 days.

For additional papers covering specific benefits to different enterprise roles as well as examples:

- [“Six Reasons the COO Should Be Interested in BPEL, IAM and DRM”](#)
- [“Rethinking Corporate Counsel Business Processes – An Example”](#)
- [“Five Reasons Why Corporate Counsel Should Rethink Their Business Processes”](#)
- [“Saving Operating Dollars Using BPEL, IAM and DRM”](#)
- [“The Challenges With Using BPEL”](#)

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For more information on the components used in this example:

- Oracle Identity - <http://www.oracle.com/products/middleware/identity-management/identity-management.html>
- Oracle BPEL Server - http://www.oracle.com/appserver/bpel_home.html
- Adobe LiveCycle - <http://www.adobe.com/products/server/policy/>

ABOUT THE AUTHOR:

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