The ABCs of Outside Processing in R12 – A Guide to Get Up and Running

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Introduction

In today's economy, companies must strive to stay one step in front of the competition and take advantage of any competitive edge they can. This need is especially pronounced in the manufacturing industry where outsourcing and job losses to foreign countries continue to occur. The outside processing (OSP) functionality within the supply chain modules of Oracle's E-Business Suite is one area that can become a competitive advantage for these companies..

OSP in Oracle allows a company to complement its existing labor pool or supplement its labor pool for functions that are not economically feasible to perform internally. For example, a company might use OSP if it wanted to increase capacity because of increased demand or provide a service that is specialized and better suited to a third-party facility to process. OSP also allows for a more accurate product cost along with the ability to monitor and measure your true manufacturing costs because your costs for outside services are now directly charged back to the actual discrete work order on which they were incurred. Additionally, the standard or average cost of your finished good or sub-assembly now reflects the third-party/outside labor costs associated with the product. One common misconception that people have regarding OSP is that they are buying a product. Rather, utilizing the OSP functionality allows you to purchase a service – labor – from a third-party provider. As you will learn later, your POs for OSP will be purchasing a service and not a physical product.

As with all of the modules within the E-Business Suite, the OSP functionality is extremely flexible, and setups, configurations and use can vary greatly from one company to another. With that in mind, the example provided in this paper represents a basic manufactured item. The item's routing will consist of three operations: Assembly, OSP and Final. Overall, from a high level, the setup and use of OSP in Oracle is rather straightforward, but it can seem daunting. Following this simple example should remove any fears and provide you with the foundation to build on utilizing OSP with Oracle's E-Business Suite.

OSP Overview

As mentioned previously, OSP is rather straightforward and can begin from the planner's workbench by releasing a planned order or manually by creating a discrete job that includes OSP resources. When you purchase OSP, you are purchasing a service. There are no physical products that you are purchasing, but your third party can provide additional components or may just add value to the product you send to them for services. Depending on the make-up of the routing, most functions within the shop floor will represent your standard manufacturing practices up to your OSP operation. The following list represents what happens on the example we will cover in this paper:

1. Work Order is released
2. Operation 10 – Pre-assembly is completed
3. Move Operation is performed to Operation 20 (OSP Operation)
4. Purchase Requisition is created for the OSP item associated with Operation 20
5. Purchasing creates a PO using the Autocreate functionality
6. Items/product is sent to third party for processing
7. Product is received back from third party – Received against PO from step 5
8. Oracle automatically performs a Move Operation to Operation 30, Queue, the Final operation
9. Shop floor completes Operation 30 and completes the assemblies to a sub-inventory location
10. The Work Order is completed

Of course, other variations are possible depending on your setup. If the OSP operation is the first Operation in your routing, a PO requisition would be triggered upon work order release. For those routings where the OSP operation is the last operation, the work order would automatically complete upon receipt, and the final assembly would be placed in the completion sub-inventory as identified on the routing.

This paper will consist of three major sections. The first is Manufacturing setup, which will include OSP Items, Resources and Operations. We'll then cover Purchasing setup, which will include Quotations, Sourcing Rules and

Assignment Sets; and the last section will demonstrate the previously mentioned setups through an example. Within these sections, corresponding R12 screen shots will be shown whenever possible, along with a descriptive narrative of the required setups. In some cases, we'll explore additional options that can be made within the required setup.

Outside Processing Items

Your first task is to create your OSP items within Oracle Inventory. Using an Inventory responsibility, navigate to the Item form using the following path: Inventory > Items > Master Items. Oracle provides a "seeded" template that, as a minimum, sets the attributes for an OSP item to their required values. When creating an OSP item, the following fields are required and critical to the setup. On the "Main" tab, specify the primary unit of measure for your OSP item. By default, using the seeded template, your OSP item will not be stockable or transactable. This designation is correct as an OSP item is not an inventory item and will not be a component on a Bill of Material. Verify that these attributes are set properly on the "Inventory" tab. On the "Purchasing" tab, you will find three critical item attributes. The "Purchased" and Purchasable" attributes should be selected as a function of the template application. Lastly, the Outside Processing Item attribute must be selected and you must specify a value for the "Unit Type." There are two selections you can make here: "Assembly" or "Resource." If the value is set to "Assembly," you receive one outside processing item for each assembly you receive. When this value is set to "Resource," you receive the quantity of the outside processing item for each assembly you receive. Our example is set to "Resource." Therefore, we will receive one unit for each assembly on our work order.

Resources

The creation and use of the OSP "Resource" that is assigned to your OSP operation is critical. Once your OSP item is created, the majority of the setups are in the Bills of Material module. Using a Bills of Material responsibility, navigate to the "Resource" form using the following path: Bills of Material > Routings > Resources.

Creating resources is a prerequisite to departments. Major configurations at the "Resource" creation level include the "Type," "UOM," Charge Type," "OSP Item" and the "Costed" flag. When defining your resource, there is a simple method to add costs to the resource. Once your data fields have been entered, select the "Rates" and, if needed, "Overheads" buttons to assign values against the resource. Also optional is the flag to cost the resource at Standard. Selecting the "Standard rate" checkbox will cost the resource at standard. The type of resource allows for
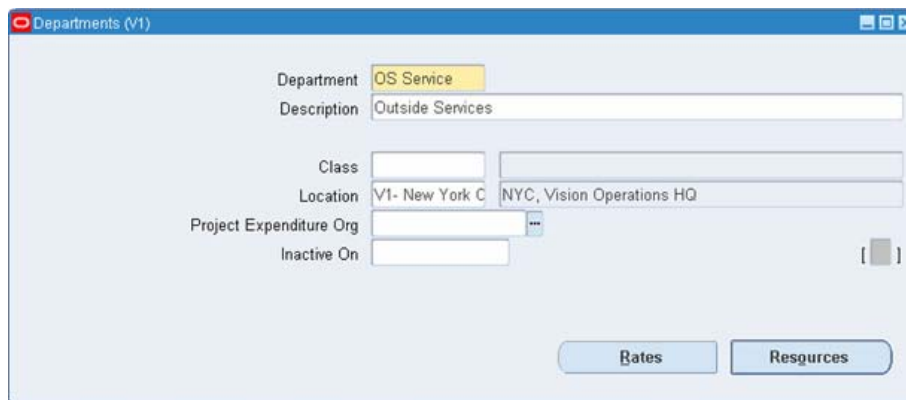
a few options: "Person" or 'Assembly." Selecting "Person" will signify that the resource type is labor related, while "Assembly" would indicate a physical resource.

To ensure that your transactions are automated within WIP, select the charge type of "PO Move." This selection will ensure that when your OSP items are received back from the third party processing, the move transaction will be triggered upon that PO receipt.

The next significant and probably most important setup on this screen is the OSP item. This step is when you associate the resource with the OSP item defined earlier. When this resource is used on an OSP operation and the assemblies are moved to the queue of this operation, the resource consumption associated with the OSP item identified here will trigger the requisition of this OSP item for this particular work order / operation.

Departments
Once you have competed creating your resources, you need to create an OSP department to which you can assign those resources. Using a Bills of Material responsibility, navigate to the "Department" form using the following path: Bills of Material > Routings > Departments.


Creating and defining your OSP departments is not much different than creating any other routing department. Although not a required field on the "Department" form, your OSP department and subsequent departments after the OSP department on your routing must have a "Location" identified. When using a "Charge Type" of PO Move, the department following the OSP department must have a location associated with it in order to move those assemblies to the next operation. Select the "Resources" button to assign your OSP resources to the OSP department. Optionally, you can also enter overhead rates for the resources at the department level.

Creating a Routing with OSP Departments
Now that your OSP departments are created with resources assigned to them, you can create your routings. Using a Bills of Material responsibility, navigate to the "Routing" form using the following path: Bills of Material > Routings > Routings. For the purposes of this paper, we will concentrate solely on the creation of the OSP operation on the routing. This step is the last task in the "Manufacturing" setups. Once you have created your OSP routing, you will want to perform an assembly cost rollup to incorporate your new operations and OSP costs within your product structure.

The essential aspect within routings will be to associate the "Resource" that was created earlier. When you go to create your OSP operation, the majority of the controls can be similar to other operations. The major difference is the "Resource" and how it is applied and used within the operation. Start by creating your operation and selecting the "OSP Department." Then, enter your desired setting for the remaining tabs and a description stating that this is an OSP operation. Once this step is complete, select the "Resources" button to add resources to the operation. Once you have selected the resources button, there are three tabs of information: Main, Scheduling and Costing. Each tab has essential elements in the function of the resource within the operation.

Within the "Main" tab, you will enter your OSP resource, specify the basis and apply a usage rate or amount.
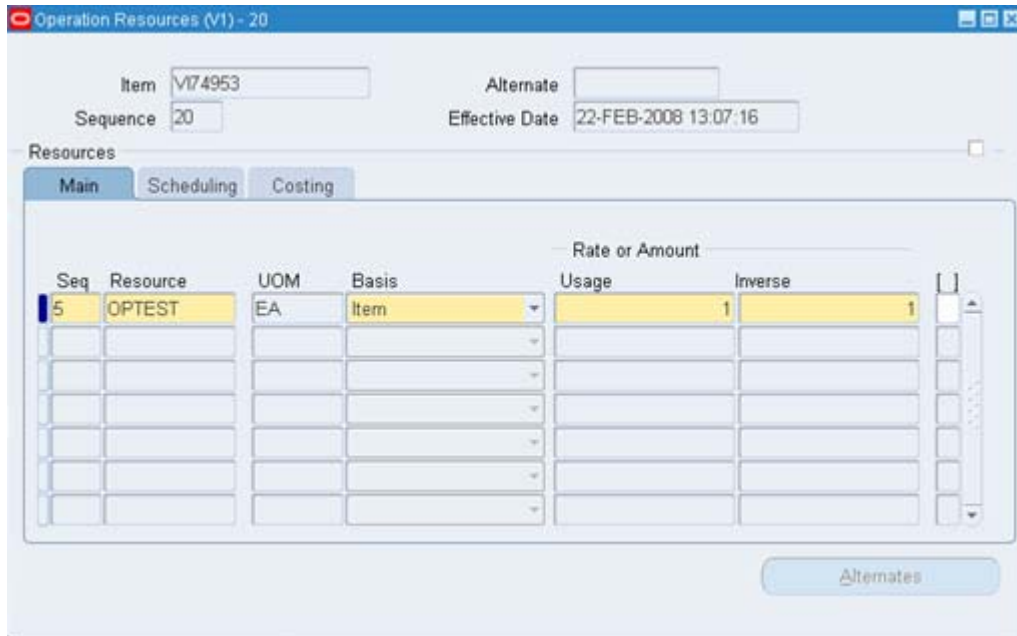
The next step is to select the "Scheduling" tab. Within this tab, enter values for the number of resource units and whether or not to schedule the resource.
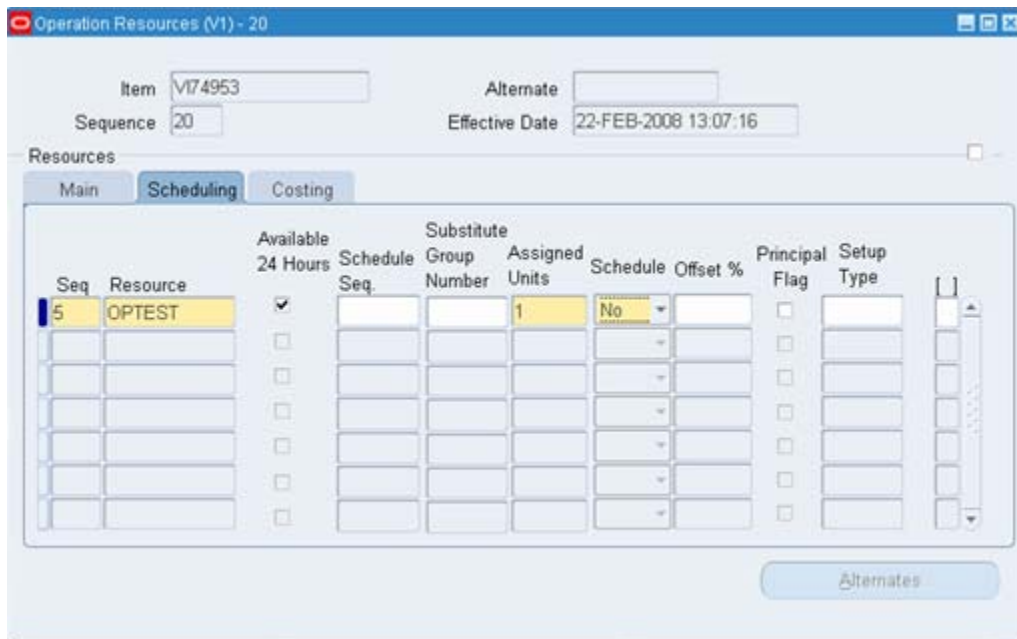
The last step is to select the "Costing" tab. Within this tab, select whether or not to cost the resource at standard rate and select the charge type. Remember, if you want Oracle to execute the move transactions automatically, select a charge type of "PO Move."

WIP Parameters

There is one parameter that should be checked within the WIP parameters form under the "Outside Processing" tab. Using a WIP responsibility, navigate to the "Outside Processing" tab of the WIP parameters form using the following path: Setup > Parameters. Navigate to the "Requisition Creation Time" field. Select the value of "At Operation." This setting will designate that Oracle WIP submit the requisition for outside services when the operation resource is called. Another option is to set this value to "Work Order Release." Either one is acceptable, The advantage to setting the value at "Operation" is for times when you may have a job quantity of 10,000 but you may only process/move 1,000 to the OSP operation. The "Operation" setting will generate the request for only the 1,000 needed at that time versus the entire 10,000 on the work order.

Quotations, Sourcing Rules and Assignment Sets

Once the core manufacturing setups have been completed, you can switch gears to the procurement side of OSP. Again, there are several different approaches to this setup, such as using a quote with a sourcing rule versus creating a blanket and requisitioning releases against the blanket. The following will depict the process for using a quote and sourcing from an approved supplier for the OSP items/resource. Using a Purchasing responsibility, navigate to the "Quotations" form using the following path: RFQs and Quotations > Quotations. For the type of quotation, enter a type of "standard quotation." Then, enter your supplier, effective date, ship to and bill to details, and set the status to "active." Next, navigate to the "Items" tab and enter a type of "Outside Processing." Enter your UOM and price for the line.

Approved Supplier List

The next step is to add the OSP item to an approved supplier list. Using a Purchasing responsibility, navigate to the "ASL" form using the following path: Supply Base > Approved Supplier List. For the type, select "Item" and enter your OSP item in the item filed. Navigate to the lower block and select "Direct" for the business type and enter your supplier. Navigate to the status field and change the status to "Approved." Next, select the "Attributes" button to enter the Attributes form.

Within this form, choose "Release Using Autocreate" in the release method field. Navigate to the type filed in the next block and select "Quotation." Then, enter the Quotation number from the previous form.

Sourcing Rules

The next step is to create the sourcing rules. Using a Purchasing responsibility, navigate to the "Sourcing Rules" form using the following path: Supply Base > Sourcing Rules. Create a name, description and effective date for your sourcing rule and navigate to the lower block. Select "Buy From" type and enter your supplier and supplier site. In the allocation field, enter 100% and a rank of 1.

Sourcing Rule Assignment Set

The final step is to create the sourcing rule assignment set. Using a Purchasing responsibility, navigate to the "Sourcing Rules Assignment" form using the following path: Supply Base > Assign Sourcing Rules. If you already have an assignment set created, you can add the new OSP item to that assignment set or create a new assignment set. If you are adding to an existing assignment set, simply navigate to the assigned to field and select the value of "Item." In the item/category field, enter your OSP Item. Navigate to the type field and select "Sourcing Rule." Then, from the list of values displayed, select the sourcing rule we created in the previous section.

WIP Transactions

Once all of the setups have been completed, it is time to test the OSP functionality. There are two different options to begin the process. You can release a planned work order from the Planners Workbench or you can manually create a discrete job. Using the setup outlined in the preceding pages, we will release a discrete job from the planner's workbench. This particular job has three operations to its routing. They are an assembly, OSP and Final operation. Once the discrete job has been released from the planner's workbench, a shop floor resource will "Release" the work order to the manufacturing floor. In our first operation, components are picked, staged and assembled per the operation. Upon completion of this operation, a "move transaction" is performed. This transaction will move our assemblies from operation 10 (Assembly), to Operation 20 (Outside Services). Once the operation is completed, the job quantity will be placed in the queue of operation 20, the OSP operation. Since our setup had us creating purchase requisitions at the operation level, Oracle will trigger a purchase requisition to be generated.

Now that the purchase requisition has been generated, the procurement department will either automatically or manually run a concurrent process called "Requisition Import." This process will take the requisition request created in WIP and create a Purchase requisition for the OSP item and link it to the work order from which it was generated from. In some instances, the requisition import process is a scheduled job executed periodically throughout the day. Depending on the column of requisitions, scheduling this task may be a more time-effective option.. The requisitions from WIP will be created as approved requisitions. This approval designation allows the specified buyer(s) to run the auto-create process to create the actual Purchase Order. When the PO is approved, the approval Workflow will generate and e-mail a PDF Purchase Order to the supplier.

When your third party is completed with the assemblies, they will be returned as a shipment against the PO. The receiving process works the same except that the assemblies will be returned to the Discrete Job in WIP. Once they are received, Oracle will automatically perform a move operation from operation 20 (OSP) to operation 30 (Final). At this point, the work order will be charged for the labor for the outside services, and the shop floor can continue with processing the work order until operation 30 is completed. Once complete, the assemblies will be moved to a completion sub-inventory and the discrete job status will change to "Complete."

Conclusion

By utilizing OSP, your company can begin complementing its labor pool, and experience competitive advantages such as increased capacity, providing specialized services and improving cost margins. The simple steps outlined in this paper will help you take advantage of this advanced functionality and reap the business rewards.