

# Don't Get Lost in the Labyrinth of Supplier Cost Flows into Projects

Rotem, Dina

*RAFAEL Advanced Defense Systems Ltd.*

Sasali, John

*JKS Associates*

## 1 Introduction

This paper will take the reader on a guided tour through the labyrinth of supplier costs flows into Projects. It describes the integration of Oracle Projects with Purchasing, Payables, Inventory, WIP, Asset Tracking, and more. It explains a variety of methods for charges, and analyzes the different processes generating expenditures of various types. Oracle Projects integration with those E-Business Suite modules allows companies to choose any combination of methods to charge their projects. Business analysts considering the use of each method, will find in this article an in depth analysis of business considerations, and list of features companies can achieve by each method.

Projects managers and controllers usually track the consumption of project budget from the initiation of a PO requisition, until actual supplier costs are fully charged. The article follows that Procure-to-Charge flow, and reviews the process' phases in each one of the alternative methods. It details how commitments are summarized and when are they transformed into actual expenditure items. For companies requiring the strictest control on their project external costs Oracle E-Business Suite offers the ability to impose project budgetary control. This paper will include some insights into this feature, as well.

In addition to the broad understanding of the costs flows, the paper explains the accounting impact flow. Each of the methods has its own accounting cycle, and various methods for journal entries flow into General Ledger. The paper describes the accounting entries generated throughout the processes, and the creation of transactions. It will also explain which tool is responsible for the rules based accounting generation, and which process controls how distributions are created. Accounting generation in R11i depends on the specific path for supplier cost flows into Projects, and utilizes tools like Account Generator in PO and AP, Auto Accounting in PA and Account Generation in Inventory Costing. R12 has introduced the Sub-Ledger Accounting new tool that replaces the various functions available on R11i.

Further on, the article details the required setup in order to utilize each of the methods. Then it explains which processes users should run, and describes the considerations for choosing any values for the process' parameters.

The paper will reveal known gaps in the 11i release of E-Business-Suite and the enhancements introduced by R12. Most of those are related to limitations imposed on adjusting transactions within Oracle Projects. Complex procurement contracts are also a challenge and will be discussed.

## 2 Flows of Supplier Costs into Projects

### 2.1 Stand Alone Supplier Invoices

An Account Payables user receives a supplier invoice for services or goods delivered to the company. This is an independent invoice with no matching to any purchase order where the user has to enter the invoice header and lines. Each invoice line in R11i is actually a distribution line. In R12 a new level of invoice line exists under the invoice header, while accounting and project details are on distribution lines beneath the invoice line. On a distribution line the user may enter the project data including the project number, task number, expenditure organization name, expenditure type name, and expenditure PA item date. The system will generate automatically

the charge account for GL. Based on a profile option that the implementation team may setup; the user may or may not override the GL charge account, which the system has generated.

The accounting generated for such supplier invoice is:

Debit charge account (expense) for invoiced amount  
Credit supplier liability account (liability)

After entering the supplier invoice the user should validate it, generate accounting (optional) and later on approve the invoice. There are several processes to be run:

- Generate Accounting (if not done previously on the invoice form)
- Interface Payables to GL
- PRC: Interface Supplier Costs (ISC).

On that last process there are several parameters controlling the flow of supplier invoices to Projects:

- Through GL Date or Through Transaction Date
- Interface Supplier invoices should be set as 'Yes'.

This process interfaces the invoice distribution lines directly into Projects creating the expenditure items. Although technically the transactions are written into the PA Transaction Open Interface Table, the system automatically calls the PRC: Transaction Import process and transfers all invoice transactions into Projects Costing tables.

That ISC process interfaces all supplier invoices distribution lines which contain valid project data that were already validated and accounted. The user may interface invoices to Projects and GL in any order.

In Oracle Projects the user may view the transactions on the Expenditure Inquiry Form. The description of each EI is the text entered by the AP user on each of the invoice lines.

## **2.2 Purchase Orders for Services**

In Oracle Purchasing a buyer may create a purchase order to contract some services from a vendor. The purchase order lines may be auto-created from requisitions or directly entered by the buyer. The lines describe various services or milestones that the vendor has to deliver. The PO line would have in that case a type of service based on amount or quantity (but not Goods or Outside Processing line type). When implementing Oracle Services Procurement users may also choose line types that are based on fixed price and rate value. When ordering a service for a pre-agreed amount the line type is based on fixed price, whereas when ordering services on a fee per unit basis, the appropriate line type is rate based, for example, you might order consulting services at \$100 per hour.

Under each PO line the buyer may enter one or more shipment lines. Each shipment line may have one or more distribution lines. The distribution lines of such a PO may include project data. If project data is entered the system automatically generates the GL accounts on that distribution line. When the buyer auto creates the purchase order line from a requisition, the system actually copies the distributions from the original document.

Later on, the vendor will submit an invoice for the services rendered to the company. The Account Payables user receives that invoice, enters the invoice header and matches it to the purchase order specific lines. In such case the system automatically creates the invoice distribution lines, based on the distribution lines of the matched purchase order lines. In case the purchase order distributions included project data, the supplier invoice distributions gets the same project data and GL charge account.

The accounting generated for such supplier invoice is:

Debit charge account (expense) for invoiced amount  
Credit supplier liability account (liability)

The AP users should follow the same actions and processes as mentioned for the stand alone invoice, validate account and interface the invoices to GL and Projects.

In Oracle Projects the user may view the transactions on the Expenditure Inquiry Form. The description of each EI is the PO line description that was defaulted previously on the invoice lines.

### ***2.3 Purchase Orders for Contingent Labor***

With the introduction of contingent worker functionality, companies have the ability to procure contingent workers and assign them to projects and tasks. This feature is available when implementing Oracle Services Procurement. With OTL integration, a contingent worker established in HR is able to enter time in OTL as well as expense reports in i-expense. When the contingent worker is established in HR, they are linked to a purchase order, line number and Supplier. When entering time in OTL, the contingent worker timecard layout requires additional entry of the purchase order and line number.

There are two mechanisms for interfacing contingent worker labor costs to projects. Under the expenditure implementation options in projects, if you select to import contingent worker timecards, OTL will interface the hours to projects. Costs will then be calculated based on the purchase order price. On the actual purchase order line, rate based line types may be specified for straight time, overtime, holiday, travel time, etc. A mechanism is in place that will create a purchase order receipt for contingent labor hours entered in OTL. This in turn creates the supplier invoice in AP. If OTL is not being utilized, the supplier invoice will be interfaced to Projects for the contingent worker costs.

If you do not wish to interface contingent labor hours to your project/task, transaction controls provides a feature where you may select to allow only employee labor charges. For contingent worker travel expenses entered using i-expense, costs are integrated to projects the same as for employees.

### ***2.4 Purchase Orders for Goods – Expense Destination – Accrue on Period End***

Purchasing goods means procurement of some physical deliverable, an item, a product or a piece of equipment. A PO line for goods is setup as quantity based, so line value is quantity ordered multiplied by the unit price. On the purchasing order line the buyer may enter an item number, which has been set up in Inventory applications. If item number is not entered the buyer may enter any description and category information. After entering the PO line, the buyer enters shipment lines and the distribution lines underneath. On the distribution line the user chooses the destination type as Expense, Inventory or Shop Floor. Note, that if the PO line has an item number, and the item attributes are stockable and accrue on receipt is 'Yes', the destination type is defaulted to Inventory. A buyer may override the destination to Expense. In that case the goods are delivered to the requestor at an expense location.

For expense destination purchase orders Oracle Purchasing offers two methods that control the receiving transactions accounting. The transactions may be accounted on receipt or at period end. The buyer can choose either one of those methods when entering the shipment line information for expense destination.

Considerations that control the ability to use accrual at period end depend on three separate entities. First is the setup on the purchasing application setup. Second entity is a setup attribute on the item level, being an expense item or asset item. Third factor is the destination of the purchase order distribution, being inventory or expense. The system is controlled by the following terms: On Purchasing Options, Receipt Accounting tab, there are two fields to set up – Accrue Expense Items and Accrue Inventory items, for each one of those the implementation team may choose either to accrue on receipt or period end. Those values are defaulted to all items, based on their attribute as expense items or not. The value of the item is the default for the purchase order shipment line. When the item itself is setup as an expense item, and for that item the Accrue Expense Items flag is set to Period End, buyer cannot override the method on the shipment line. However, for expense items where the Accrue Expense Items flag is set to At Receipt, the default is to accrue upon receipt, however the user can change it to Period End.

Attention: When using Cash Basis Accounting you should always set the Accrue Expense Items flag to Period End. Otherwise it is optional. A buyer who enters a purchase order with no item number is not constrained by item setup, and may override the system options on any shipment line, when the intended destination is expense.

Let's look at the scenario where a PO for goods has destination expense and the accrual method is at period end. The vendor delivers the goods and issues an invoice for those deliverables. The receiving user enters a receiving

transaction and delivers the goods to the requestor, at expense destination. Up to this moment no accounting transaction is created, and no actual costs may be seen in Projects. When AP user receives the invoice, he enters the invoice header and matches the invoice to the purchase order receipts. The system automatically creates the invoice distributions based on the PO lines which were received. The GL charge account and the project data are copied from the PO distributions into the invoice distribution lines.

The accounting for the invoice distribution transaction is:

Debit	Charge Account (expense)	for quantity invoiced @ invoice unit price
Credit	supplier liability account (liability)	

When the accounting period for PO is closed, and the system finds receiving transactions which were not yet matched to a vendor invoice, it generates accounting transactions that charge the Accrual accounts for the GL date of the period end. A reversal accounting batch has to be created at the beginning of the following period. Such period end accounting transactions are not related to the projects, and therefore are not interfaced to Oracle Projects as project actual costs.

Supplier invoices for purchased goods, with expense destination distributions and accrual at period end, will be interfaced to Oracle Projects using the same ISC process as stand alone invoices or services invoices.

## ***2.5 Purchase Orders for Goods – Expense Destination – Accrue on Receipt***

This section continues the above discussion about the flow of purchase orders for goods, where the destination on the distribution line is set as Expense. However, when such purchase orders are set to accrue on receipt the accounting flows and the project integration flows are significantly changed.

As explained before the purchase order lines, shipments and distributions may be copied from an approved requisition or by entered directly by the buyer. When a user sets the requisition or a purchase order distribution, he may enter the full project data. The system then automatically generates the appropriate GL accounts, derived from the setups and the project data.

The buyer entering the shipment lines of the purchase order may enter the receiving controls for the purchased goods. Choosing the Receipt Routing affects also the accounting transactions generation. The values there may be Direct-Delivery, Inspection-Required or Standard-Receipt. Entering receipt transaction using the standard receipt requires the user to make two separate actions; the first is to receive the items into the receiving location, and later on to deliver the item from that location to the requestor in an expense location. The direct delivery method will automatically generate the two steps transactions on the same moment. The receiving and delivery transactions create accounting lines that are sent from PO to GL.

The accounting for the receiving transaction is:

Debit	Receiving Account (asset)	for quantity received @ PO unit price
Credit	Supplier Accrual Account (liability)	

The accounting for the delivery transaction is:

Debit	Charge Account (expense)	for quantity delivered @ PO unit price
Credit	Receiving Account (asset)	

When such purchase orders receipt transactions are related to purchase orders with project destination, the system allows you to interface the deliver-to transactions as actual costs to Projects. There is no need for further setup since the ability to interface the receipt accrual transactions to PA is just a parameter on the existing process – PRC: Interface Supplier Costs.

The AP user receives the supplier invoice for the delivered goods, and may enter the invoice header and match it to the purchase order lines and receiving transactions. Here again the invoice distribution lines are automatically generated based on the PO distributions. However, the system calculates for each distribution line the variance

between the invoiced amount and the receiving transaction amount. Variance may occur in case the vendor billed for a different quantity, or for a different unit price. The latest is known as IPV – Invoice Price Variance amount.

The accounting for the invoice accounting is:

Debit	Supplier Accrual Account (liability)	for quantity Invoiced @ PO unit price
Debit	Price Variance Account (expense)	for quantity received @ unit IPV
Credit	supplier liability account (liability)	

After validating and accounting the invoice, the user may interface the accounting transactions to GL and interface the invoice distributions to Projects. The supplier costs are interfaced to PA using the same process mentioned before – the PRC: Interface Supplier Costs. However, when using receipt accruals that process becomes more complex and you need to carefully select the process parameters.

The available parameters are:

Interface Supplier Invoices: Yes / No / Accrued Cost Only  
Interface Receipt Accruals: Yes / No

Set A: you run that process with the following parameters' combination:

Invoices =Yes, Receipts = No,

The system will not interface receipt accrual transactions from PO to Projects. It will only interface the supplier invoice distributions at the full invoiced amount.

Set B: you run that process with the following parameters' combination:

Invoices = Yes, Receipts = Yes,

The system will interface the receipt accrual transactions from PO to Projects, only if the supplier invoice full amount was not yet interfaced. On the other end, when looking at the supplier invoices distribution the process will interface the variances amounts if it finds that the receipt accrual transactions were already interfaced. Otherwise, the process interfaces the entire invoice distribution amount.

Set C: you run that process with the following parameters' combination:

Invoices = Accrued Cost Only, Receipts = Yes,

The system will interface always the receipt accrual transactions from PO to Projects, without considering the existence of a matched supplier invoice. On the other end the processes always interface from the supplier invoice only the variances amounts, even if the receipt accruals transactions are not yet available to be interfaced.

Based on the nature of the procure-to-pay flow the business has to consider whether to interface receipt accruals to Projects, or stay with interfacing only the full invoice amount. Receipt and delivery transactions are usually available earlier than invoices, and in such case there is a benefit to see project costs earlier, and be able to bill them as costs are received. Interfacing receipt accruals transactions to Projects also improve the period reconciliation between project costs and GL expense charge account, since the both are charged by the same transactions within the same accounting period.

Given that the business wants to interface receipt accruals transactions to Projects, it has to decide whether to use the ISC process with set B or C configuration. Set B is suitable when timely visibility of project costs is most crucial. The ISC process may interface full invoice amount if it is available before the delivery transactions were entered. Delivery transaction may be late when there are some inspection activities and acceptance tests before delivering the goods to the project requestor. The ISC process will interface the delivery transactions if those are available before supplier invoices were entered into the system.

Running the ISC process with the set C may face particular scenarios when the delivery transactions are entered significantly late. In that case the project will only see the invoice variances for a while and only on a later date the receipt accrual costs complete the full billed amount. However, this solution has several benefits like better

consistency of the project charges method, less confusion by the users, and better compliance with the GL when comparing project costs with the GL charge account for the same accounting periods.

## **2.6 Issue Inventory Items to a Project**

With Release 11 Oracle introduced the integration of Projects Costing with Inventory, and the Project Manufacturing functionality. Companies may want to store items in a warehouse till the time they are actually used. The projects' users have two alternative methods for sourcing such materials. The first method is to get the items from general on-hand inventory. Second method is to get the items from inventory, which was previously procured and reserved for the requiring project. The second method is available only when the inventory organization – the warehouse – has been enabled as a Project Manufacturing Organization.

When procuring goods that will be stored in a warehouse, the buyer has to create the purchase order for those items and set the destination type on the distribution lines as Inventory. If the inventory organization is not PJM enabled, the user cannot use the project fields on the distribution lines of the PO. Items are received and delivered to the inventory organization. Such business process generates accounting to GL, which are not related at all to any project.

When the project team demands some items from the warehouse, the storekeeper will issue the items from their place in the warehouse to the project, using a Miscellaneous Issue type of transaction. There is a mandatory setup in Oracle Inventory application to allow for such action. You should create transaction types for Miscellaneous Issue (and Receive) and flag those as project enabled. Only on such transaction type the user will be able to enter project, task, expenditure organization and expenditure type. Those are the fields representing the data of the receiver. Note the prompt term on the form is "source project", which is actually the project that gets the item from inventory. On the misc. receipt transaction the "source project" is the project who gives the item to the store.

The miscellaneous transaction generates the following accounting:

Debit	Project Materials Account (Expense)	for quantity issued @ item unit cost
Credit	Inventory Materials Valuation Account (Asset)	

Note that such transaction is not related to any specific purchase order, and not to the PO cost. The miscellaneous issue transaction may occur a long time after the items were procured, and stored in the warehouse. The issue to project transaction is costed using the item unit cost known at the issue moment. It could be the item average or standard cost, depends on the organization costing method.

The cost of those items will be interfaced into Oracle Projects using the following steps:

- The Cost Management process runs in the inventory organization and generates the cost calculation and the accounting lines.
- Cost Collection process runs and select the transactions that should be interfaced to Oracle Projects. It writes the transactions into the PA Interface Process.
- PRC: Transaction Import process, using the Transaction Source parameter as Inventory Miscellaneous.

Within Oracle Projects user can view the material costs using the Expenditure Inquiry Form.

## **2.7 Purchase Orders for Goods – Inventory Destination**

An inventory organization may be enabled also as a Project Manufacturing organization. In such organization Oracle allows you to store items by projects, and reserve the on-hand inventory for the projects, so they will be able to issue them out of store and consume the items when project schedule requires that. When you assign to the organization a classification of a PJM org, there are several fields that need to be filled in. Choose the control level as Project only or Project and Task; choose whether to assign a project number (The "common" project) for all non-project transactions. You should also set up the expenditure types that system uses for purchased items, the invoice variance, the freight cost and non recoverable tax cost. In any PJM organization items are stored in locators. A locator may reflect a physical place and is also indicating the project and tasks which owns the on-hand quantity in

that place. When setting up the locator KFF, the segments 19 and 20 are predefined by Oracle for project and task ID's.

After setting up the organization there is a need to assign project parameters for any project that would be allowed on that PJM inventory organization.

A project lead or team member may plan ahead to use some pieces of goods or consume some materials for the project work. The project team member enters a requisition for the needed items, and asks to store them in the warehouse and reserve them till the time comes to utilize them on a project work. The requisition and later on the purchase order will be created using distribution lines with destination type – Inventory. In case the ship-to organization is a PJM organization, the system will allow the user to enter project and task on the distribution line (task is not allowed if PJM organization has been set with control level – project). The expenditure type and expenditure organization are not updatable. Expenditure organization will always be the ship-to inventory organization, and expenditure type is determined by the PJM setup. Note that only projects assigned to the receiving organization may be entered on the distribution lines.

Once vendor delivers the items, the storekeeper receives them and later on delivers the items into the required sub-inventory and the specific project locator. Inventory destined items always accrue upon receipt, hence the accounting results are as follows.

The accounting for the receiving transaction is:

Debit	Receiving Account (asset)	for quantity received @ PO unit price
Credit	Supplier Accrual Account (liability)	

The accounting for the delivery transaction is:

Debit	Inventory Materials Account (asset)	for quantity delivered @ PO unit price
Credit	Receiving Account (asset)	

When using Standard Costing method the system generates two separate debit amounts,

Debit	Inventory Materials Account (asset)	for quantity delivered @ standard unit price
Debit	Purchase Price Variance (expense)	for quantity delivered @ (PO unit price - standard unit price)
Credit	Receiving Account (asset)	

Contrary to the non-PJM scenario, now the delivery transaction is considered immediately as a project cost. The cost of those items will be interfaced into Oracle Projects using the following steps:

- The Cost Management process runs in the inventory organization and generates the cost calculation and the accounting lines.
- Cost Collection process runs and selects the transactions that should be interfaced to Oracle Projects. It writes the transactions into the PA Interface Process.
- PRC: Transaction Import process, using the Transaction Source parameter as Inventory, Inventory with Accounts or Inventory with No Accounts. (Details on the alternatives transaction sources are described on chapter 5).

Usually, after the goods were received the AP user gets the supplier invoice and enters it into the system. The user matches the invoice to the purchase order lines and receiving transactions. The invoice distribution lines are automatically generated based on the PO distributions. In case of a variance the system calculates for each distribution line the difference between the invoiced amount and the receiving transaction amount. Variance may occur in case the vendor billed for a different quantity, or for a different unit price, which is referred to as IPV.

The accounting for the invoice accounting is:

Debit	Supplier Accrual Account (liability)	for quantity Invoiced @ PO unit price
Debit	Price Variance Account (expense)	for quantity received @ unit IPV
Credit	supplier liability account (liability)	

After validating and accounting the invoice, the user may interface the accounting transactions to GL.

In case the invoice distribution includes variances, or additional freight costs allocated to the items there is a need to interface those amounts as additional costs to the project, which has received until now only the delivery transaction at PO unit cost. The process that is responsible for dealing with those extra costs is called –

- Transfer Project Invoice Charges Request

That process transfers the extra costs to Inventory as additional cost transactions (not affecting quantity), related to the original project delivery transaction. Those additional transactions will go through the same three processes as the original delivery transactions, and will end up as expenditure items in Oracle Projects.

When the PJM organization setup includes the use of a common project, any purchase order receiving into that organization, will be interfaced to Oracle Projects. In case the PO distribution line has no project data, the cost collector process override the null fields with the number of the project and task which were set up as the organization's common project.

## **2.8 Purchase Orders for Outside Processing**

Companies who use discrete manufacturing may purchase outside processing resources for project work orders in the shop floor. Outside processing refers to a value added work done by a vendor on an assembled item. The work order released in Oracle Work-In-Process will be charged by the vendor resources costs. A purchase order for outside resources should use line type which has an attribute of outside processing. On the distribution line the buyer enters the destination type as Shop Floor, and an inventory organization which is classified also as a WIP organization. When such organization is also enabled as a PJM organization the buyer may fill in the project and task values. The project and task on the PO distribution line are always the project and task of the work order in WIP.

Once vendor send in the processed items, the storekeeper receives them into the receiving locator, and later on delivers the processed items to the shop-floor. The costs of OSP destined items always accrue upon receipt, hence the accounting results are as follows.

The accounting for the receiving transaction is:

Debit	Receiving Account (asset)	for quantity received @ PO unit price
Credit	Supplier Accrual Account (liability)	

The accounting for the delivery transaction is:

Debit	WIP Account (asset)	for quantity delivered @ PO unit price
Credit	Receiving Account (asset)	

The delivery transaction is considered as a work order resource transaction, and is adding costs to the work order. In a PJM organization, when the work order is set for a project, those OSP costs are considered as project WIP costs. The cost of those vendor resources will be interfaced into Oracle Projects using the following steps:

The Cost Management process runs in the inventory organization and generates the cost calculation and the accounting lines.

Cost Collection process runs and select the WIP transactions that should be interfaced to Oracle Projects. It writes the transactions into the PA Interface Process.

PRC: Transaction Import process, using the Transaction Source parameter as Work In Process, WIP with Accounts, or WIP with No Accounts. (Details on those alternative transaction sources are described in chapter 6).

Managing the supplier invoice for OSP in Oracle Payables is similar to the treatment of invoices for inventory items. Here again, if the invoice includes any variances and extra costs you should run the process to transfer those into Inventory. Only then the extra costs of the OSP resources can be interfaced from Inventory to Projects.

## 2.9 Purchase Orders for Items integrated with Asset Tracking

Oracle Asset Tracking (CSE) is a new product in 11.5.10, which integrates with Projects allowing for capitalization of individual items. "Oracle Asset Tracking" was previously known as "Oracle Enterprise Install Base". This application replaced the "Network Logistics" application and CRL functionality in Projects. Oracle Asset Tracking (SCE) is an add-on financial functionality based on transactions managed by Oracle Install Base (CSI).

Oracle Asset Tracking is a tracking system that integrates with and stores information collected from Oracle Inventory, Oracle Purchasing, Oracle Projects, Oracle Assets, Oracle Payables, and Oracle Install Base. The application facilitates financials transactions based on physical movements of material and equipment, by each instance of such goods. Users can locate the goods instances anywhere in the system, on a warehouse sub inventory, installed in a complex system, or sent out to a project work site. In addition, Oracle Asset Tracking can provide a life-cycle history of all activity for that equipment.

When an item is initially received for a purchase order, the initial receipt transaction creates an instance record for the item in Oracle Asset Tracking. If the item is a serialized item, then an item instance is created for each separate item. If the item is a non-serialized item, an item instance is created or updated for each combination of the following attributes: Inventory Item ID; Usage Code; Inventory Organization; Sub-inventory Name; Locator; Revision; Lot (Not All attributes are required in all cases). Subsequent transactions against this item will also be associated with the instance record and will compose the history for that record.

Asset Tracking has different methods for generating assets based on item attributes. On the item set up service tab the user should enable Install Base tracking. The Asset Tracking attribute could be either 'Depreciable' or 'None; (meaning 'normal'). A normal item is charged to a capital project and will become an asset in FA after it is put in service. A depreciable item will become an asset in FA when the item is received, either in Oracle Inventory or in Oracle Projects. The asset is created by Oracle Asset Tracking.

A capital project may use various normal items. Those items can be directly purchased for that capital project. Alternatively the items may be issued from a general inventory to the capital project. The first method starts when a user creates a standard purchase order with a line type as Goods. For such line the user needs to select the destination type as Expense, and distribution of a capital project. When item is received from vendor, the user should enter the details for the delivery transaction, including quantity, requestor, location, and the project. If the item is serialized, enter serial number(s) through Button 'Lot - Serial'.

In order to receive those delivery transactions into Oracle Projects the user has to run the program PRC: Transaction Import with parameter Transaction Source = 'CSE\_PO\_RECEIPT'.

The "Interface Invoice Price Variance to Projects" program provided by Oracle Asset Tracking will now transfer the freight and tax part of the invoice along with the price variance as expenditure items to Oracle Projects interface table. The user has to import the transactions using Transaction Source: 'CSE\_IPV\_ADJUSTMENT'.

The other method for a capital project to use normal items is to issue them from general inventory. The steps for issue an item to a project were described previously. However, the inventory transaction of a track-able item is inserted into Projects interface table using attributes that identifies as such. User needs to use the transaction source: CSE\_INV\_ISSUE for importing expenditures of type 'Issue to Project' for a normal item.

The asset will be created after the instance item is put in service using the functionality of Installed Based application. In Oracle Projects the user will run a program 'eIB Asset Request set', which will generate asset lines and interface to FA each instance as a separate asset. When the physical items are put in service all the extra costs, material, price variance, freight and tax, are proportionately assigned to the project asset.

The second method deals with depreciable inventory items. Here again items may be purchased directly for a project or received from Inventory. When such items are received from vendor they are created as instance in Asset Tracking. This application will interface each instance as a separate asset into Fixed Assets.

When receiving a depreciable item for a project related PO with expense destination, the system automatically post the deliver transaction into Projects interface table. Such costs should be imported into Projects using the transaction source: CSE\_PO\_RECEIPT\_DEPR. Invoice variances related to such item are interfaced by Asset Tracking process to the open interface. For importing the variances costs into Projects user should select the transaction source: CSE\_IPV\_ADJUSTMENT\_DEPR.

Depreciable items may be procured and stored in inventory, while tracked also by Oracle Installed Based. Such items can be transferred through different places out of inventory. Those locations can be associated with project sites, and therefore the item costs charged the project using that item. When such an item is issued from inventory to a project, the system inserts the transaction on the interface table, with special attributes identifying the track-able instance. For importing those records user has to use the transaction source: CSE\_INV\_ISSUE\_DEPR.

Track-able items can be later on transferred between project's sites. Using Oracle Asset Tracking UI users can select items in either usage codes "In Process" or "Installed" and transfer them from one project/task to another. The related expenditure items are reversed and new expenditure items are created using the transaction interface for the new project/task.

Note: Asset Tracking is integrated with Inventory and with Projects. However, it has not been designed to integrate with project manufacturing transactions.

## ***2.10 Payment Discounts***

Based on commercial terms contracted between the buyer company and its supplier, there may be agreed discounts. When you pay earlier than the invoice due date, you may take such a discount, and pay a lower amount. Oracle Payables accounts for such discounts upon payment event, and allocates the discount amounts to distributions based on Payables setup options. If the 'Discount Method' is set as 'Prorate Expense' and the 'Exclude Tax from Discount Calculation Payables' option is enabled then system will allocate the discount amount across expense items distributions, and not tax lines. If the 'Discount Method' is set as 'Prorate Expense' but the 'Exclude Tax...' is disabled the system allocates the discount amount across all invoice distributions. The system will account for the discount using the charge accounts. However, if the invoice is match to a PO with Accrue on Receipt enabled, the discount will be accounted using the IPV accounts. If the 'Discount Method' is not "Prorate Expense" then discount will not be allocated to the items distributions.

When the discount amount is prorated across expense distributions, which are project related, then you may choose to interface such discount amounts to Oracle Projects. Use the PRC: Interface Supplier Costs process to interface discounts associated with project distributions from AP to Projects. This process has a parameter named – Interface AP Discounts, which you may select as 'Yes'.

## ***2.11 Tax charges***

Oracles Payables is responsible for the invoice tax calculations and accounting up to R11i. On R12 this functionality has transferred to e-TAX. Based on tax codes setup the tax amounts are distributed to appropriate tax designated accounts. When tax code is recoverable the tax amount is not charging the expense account. However, when the tax code is non recoverable, or partially non recoverable then the non recoverable amount is prorated across the expense distributions, since the invoice non recoverable tax paid to suppliers is additional costs to the business. .

In case of non recoverable tax calculated for a project related invoice lines, those additional costs are considered as additional project costs. The Interface Supplier Costs process interfaces the non recoverable tax amounts of the supplier invoice to Projects, if those are linked to project distributions.. The non recoverable part of the invoice line is interfaced to Projects as a separate transaction, creating a separate expenditure item. Those transactions are interfaced to Projects when the linked supplier invoice distributions are imported.

Purchasing documents as purchase orders do carry the tax code and recovery rate. When using receipt accruals for expense destinations purchase orders, the system will consider the non-recoverable tax portion of the receiving transactions as part of the company expense, and might also interface that to Projects. If you choose to interface

receipt accruals to Projects, the system will import the non recoverable tax amount as a separate transaction, and would be using a separate transaction source, as well.

Non recoverable tax amounts associated with items receipts to Inventory are treated as the unit price for the debit of inventory valuation account, or would be partially absorbed by the PPV account for standard costing organizations. Project-Manufacturing organizations will cost collect to Projects the PO item cost including the non-recoverable tax amount.

## ***2.12 Prepayments to Suppliers***

Prepayments or advance payments to supplier are paid upfront before receiving services and goods. The payable user enters an invoice of type 'Prepayment' and pays that. The prepayment invoices and cash paid originally are not linked to any supplier deliverable based invoice. When supplier sends in an invoice for services or goods, the Payables user may apply the entire balance of the prepayment or only part of it to the approved invoice. The remaining amount that has no payment applied to it will be paid on the invoice due date.

When entering a prepayment invoice the user may enter the project data on the distribution line. Such project related invoice will be interfaced to Projects as any other project related invoice. Once the user enters a supplier invoice for the deliverables, the prepayment may be applied to that invoice. The system creates a credit distribution line on that invoice that credits the prepayment original distribution, including the project data of the prepayment. As a result, when the supplier invoice is interfaced to Projects, it will transfer the negative distribution line, thus reducing the prepayment amount charged previously to that project.

Importing the prepayments paid to suppliers as project costs has advantages and disadvantages, which should be considered. The benefit is the visibility of cash flows associated with the project. In case the project customer has no objection, the company may bill those prepaid supplier costs, as well. However, some accounting regulations may restrict the company from earning revenue on such costs. That may especially be the case when revenue generation is based on percent spent, while prepaid cost does not contribute to project actual progress. Additional issue is that while a prepayment is considered an asset account, the project costs usually are referred to as periodical expense accounts.

## ***2.13 Complex Procurement Contracts and Complex Payments (Progress Payments)***

Oracle Purchasing and Payables on EBS release 12 have been enhanced for the ability of managing progress payments for subcontractors and suppliers. Prior to this release, Oracle customers were challenged with recording the delivery items to purchase on a purchase order as well as managing progress payments or advances made for such purchases. With R12, complex contract agreements are handled in Purchasing and Payables, including progress for invoicing, advances and retained withholdings for invoicing.

### **Complex Contract - Oracle Purchasing**

With R12, buyers may define complex payment terms on the purchase order lines. For financing, the allowed advance amount that may be applied to a purchase order line may now be defined. Prior to this release, an advance had to be applied to the actual PO line item, where as in R12, the advance is applied to the line as an amount versus a quantity invoiced against the inventory item. Along with the advance amount, the recoupment rate and progress payment rate are also identified. When a Supplier invoice is matched in Payables, the advance is automatically liquidated based on the recoupment rate on the PO line. Purchase order lines now contain a retainage section where the maximum retainage amount is identified along with the retainage rate.

For progress payments, a purchase order line may now be associated with a 'pay item'. The pay item is used to identify the values to be paid to the Supplier versus the items to be delivered. A pay item may consist of a milestone, a lump sum payment or a rate applied to units completed. A complex contract could contain a purchase order for specific sub contracted inventory items. In addition, the purchase order can now identify the progress payments that the sub contractor is allowed to invoice for and the retain amounts that should be withheld until final completion of

the deliveries. If there is an agreement with your supplier to bill based on 'pay items'; the purchase order can identify the pay items and amounts. These amounts would be matched in Accounts Payable to the Purchase Order.

#### Complex Payment - Oracle Payables

Advance payment functionality allows you to apply an advance against specific purchase items. As discussed in the Purchasing section, one can identify terms that indicate how the advances should be applied to subsequent invoicing. For contract withholds or 'retention', Payables will now retain amounts from the payment per the retain terms on the purchase order line. In addition, Payables also supports the retainage release as work commences per purchase order terms. As the Supplier invoices for progress work, the purchase order is updated. On the progress invoice, with R12 functionality, a percentage may be retained as well as advances applied; all based on the complex contract terms identified on the purchase order.

#### Integration to Projects

Complex agreement values from Payables integrate to Oracle Projects as supplier invoice costs. Where the advance, progress or retain invoice lines are tied to a project, the amounts will flow to Projects via the standard interface processes. For receipt accruals, the values interfaced to Projects coincide with the parameters identified in previous sections for the supplier costs interface process. The destination type of expense or inventory will work the same as identified in previous sections. Refer to section 2.7 *Purchase Orders for Goods – Inventory Destination* and section 2.5 *Purchase Orders for Goods – Expense Destination – Accrue on Receipt*.

### 3 Foreign Currency Supplier Costs

Oracle allows entering any supplier invoice, requisition and purchase order in any currency. All Purchasing and Payables transactions are converted from the document currency to their Operating Unit functional currency. When PO and AP transactions are interfaced to Oracle Projects they are keeping the same original transaction currency amounts and the converted amounts in functional currency. Oracle Projects will, in addition, convert the transactions from the original currency to the functional currency of the project owning Operating Unit, and to the Project Currency. Note that PO receiving transactions to both, inventory and expense destinations, are kept in the original transaction and the functional currency. However, after an item was received to inventory, any further transaction like issue to a project will be only costed only by the functional currency of the inventory organization. Oracle Inventory application does not support multi currency costing.

When a purchase order is created in a foreign currency, and its shipment lines are flagged to accrue on receipt, then the receiving transactions are generating accounting transactions. The receiving and the deliver transactions are both converted to the functional currency using the exchange rate on the original receipt transaction date. The AP user enters the supplier invoice in the PO currency. User may optionally override the default exchange date, which defaults from the invoice GL Date. The invoice amount is converted to functional currency using the invoice exchange date. Many times the exchange rate at the receipt date is different from the invoice exchange date. We can look at the following example.

A PO is created in a USD operating unit for an item at 1000 EUR. Item is received and delivered when the exchange rate is 1.50 USD per EUR. The accounting generated is:

Debit	Charge Account (expense)	for 1000 EUR, 1500 USD.
Credit	Supplier Accrual Account (liability)	

The supplier invoice is entered for 1000 EUR while the exchange rate is 1.45 USD to EUR. So the invoice amount is 1450 USD. When matching the invoice to the PO it needs to reverse the accrual amount, but a variance is revealed between the invoice amount the accrual amount in USD. This variance referred to as Exchange Rate Variance is created on the distribution line. Therefore the invoice accounting will be:

Debit	Supplier Liability Account	for 1000 EUR, 1450 USD
-------	----------------------------	------------------------

Credit	Supplier Accrual Account	for 1000 EUR, 1500 USD
Debit	ERV Account	for 0 EUR, 50 USD

The ERV account is set up in Payables options, and is not generated by Account Generator. That means this account is not dependent on the project distribution, although it is accounted on a project related distribution line.

The program PRC: Interface Supplier Costs is interfacing the ERV amount as additional cost to the project. Other programs that transfer supplier invoice variances to Projects (for PJM or CSE sources) are also transferring the ERV as part of the extra costs.

## **4 Subsequent Transactions and Adjustments**

### **4.1 Subsequent Transactions and adjustments in Payables**

Users may enter several types of adjustments or related documents to a supplier invoice in Oracle Payables.

Assume a case where the supplier sent an invoice for a higher quantity or higher unit price than the AP user wants to approve. In such case, the user may enter as a separate document a negative amount invoice of type Debit Memo or Credit Memo. Both invoices the basic supplier invoice and the debit memo which is related to it, can be approved together, assuring the payment is done to the netted amount.

The user can list manually the distributions he wants to credit. Alternatively, the user may match the debit memo to previously entered invoice(s), purchase orders, or receipts to have Payables automatically copy the accounting information and create invoice distributions for the credit/debit memo. In this way the system creates negative distributions for all or selected distributions of the matched against document. If the debit memo total amount is lower than the matched distributions, the system will prorate the amount across the selected distributions. The distributions of the debit memo will have the same project data and GL accounts as the basic related invoice. When you run the program PRC: Interface supplier costs, the system will fetch all debit and credit memo project-related distributions and transfer those to Oracle Projects.

Before a project related invoice has been accounted and interfaced to Projects the users may update any information on the distribution lines. If the users change the project data on an existing distribution the accounting will be re-generated. However, after a project related invoice was interfaced to Oracle Projects you cannot update the invoice total amount, or the project data on an existing distribution. If a user needs to adjust any distribution line, he will enter a reversing distribution line with the wrong attributes and a new distribution for the same amount with the corrected attributes. You may cancel an invoice in Payables if it was not yet paid. In such case the system actually sets the invoice amount to zero and reverses all existing distributions, The ISC process interfaces all distribution lines that have project data, hence added distributions lines will be picked and transferred to Projects, if applicable.

Oracle Payables offer a setup option called – Allow Adjustments to Paid Invoices. If this option is disabled the users are restricted and may not adjust any invoice distribution, once it was paid or partially paid. In such cases users cannot add any new distribution lines as well.

When this option is enabled you still may be restricted to make any adjustments to distributions. Such case is when Automatic Offsets is enabled, and the invoice contains distributions charged to more than one balancing segment, and the invoice is paid or partially paid and accounted. However, those restrictions are removed on Oracle EBS R12, as described later on.

### **4.2 Subsequent Transactions and adjustments in Purchasing**

Goods or outside processing items are received from vendor and delivered to inventory sub-inventory or expense location. The warehouse user enters the initial receiving transaction. Based on the receiving routing the user may need to transfer the goods to an inspection location. If all units pass inspection the user deliver them to the requestor. However, if some units or the entire quantity are rejected then only part or none of the original received quantity is

delivered to the destination location. The rejected quantity may be returned to the vendor. The system interfaces to Projects only the delivered quantity.

Sometimes the items are delivered to the destination location without a receiving inspection. When items are detected with wrong specification, or defected, then users may want to return those parts to the supplier. The warehouse user may use a Correction or a Return to Vendor subsequent transaction, linked to the original receiving transaction. Those subsequent transactions inherit the distribution details from the previous transaction, resulting in a credit accounting lines of the original debited accounts. When those are project related PO transactions, they may be sent to Oracle Projects as well. This is the case when you return to vendor from a sub-inventory of a PJM organization. When the PO was for project related expense destination, and accrue on receipt, those subsequent transactions generate additional receipt accrual expenditures transferred into Projects, and reduce project costs. Expense receipt accrual transactions are interfaced by the Interface Supplier Costs program. The return to vendor from inventory transactions are costed in Inventory and cost collected to Projects.

Users may update any information on an unapproved PO. If they update project information on such order the system will regenerate the GL accounts for those distributions. However, after approving the purchase order most fields cannot be changed, unless the document gets new revision number and needs re-approval.

There may be scenarios where users need to deliver the goods for an expense destination to a project and task, which are different from those on the original project distribution. This may occur if the order distributions were wrong, in cases where project plans have changed and it does not require the goods any more, or in cases a higher priority project has an immediate demand for the items or services. The solution for that is to return the items to receiving warehouse, using receiving correction transactions. Next, you have to update the project distribution on the order. Finally, enter a revised deliver transaction to the required project.

When a user wants to update project details on distribution lines the system will check the status of those distributions. When a distribution line has been received and billed you cannot update the project data. When a distribution line has not been billed yet, and the receiving transactions total quantity is zero you may update the project distribution.

Oracle Projects does not allow any adjustment to either inventory transactions or to receipt accrual transactions. Therefore any correction or updated allocation of material items to another project and task must be done in the source application, Inventory or PO receiving. Because of the above mentioned restrictions users may be forced to unmatch invoices from the PO, and enter returns transactions just to allow an adjustment of the project, and then re-match the invoice and deliver the goods. Those restrictions do not apply to PJM, since a user may perform a project transfer transaction in a PJM inventory organization moving items from the receiving project to the project requiring the demand.

Oracle Purchasing offers an option to allow retroactive pricing. If this option is enabled the system allows a buyer to update item price on Global Agreements or Blanket Agreements. Based on the profile option the process Retroactive Price Update on Purchasing Documents will update standard purchase orders against such global agreements and any blanket releases of such blanket agreement. If those documents already had receiving transactions and match invoices, this system will create subsequent receiving adjusting transactions, and automatic supplier invoices of type PPA (Purchase Price Adjustment). The charge account for the receiving adjustment may be setup on the receiving controls form. The process Interface supplier costs will interface to Oracle Projects the adjustment transactions of expense destination receipt accruals using separate transaction source.

### ***4.3 Subsequent Transactions and adjustments in Projects***

Users in Oracle Projects may want to adjust expenditures of supplier costs. When expenditure items sourced from Payables are adjusted in Oracle projects, the users need to distribute the items in Projects. Based on the nature of adjustment, reversing and new CDL are added to the original EI, or the additional related new EI's are distributed. Up to release 11i users have to interface back the adjustments from Projects to Payables. New functionality regarding this process was released with R12. On the prior release, the system interfaces any new CDLs of the

related expenditures. The system does not interface to Payables any CDLs generated in Projects if the reverse and new CCID of the raw amount have not changed.

When Projects is integrated with Inventory, without Project Manufacturing, the Projects users may not adjust miscellaneous inventory transactions of materials issue and receipt. Those transactions are imported as costed and accounted. Contrary, when Projects is integrated with PJM, the Inventory Misc transaction source does allow adjustments. Work in Process and Inventory transactions imported from PJM organizations cannot be adjusted at all by the Projects' users. The reason is that those transaction sources are predefined not to allow adjustments. A similar restriction is imposed on receipt accrual expenditures imported to Projects from PO receiving. Note, if the invoice is matched to an Accrue on Receipt purchase order line and the invoice line (rather than the purchase order receipt) is interfaced, then the invoice line can be adjusted in Oracle Projects.

Oracle Projects imposes restrictions to supplier costs adjustments, which are the same restrictions Oracle Payable is mandating. Therefore, users of R11i are not allowed to make adjustments to EI's sourced from Payables in the cases mentioned above.

## 5 The Supplier Cost Flows and Accounting Generation

This chapter describes the various methods and setup attributes that are involved and affect the generation of accounting lines. The information included here is in affect within EBS release 11i. The functionality regarding the accounting tools has been changed significantly with R12, and the introduction of Sub-Ledger-Accounting.

Companies that don't implement Project Manufacturing will face a small part of the routing's variety for cost flow into Projects and their respective distributions post into GL. Basically, supplier invoice amounts are interfaced directly from Payables to GL. Purchasing is creating online accounting lines in GL interface table for all receiving transactions, and their subsequent delivery transactions to expense locations. Account Generator is a Workflow based tool that allows you to code the accounting rules for all project related documents, requisitions, purchase orders and supplier invoices.

The interface of AP transactions and PO receipt accrual transactions into Projects is controlled by a single concurrent process, PRC: Interface Supplier Costs. The expenditure items created in Projects are imported as accounted, and there is no need to distribute their costs in Projects. Users in Projects may adjust expenditures, which were sourced as supplier invoices. Only then there is a need to run a distribute process and generate new accounting within Projects. The process Distribute Supplier Invoices Adjustments in Projects is calling the Auto Accounting rules for generating the new distribution lines for those adjusted expenditures.

All AP and PO receipt accruals expenditures may be burdened in Projects. Applying overhead and material handling burden costs is done by Projects Costing. The applicable burden schedule revision ID is assigned to the expenditure upon import. Based on the burden setup in Projects, the expenditure item may be created already burdened. Alternatively, user has to run the process PRC: Create and distribute burden items, for generating separate burden items associated with the AP or PO expenditures.

Last source of materials costs for non-PJM organization would be the issue of items from inventory to projects. Here Inventory is responsible for accounting and it interfaces those lines to GL. Importing such inventory transactions into Projects, is done where those expenditures are already accounted. Expenditures imported from Inventory cannot be burdened in Projects.

When Project Manufacturing is enabled for all or certain inventory organizations, there are several alternative options for accounting scope and path. On the setup form of a PJM organization you should select one value for each one of the following parameters:

- GL Posting Option:
  - Manufacturing: All inventory and WIP transactions are accounted by Cost Management process in Inventory, and sent from Inventory to GL. The project related transactions are interfaced from

Inventory to Projects as accounted. In this case you cannot apply burden rates in Projects on those expenditures.

- Projects: Inventory is not interfacing any materials or WIP transaction to GL. The project related transactions are interfaced from Inventory and WIP to Projects. All such transactions may be burdened in Oracle Projects. Burden amounts will also be accounted and interfaced from PA to GL.
- Account Option: This option is applicable only if GL posting option is selected as Projects.
  - Use Auto Accounting: Inventory and WIP transactions are imported into Projects not accounted. Oracle Projects is responsible for distributing those expenditures using Auto Accounting rules.
  - Send Accounts to PA: Inventory and WIP transactions are interfaced to Projects with the accounts defined by the source. However, Projects will interface those to GL.

Inventory miscellaneous transactions imported from a PJM organization will be accounted by Auto Accounting rules in Projects.

Several points regarding those options are worth noting when implementing Project Manufacturing:

- When selecting the Projects value for the GL Posting option, only transactions that are cost collected into Projects are accounted and posted in GL. All other inventory transactions are not charging projects and are not affecting any GL accounts. Any inventory transaction that represent a change in the physical on-hand value of inventory without adding or reducing any project accumulated cost will not be cost collected nor accounted in GL.
- WIP transactions represent resources adding value to the project-work-orders; hence those are always cost collected into Projects, and always accounted.
- PO delivery transactions into Inventory or Shop-Floor, and any subsequent correction or return transactions will always be accounted and interfaced to Projects as well.
- When selecting the Projects value for the GL Posting option you have to enable a project number as a Common project on the PJM organization setup form. Users entering transactions for non hard-pegged items do not assign any project and task to the transactions. That feature will ensure capturing of any WIP and Inventory transactions with no project data, and interface those to Projects, all assigned to the predefined common project and task.

Cost Management calls the cost processor program that invokes for each inventory and WIP transaction, one by one, following their creation order. It calculates the cost amount of each transaction and generates the accounting lines. As standard functionality the accounting is based on accounts set up of Cost Groups and WIP Accounting Class associated with the transaction's project. Cost Management system also offers some tools that may be implemented for changing those default accounts.

There are two alternative client extensions that manipulate the accounting that Cost Processor generates. You should use either one of the offered extensions, but not both. These extensions are applicable for a standard or average costing organization. The updated accounting lines will be interfaced to GL.

- Accounting Entry Extension: Use this extension to generate accounting entries that are unique to the company requirements. By this extension you may create a different set of debits and credits than those derived by the standard system.

- **Account Generation Extension:** Use this extension to provide alternative accounts to override the system generated account distributions. Cost Processor program will use the provided alternative accounts when it performs accounting distribution.

The following extensions are available only for a PJM organization that uses average costing method.

- **Project Cost Collector Transaction Client Extension:** This extension provides you the flexibility to control the logic of inserting records into the Projects Interface table for each inventory transaction. The extension is invoked for each cost record of inventory transaction. If you enable it, the cost collector will not insert any record in the PA interface table, unless the customized code does it. This functionality is useful in cases the company wants to prevent certain cost transactions from being interfaced to Projects. Another requirement may be to split an inventory transaction into separate records by serial number.
- **Project Cost Collector Accounting Extension:** This extension might be used when the company had chosen the GL Posting by Projects, and wants to interface the expenditures to PA with accounts. This procedure allows you to pass accounts to the project interface, for any inventory or WIP transaction. For example, you might want to use it to generate special accounts for capital projects.

These extensions exist in R11i. When upgrading to R12 users should reimplement their extensions within SLA to maintain their customized accounting.

The following table details the application responsible for generation of the accounting lines and the interface of those to General Ledger. It also lists the name of the Transaction Source used by the system when importing the expenditures into Projects.

Table 1: Summary of Transaction Source into Projects and Accounting Responsibly (11i)

Supplier Costs Flow	Which Inventory Integration is Enabled?	Which Application Interfaces Journals Entries to GL?	Which Application Generates Accounting?	Through which Transaction Source are cost imported to Projects?
Stand Alone Supplier Invoice	N/A	AP	Account Generator in AP	Oracle Payables Supplier Invoices
Supplier Invoice Matched to Service Purchase Order	N/A	AP	Account Generator in Purchasing	Oracle Payables Supplier Invoices
Supplier invoices matched to Goods PO, which accrue on period end.	N/A	AP	Account Generator in Purchasing	Oracle Payables Supplier Invoices
Supplier invoices discounts	N/A	AP	Account Payables setup options if using a predefined system account. Else, if prorate on expense, uses the same accounting combination Account Generator has generated.	Supplier Invoice Discounts from Payables
Receiving and delivery transactions for PO, which accrue on receipt, expense destination	N/A	PO	Account Generator in Purchasing Non Recoverable Tax is based on setup option or overlay rules. Retroactive Price Adjustment is debiting the charge account of the PO distribution and credit a setup account on receiving controls form.	Oracle Purchasing Receipt Accruals. Non Recoverable Tax from Purchasing Receipts Oracle Purchasing Receipt Accruals Price Adjustment

Table 1: Summary of Transaction Source into Projects and Accounting Responsibly (11i)

Supplier Costs Flow	Which Inventory Integration is Enabled?	Which Application Interfaces Journals Entries to GL?	Which Application Generates Accounting?	Through which Transaction Source are cost imported to Projects?
Variiances and extra charges of invoices match to goods PO, which accrue on receipt, expense destination	N/A	AP	IPV - Account Generator in Purchasing ERV – Payables Implementation Options  Non Recoverable Tax – based on setup option or pro-rate. If pro-rate, uses distribution line account assigned by account generator.  Freight expense allocated to item lines uses the Account Generator defined charge account.  Miscellaneous expense allocated to item lines uses the Account Generator defined charge account.	Oracle Payables Supplier Invoices Oracle Payables Supplier Invoices  Non Recoverable Tax from Payables Oracle Payables Supplier Invoices  Oracle Payables Supplier Invoices
Adjustments of supplier invoices expenditures in Projects	N/A	Projects	Auto Accounting in Projects	N/A  Distributions are interfaced from Projects to Payables
Issue items from Inventory to Projects	Regular Inventory	Inventory	Inventory. Credit Inventory valuation based on inventory organization accounts setup. Debit based on user entered expense account.	Inventory Misc
Receiving transactions for PO, Inventory and Workshop destination	PJM, All options	PO	Purchasing, based on accounts setup in the inventory organization receiving the goods	N/A  The initial receiving transaction is not project related, and not interfaced to PA.
Delivery transactions of materials/goods from PO into inventory	PJM, GL Posting = Manufacturing	Inventory	Inventory, based on accounts setup for the Cost Group (assigned to the project).	Inventory

Table 1: Summary of Transaction Source into Projects and Accounting Responsibly (11i)

<b>Supplier Costs Flow</b>	<b>Which Inventory Integration is Enabled?</b>	<b>Which Application Interfaces Journals Entries to GL?</b>	<b>Which Application Generates Accounting?</b>	<b>Through which Transaction Source are cost imported to Projects?</b>
Delivery transactions of materials/goods from PO into inventory	PJM, GL Posting = Projects; Accounts sent.	Projects	Inventory, based on accounts setup for the Cost Group (assigned to the project).	Inventory with Accounts
Delivery transactions of materials/goods from PO into inventory	PJM, GL Posting = Projects; Use AA	Projects	Auto accounting in Projects	Inventory with No Accounts
Delivery transactions of outside processing items from PO into shop floor	PJM, GL Posting = Manufacturing	Inventory	Inventory, based on accounts setup for the WIP Accounting Class (assigned to the project).	Work In Process
Delivery transactions of outside processing items from PO into shop floor	PJM, GL Posting = Projects; Accounts sent.	Projects	Inventory, based on accounts setup for the WIP Accounting Class (assigned to the project).	WIP with Accounts
Delivery transactions of outside processing items from PO into shop floor	PJM, GL Posting = Projects; Use AA	Projects	Auto Accounting in Projects	WIP with No Accounts

Table 1: Summary of Transaction Source into Projects and Accounting Responsibly (11i)

Supplier Costs Flow	Which Inventory Integration is Enabled?	Which Application Interfaces Journals Entries to GL?	Which Application Generates Accounting?	Through which Transaction Source are cost imported to Projects?
<p>Variances and extra charges of invoices matched to PO, with destination Inventory or Shop Floor.</p>	<p>PJM All Options</p>	<p>AP</p>	<p>IPV - Account Generator in Purchasing ERV – Payables Implementation Options Non Recoverable Tax - based on setup option or pro-rate. If pro-rate, uses distribution line account assigned by account generator. Freight expenses allocated to item lines uses the Account Generator defined charge account. Miscellaneous expenses allocated to item lines use the Account Generator defined charge account.</p>	<p>Inventory  The expenditure types associated with each charge is setup on the PJM organization.</p>
<p>Issue items from Inventory to Projects</p>	<p>PJM All Options</p>	<p>Projects</p>	<p>Auto Accounting in Projects</p>	<p>Inventory Misc</p>
<p>Delivery transaction of an Installed Based item on an expense PO</p>	<p>N/A</p>	<p>Purchasing</p>	<p>PO Account Generator</p>	<p>CSE_PO_RECEIPT_DEPR – when depreciable item CSE_PO_RECEIPT – when normal item</p>
<p>Variances of invoices matched to PO of an Installed Based item.</p>	<p>N/A</p>	<p>Payables</p>	<p>PO Account Generator</p>	<p>CSE_IPV_ADJUSTMENT_DEPR - when depreciable item CSE_IPV_ADJUSTMENT - when normal item</p>
<p>Issue Installed Based items from Inventory to Projects</p>	<p>N/A</p>	<p>Inventory</p>		<p>CSE_INV_ISSUE_DEPR - when depreciable item CSE_INV_ISSUE - when normal item</p>

## 6 Cash Base Accounting

Up until this point the paper has focused on accrual basis accounting. In the Payables module, the option exists to use either cash or accrual basis accounting. When the cash basis option is implemented, it is important to point out that supplier expenditures are not interfaced from Payables to PA until the invoice is paid. If an expense report is partially paid, PA will accept the partially paid lines.

If a combined basis is used in AP (where the primary ledger is an accrual ledger and the secondary a cash ledger); Oracle Payables will record the transactions in both ledgers. The accounting method of the primary ledger determines the flow of information to Projects. If cash basis was the primary method, only paid invoices would flow to PA. If the accrual basis is the primary basis, invoices would flow to PA as recorded, validated and accounted.

When using cash basis or a combined basis, invoice adjustment in PA will only flow back to the primary ledger. If the invoice item is adjusted in AP, the adjustment will flow to both ledgers and the primary adjustment will flow to PA.

Difference in project cost flow using Accrual Basis versus Cash Basis Accounting

Basis	Invoice Status	Interface to PA?
Cash	Accounted and Validated	No
Accrual	Accounted and Validated	Yes
Cash	Full Payment	Yes
Cash Pre R12	Partial Payment	No
Cash R12	Partial Payment	Yes

## 7 Reconciliation of Supplier Costs across E-Business Suite

This chapter will try to describe issues that Projects accounting users may face when trying to reconcile the supplier costs captured in Projects costing. The reconciliation will occur on two sides: The GL balances of project cost accounts, and the source applications, like Payables, Purchasing, Inventory, etc.

### 7.1 Segregating Projects and Non-Projects Costs

The very basic suggestion for companies, which implement both Projects and GL, is to segregate the accounting code combinations in GL based on the reconciliation requirements. You may better setup list of accounts that will be used by purchasing and payables for project related documents. The non project purchase orders and supplier invoices might be using a different set of accounts. If not all organization within a the company use Projects, it is better to setup the Projects based organizations as separate cost centers in the GL code accounting combination. Based on such accounting setup, the accountants will have easier tools for consolidating the projects world costs with GL.

One of the common issues Projects implementations usually face is the ability to control what the user is entering on purchasing documents and supplier invoices in Payables where the invoices are applicable to project distributions. Many exceptions are raised during reconciliation of the Projects and GL, when users in AP & PO enter charge

accounts and forget to enter the project data on the same distribution line. Such control may be automatically forced by simple customization. For example, a project centric enterprise has rules where all goods and services from suppliers are contracted using purchase orders. All supplier costs are captured by projects, being indirect, capital and contract projects. Users creating requisitions and purchase orders are always expected to enter project distribution. A simple custom of the forms prevents any user from entering directly the charge account. The PA profile option is set not to allow override of the Account Generator derived accounts. As a result, users cannot save any purchasing documents without entering a valid project distribution. In Payables the company instructed users only to use predefined distribution sets. A customization of the supplier invoice form prevents users from entering directly the GL accounts, as those are always defaulted from the distribution sets, and may not be overridden. Distribution sets are setup only by a special responsibility in the central accounting department, and this user will ensure the enclosure of project data on the distribution sets.

## **7.2 Controlling Accounting Periods**

Oracle Projects offers two type of periods for tracking project transactions, the PA period serves for project management and resource management, where GL period serves for accounting reporting. You may setup PA periods which differ from GL periods. However, for reconciliation of cost transactions across the various applications only the GL financial period is relevant. Since most reporting and inquiries in Projects were designed to show transactions by PA periods, you should pay attention to the differences between the period types.

Earlier Projects implementations could only use the 'period-end date accounting' method, by which Oracle Projects derives GL dates from PA dates and sets each accounting date to the end date of the corresponding accounting period. Since the Projects date derivation rules differ from AP and PO rules for GL date derivation, the reconsolidation challenges are enormous.

With R11i Oracle added the method 'Expenditure item date accounting', which is the recommended method, and the only one available in R12. To use this method you should set the profile option - PA: Enable Enhanced Period Processing to 'Yes'. When enhanced period processing features are enabled, you must maintain the status of your GL periods for project transaction processing in Oracle Projects. With that method the derivation of GL date in Projects is not based on the PA date. The PA date is derived independently if the PA periods are separate from the GL periods. In case the PA periods are the same as GL periods, you should enable the implementation option Maintain Common PA and GL Periods. With common periods, the system usually copies for each transaction the GL date to the PA date.

When interfacing accounted expenditures into Projects, the system copies the GL date from the source system. For example, expenditure item imported from Payables gets the GL date from the GL date entered for the invoice distribution line on the supplier invoice. That will be also the PA date, when you maintain the common periods. If you maintain separate PA periods, the period will be derived from the EI date.

When you use the Maintain Common PA and GL Periods implementation option, the PA date and GL date are the same for most transactions. However, when you interface transactions from Projects to Oracle Payables (R11i), the system can generate exceptions that cause the transaction GL date to differ from the PA date. That may occur if the accounting period of the adjustment item date in Projects is open, whereas the same period is already closed in Payables. The adjustment distribution will be posted from Payables in a later GL period. This type of exception will not show up in R12, anymore, since adjustments are interfaced from Projects directly to GL.

In addition to the described issues around accounting code combinations and accounting periods, the users may also consider the timing differences for certain transactions. Receipt accruals for expense destinations are posted to GL concurrently. However, if you prefer not to interface receipt accruals to Projects, you will meet a difference between project costs in GL versus costs in Projects.

### 7.3 What Can Go Wrong?

Previous sections explained implementation decisions and general system features which may affect the reconciliation challenges. This section will try to detail reconciliation issues arising when the system is not functioning as desired and designed.

All project related supplier costs should ultimately be posted in GL, and should be interfaced to Projects. Looking at the GL view, many intermediate accounting transactions are debiting and crediting each other, until finally an expense (or asset) account is absorbing the entire supplier invoice cost. This is the case where goods are debiting receiving account, then expense account, while AP is debiting the Payables accrual account, and also the variances and extra costs. Projects, not being a full accounting ledger, may be getting only part of the accounting transactions. The reconciliation challenge is to verify all project related costs paid to suppliers are ultimately also imported to Projects.

If you know a supplier invoice distribution should have been interfaced to Projects, but you cannot see the related expenditure item in Projects, you may want to look in Payables at the suspected distribution line and check the value of PA\_ADDITION\_FLAG. This field tracks the status of project-related supplier invoice distribution lines. When the supplier invoice distributions are entered in Oracle Payables, and the distribution is project-related, the PA\_ADDITION\_FLAG is set to N; otherwise it is set to E. When sending those lines to Projects, the system updates that field to reflect a successful EI was created (code Z or Y). Otherwise it will insert a rejection code. For supplier invoice adjustment lines interfaced from Projects to Payables, the value for the PA\_ADDITION\_FLAG is set to T. If an item is rejected, you must correct the rejection reason and re-run the interface process.

Similarly, the accounting lines of receipt accruals which were interfaced to Projects or rejected during that process are marked with a flag called PA\_ADDITION\_FLAG.

When using Project Manufacturing the Purchasing receiving transactions are entered in Inventory receiving form. Transactions should be costed by Cost Management. If transactions have not successful costed or were not successfully cost collected you may see the rejection reason and error code on the form – Material Transactions window, using the Cost menu. The Find Material Transactions window includes select criteria which allow you to view transactions base don the following lists:

- Costed: includes Yes, No, and Error
- Transferred to Projects: includes Yes, No, Error, and Not Applicable.

The error indicator appears in the Reason, Reference tab, for those transactions that have rejected. The error indicator appears in either the Costed column or the Transferred to Projects column, whichever is appropriate. On that tab you may see also the error codes and error explanations which enable you to analyze and correct errors before resubmitting transactions.

Last place to look for exceptions is the PA\_TRANSACTION\_INTERFACE\_ALL table. If transactions are rejected during the Transaction Import process, you can review and correct them using the Review Transactions window. After you correct transactions, you should resubmit the Transaction Import process.

Other issues that the system does not identify as exceptions are those which will make the reconciliation work the toughest. Examples for such cases are described next.

A user changed the destination type of a distribution from Inventory to Expense, after a receipt transaction was already entered. The interface supplier cost process didn't find the receipt accrual transaction and interfaced the entire invoice cost to Projects. The case resulted in double charging the project costs.

A user changed project distribution for a PO line after a receipt transaction was already created. The first transaction was interfaced to Projects. When he entered the supplier invoice and matched to that PO the system copied the new distribution, and as a result the variances went to the new project. This scenario was bugged and patched already by Oracle.

A user created a PO for expense destination and flagged by mistake to accrue on receipt. The selected invoice matching method was 2-way matching. When the supplier invoice was entered in AP, there were no receiving transactions. The invoice was validated. The interface to Projects used the parameter to interface accrued cost only. Thus it was not interfaced to Projects. However, no one has entered a receiving transaction in PO. As a result, the supplier costs were not interfaced to Projects at all.

Last example is a case where on the purchase order there is a shipment line with multiple project distribution for expense (project C needs 5 units, project B needs 7). The GL charge accounts derived from those projects are different. The supplier shipped partial quantity of 5 units. The receiving user delivered the entire quantity to one project (C), and that receipt accrual transaction was interfaced to Projects. When matching supplier invoice to that purchase order the system uses the PO distributions and prorates the invoice amount of 5 units across both projects. As a result the invoice variances charged partially a project which did not receive any goods yet.

## **7.4 Exceptions Reports**

Users may use standard reports to explore exceptions which were identified by the system. A list of such reports is described here.

- The Interface Project Costs from Payables Exception Report lists all invoice distribution lines and receipt accrual transactions that failed to interface to Oracle Projects during the process. For each transaction that fails to transfer, output reports list the rejection reason.
- The Receiving Interface Errors Report shows you what warnings or errors occurred while the Receiving Transaction Processor was processing rows in the Receiving Open Interface tables.
- The Transaction Import Exception Report lists all transactions that were rejected during the Transaction Import process. For each rejected transaction, this report displays the identification of the transaction in the interface table. It also displays the rejection reason code that identifies the cause of the transaction's rejection.
- The EXC: Transaction Exception Details report lists all transactions that have not been fully processed. You can use this report to identify corrections that you need to make before attempting to close a PA period.

Custom reports may be developed to track transactions and help in the reconciliation mission. Such report may start with a supplier invoice distribution line and show which expenditure items in Projects may be consolidated to match the invoice distribution. Such expenditure items may include various receipt accrual transactions (including corrections and returns), and various components of the supplier costs interfaced from Payables. That report will also show transactions, which had not arrived to Projects, and are waiting in one of the interface tables with a rejection code. Such report will also show cases where the project and task charged in Payables is different from that in Projects, where no adjustment transactions exist. A similar report may be developed for Project Manufacturing organizations, as well.

## **8 Commitments Tracking in Projects**

Oracle Projects offers the users two methods for tracking the amount of commitments. First is the Project Status Inquiry (PSI) when using the forms technology. Projects Management on family pack M (R11.5.10.2 or R12) introduced the Project Performance Reporting pages (HTML), which offers several predefined inquiries. Both types of inquiries show the commitments summarized from Purchasing, Payables, and Inventory (for PJM organizations).

You have to set up the reporting period in Projects, and run the summarization process in order to allow users to see updated information of the commitments. The summarization processes updates the summary amounts of actuals and commitments during the same process. The results are saved on accumulated amounts tables, while the reporting is done on views based on those accumulated values.

Commitments update process is actually looking into six basic groups of transactions, and for each of those it finds new documents and changed documents. It also finds transactions related to those documents which were interfaced to Projects as actuals. Basically, the commitment amount is calculated as the value of the project related distribution line on a purchasing-payable document minus any related actual transactions interfaced to Projects.

The following table summarizes the standard logic of the commitments amounts derivation.

Type of Organization	Commitment View	When commitments are increased or decreased?
Any organization	Requisitions for services or expense destination goods.	<p>When a requisition line with project distribution is created and saved, it will be picked up as a new commitment. Any update to such line such as different project data, quantity or unit price will be captured by the next summarization process run.</p> <p>When a buyer auto creates purchase order from the requisition, that requisition will be decrease from the commitment summary.</p> <p>A canceled requisition is not included in the commitment summary.</p>
PJM organization	Requisitions for inventory destination goods, and shop-floor destination outside processing items	<p>This view is working only for requisitions with destination of a PJM organization. If no project data exists the system will summarize the requisition to the predefined common project of that PJM organization.</p> <p>The process treats PJM requisitions as any expense requisition.</p>
Any organization	Purchase orders for services or expense destination goods.	<p>When a purchase order line with project distribution is created and saved, it will be picked up as a new commitment. Changes to such PO distribution will be resummarized next time the process is run.</p> <p>If the distribution line is not for an accrue-on-receipt item, the commitment will remain until a supplier invoice is matched to the PO and saved with the related distribution. If the amount billed is different from the ordered amount, only the remaining amount is considered a commitment.</p> <p>Otherwise, the process will verify if a receipt accrual transaction was interfaced to Projects, or if that PO line is matched to supplier invoice. In either of those cases the amount delivered or billed is reduced for the commitment value.</p> <p>When Purchase order is closed or canceled the remaining commitment is reduced.</p>
PJM organization	Purchase orders for inventory destination goods, and shop-floor destination outside processing items	<p>This view is working only for purchase orders with destination of a PJM organization. If no project data exists on the PO distribution line, the process will consider the amount as a commitment of the organization's common project.</p> <p>Commitment is reduced when items were received and delivered to sub inventory or shop floor. Existence of supplier invoice has no relevance here.</p> <p>Commitment is reduced when the purchase order is closed, or canceled.</p>

Type of Organization	Commitment View	When commitments are increased or decreased?
Any organization	Supplier invoice	<p>A stand alone supplier invoice with project distribution, which was not yet interfaced to Projects, is considered as a project commitment.</p> <p>A supplier invoice matched to PO without accrue on receipt, which was not yet interfaced to Projects is considered as a project commitment.</p> <p>Consider a supplier invoice was matched to PO for expense destination with accrue on receipt. The system will check if the accrued receipt transaction was already interfaced to PA. If so, only the variances and extra charges on the invoice will be summarized as commitments, until those are interfaced to PA as well. If the receipt transaction was not yet interfaced to Projects, the supplier invoice distribution was not interfaced, and any variances were not yet interfaced as well, the entire amount of the invoice distribution is considered as a project commitment.</p> <p>When a supplier invoice is matched to an inventory destination purchase order, only the variances and extra charges are summarized as commitments, until those are interfaced by PJM process to Inventory, and Projects.</p>
PJM organization	PJM items in Inventory	Items delivered to a PJM inventory organization and costed there are considered as commitments, as long as the cost collector has not interfaced those to Projects.

The logic of the standard commitments summarization processes introduce several issues which will cause misrepresentation of the commitments value, or will commit amounts which project manger has not planned. Following are some real-life scenarios that may demonstrate such situations.

The system does not consider the approval procedures on the purchasing and payables documents. Once entered and successfully saved those documents are committing the project budget. For example, a user may enter requisition with a project distribution, but this requisition is not even sent for approval, and may stay for long time as not approved. Such requisition stays as commitment and will not be released until canceled.

When a purchase order is committed for long time, and the supplier deliverables are still due, you may face a situation, where the buyer of such PO has left your company. Once the purchase order buyer is not active any more, the system does not summarize that purchase order as an open commitment.

An AP clerk may double enter a supplier invoice because the supplier sent in a duplicate charge, or the AP user wrongly entered an incorrect invoice number. When that extra supplier invoice is matched to PO it will be placed on hold for overbilling. Although, such invoice will not be approved and paid, during the time it takes to check things with the supplier, the summarization process does commit the extra invoice charges to the project.

Other source of commitments being understate exist when there are timing differences or transactions are rejects and not imported into Projects. The commitment process may reduce the commitment believing actuals were charged in Projects, while actuals were delayed and therefore were not imported or not distributed.

In PJM organization the cost processor is setup to process transactions with a delay of a couple of days. An outside item was delivered to shop floor and not yet costed. When commitment summarization is running it will reduce the PO commitment since the item was already delivered. The PJM inventory view does not look at non-costed items, and will not "see" that as a commitment. The actual cost is not yet imported to Projects, and the result is an under representation of the project status against its budget.

If you schedule the summarization process before all transactions were imported into projects and distributed (for those sources that bring unaccounted expenditures), the accumulated actual costs will be shorter than reality, while the commitment amounts are already reduced.

If commitments amounts are carefully watched by project managers and cost controllers, you may want to devote some time and resources for the on going processes, and plan carefully the timing of the summarization processes. In addition, if the standard functionality logic for increasing or decreasing the commitments does not meet the business requirements, then the implementation team may change the delivered views, and add or modify the delivered views. Such change is considered by Oracle as a supported customization.

## **9 Controlling whether Supplier Costs may Charge Projects**

### **9.1 Project Status**

Oracle EBS delivers several mechanisms which help the project administrators and managers to control the supplier costs accumulated on the project, to reduce inaccuracy of costs charges, and to reduce the risks of project costs overruns.

The first setup tool is the project status. When implementing Oracle Projects, you may setup several values of project statuses. For each status you have to decide and set up the allowed actions. Hence, when a project is on a status that does not allow cost charges, the risk of entering new documents and transaction is reduced. For example, a project status named closed, is setup as such.

When a user enters a stand alone supplier invoice, a new purchase requisition or a purchase order with a project distribution, the system validates the project status. If the project status is closed for cost, the user will not be allowed to choose that project on the list-of-values and to save that project distribution.

However, if the commitment was created while a project was active, and later on the project status was changed so it does not allow charges, the system still honors the supplier cost commitment. When items are delivered and supplier invoices matched to the purchase orders, the process will successfully interface the costs to Projects. This business rule was first introduced in Projects with release FP\_K.

### **9.2 Tasks Dates**

Each chargeable task on a project may be set up with start and end dates. The tasks dates are validated for being inclusive within the project start and end dates. The type of dates that control project cost charges are the 'Transaction' start and end date. The system basically should prevent the creation of new documents and expenditures if the item date falls outside of the task transaction dates.

When a user enters a stand alone supplier invoice with a project distribution the system validates the item date entered against the entered task dates. By standard functionality until release 11i the user in Payables may enter any item date. Therefore, there is a workaround that payable administrator may use to enable the supplier invoice to charge the project and task, even if it gets in late. With R12 the system offers a method to derive the EI date from the supplier invoice date or GL date. Hence the control can be tightened.

When users in Purchasing enter requisitions and purchase orders for expense destination with project distribution, they are supposed to enter the item date as the estimated date for the future deliverable charge. The system validates the item date to ensure it is with in tasks dates. After the Purchase order is approved the commitment will be honored. When receiving transactions are accrued for such purchase order you may interface them to Projects, even in receiving item date is currently out of task dates. When supplier invoices are matched to such purchase orders, the AP distributions are created from the purchase order, and all project data, including item date are derived from the PO distribution. The system does not revalidate the project status, nor the task dates. The import of matched supplier invoices into projects is skipping the project regular validations.

### **9.3 Projects Manufacturing Dates Controls**

Project Manufacturing has its own method for controlling the creation of project related documents and charges. For each PJM organization you should assign the projects that will be allowed there. As part of the project parameters assignments you may optionally enter the project effective from and to dates. Those dates control the ability to operate for this project in the assigned inventory organization and may be more restrictive than the entire project dates. The project, project-task and Project Parameter start/end dates are validated in various procurement documents such as Purchase Orders, Purchase Requisitions, Blanket Release, RFQs, and Quotes. The validation is technically handled by Oracle Workflow technology calling Project Manufacturing API.

By standard functionality the system generates warnings when the exceptions are encountered during the creation of the document. You can create extensions to this API to include business specific rules. For example, a customized API may prevent the creation of purchase order for a project if the shipment is planned for a date that exceed task dates, or the effective dates of the project assignment to the inventory organization.

Additionally, users may run reports that will list exceptions for procurement activities.

- Project Schedule Exception Report - Procurement Activities. The report lists the procurement documents that violate the project schedule dates.
- Overdue Project Procurement Activities Report. This report lists all the project procurement documents that have not been completed even after the Project/Task schedule completion date.

### **9.4 Transaction Controls**

The most powerful mechanism that enforces control of supplier cost charges to a project is the setup of project or task Transaction Controls. The system calls the transaction control validation when ever it validates all project data entered on a purchasing and payables document. Meaning, a user may be restricted from creating a purchase order or entering a stand alone supplier invoice distribution for an active project and task, if some other value on the document violates the predefined controls for that project.

When transaction control is setup for a task (or project) you first have to set the logic for all the listed controlled records on that task. The logic could be either to include only listed items or to exclude only listed items. You can configure transaction controls by the following entities: Expenditure Category, Expenditure Type, Non-Labor Resource, Employee, Scheduled Expenditure Only, Workplan Resources Only or Person Type. For each of such controlled item you can setup the dates this control should be effective.

Examples for use of transaction controls may be by listing names of suppliers, which may be allowed for that task. Optionally, transaction control may get detailed lists of allowed items. If you budget by resources, the transaction control may restrict users to purchase only the planned resources. However, it is important to note, that transaction controls does not consider the amount of the transaction or document being entered. The standard functionality only validates existence in the allowed or restricted list, but does not compare the purchase order amount with the budgeted or planned resource quantity or amount.

Transaction control has an additional powerful tool, since it always calls a client extension, which may be customized to the business rules. Using the extension you may write your own logic for allowed or restricted project charges. Example for using the extension is described here. The business requires having a phased procedure of closing a project. When project is going to be completed, the project manger may want to cease creating any new commitments, and wants to restrict the project team from creating requisitions and purchase orders. During that phase, the project is still active and may get charges of in house resources, or subsequent transactions of existing purchase orders. A specific project status was set up named 'Prevent PO', which was set to allow cost charges as an active project status. Using the transaction control client extension the implementation team was able to develop the business rule that rejects the creation of a purchase orders and requisitions, if the project status is 'Prevent PO'. The transaction control has not rejected supplier invoices for that project, or any other cost transactions imported into Projects.

## 10 Budgetary Control

Budgetary Control provides project managers the ability to control costs charged to a project using a project cost budget. The funds check process validates Purchase Orders, Requisitions and Supplier Invoices to be within budget amounts prior to document approval.

There are three levels of budgetary controls.

- Absolute - the system rejects transactions that do not pass funds check results.
- Advisory – accepts transactions that do not pass funds check results. Provides warning
- None – performs no funds check

Budgetary Controls can be held at the Project, Task, Resource Group or Resources level. The amount type defines the start of a time interval for funds checking.

- Period To Date - The funds check routine uses funds available from the start of the period in which the transaction GL date falls.
- Year To Date - The funds check routine uses funds available from the start of the year in which the transaction GL date falls.
- Project To Date - The funds check routine uses funds available from the start of the project.

The funds check validation used by the application is based on the type of transaction.

		<i>Validation Results</i>		
Type	Validation Occurs	Absolute	Advisory	None
PO/REQ Commitment, Unmatched Supplier Invoice	Validation Process	Rejects transaction where not pass funds check	Accepts transaction where not pass funds check. Provides Warning	Accepts transaction
Supplier Invoice adjusted in AP	Re-Validation Process	Rejects transaction where not pass funds check	Accepts transaction where not pass funds check. Provides Warning	Accepts transaction
Supplier Invoice adjusted in PA	Supplier Adjustment Cost Distribution Process	Transaction remains in 'Un-distributed' status	Transaction status is Cost Distributed	Transaction status is Cost Distributed

If you find the supplier adjustment in PA has violated the funds check, one approach to correct this is to modify the validation results to 'Advisory'. This will allow the funds check to then pass. After this, the validation type can be changed back to 'Absolute'. Another approach would be to increase the budget values and re-run the costing process.

Key features for this functionality to be noted:

- Budget entry method used for budgetary controls cannot be time phased by date ranges, you must use GL Periods.
- Budget types used for budgetary controls can only be entered through forms based interface. In R12, the functionality includes HTML budgets in project management.
- The feature validates against burdened cost amounts. If your organization is using raw costs, the system assumes raw equals burdened.
- Budgetary controls only works for destination type of expense on a purchase order or supplier invoice.
- Budgetary controls populate separate tables that get encumbrance records upon creation of a commitment. Project's provides a view that allows you to see what costs have been reserved against your project.
- If you accrue on receipt and allow overage of receipt of goods, additional items are not subject to funds check.
- For prepayments, the funds check is only validated against unmatched prepayments.

For project management users in R12:

- If the budget being used is for budgetary control purposes, from this budget you will not be able to generate budgets from work plans, staffing plans and other financial plans.

## 11 New Features in Release 12

Release 12 offers new features for project costing and the integration with purchasing and payables. This section will highlight the changes and improvements.

### 11.1 Adjustments

Prior to release 12 adjusting supplier invoice costs in Projects was challenging and restricted. Based on payables set up option of automatic offset, once the invoice was paid in AP, adjustments could not be made in PA. With R12 this restriction has been removed and supplier costs may be adjusted in PA even if paid. This enhancement also applies to companies utilizing the cash basis accounting method.

The table below illustrates the conditions that allow for supplier invoice cost adjustments in PA that in prior versions were not allowed.

Condition	Adjustments Allowed in Projects
Automatic Offset Feature enabled in AP	Invoice paid or unpaid
Cash basis accounting as primary ledger	Invoice paid or partially paid
AP set up does not allow adjustments for paid invoices	Invoice paid or unpaid
AP invoice matched to PO	Closed and Finally closed PO lines
Prepaid Invoice	Fully or partially paid
AP Invoices - All	Invoice Selected for Payment
Payment Discounts	Yes, even if distributed to project invoice distributions

For companies using cash basis accounting, R12 has been improved where the system now interfaces both partial and full payments to PA. In prior releases, the full invoice amount had to be paid prior to the invoice distributions being interfaced. The change now interfaces project costs based on the payment lines. With this improvement, costs are more accurately reflected in a timely manner on your project.

### 11.2 Payables Invoice Lines

As mentioned in a prior section, R12 provides an architectural change which now provides invoice lines. Prior to R12, payables contained the invoice header and invoice distributions. This release now provides the invoice header,

invoice lines associated to the header and distribution lines associated with the line. The new feature offers the ability for line level approval and matching of an invoice at the line level. Invoice lines are for goods or services where tax, freight and other charges become distribution lines associated with that invoice line. As an example, a line for goods would have its own distribution lines including tax and or freight distribution line associated with that invoice line. Prior to release 12, the invoice would contain a distribution line for goods, one for tax and the other for freight and the analyst would not necessarily know how the tax and miscellaneous lines related to the goods distribution lines.

### ***11.3 Controlling Expenditure Item Dates***

Release 12 now offers the ability to control how an expenditure item date is determined for receipts and invoices. Prior to this release, the item date posed as it was based on the expenditure item date entered on the requisition or purchase order distribution line.

A new profile option is offered that controls the default date used for invoices, receipt accruals, discounts and payments. The attributes used for determining the expenditure item date are:

- Transaction date for invoice or payment
- The General Ledger date for the invoice, discount or payment
- The system date for when the invoice or payment was created
- Expenditure item date entered on purchase order

### ***11.4 Expenditure Inquiry Additional Attributes for Supplier Costs***

This release provides the ability to inquire on expenditure inquiry using the supplier name, invoice number, invoice line number, invoice distribution number or payment number. When the inquiry is performed for the invoice line number, all costs associated to the line such as freight, tax or miscellaneous charges will be displayed.

## **12 Conclusion**

This paper has identified the numerous types of supplier costs that flow to Oracle Projects from the various applications. Through the years Oracle Projects has built well thought out supplier cost integration paths for companies that are operating the Oracle application suite. Supplier costs are integrated timely and accurately through such variations as invoices, receipt accruals, progress invoicing, inventory purchases/movements and contingent labor charges. This tight integration allows a company to timely track supplier expenditures and commitments, providing accurate reporting and invoicing to customers. Whether your organization is capital funded intensive for assets, service oriented or manufacturing intensive, supplier cost integration will suit your project tracking needs.