Tips & Tricks #27 - GL Distributions from Inventory, Purchase Order and Order Entry

Some of the questions we receive from customers relate to the fundamental underpinnings of the way PBS processes transactions and creates the GL distributions ending up on financial statements.

For example, a new customer to PBS wanted to be assured that Passport followed GAAP standards (Generally Accepted Accounting Principles) especially with respect to the costing of items. Their questions were slightly unusual in terms of their directness and generality. And this helped us realize that many of you might appreciate a look "behind the curtain" into the ways PBS generates GL transactions. One of the key "mysteries" is how we process transactions that occur in different stages over time – accruals - and how the system automates this and knows which accounts to use.

Here is a lightly edited version of our client's questions:

Inventory and Costing

1. What is the accounting impact when I enter a vendor bill into Passport? In addition to the standard AP liability account, what will the offset account be?

2. How does Passport determine the Cost of Goods Sold (CoGS or CoS)? Is it recognized when the products are shipped out to the customers at the time of billing, or at another time?

3. Can PBS be GAAP-compliant and what things do we need to look at in PBS to verify this. In this context what specific steps can we take to ensure that the system will correctly calculate CoGS?

4. How is the gross margin determined at the customer level? For instance, can I define what is included in "Cost of Sales?"

5. How can I track profitability at the item level, in addition to at the customer level?

General Ledger

6. Can I run a P&L before closing the books at the end of the month?

7. How does Passport set up GL distribution accounts, to each module or transaction type or item category?

Besides issues related to setting up Passport, much of this involves the concept of accrual which is used when a single logical transaction like receiving inventory occurs in two distinct steps separated in time. For example, you will want to accrue any receipt of inventory, acknowledging the increase to the value of your inventory when it comes in the door. However, typically this happens before you have received the invoice from the vendor for these goods and therefore, (until the invoice is vouchered later by you), you have not acknowledged the liability for this purchase. The accrual process bridges the gap between receipt of the asset and the creation of the offsetting liability by saving the asset value so it can be matched later against this liability.

GL Distributions from Inventory, Purchase Orders and Order Entry

Before we answer these client's questions, there are a half dozen background issues we need to cover so the answers to the seven questions will truly make sense:

One important practical point to keep in mind from the beginning is that the accounting system is made up of a number of modules that are designed to communicate with each other. The major players in the Purchase Order/Order Entry/Inventory area, from an accounting point of view, are the Accounts Receivable (AR), the Accounts Payable (AP) and the Inventory (IC) modules. The operational-level modules like Purchase Orders (PO) and Order Entry (OE) "sub-contract" i.e., pass data to AR, AP and IC to have them do the actual posting of the accounting transactions. These transactions include:
- IC - Inventory quantities and rolling inventory costs
- AP - Open Item liabilities (AP) for purchased items
- AR - Revenue entries for AR Open Items from customer invoices

For GAAP compliance, these specific relationships include:

Purchasing/Receiving
A. When a receiving is done through PO Receivings, the PO module passes data to the IC module to update the quantities and running costs for each of the items received. The IC module in turn creates the appropriate GL transactions to be passed into the GL – in this case a debit to inventory costs, and a credit to the "Inventory Suspense"/"Uninvoiced receivings" account. This latter account is an accrual/suspense account that holds the receiving inventory value pending the later receipt of the vendor invoice for that receiving. (In PBS this account goes by the name of "B/S Liability account" (B/S for Balance Sheet) and is one of the default account values defined in the IC Control file.)
   - Note 1: Except for the B/S liability account mentioned above, the account numbers for these transactions are taken from values defined uniquely in each inventory item's record in the IC Item file. Each record specifies the Inventory account, the Sales account and the CoGS account for that item.
   - Note 2: Receivings can also be entered *directly* into the IC module. The effects are the same with respect to the GL transactions produced.)

B. If you are using Average Cost (and most of you are) the posting of a receiving increases the inventory for each item by the amount received, i.e.
   - ➢ Old_OH_Qty + Rcv_qty = New_OH_Qty. (OH for On Hand)

   In addition, this IC posting <u>recomputes</u> the average cost of the updated inventory as follows:
   - ➢ (Old_OH_Qty * Old_Avg_Cost + Rcv_Qty * Rcv-Unit-Cst) all divided by New_OH_Qty. In other words, total starting cost for the item plus total receiving cost for the item divided by the resulting total quantity.

AP Vouchering

C. When the vendor invoice is received, the AP clerk will enter a voucher into AP that records the cost of the inventory received. When properly setup, the AP module will produce GL transactions that credit the AP Open liability account and debit the accrual/suspense/balance sheet liability account mentioned in section A above. The debit value should reverse the value posted to the accrual account by the Receiving that this voucher is to pay. To have this happen automatically each vendor who regularly or primarily supplies inventoried materials should have their individual default expense account changed to be the Uninvoiced Receivings/B/S Liability account.

D. The net effect of these two inventory receiving and vouchering steps (A and C) is to increase (debit) inventory assets and to record, i.e., acknowledge in AP, the liability to pay for that inventory (credit AP Open Items). A subsequent step to cut a check will credit Cash and debit AP Open items which will clear the liability.

See the golden/yellow set of T-bars below for an example.

Order Entry, Billing – Inventory and Accounts Receivable
E. A more complex parallel to the above steps is played out when an order is entered and then billed.
Most important: it is only the actual bill posting step in the billing cycle that has a permanent effect on the accounting system, both from the point of view of inventory as well as sales. Entering orders does alter some statistical counters but there is no permanent effect made by entering orders, neither for On-Hand quantities or costs nor for sales revenue.

When the invoice is billed and posted, basically, we have the two sets of transactions that will be repeated for each line item:

- Compute the reduced inventory quantity based on the line item shipped quantity and compute the CoGS as based on average cost and line-item shipped quantity
- Compute the sales revenue based on the pricing grid used and the line-item shipped quantity
- These two transaction sets trigger two distinct sets of operations

    o For the costing/inventory side of the transaction the OE module passes data to the IC module, handing it the item quantities and costs that are involved with each line item of the invoice. The result of the sale/shipment will be to decrease the inventory count for that item and to produce distribution transactions that decrease (credit) the inventory value by the (current/instantaneous) Avg-cost * posted quantity. This cost value will also debit the Cost of Goods Sold (CoGS or CoS) account. This is the key point about the value and timing of the creation of the cost of sales posted to the GL. The term instantaneous is used here deliberately because the average cost can literally be changing minute by minute including just before the billing

transaction is posted and/or just after, depending on when receivings are being posted.

- o For the pricing or sales side of the transaction, the OE hands off data to the AR module which performs the steps that update the AR Open Item file (and other history files) and, in turn, AR generates the GL transactions reflecting the sales, i.e., debit AR Open Items, credit Revenue/Sales.

See the green set of T-bars below for an example.

A simplified summary of the GL transactions produced by the above cycle of operations:

	Cash		Inventory		A/R		A/P		Inv Accrual = UnInv Rcv		Rev./ Sales		Cost of Sales	
	DB	CR	DB	CR	DB	CR	DB	CR	DB	CR	DB	CR	DB	CR
Receive $12 inventory			$12							$12				
Voucher the receiving								$12	$12					
Pay Vendor for inventory		$12					$12							
Post Invoice for 1/2 of Inventory. @50% MrkUp Cost (IC) Price (AR)				$6	$9							$9	$6	
Receive Check for sold goods	$9					$9								
Ttls:	($3)		$6		$0		$0		$0		($9)		$6	

In this sample, the gold highlighted rows correspond to the steps involved with receiving into inventory, vouchering and paying for an order of inventoried items. The green corresponds to the two steps involved with posting an invoice and then receiving a check for it. Each transaction has been simplified to one debit and one credit and all transactions are in balance (DB=CR). Multiple debits and credits could be added (e.g., Freight and Taxes on a customer invoice or Special Finishing charges on a vendor invoice for inventory. However, while they would make these transactions more realistic, they would not change the basic message.

The net effect of all the inventory purchase transactions is to increase inventory by $12.00 and decrease Cash by $12.00. The AP and Uninvoiced Receiving accounts have been cleared in this process.

Similarly for OE, the invoice posting shows a pair of two-sided transactions. On the inventory/costing side, the effect on inventory (1/2 of the amount ordered above) is to reduce the inventory value by $6.00 and Cost of Sales is debited by that same amount. On the price/revenue side the sale is for $9 (50% mark-up on the $6) and so a debit to AR and a credit to Revenue is recorded. With the receipt of the client check, Cash is increased by $9 and the AR account credited by that amount which clears AR.

Note that after checks paid to vendors and received from customers, all the accrual accounts (AR, AP, Uninvoiced Receivings) have been cleared, and the net values are in Cash, Inventory, Revenue and Cost of Sales.

Also note that in these transactions, GAAP standards are followed:

- In receiving inventory, cost is recognized at Receiving time but liability for that cost is recognized only when the AP Voucher is posted.

- Because the inventory asset account is a balance sheet account, the inventory asset account value is carried forward from month to month. Thus, adjustments for Opening Balance and Closing balance each month are not needed, i.e., this is a Perpetual Inventory. In addition, the inventory value is as "real-time" as the interface process that moves these transactions into the GL, i.e., if you interface monthly then it will be correct as of that one time, if you interface weekly then 4 times per month the value will be correct.

- CoGS is only recognized when the Invoice is posted which also means when the product is shipped; and recognition is simultaneous with the reduction in Inventory asset value. The values used to compute the CoGS are for each line item, Avg_Cost * Line_Item_Qty using the current instantaneous average cost. So costing and gross profit statistics are recorded with a granularity down to the individual line item on each invoice

- Since CoGS are recognized from OE on a line-by-line basis, and the inventory is reduced in parallel with this CoGS calculation, the inventory is correct with each posted line item.

- Since the inventory value is increased by Receivings in PO and decreased by shipments through OE invoice posting, the Accounts Payable process has no effect on inventory asset value and is asynchronous with respect to timing.

With these points in mind, we can now answer the questions posed by the client which we will do in the next segment, next month. Stay tuned!