Chapter 3: Supply Chain and Related Processes

This chapter covers Shopping Carts, Purchase Orders and Invoices. In this chapter you will learn:

- How to reconcile supply chain purchases from shopping cart creation through invoice receipt.
- How to distinguish between valuated and non-valuated purchase orders.
- How purchase order document types and dollar amounts control whether expenses post at the time of goods receipt or invoice receipt.
- Which BW reports and ECC transaction codes are most helpful in reconciling purchase orders.

Business Overview

The most commonly used method to purchase goods and services from vendors outside of Johns Hopkins is by creating a purchase order. Before conversion to SAP, eProcurement and REQN were used to do this. Now this task is handled through the SAP web portal using the “Go Shopping” transaction, also known as SRM. Previously, a requisitioner would create an order that would be routed directly to a buyer in Purchasing, unless the order was for over $2,500. Orders over that threshold required a departmental approval before being routed to Purchasing for approval and completion.

Like many of the other transactions in SAP, a system of checks and balances known as workflow has been designed to increase the control of valid expenses on University accounts. Workflow for SRM shopping carts has been designed to flow to an administrative approver of the cost center that the requisitioner is charging. For example, if a shopping cart is created to charge multiple cost centers, the administrative approver for each cost center will have to approve the line item charging their cost center. This way, any order placed must first be approved by an administrative approver for that particular cost center before the purchase order can be created.
It should be noted that all shopping carts, excluding LVPO’s (Low Value Purchase Orders) less than $2,500 in value, are approved at the division or center level, while PO transactions with an aggregate value of $5,000 or more are routed to the Supply Chain Shared Service Center (SCSSC) for final approval. As noted, LVPO’s require no approval and the good or service is also ordered by the original requisitioner.

The purpose of workflow within this transaction, and all SAP transactions, is to validate expenses before they are even incurred. For example, if an administrative approver checks shopping carts for allowability and allocability on the front-end, it decreases the possibility of erroneous charges significantly. Rather than just approving a shopping cart because it is created within your department, the requisitioner, cost assignment, vendor and item information should also be reviewed. Reviewing this information will allow the approver to verify that the requisitioner should be charging this cost object and that the vendor and items from this vendor are allowable for the cost object being charged. The completion of the shopping cart, combined with a review of the previously mentioned key fields during approval, make up the first step of the three (or two) way match.

### Key Points of the Supply Chain Process

#### Purchase Order Categories

There are 2 categories of purchase orders, each considered an FI posting classification. Users should be familiar with the two categories, because the manner in which expenses post to your cost objects varies based on the category. These categories are:

- Valuated
- Non-Valuated

#### Valuated Purchase Orders

Valuating purchase orders require a goods receipt, and expenses post upon goods receipt in the amount of the goods receipt. When the expense posts, a ten digit FI document number beginning with 50 is assigned, which will display on your reports.

This type of purchase order can be identified using the ME23N transaction in ECC. As shown in Display 3-1, the Delivery tab contains the information needed to determine the PO category. If the Goods Receipt box is checked and the GR non-valuated box is not checked, it is a valuated PO and expenses will post when the goods receipt is completed.
Key Points of the Supply Chain Process

Display 3-1. Valuated Purchase Order

Users should be aware of the following key points related to valuated purchase orders.

- Goods receipt is required. The goods receipt posts the expense and relieves the commitment.
- If an invoice is received before goods receipt, the invoice is blocked and nothing posts to the cost object until goods receipt is completed.
- Because expense is recognized at the time of goods receipt, if an invoice is paid without referencing the purchase order, for example, through an online payment request, your cost object will be charged twice, once upon goods receipt and once upon invoice payment. (See Chapter 5 Non-Purchase Order Payments).
- Valuated purchase orders can only have one account assignment per line item. If there are multiple account assignments per line item, SAP automatically designates the PO line item as GR Non-Valuated.

Non-Valuated Purchase Orders

Non-valuated line items in POs are used when there are multiple cost assignments (a split cost assignment) for one line item. These purchase orders can be identified using the ME23N Delivery and Account Assignment tabs. In the Delivery tab, purchase orders will be specifically marked as non-valuated (see Display 3-2), while in the account assignment tab, the existence of multiple accounts will signal the user that the PO is non-valuated. PO’s under the $2,500 threshold are also non-valuated.

Users should be aware of the following key points related to non-valuated purchase orders.

- Expenses post when the invoice is posted (not necessarily paid).
The invoice payment will display on your statements with FI document numbers starting with 51 or 19 (with a reference document number of 51 and predecessor doc of 20).

Display 3-2. Non-Valuated Purchase Order

What determines whether the FI doc number that posts expense for a non-valuated purchase order is a 51 or a 19 document number, is whether the vendor invoice is received electronically. Notice that 19 FI doc postings of purchase order expenses received electronically will look much the same as other SAP automatic uploads, in that the Created By field in BW will show SCAUTO. See Display 3-3 for posting examples.
Key Points of the Supply Chain Process

Display 3-3. BW Detail Report comparing expenses for Non-Valuated Purchase Orders (both 51 and 19 docs)

Users should note that valuated purchase orders will post expense with an FI Document number of 50 indicating three-way match (PO, IR, GR), regardless of whether the vendor invoices electronically.

Shopping Cart and Purchase Order Postings

Shopping Carts
When a shopping cart is created and approved, it is assigned a ten digit reference document number beginning with a 10 and will display on financial statements as a debit in the commitment column. After receiving all the appropriate approvals, the shopping cart then becomes a purchase order and is assigned a new ten digit document number beginning with a 20. The original shopping cart commitment is then credited, netting out the original commitment, and a new commitment for the purchase order is debited to the account in its place.

Purchase Orders
As the purchase order is invoiced and paid, the purchase order commitment is credited and an actual expense is debited to the revenue and expenses column. These expenses are assigned ten digit FI document numbers beginning with 50 (goods receipt posting), 51 (invoice processed) or 19 (electronic invoice processed). Examples of the postings from shopping cart to purchase order to goods receipt are shown in Display 3-4.

On 06/24/2011, shopping cart 1002664794 was created/approved for a Custom Gene Synthesis and a $5,566.46 commitment was debited to G/L account 633024.
On 06/27/2011, as the shopping cart became a purchase order, 2001245817 was created. The shopping cart commitment was cleared with a $-5,566.46 credit, and a commitment was created for the purchase order.

On 09/08/2011, goods receipt 5011589088 was processed, clearing the purchase order commitment and posting an expense of $5,566.46 to G/L account 633024. Note that because the PO total was over $5,566.46 it required the three-way match, which is why the goods receipt (50 doc) posted the expense.

Display 3-4. Supply Chain Postings - Shopping Cart to Purchase Order to Goods Receipt

Goods Receipt/Invoice Receipt - Valuated Purchase Orders
When a good or service is confirmed before Accounts Payable receives the invoice, it is recorded as an expense and is assigned an FI document number beginning with a 50. In the case of valuated purchase orders, if Accounts Payable receives and processes an invoice before the good is confirmed, the invoice blocks for quantity difference, and the shopping cart requisitioner is notified by email that the purchase order requires confirmation in SRM.

Display 3-5. Valuated Purchase Order - Goods Receipt posts expense and invoice posts delivery charge
If there are any discrepancies between the invoice and the goods that are actually received, the original requisitioner must record this when confirming the goods. If the goods have not been received, or the invoice is a duplicate billing, the requisitioner may reject the confirmation.

In some instances, an invoice may include a small additional charge added to the invoice that was not originally provided in the shopping cart. An example of this is a delivery charge shown in Display 3-5. This CAPP purchase order shows an ordered amount totalling $35,485.00. We can see the amount expensed was $35,669.73, a difference of $184.73, shown in Display 3-6.

The 50 docs in Display 3-5 indicate the goods receipt (the 3-way match of PO, GR and IR are all needed for a valuated PO) and the 19 docs indicate payment for the delivery, split proportionately among all line items. The 19 postings indicate the vendor, Gaumard Scientific, invoiced electronically.

To see delivery costs, the user can use transaction code ME23N, click on the Goods Receipt, and then click the Details tab shown in Display 3-7.
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Display 3-7. How to find unplanned delivery costs

Goods Receipt and Approval Thresholds
Effective September 1, 2009, a Two-Way Match policy was implemented for JHU Purchase Orders totalling less than $2,500 (with some exceptions noted below). This Two-Way Match policy for PO’s less than $2,500 has been extremely successful in reducing the amount of outstanding Goods Receipts, and eliminating some of the administrative burden for users, while increasing the turnaround time for vendor payments. Cost objects are expensed on these purchase orders at the time of the invoice receipt by Accounts Payable Shared Services. Some exclusions apply, shown below:

Display 3-8. Two-Way Match Exclusions

<table>
<thead>
<tr>
<th>Description</th>
<th>Exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subaward and Subcontract Purchase Orders</td>
<td>SPPO</td>
</tr>
<tr>
<td>Project Purchase Orders</td>
<td>PROJ</td>
</tr>
<tr>
<td>Capital Expenditures - Equipment</td>
<td>CAPP</td>
</tr>
<tr>
<td>Inventory Purchases - JHU Supply Stores</td>
<td>PO begins with '21'</td>
</tr>
<tr>
<td>Independent Contractor Purchase Orders</td>
<td>Vendors begin with '19'</td>
</tr>
</tbody>
</table>

For those PO document types still requiring a Three-Way Match (SPPO, PROJ, CAPP, Inventory Purchases by JHU Supply Store, and Independent Contractors), or PO’s greater than the $2,500 threshold, the confirmation of the goods and the processing of the invoice in Accounts Payable are the final two steps of the three-
way match. Payment is not made to the vendor until receipt of the good is confirmed, and the invoice is processed by Accounts Payable. Because both steps must be completed before the vendor is paid, it is very important to confirm goods in a timely and accurate manner.

The Importance of the Goods Receipt
Prior to SAP, invoices were paid as they arrived regardless of whether the good/service was received or not. Accounts Payable could verify that the invoice matched the purchase order, but they could not verify that the goods received matched the purchase order or the invoice. It was always up to the requisitioner to follow up with the vendor in the event of a discrepancy.

Now the goods receipt process (when required) allows the original requisitioner to provide a documented confirmation that the good/service was received before the vendor is paid. It is extremely important that the goods confirmation is completed timely and accurately. Similar to other SAP processes, goods confirmation must be viewed and completed correctly on the front-end to prevent erroneous charges on the backend. If a shopping cart is reviewed for allocability and allowability during the approval process, and the goods receipt is completed correctly and timely, the likelihood of incurring incorrect charges decreases dramatically. Understanding this will significantly simplify reconciliation procedures.

Sponsored Purchase Orders- SPPO Shopping Carts

Shopping Carts for Subaward Expenses
SPPO shopping carts are procurement for sub-awards or subcontracts. Any sponsored award received by Hopkins is either a grant or a contract, as defined by the terms and the conditions of the award. When the prime award is a contract, any sub-recipient in the prime award would be a subcontract. All others would be subawards. The subaward or subcontract product category must be chosen when initially setting up this document type. The vendor will not receive a Purchase Order from the SRM system.

Internal orders that begin with 96xxxxxx are established exclusively in SAP to track subaward expenses. As subawards are executed, a separate internal order is set up. The anticipated facilities and administrative (F&A) expenses are calculated at the time the subaward internal order is established and the F&A is tracked on Grant Master Data. As part of the reconciliation process, the subaward should be reviewed to determine if it was set up correctly. To view the subaward internal order master data, type GMGRANTD in the command box in ECC, enter the grant number and go to the Overhead Costs Tab.

Review the Overhead Cost Record on the Overhead Costs tab. Recall that all subaward internal orders begin with a 96 and review the associated F&A rates on the internal order. If the subaward internal order will be taking F&A, a rate will be placed in the indirect rate column on the sponsored class line 642400. Subaward expenses roll up to sponsored class 642400.
If the subaward is collecting F&A, proceed to the box titled “Overhead Cost Limit.” A calculation is made as to how much F&A should be collected for the subaward. For example, some subawards take F&A on total direct costs (TDC), which is the entire amount of the subaward. Many subawards have F&A calculated on a modified total direct cost (MTDC) method.

For our example, F&A is capped at $15,875, which is the F&A rate (63.5% x $25,000). Once $15,875 of indirect costs are taken, the IDC cap will prevent further F&A postings..

Display 3-9. Master Data example for a Subaward Internal Order
**Recommended BW Reports for Reconciliation**

The following BW reports will be helpful in the reconciliation process.

- Sponsored Accounts: Sponsored Rev-Exp Detail - Single and Multiple Period
- Non-Sponsored Accounts: Non-Sponsored Financial Detail or Non-Sponsored YTD Transactional Detail

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**Recommended Procedures for Reconciliation**

**The Reconciliation Process**

Generate one of the recommended reports for your cost object for a specific period (see recommended BW Reports for Reconciliation, above). Purchase order expenses are FI document numbers starting with 50, 51, or 19 (with a reference document number of 51). This is an easy way to distinguish purchase order expenses from other expenses.

There are a few fields to focus on as you investigate each individual line item (see Display 3-10). One of the most important fields to review is the **PO REQNR** field. If workflow was handled correctly, there should be no incorrect requisitioners because your departmental approver would have originally rejected that shopping cart. Another important field to review is the **SRM doc type** field. Any purchase order that is not a LVPO, will also have been approved by your departmental approver.
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Display 3-10. Reconciling Supply Chain

Since Accounts Payable should not be paying invoices in excess of 5% over the original purchase order, it is an acceptable practice to consider all non LVPO purchase orders valid expenses as long as workflow is being managed correctly on the front-end. It is still suggested that you review each purchase order expense and quickly verify that the PO requisitioner is a valid requisitioner for that cost object. The user can also review the G/L account (commitment item), vendor and item text (long desc.) to further validate the expense. If the purchase order is an LVPO or there is missing information for the vendor or description, further information can be accessed using the ECC transactions FB03 – Display Document and ME23N – Display Purchase Order. If the purchase order was an LVPO and has no vendor or description, or if the PO REQNR is unknown, further research must be done using FB03 and ME23N.

ME23N - Display Purchase Order in ECC

Before discussing transaction code ME23N in ECC, it is important to note that from some of the typical BW reports used for reconciliation (sponsored detail, non-sponsored detail or YTD transactional detail), the reconciler may right click on the 50/51/19 FI doc number associated with a purchase order to drill through to ECC to gather more information using the BW “go to” feature, which is discussed in further detail in Appendix 5 of this guide.

ME23N is the transaction in ECC that will provide all of the purchase order information. This transaction can be found in ECC in your user menu under the SRM Requisitioner folder or the “AP Display” folder. The SRM requisition role provides the necessary information for purchase orders. Adding the AP display...
Recommended Procedures for Reconciliation

role (ZRSC_AP_DISPLAY_ALL) will provide a few extra features that make this transaction more powerful. If you have the AP display role, you can enter the transaction through either link and it behaves the same. Double click on ME23N.

Display 3-11. ME23N main page

This opens up the main page for ME23N (see Display 3-11). There are three sections to the body of ME23N that can all be expanded or collapsed. These fields are the header field (1), item overview (2) and item detail (3). To view a particular purchase order, select Purchase Order > Other Purchase Order from the menu bar (see Display 3-12) or click on the icon.

Display 3-12. ME23N - Selecting a Purchase Order to Review
Enter the predecessor doc number, that begins with a 20, from the BW detail statement and enter it into the text box for the purchase order number. All predecessor document numbers for FI purchase order expenses will be the purchase order number. After typing the number, hit enter.

Display 3-13. ME23N - Purchase Order Detail

As shown in Display 3-13, the ME23N transaction provides complete information for the selected purchase order. The header section and the item detail section will have a few tabs providing different sections while the item overview section will provide information about the line items of the purchase order. The banner across the top of the screen will display the purchase order number and the name of the individual that created the purchase order. Typically this is the requisitioner, but there are some instances that a name of a member from the Supply Chain team could be present. If this is the situation, the JHED ID of the requisitioner can be found in a column in the item overview section. Directly below the banner is the vendor name and number.

An important section to view is the “Status” tab found in the header section. If you do not have the AP Display role, this section is difficult to interpret.
because everything is displayed in units. If you do have the AP Display role, amounts are displayed in currency. The status tab provides a quick overview of the purchase order’s available funds. The “Ordered” line displays the amount the purchase order was created for, the “Delivered” line displays the amount that has been paid against the purchase order, and the “Invoiced” line displays the amount that has been invoiced by the vendor. The amount on the “Still to deliv.” line is the amount of available funds. From the display, we can see that this is an active purchase order totaling $1448, that has been partially invoiced, and has remaining funds totaling $516.

- The item overview section will provide information about the line items of the purchase order.

- In the item detail section, you can also view the purchase order history. This section will show all the payments that have been applied to this purchase order and the posting date for that payment.

**FB03 - Display Document in ECC**

FB03 is an ECC transaction that is designed for use with many of the supply chain expenses found in BW Reports. This transaction does not provide as much information as ME23N does for purchase orders, but can still be very helpful when researching expenses. If you run into an expense that begins with a 50 or 51, but has no predecessor document number, check FB03.

Using FB03 is explained in greater detail in Chapter 5 in section, *Further Research of Online Payments-FB03* on page 5-4.

**Records Retention**

Prior to SAP, departments typically retained the original copies of purchase orders sent from Purchasing, and the associated packing slips. Quotes and other documentation pertaining to the order were also retained. Depending on the department’s business practices, purchase orders and accompanying documents were either filed by vendor or filed by date. Original copies of shopping carts are no longer required to be printed and filed. All of the information for a shopping cart is stored in ECC and most of the essential information is displayed in the BW detail reports. The biggest difference between CUFS and SAP for purchase orders is that CUFS displayed a name that was typed by the requisitioner while SAP provides the name of the actual requisitioner.

Proper use of workflow and the controls in ECC allow for a more “paperless” method. If an order is reviewed and approved appropriately by the departmental approver and the good is confirmed correctly and timely by the requisitioner (when needed), then much of the necessary information is already retained in ECC. Maintaining packing slips and quotes (when needed) for all purchase orders,
however, is highly recommended. Packing slips, in addition to the goods receipt in SAP verify that we have received what we paid for and quotes help determine reasonableness of the purchase.

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**Additional Resources**

Links to other resources you may find helpful:

Supply Chain Frequently Asked Questions (FAQ)

http://ssc.jhmi.edu/supplychain/archive/faqs_index.html

Supply Chain Training and Support

http://ssc.jhmi.edu/supplychain/training/index.html

HopkinsSelect eMarketplace

http://ssc.jhmi.edu/supplychain/emarketplace/index.html