

# Global Inventory Shipments – A Buy Sell Solution

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## Introduction

Many companies have a need to create a global process to ship material between different legal entities and across sets of books. In our example the process will need to support different markup values based on the receiving organization; and the material shipments and receipts must be traceable. The process must support different currencies as well as be scaleable to include new organizations without having to make major modifications. Finally, any transactions that will effect an organization in a different set of books must be approved by the effected organization prior to any action being taken.

Applied Materials manufactures Semi-Conductor Fabrication Equipment. They have service offices throughout the Northern Hemisphere and manufacturing facilities in Japan (AMJ), Israel, United Kingdom, and North America (NAROC). Each tool that is manufactured meets a specific customer requirement. This means that every shippable item has a unique item number and structure.

## Where to begin

The AMJ manufacturing organization has a requirement to purchase 80% of the items it uses from headquarter in the United States (NAROC). The AMJ facility is operating on three legacy systems. The current method of requesting material for AMJ consists of an excel spreadsheets and a Lotus Notes database. The Oracle inventory transaction used to ship the material is a Miscellaneous Issue from whatever inventory organization that had an available quantity. Material costs and intercompany charges were transacted monthly. The basis for the transaction was when finance received both shipment and receipt conformation on each item. Needless to say low dollar items were often provided free of charge. The existing process allowed AMJ to accept, via Lotus Notes, each piece of material prior to transacting the item into inventory. This is a control that the users were reluctant to give up as it provided the only traceable proof of shipment and receipt within the AMJ organization and, prevented the organization from having to accept material they believed to be incorrect. Any items that AMJ believes to be incorrect are not received into inventory and a replacement item is requested.

The AMJ manufacturing facility and the corresponding NAROC facility have a unique manufacturing process that allow them to use material that is purchased from multiple sources at significantly different prices. Because of this, the two organizations were created using Average Costing. All other company organizations use Standard Costing. Inter-organizational shipments have a fee associated to them it is very important that this fee not be included in the cost of the item at the time the item is received or it will have an undesirable effect on the average cost of the item. Finally, there is a corporate policy that prohibits users in one set of books to perform a transaction in any other set of books. As AMJ is a separate legal entity with a different set of books and functional currency, this rule applies.

## Background

The procurement of inventory was done two ways. The first is for Locally Sourced Parts (LSP). These are items that are needed to build the tool and are purchased from suppliers that are found in Japan. This type of material includes Customer Engineering Specials and items that will not be available from the US. Requests for these items are provided to a shared purchasing department who procures the material from local suppliers.

The second process is a request for material from the US home office. AMJ used a legacy inventory system to determine material that was needed. A list of Non-CES material was generated and sent to a contact person working in the NAROC office. This list was created using an excel spreadsheet. The NAROC contact person began to look for inventory in the US organizations. If available quantity was located in current stock, it was moved into a

NAROC controlled subinventory, located in the Austin (AUS) organization and a miscellaneous transaction were done charging the items to a NAROC inventory account. If the item was not available and needed to be purchased, the demand was loaded in the NAROC organization and the items were purchased. The items were then listed individually into a Lotus Notes database titled the 'Intercompany Database'. Proper shipping and export documentation were manually generated and the items were shipped to Japan. Upon receipt, each item was inspected against the original request and the packing list. This was to insure that the correct item was shipped and that it was not visibly damaged in-transit. Once the item passed inspection it was received into the legacy systems inventory, and accepted in the Intercompany Database.

Approximately 10% of items shipped by NAROC to AMJ were discrepant. This material was dispositioned according to value. If the item was valued at under \$200, an e-mail would be sent to NAROC stating the item was either incorrect or damaged. The item was then scrapped. NAROC would ship a new item to AMJ and if this one was approved it would be accepted in the intercompany database and placed into inventory. If the item was valued at over \$200, an e-mail would be sent to NAROC stating the item was either incorrect or damaged, the discrepant item would be returned to NAROC for repair and, a new item would be shipped to AMJ. Only after the new item had passed inspection would it be accepted into the inter company database.

The process was completely manual and accurate inventory tracking was difficult. The issues were - how do we automate the process, improve inventory shipment accuracy, guarantee that all items shipped were properly received and paid for and, that discrepant material was properly replaced

After meeting with both AMJ and NAROC a clear set of requirements were established. Additionally the solution would need to be created so that it would be a global solution usable by any new organization to be created during future implementations. Any solution must meet all of the requirements.

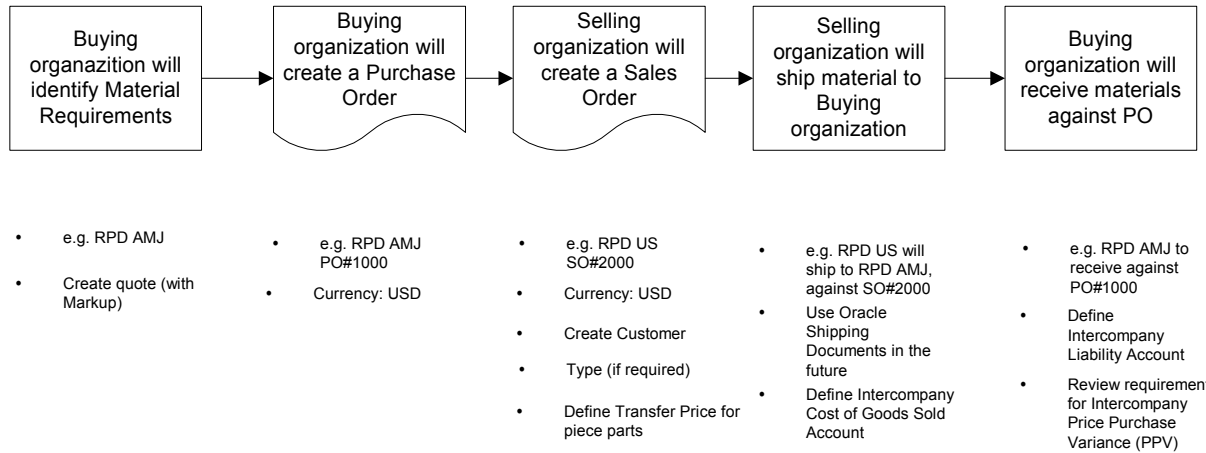
#### System Requirements:

- Intercompany transactions arising out of transfer of material between Inventory Organizations that is transacting in two different Sets of Books.
- All transactions between any regions could be in any currency
- Need to be able to change the transactional currency in either case at the time of PO creation.
- Need to use specific currency rate type for transactions between United States and Japan.
- Need to see impact on I/C COGS and I/C Revenue.
- Need to be able to use a transfer price markup that may vary between different regions.
- Need to see document trail for audit purposes – Purchase Order, Invoice, etc.
- Shipping organization must approve material demand.
- Users may not perform transactions in an inventory organization not associated in the Set of Books the user is attached to.
- All intercompany transactions between Japan and the US need to be in US Dollars

#### Requirements that would need a new Business Process:

- Other needs may arise out of shipment activities across countries and these may be region/country specific.
- Issues with reconciling these transactions between the intercompany elimination process in SAP and the detailed transactions in Oracle.

The flow for the business requirements looks something like this:

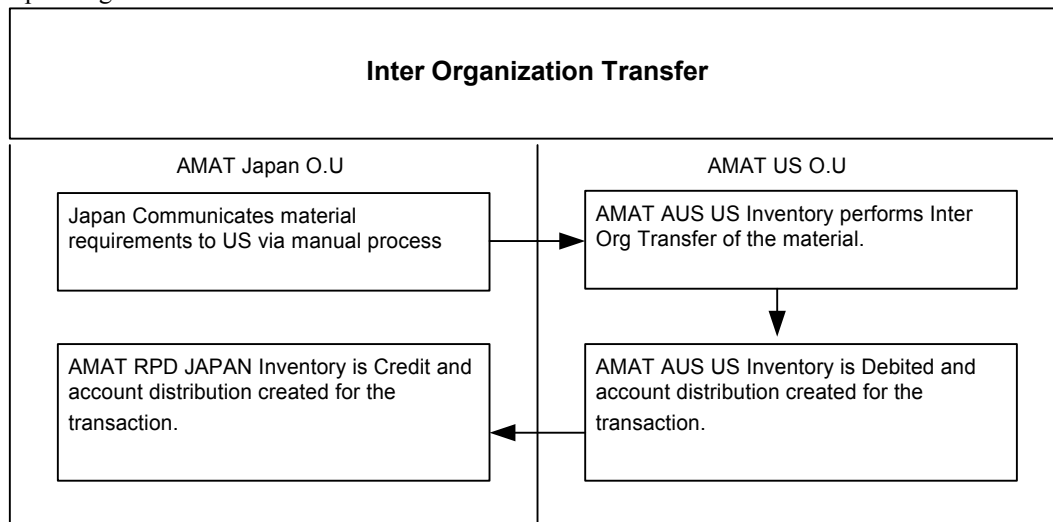


## Solution

The first activity to be addressed was the method by which demand in AMJ would be turned into a supply in AMJ provided by NAROC. What ever was decided upon needed to meet the requirements of being easy for the users with as little manual activity as possible and that transaction were not made across sets of books. All options were to be reviewed by the finance organization that would have final approval.

Several options were presented and reviewed. The following are those options and the evaluation of those options. Within options one through three you will see that the US organization that the items are to be purchased from is AUS-US. When the NAROC organization went live in January 2001 the decision was made to only enable item numbers that NAROC currently had in inventory and additional item numbers would be enabled as a demand for them arose. The Austin (AUS-US) organization was selected as all items are enabled in this organization.

Option #1 Inter Org Transfer Transaction: This is Material Transfer across Inventory Organization in different Operating Units.



### Why did this option not work for us?

In this scenario the AMJ request process would remain unchanged. There is no systematic method to create a demand, track the material request, track the shipments of the material, properly value items in the receiving organization or properly assess the intercompany charges.

### Option #2 Internal Requisition/Internal Sales Order:

Use of Internal Requisition/Internal sales orders in AMJ to source the item from AUS –US.

- Create Internal Requisitions in AMJ.
- Run interface process to create internal sales order in AMJ.
- AUS-US will see the demand for the internal sales order.
- Pick Release the Internal sales order from AMJ.
- Ship the Internal sales order from AUS-US.
- Material transaction containing the distribution accounts can be viewed in AUS-US as well as AMJ
- Transaction values are in the appropriate currencies with respect to the operating units.

### **Why did this option not work for us?**

This process would require that all items purchased from the US from Japan have the Internally Sourced attribute set to 'Yes' and the source organization would be AUS-US. New orders would be created without the approval of the shipping organization. The Pick Release for the material would then be performed in Japan reserving material in the AUS-US without approval of the material owners. This is in direct violation of company policy as well as more work for the AMJ users. Finally this does not address the issue of the transfer price markup.

### Option #3 A Buy Sell Solution:

The original implementation was done as a single org structure with a single set of books. As the functional currency in Japan is the Yen, it became a requirement that we create a new set of books and implement with an additional operating unit. The Japan go-live was the first implementation with a new set of books. The previous options would fulfill some the functional requirements but they failed to meet the corporate requirements.

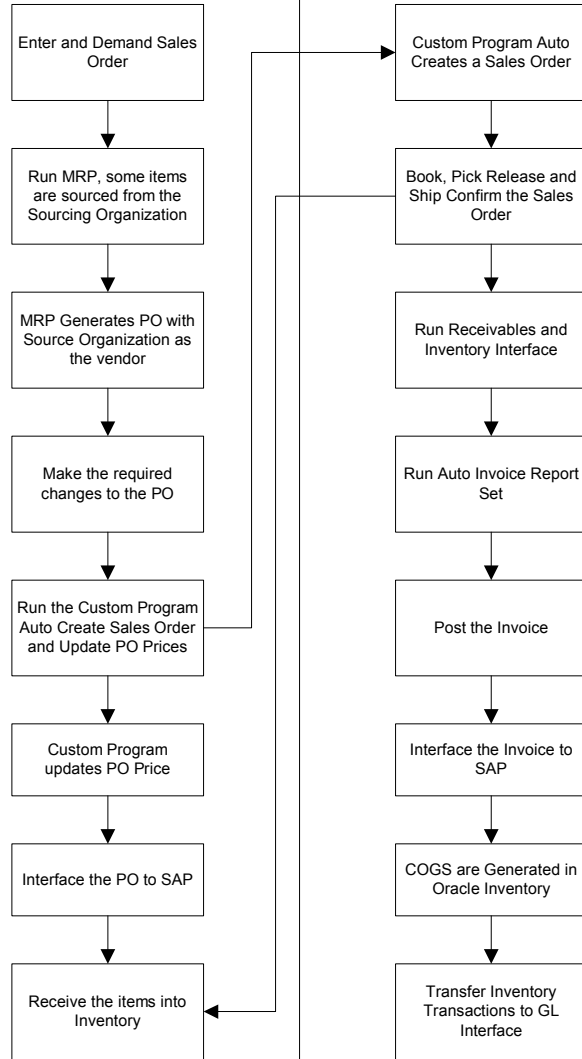
The Buy Sell solution enabled us to meet all operational and corporate requirements with a few customizations. This solution involves the requesting organization creation of a purchase order that, when approved, would be used to create a sales order in the supplying organization. A custom program used the purchase order data to create the sales order, using the standard order import process. Both these transactions would be fulfilled and, appropriate setups would ensure relevant intercompany accounting.

The following is a detail of this solution:

- The requesting organization is set up as an intercompany customer in the Customer Master.
- The supplying organization is set up as an intercompany supplier in the Supplier Master.
- A **Location** is setup for each Supplier Site and is attached as the default **Ship-To Location**. This location links the supplier site to the Customer ship to address. This is the key connection in establishing the Supplier-Customer "intercompany" relationship.
- Critical elements for creating the order were defined at the customer ship to address.
- A new order type is defined for Intercompany Orders called **I/C-Intercompany**.
- The requesting organization creates a PO using the intercompany supplier with the appropriate site.
- The custom interface will copy data upon approval of a PO, to the Open Interface tables and launches the Order Import program. The Order Import program creates an I/C-Intercompany sales order in the supplying organization in a status of 'Entered'. The custom interface will update the PO with the current price of the item in the supplying organization.
- The custom interface program sends an email notification to the Supplying organization and the Buyer, on successful creation of the Sales Order.
- An intercompany fee is added to each item on the SO. The fee is calculated (transfer price percentage) by the interface program, based on the supplier site descriptive flexfield set up. The fee will not be updated into the purchase order price.
- The I/C-Intercompany Sales Order number is updated into the PO comments field.
- The supplying organization will Pick Release, Ship Confirm and run the interface programs for the order. Material will be charged to the appropriate Cost of Goods Sold account based on the order type.
- Auto Invoice is scheduled to run daily to create Intercompany AR Invoices. An additional order source was defined for this purpose.
- I/C Receivable and I/C Revenue accounting are picked up from the sales person.
- The requesting organization will receive the material against the open PO.

**Destination Organization**

**Source Organization**



This solution met all the requirements of the corporation however; the testing process uncovered the following issues that needed to be addressed.

**Issue:** Any changes to the Intercompany Purchase Order after approval will not be reflected on the associated I/C-Intercompany Sales Order.

**Solution:** The custom interface set the Purchase Order to a 'Freeze' state once the Sales Order has been created.

**Issue:** If an item is either not enabled in the supply organization or has a cost of \$0, the custom interface program will fail to create the Sales Order. This would then require a new PO to be created manually after the data was fixed.

**Solution:** Modify the approval workflow to not approve the PO if either condition was met. A report is then run to list the items that are either \$0 or not enabled in the supplying organization. Once the data was corrected the PO would approve without incident.

**Benefit:** The Buy Sell Solution was used to generate demand from the requesting organization to the supplying organization. The automated creation of the sales order ensured that shipping docs were accurate and the items shipped were the same as the ones requested. The automated creation of the invoice effected appropriate intercompany accounts without manual intervention and was timely.

Another of the benefits to this process is that it allows the use of the Oracle RMA process to return discrepant material. If an item is identified as discrepant the requesting organization contacts the supplying organization for an RMA number and that a replacement item be shipped. Once the discrepant item is received back into inventory of the supplying organization, the item cost and the intercompany charges are reversed. This was a big benefit because prior to this implementation there was no method of tracking material that was to be returned to the supplying organization. The RMA process is now used for all discrepant material valued at over \$200.

#### **About the Author**

Mrs. Bryan is a Finance Manager at Applied Materials in Santa Clara, California. She has extensive experience in manufacturing operations and was a member of the Oracle Implementation team. She has been working with the Oracle system for 4 years.