Managing Customer Consigned Inventory with Oracle Applications

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Introduction

Sequent Computer Systems, Inc., based in Beaverton, Oregon, is a leading architect and provider of open client/server systems for commercial computer applications in On-Line Transaction Processing, Decision Support, and several other business applications. Sequent builds large UNIX and NT platforms which are uniquely configured to each customer's own specifications. Sequent has installed more than 8000 large scale multiprocessor systems worldwide. We process approximately 2000 sales orders per quarter. The manufacturing environment is assemble and test to order with a very short cycle time, averaging 7 days.

Sequent has been using Oracle Financials products since 1988 and implemented Oracle Manufacturing in 1990. We are currently using version 10.7 NCA of the applications.

Consigned Inventory

All companies are attempting to find ways to reduce their inventory holdings. Consigning material is one way to accomplish this. There are many ways to consign inventory, but the general definition implies ownership by one company with possession and/or control by another. Generally, the participating companies have a supplier/customer relationship.

At Sequent, we have two types of consigned inventory. One type being inventory owned by Sequent and consigned to our suppliers for some process or subassembly work. This paper will deal exclusively with the other type which is inventory owned by our customers, but controlled and managed by Sequent.

Customer Consigned Inventory at Sequent

Several of Sequent's large customers have made agreements with us which allow them to purchase a large volume of product at one time, while taking delivery over an extended period. This gives them a favorable pricing structure, but requires that we somehow store and track the material they have purchased until they are ready to take delivery. Since this inventory is no longer owned by Sequent, we had to find a way to maintain accurate inventory balances without potentially mixing their material with ours, or with that of other customers. Further complicating the scenario, is the fact that Sequent's end products are configured individually for each order. The final delivery configuration might not match the initial configuration as ordered. We had to manage the re-configuration work as well as the inventory balances.

The volume of sales falling into this category is significant and growing, so we attempted to find a solution that closely matched our standard sales order fulfillment processes without requiring special handling or manual intervention. We also determined that our solution should not involve major customizations to the Oracle applications for reasons that should be apparent to all.

In achieving this, there were many business process questions we had to ask. In addition to the inventory management and re-configuration issues, we had to consider:

- When do we invoice the customer?
- When do we capture the configuration information for the customer service install base data?
- How do we update down rev material when we ship the final configuration?
- How do we cost the customer owned inventory?

Consigned Inventory Organizations

Oracle's multiple inventory organization functionality provided the means to achieve the desired solution. The rest of this paper will focus on the details of how to set this up, our processes and any customizations we built to enable the process.

The process is fairly simple and can be easily summarized. We book and ship a sales order from our master organization. The order type drives an order cycle which is the same as our standard order cycle except for the addition of a cycle action. The additional step "moves" the shipped material into the consigned inventory organization. When the customer is ready to take final delivery, another order is entered and booked. The material for this order comes from the consigned organization. The second order cycle does not include receivables interface so no invoice is generated.

This is a high-level synopsis of how this works. Now let's take a look at the details.

Order Process at Sequent

In order to understand how this process functions, it is helpful to review the standard sales order fulfillment process at Sequent.

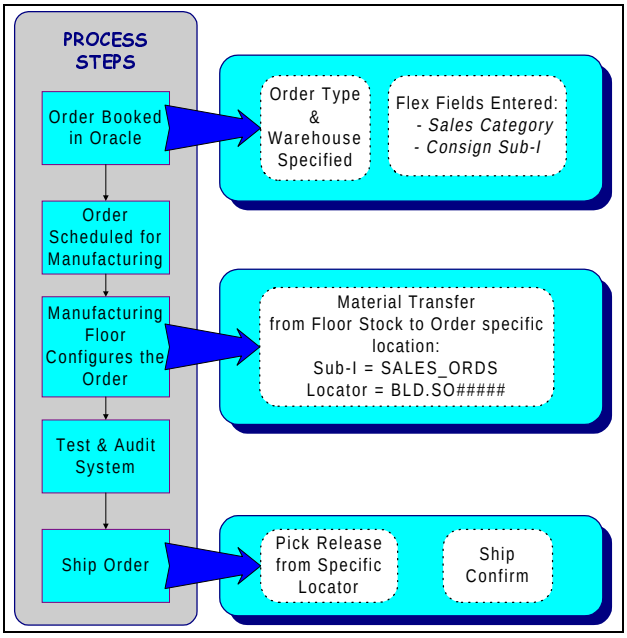

Exhibit 1 Standard Sales Order Flow

There are some key things to note that are distinct factors of Sequent's business needs. Work orders are not generated to process sales orders. Items are not model numbers, but rather a combination of PTO Kits and Purchased Items. Each order contains multiple line items which make up a single configured system. It is preferred that all line items on an order will ship together. After an order is released to manufacturing, the pick process for a work order is replaced by a material transaction from stocking locations to an order specific subinventory/locator. After the order has been configured and tested, it is ready to ship. It is not until this point that we perform the pick release operation. All items are pick released from the order specific subinventory/locator, followed immediately by the ship confirm function. Much of this part of the process is automated through our bar code application.

Consigned Inventory Organization Structure

A detailed discussion of the Consigned Inventory Order process will rely on an understanding of how the Consigned Inventory Organization is structured. What follows is a discussion of how it is set up and why.

Sequent's needs are best met by a structure that allows the use of the same inventory organization for any customer. It is also crucial to be able to identify all material owned by a particular customer at any point in time. Therefore, customer's names are used as subinventory names. Another identifying feature for Sequent is the Consigned Inventory Order used to ship the material. Since the items are configured into one system, the order numbers could be considered to be much like a stock bin. This helped in facilitating good physical inventory practices.

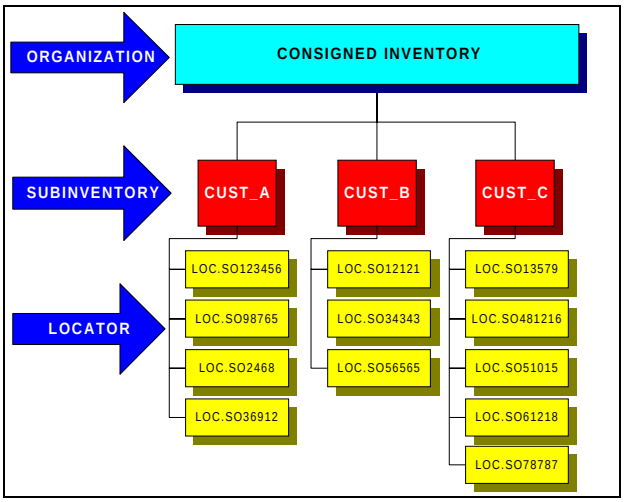

Exhibit 2 Inventory Organization Structure

Consigned Inventory Orders

Consigned inventory orders require a few more steps than standard ones and some additional data entry, but the overall process is the same. Two sales orders are needed since the first order relieves Sequent inventory and posts to the receivables interface while the second serves primarily to relieve the consigned inventory. For the purposes of this paper, we will refer to the first order as the Consigned Inventory Order and the second as the Inventory Relief Order.

A Consigned Inventory Order follows the standard order process as described previously with one major exception. After the order has shipped, all the material is moved to the Consigned Inventory Organization. This is accomplished by using a customization which will be described in more detail below. The customization logic relies on information on the sales order, specifically:

- Sales Category
- Consign Subinventory
- Order Type

The first two items are descriptive flex fields in the Enter Orders form. The Sales Category field is used to group specific types of orders. Functionality in our bar

code software and some custom reports in Oracle also use this field. The Consign Subinventory field designates which subinventory will hold the material for a consigned order after it ships from Sequent (see Consigned Inventory Organization Structure).

The Order Type is tied to an order cycle called Consign-In. This cycle contains an action called Consign Move which is used to trigger a custom C program. An order becomes eligible for Consign Move after Ship Confirm

Consign Move Program

The consign.move C program is used to facilitate moving the shipped material into the Consigned Inventory Organization.

A cron job is scheduled to run every hour which launches the program. The program looks for orders which are eligible for Consign Move. For each one, it creates a list of the shipped material. The material is then moved to the appropriate subinventory and locator in the Consigned Inventory Organization based on logic tied to the descriptive flex fields as described above. The program logic is graphically depicted in Exhibit 3.

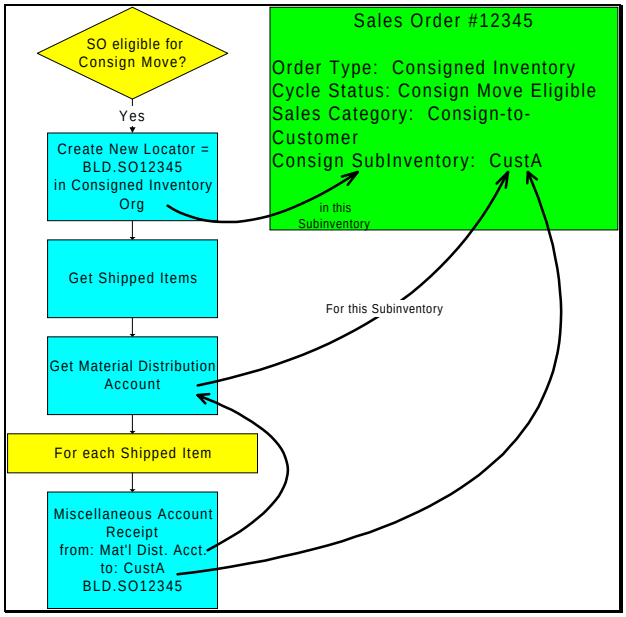

Exhibit 3 Consign Move Program Logic

The transaction which populates the consigned inventory organization is actually a miscellaneous account receipt. The account number used is the same as the material overhead account for the Consign Subinventory listed on the Consigned Inventory Order descriptive flex field. This same account number is debited when the material ships from that subinventory with the Inventory Relief Order.

Inventory Relief Orders

After the Consigned Inventory Order ships, the customer takes ownership of the material. The material is tracked in a separate inventory organization within Oracle, but may physically reside anywhere. When the customer is ready to take possession of some or all of the material ordered, a second sales order is entered in Oracle. This is the Inventory Relief Order. The process for fulfilling this order is very similar to the standard process except the inventory comes from the Consigned Inventory Organization. The Order Cycle for this order does not contain a receivables interface since the customer has already been billed for this material.

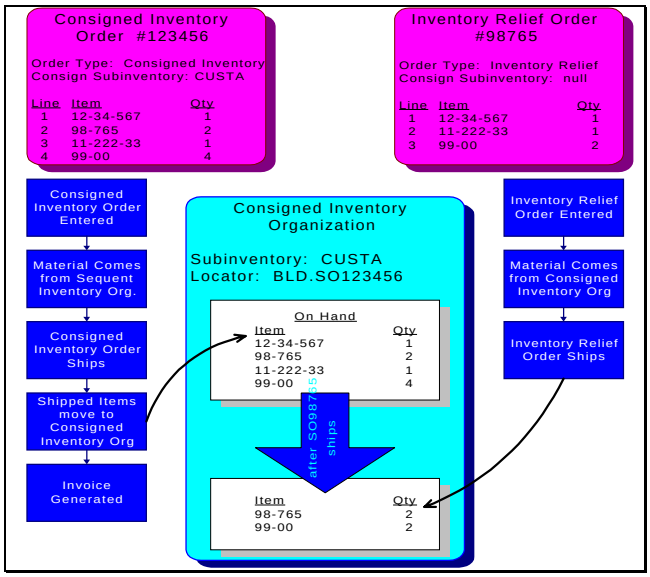

Exhibit 4 Consigned Orders Process

It is important to consider how much time might elapse between the shipment of the Consigned Inventory Order and the Inventory Relief Order. It is possible that material will become outdated or obsolete while it is sitting in the Consigned Inventory Organization. Your company should address this with the customer and determine how to handle this situation before setting up the process. In any case, FIFO procedures should be followed to ensure that the oldest material is used first. At Sequent, we upgrade to the latest revision as required. We use a custom ATP process to determine which material will have to be replaced before shipping the Inventory Relief Order.

The configuration of the Inventory Relief Order is the final configuration which arrives at the customer's site. This provides a way to capture that data for any install base information systems you may have.

Conclusions

Oracle's multiple inventory organization functionality provides a fairly simple way to control inventory which is not owned by your company. There are many benefits to using this approach.

- Uses standard Oracle functionality for multiple inventory organizations
- Can be adapted to your company's standard order processes by using descriptive flex fields
- Material can be costed differently in the separate organization so that your companies books need not reflect the value of this inventory
- Organization structure allows you to generate on hand balance reports which may be required by your customers

NOTE: It may make more sense for some companies to use internal orders to control this type of material movement. This would eliminate the need for the customization used at Sequent. We did not take this approach because we do not currently use any internal orders. Significant modifications to existing processes and systems would have been required if we were to use internal orders so we chose an alternate solution.

About the Author

Susan Vasquez is the user Project Leader for Oracle Applications. She was involved in the original conversion from ASK-MANMAN to Oracle at Sequent in 1990 and has over 8 years of experience working with the applications.

Teri Craver is a Project Leader in the IS group at Sequent with a focus on the Oracle Manufacturing Applications. She has a degree in Systems Engineering and a broad background is in manufacturing systems and processes. She has over 3 years of experience working with the Oracle Applications.