

Inventory Close In 2 Days

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Introduction

A full P&L, from individual manufacturing sites, through all organizational levels, must be completed within two business days of the end of the fiscal month. This presentation provides detailed steps executed to close the inventory period, through the interfacing of journal entries, to meet this requirement.

Overview

For many years, it has been a requirement of the Corporation to provide complete P&L information before the end of the second working day after the fiscal end of the accounting month. There are two domestic manufacturing facilities reporting to the Group and the Group reports into a Sector, that reports into Corporate headquarters. The Automotive, Industrial and Electronics Group manufacturers electronic controls and sensors to the automotive industry, operating in a continuous flow, mixed model environment. Some of our production lines operate seven days a week, 24 hours per day and there is no shut down of production to facilitate the cost accounting close process.

In our domestic facilities, Oracle Financials version 9.3 was implemented in 1993. In January of 1999 the domestic manufacturing facilities in our Group implemented Oracle Manufacturing Applications, version 10SC, PROD 16.1. The Order Entry and Shipping system operates on an in-house developed main frame system. Oracle Accounts Receivables was implemented in August of 2000. In Europe, Oracle General Ledger, Accounts Payable, Accounts Receivables and MRO Purchasing were implemented in July and August of 1999. Oracle manufacturing modules were implemented in the Angers, France manufacturing facility on January 1, 2001. This implementation included changing the functional currency from French Francs to the Euro in version 10.7. It was necessary to set up a totally new installation, converting GL open balances and Accounts Payables and Receivables to the new environment. All of our Oracle systems operate on separate SID's, single instances of the database. IT support for all installations is provided by our Chicago-based IT group, with some local UNIX support.

Scope

The scope of this paper is to discuss the close process for the Oracle manufacturing modules. There is a different process that is followed for Accounts Payables, Accounts Receivables and General Ledger. Due to the amount of manufacturing transactions processed, we import journals weekly and post all journals at the end of the month.

P&L Structure and Set Up

We operate with separate P&L's for each family of products. The products are summarized into Businesses that are then summarized into a P&L for the Group. Balance sheets are prepared at the Group level. The P&L reporting structure requires that we record Purchase Price Variance (PPV) for each transaction and be able to post to the individual P&L. When we implemented the manufacturing modules, each P&L already had a 3-digit account segment in the General Ledger. We wanted the users to be able to readily identify the correct product family so we decided to use product names instead of the 3-digit GL product code. We set up an Inventory Item Category for the Product Name and made the Business a dependent segment. The 3-digit GL product code was added to the descriptive flexfield on the MTL_CATEGORIES table. Each inventory item is assigned a Product Name/Business.

In the Cost module, Material overhead rates are set up for each of the product names and assigned to each end item. In the Inventory module, we use Account Aliases for one-sided inventory moves. Each Account Alias has an account number and product name assigned.

Manufacturing Process and Set Up

Most of our manufacturing lines operate in a continuous flow, mixed model environment. We do not use routings in work in process (WIP). Discrete jobs are auto released when the MPS is launched and are manually maintained. WIP Accounting Classes are set up for each P&L for standard discrete jobs and repeating outside processing (OSP) assemblies. Non-standard, expense WIP Accounting Classes, are set up for rework and warranty expenses. A custom program was written to find the correct WIP Accounting Class after the discrete job is auto released. The assembly item number is looked up in the item category assignment for the product name and matched to the name of the WIP Accounting Class for the standard job type. The default WIP Accounting Class is then updated. Material overhead is added to each finished goods item, reflecting the rate for that product code.

Weekly Manufacturing Close Process

Each week, we run reports and transfer journals into the plant General Ledger performing the following steps.

All new item numbers are assigned a default value for the Product Name item category. The Product Name needs to be changed to reflect the correct product P&L. A custom report was written to identify if a purchase order receipt was transacted for an item that had the default value assigned in the Product Name item category. Any items identified on this report are manually updated on the item master to reflect the correct product name. All purchase order receipt distributions are initially processed with a generic P&L code in the 3-digit account segment. A customized concurrent process is launched. The program finds all distributions with the generic code in the account segment. It then finds the item number received, does a look up against the MTL Systems Items table and finds the product name, does a look up of the product name on the MTL_ITEM_CATEGORIES table and finds the 3-digit GL product code in the descriptive flexfield. The generic 3-digit product code in the account distribution is changed to the value found in the descriptive flexfield. When the purchase price variance is posted to the general ledger, it updates the correct product P&L.

When WIP assembly completions are transacted, the inventory account is relieved (credited), the design change account is debited for the value of the material consumed and the material overhead amount is credited to the inventory change (EOIC) account. The order entry, shipping system is a main frame program. When a shipment is made to a customer or a return is received from a customer, an Account Alias transaction is sent to Oracle Manufacturing through the MTL transactions interface table. The total value, including the material overhead, is debited to the design change account number. A customized concurrent process is launched. The program finds the item number for the account alias types of Customer Shipment and Customer Return transactions. It then looks up the total material overhead rate, calculates the amount for the units transacted, splits the cost of the overhead and debits the inventory change (EOIC) account.

A general ledger transfer to GL concurrent process is launched to transfer the inventory and WIP distribution journals to the GL interface table. General ledger periods are set up from Sunday through Saturday. The date entered is the Saturday week ending date and the current period is entered. A description is entered.

The inventory and WIP journals are then imported to the plant general ledger. Navigate to Import Journals. Run options selected are post errors to suspense and create summary journals. The date range entered is the prior Saturday date through the Sunday date of the current week. Descriptive flexfields are not imported.

The Journals – General concurrent request is processed. The type is line item. The posting status is unposted journals. Currency is the set of books currency. The period is the current GL period. The source is inventory, the batch name is entered and the concurrent request is submitted and printed.

The Material Account Distribution Summary Report is then submitted and printed. The sort by option selected is account, transaction type. Transaction dates from and to are the prior Saturday date through the Sunday date of the current week. The GL Batch number is defaulted.

Weekly reports are then reconciled and any correcting entries are recorded in Excel spreadsheets so that manual journal entries can be made to the general ledger at the end of the month. Processing journals weekly provides the benefits of having only one week of activity to reconcile at month end and reduces the number of records on the material distributions table, improving system performance.

Monthly Manufacturing Close Process

At the end of the month, the same process as the weekly close process is performed with some additional activities.

We operate some manufacturing lines seven days a week, 24 hours a day and interface transactions from the main frame system. We utilize a third-party bar code system for raw material stock. We have customized a bolt-on system to process scrap (Account Alias transactions) that provides the ability to scrap a phantom assembly from the system by exploding down to the components level and processing account alias issues against at the component level. All of these transactions are updated in Oracle Manufacturing through the use of the MTL Transaction Interface table. Therefore, it is necessary to establish cut off times for some processes. Receiving and scrap transactions are cut off at noon on Saturday. Accounts Payables is then closed. Shipping transactions are cut off at six p.m. and the main frame month end processing is started so that all transactions are interfaced into Oracle Manufacturing before midnight.

The Material Transaction Interface table errors are monitored on a daily basis and records are manually transacted and deleted from the interface tables or the error conditions are corrected and records are resubmitted from the interface tables. At month end, material control personnel monitor the interface table after receipts are processed and records with errors are corrected and processed. Shortly before midnight, cost accounting comes in and again checks the interface tables for errors, correcting and processing records with errors. If there are records in the tables with errors that cannot be corrected, the table information is downloaded to an Excel file for reconciliation and manual entry on Monday, the records are deleted from the interface table and manual correcting transactions are performed on Monday in the next inventory period.

We have a customized form that is used to monitor all interface tables and identifies when costing transactions have processed with errors. This screen is checked to make sure that all transactions have been costed and there are no records with errors. If there are records with costing errors, IT support is paged and a SQL script is run to correct and process the records with errors.

A customized concurrent process has been written that users can launch. A SQL script locks the transaction and interface tables. This table locking allows the manufacturing operation to continue manufacturing product. The production line scans completed unit data at the end of the production line that records the transaction details. This data is transferred to Oracle Manufacturing through the MTL Transaction Interface table. After the tables are locked, the production line operators can continue to scan completed units and the data is held until the tables are unlocked. If a user is logged into Oracle Manufacturing and attempts to transact during the time the tables are locked, the hourglass will appear until the table are unlocked and the transaction can be processed. Users of Oracle Manufacturing are advised that month end processing will be taking place at midnight and advised to log off of the system until notified that the cost close is complete.

Once the tables have been locked, a series of reports are run. There are several inventory reports including the Inventory Value Reports with different sort options and the Period Close Value Summary sorted by subinventory. The Receiving Value Destination Account report is run. For Work in Process, the Discrete Job Value Report for Standard Costing, the Expense Job Value Report and the WIP Value Report are run. We then run Distribution Summary reports to review inventory related journals before transferring the information to the general ledger. The reports used are the Material Account Distribution Summary report and the WIP Account Summary Report.

The process at this point is the same as the weekly process. We transfer the Inventory and WIP distribution journals to the GL interface table and import into the plant general ledger. We then view unsuccessful imported general ledger journals. For each unsuccessful journal imported, corrections are made and the account balance totals are verified against the distribution accounts to the general ledger journal. The unposted material journal is printed and a verification is made to confirm that the MTL and WIP category is equal to the Material Account Distribution Summary Report. The inventory journal is posted and the Journals – General report is printed.

Cost Accounting then opens the next period. There is another SQL script that is launched by the user through the use of a concurrent process. This script unlocks the tables. At the conclusion of this process, transactions are again processed.

General ledger accounts are balanced manually. The beginning inventory value from the report for last month's close, plus or minus the Material Account Distribution Summary value should equal the inventory value on the current report. This ending inventory value should also equal the sum of the Inventory accounts in the General Ledger. WIP valuation accounts should equal zero. All unclosed discrete jobs are mapped to the design change account in the P&L.

Journals are then interfaced to the Sector General Ledger by launching a concurrent request.

This concludes the steps that are taken at midnight. In order to achieve the goal of completing the accounting close in two days, the posting of the plant ledger needs to be completed by Noon on Sunday. Typically, this process takes two hours to complete. Manual correcting journal entries are made on Monday morning. It is the goal of the manufacturing plants that all annual entries be completed by 10:00 a.m. on Monday.

Automating the Close Process

There is currently a project being tested that will automate the Inventory accounting close process. When we implemented Oracle Manufacturing modules, we purchased a software scheduling program, APPWORX™. This program schedule “chains” of concurrent requests. Dependencies can be set in the “chain”. If any of the concurrent processes end with an error, then a page is sent to IT support. The “chain” can be programmed to stop processing if an error occurs. Any reports generated from the APPWORX™ chain are stored in another third party tool, Vista Plus™. This application archives reports that can be viewed by a group of users. Each report can have different archive criteria. Both of these systems are being utilized in the customization of automating the Inventory close process.

The next inventory period is going to opened by cost accounting before the end of the current fiscal month. The customized updates for PPV and the splitting of material overhead for customer shipments and returns will be scheduled. A program will verify that the material overhead account has been created for the material transactions, the PPV account number segment has been updated and there are no default values in the 3-digit account segment. If these programs do not update properly, cost accounting is paged and the “chain” is stopped.

Programs have been written to verify that all inventory transactions have been processed through the interface tables. If there are more than five records in the MTL transaction interface table or the Pending table, both Cost Accounting and IT support will be paged and will have to log into the system and correct, resubmit or delete the records. If there are less than five records, the data from the table will be copied to a report, saved on Vista Plus™, and the records deleted from the tables. An additional program has been written to verify that all transactions have been costed and there are no errors. If there are records with errors, a SQL script will run that updates the flags on the table and launches the Cost Manager if it is not running. If there are still records with errors, IT Support will be paged and will have to log into the system and the “chain” stops.

All of the reports are then scheduled through the APPWORX™ “chains” and archived on Vista Plus™. If any of the reports end with an error, IT support is paged and the “chain” is stopped.

Transfers to the General Ledger, importing, posting and printing Journal reports and the Interface to the Sector general ledger are all scheduled in APPWORX™. Any concurrent processes that end in error will initiate a page to IT support.

The automated close APPWORX™ “chain” will be scheduled to run at the end of each week, as well as at month end. Only at month end will correcting manual entries be made to the posted General Ledger. The paging features to Cost Accounting will only run at month end. Any errors that are encountered scheduled within APPWORX™ will automatically page IT support or cost accounting. Any errors resulting during the weekly close process will be corrected on Monday.

Summary

We have consistently posted inventory and WIP journals and processed manual correcting journal entries by 10:00 a.m. on the first Monday of the fiscal month. Customizations have been made in the area of posting PPV and EOIC to individual P&L's and updating material overhead from an interfaced order entry and shipping system. Locking transaction tables allows manufacturing to continue producing during the close processing. A project to automate the close process is currently in system test, utilizing scheduling and report archive programs.