Buy Resell Operation
Process Setup, Process Automation
and
System Integration Design

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Abstract

Current consign model with VI supplier, Motorola Penang carry and manage full kit inventory for assembly at subcontractor. This costs Motorola on inventory holding and significant resources invested in logistics preparation. In turnkey model with EMS provider, Motorola Penang loss pricing leverage against suppliers and potentially high exposure of E&O risk due to deficiency of their Supply Chain.

One opportunity for improvement is to setup Buy resells operation and acts as "Part Distributor" to support EMS provider/Vertical Integration (VI) suppliers for price masking purpose and control over the allocation of constraint parts. Centralize Schedule Sharing planning vs. individual EMS planning will allow Motorola have the ability and flexibility in managing the E&O exposure.

This paper discusses the design for the new business operation process and process transaction automation. Process transaction automation is possible thru proper systems integration design by linking the supplier, EMS to HUB and Schedule Sharing. By automate the system transaction, buy resell operation can focus in improving the efficiency on Supply Chain and reduce risk of E&O.

Introduction

Penang has been using external hubbing since 1999. Along the way, quite a lot of improvement project was implemented to automate the WMS system in hub and Oracle system transaction thru EDI interfaces. The external hubbing module play an important role in setting up a buy resells business. We will share with you how the hubbing module is setup for the Penang Buy Resell operation

Technical Know How

Step#1: Defining the operation model

Before we start setting up the hub, it is important to come out the business operation model. Figure-1 shows the operation model which was design/define by the teams.

Figure-1

There are 3 major areas here. "*Material Planning*", "*Filling the Hub*" and "*Material Request and Ship Material to EMS*".

Material Planning

Each week, Schedule Sharing will pushes the demand to EMS, EMS will base on the demand perform ERP and feed their requirement to buy-resell via Schedule Sharing. Supplier will than base on Schedule Sharing demand to fill up the hub.

Filling the Hub

Hub will basically receive the material from supplier and feed the information to Motorola in order to manage the inventory which will align with the demand planning within EMS, Motorola and Supplier via Schedule Sharing.

Material Request and Shipment to EMS

One Material Planning works, the supplier will fill up the hub with at least 4 weeks inventory. EMS will than able to pull their weekly material thru the hub. EMS will pull the material required from the hub using EDI-940 (Pull Request to hub). The material will then be pick and ship to EMS. Uppon shipment out to EMS, hub will acknowledge Motorola on the shipment via EDI-

945 (Shipment Confirmation) and Motorola will then trigger payment to supplier and issuing invoice to supplier via hub.

Step#2: Setting Up Operation Process

Once the operation model is been define. EMS and Hub are call in to work on the detail on actual operation process. Here I will share with you one two major processor. Receiving the material and shipping out the material to EMS.

Figure-2

Receiving

Figure-2 shows the receiving process in hub. As the material are ships from the supplier to the hub. Hub will receive in the material and verify the shipment against Motorola's PO which was downloaded to the hub up-front via EDI-850. Once the material are receive in and post into the warehouse, the hub will send their receiving record via EDI-861. Motorola will download the record and trigger payment to the supplier if the material is purchase in as MOI agreement. With the auto receipt put in place Motorola system, we manage to remove the redundant receiving entry and manage to fully leverage the receiving service provide by 3PL (Another success story in out-sourcing).

Shipment to EMS

Figure-3 shows the shipment process. As the EMS submits their weekly requirement to hub, hub will allocated and pick the material. Upon completing the pick, hub will perform shipment confirmation and acknowledge Motorola about that via EDI-945. Once EDI-945 is downloaded in Motorola, Motorola's system will trigger receipt for material which is under SOI program, create

order, and invoice. The invoice will then send to hub via E-Mail and hub will print out the invoice, match the invoice against the hub's DO, submit for customs approval. After customs approval, the document together with the material will move in to the track and send it to the EMS.
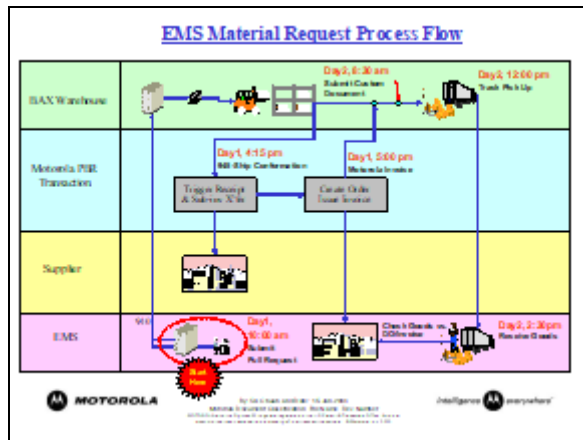

Figure-3

Step#3: Application Development/ System Setup

Once the actual operation process is sketch out in the drawing board. The next step is to setup the system (Oracle11i Application Setup). SME, and Application Developer are call in to discuss on the development and setup base on the operation process. Simulation and proto run are done by SME together with the developer in order to make some technical decision.
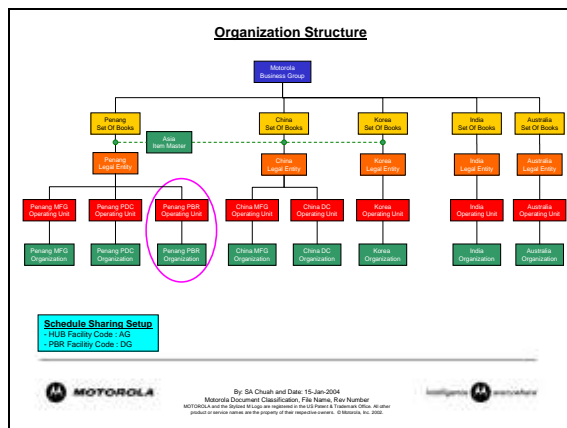
Figure-4

A different org will be setup in the system (Oracle 11i Application). This is basically base on business and operation advantage came out by the team. SME will than provide all the setup requirement to the application engineer to setup the system. Few automation module are define

and development are done by the application developer.
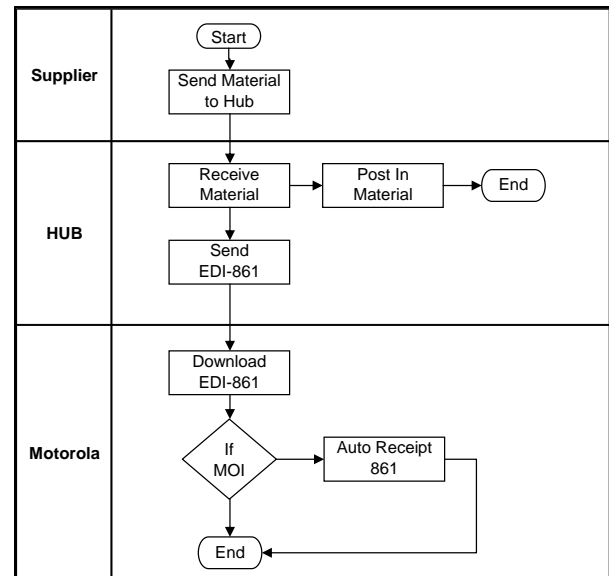
Figure-5

Figure-5 shows the process flow for material receiving. Few application modules were developed to handle the automation part of this process flow. EDI interface which download the EDI-861 flag-file and decode it into custom database table (Oracle database). Auto Receipt which trigger receipt to pay MOI supplier.
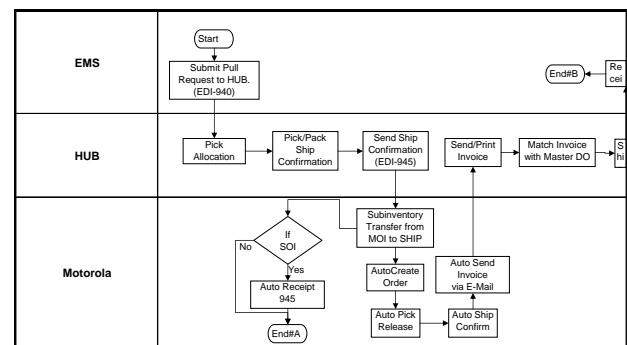

Figure-6

Figure-6 shows the process flow for material request and issuance to EMS. Few application modules were developed to handle the automation part of this process flow. EDI interface which download the EDI-945 flag-file and decode it into custom database table (Oracle database). Auto Receipt which trigger receipt to pay SOI supplier. Auto sub-inventory transfer that move material to correct EMS's ship location in system. Auto creates order that base on EDI-

945 information. Auto Picks Release that validates the shipment quantity against system on hand in EMS's ship location in the system. Auto Ship Confirm which will generate the invoice after that. The invoice will be send to hub via E-Mail.

Conclusion

The Penang buy resell hub is setup and release to production beginning of October 2004. The next step for the operation to do is to fill up the hub and get more EMS program in. In order to make Penang buy resell more effective, we still need to improve in price masking and material planning.

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