

“A study on the performance of Customer Controlled Pricing system

(Sanmina-SCI,Chennai)”

PROJECT REPORT

Submitted in partial fulfilment of the requirements for the award of the

POST GRADUATE DIPLOMA IN SUPPLY CHAIN MANAGEMENT

By

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“051/03/2006”

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“May, 2008”

BONA FIDE CERTIFICATE

This is to certify that the project report titled “*A study on the performance of Customer Controlled Pricing system*” is a bonafide record of work carried out by “Mr.Niranjan Kirtunia” during the final semester from “January and 2008” to “June 2008”, under my guidance, in partial fulfilment of the requirements for the award of the Post Graduate Diploma in Supply Chain Management by CII INSTITUTE OF LOGISTICS.

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DECLARATION

I, Niranjan Kirtunia hereby declared that this project report titled Pricing submitted in partial fulfilment of the requirement for the “Post Graduate Diploma in Supply Chain Management” is my original work and it has not formed the basis for the award of any other degree.

(Signature of the Student)

Student Name

Place:

Date:

TABLE OF CONTENTS

1.0 Acknowledgments	5
2.0 List of Tables	6
3.0 Summary	7
4.0 Introduction.....	8
5.0 Methodology	12
5.1 Sending Items to Suppliers for Pricing	12
5.2 Receiving Pricing details from Suppliers.....	14
5.3 Updating the Pricing into System.....	14
5.4 Supplier and GSM Price	16
5.5 Plant Suppliers Table	18
5.6 Limitation	19
6.0 Research.....	20
6.1 Suggestions.....	21
7.0 Appendix.....	23

1.0 Acknowledgments

First of all I thank almighty to have helped me in pursuing my interest throughout the project tenure. I am highly grateful to Ms. Mary Muir for her constant encouragement and valuable inputs. It has indeed been a great learning experience under her.

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2.0 List of Tables

2.1 Figure 1

Describes the week to week basis for Pricing11

2.1 Table 1

Sendout Template that is used to send to Customer for requesting the price12

2.3 Figure 2

Describes the data flow of Pricing.....16

2.4 Logic Flow diagram

Logic Flow Diagram to update Vendor Code17

2.5 Figure 3

Describes assigning of Vendor Code.....18

2.6 Figure 4

Describes the Analysis of Fallouts20

2.7 Figure 5

Suggested to update Vendor Code And Vendor Site.....21

3.0 Summary

A number of business rules have been used in the organisation. Rules have been put in place considering pricing activities, ease of use, and level of oracle customisation involved and flexibility tied to the accountability. These rules can be grouped under four major categories – Oracle Data Extraction, E-Compass Processing, Oracle upload and Reporting. The purpose of the Pricing process is to utilize organization's global purchasing power to negotiate the best cost, terms, security of supply, and minimum liability for organization's controlled components with suppliers. Collating the most up to date pricing for customer controlled items. Using the most current pricing information from the two sources to ensure buyers in the plants make purchases at the negotiated price. Rolling the most up to date pricing in the market for customer controlled and Sanmina-SCI to target prices in Oracle for all plants.

TAM – Total Available Market is used by Global Supply Chain Management team to forecast estimated annual demand of commodities required by Sanmina SCI. This tool helps the GSM's to negotiate with the suppliers to get a better pricing for the raw materials for manufacturing the end products in Sanmina SCI Plants.

TAM is applied for improving performance of Global supply chain management team. It allows GSM's to capture key suppliers, manufacturers, distributors and their product pricing and the logistics involved. TAM has the potential to improve the time to buy the products for our plants located at different geographic locations and saves the GSM's a considerable amount of time negotiating with our available list of suppliers on what is best in the market, what has been tried, and what has actually succeeded. The objective of TAM is to reduce costs, and allow all parties in the supply chain to better manage current resources and plan for future needs.

4.0 Introduction

Historically, the procurement function was viewed as low level, back office operation that existed solely to beat up suppliers for lower prices. “Three bids and a cloud of dust” is an expression used by many veteran procurement professionals to describe this traditional approach to supplier relations. The traditional approach to suppliers was price based, surface level, short term and extremely short-sighted.

Today, innovative supply managers realize that, once they have selected the best suppliers, mutual cooperation can pay big dividends for both customer and supplier. While all companies want to pay the lowest possible purchase price for goods and services, leading companies have realized that purchase price is only one element of total cost, and that it’s critically important to establish continuous improvement programs with strategic suppliers.

In our current process, process relates to inventory database and more particularly, to customer access to information about the inventory. Business supplying products and services to customers may maintain distribution channel for fulfillment of product and service requests. Distributors may rely on retailers or other agents who ultimately interface with customer. Often the supplier maintain a database relating to the inventory or services being provided. The database includes customer information, inventory data, and the like the distribution of wireless devices and accessories is typically provided by manufacturers may, for example, produce various models and brands of handsets for different wireless operating systems or protocols. The handsets are typically procured, stored and kitted for shipment in a distribution or fulfillment center. The customer purchases wireless devices, accessories, and service through a carrier at a retail interface such as retail outlet, or by telephone, facsimile transmission, mail order, and internet and so on. The retail interface may involve carrier operations and / or third parties such as agents, dealers, resellers or the like, who operate the retail outlet, or, in the case of telephone, facsimile, mail order, or Internet ordering, an order processing facility. Regardless of the fulfillment method, the relationship between the wireless Communication customer and the carries of wireless services start with a service contract. The service contract enables the customer’s wireless equipment to access a

wireless transmission system, enabling the customer to send and receive calls, for example. The service contract also enables the carrier to bill and collect fees for use of the wireless system by customer. A wireless telephone handset is associated with a unique identifier, such as an electronic serial number, usually assigned by the device manufacturer. A second unique identifier, such as telephone number or mobile identification number, is assigned by the carrier for use in connection with the handset. In collaboration with Global Supplier Management (GSM) group, this logic was designed to identify a supplier (Oracle Supplier Code and its associated site) and GSM price for planned orders wherever appropriate. The fundamental drivers behind this logic are as follows:

It should be as simple as possible for GSM to load data in Oracle's quotation module. The logics should be consistent across plants so that pricing tool can incorporate GSM negotiated supplier and price. Suppliers defined in quotation module take precedence over sourcing rules in Oracle. In Cases where planned orders are split by MRP for multiple suppliers and a quote exists for the part, the supplier information for both of the split deliveries will be the same supplier from the quote module. Two information only columns are including for buyer information. These columns are sourcing rule supplier and sourcing rule supplier site and they will display any active sourcing rule for that item New buys will not be extracted, parts that are pulled from supplier based on planned Orders demand not planned orders and parts which are not executed per MRP. New buys will not be extracted for parts that do not have a target cost defined. The TAM is carried out on a quarterly cycle and is based on 12 months gross demand. There are areas of overlap between one TAM ending and the next beginning. The following timelines indicates the major points in the TAM cycle.

Please note that the data in the TAM is static, i.e. all the data is fixed for the duration of the TAM cycle, so changes in demand or changes in a components ICS or new BOM's with demand introduced in a plant during the cycle will NOT be captured.

The component demand for the TAM is pulled from the each plant's MRP system, this is the case for Oracle 11.03 and 11.i, SAP, COPICS plants etc. Every plant in the company is part of the TAM process.

Because each customer is unique it means that the level of demand loaded into each plant's MRP is different. We then need to create a demand for the components that is consistent throughout the TAM process. We call this component demand the EAU (Estimated Annual Usage). Once the component demand is calculated it is then verified by GSM management. This is done by triangulating various sources of data from MDS (Master Demand Schedule) the company annual accounts; spend history of customers and from information on the top strategic accounts from the Customer Supply Chain Managers.

Where any demand changes are required after review, these are made at a top assembly level and the change is blown through to component level.

This demand verification takes place in week 13 of the Fiscal quarter. Generally there are around 200k components in a TAM. These components are all grouped into commodity codes. The GSM community needs to have the TAM split by commodity as they are specialists in that commodity field. We go through great lengths to ensure that each component has been allocated the correct commodity code. The Global Commodity Engineering group regularly maintains a database for every component in the company. This database matches every component with the correct commodity code. The Approved Vendor Listing is another key element for the TAM to be accurate and successful. Quite simply, if an item has no or an invalid or out of date AVL, then the GSM cannot put forward the item for negotiation with supplier. The GSM group is continually working with suppliers to gather information on the corrected "orderable" MPN. We find that in most plants the MPN supplied initially by the customer is still on the product BOM's and has never been updated, or the MPN supplied by the customer was incorrect.

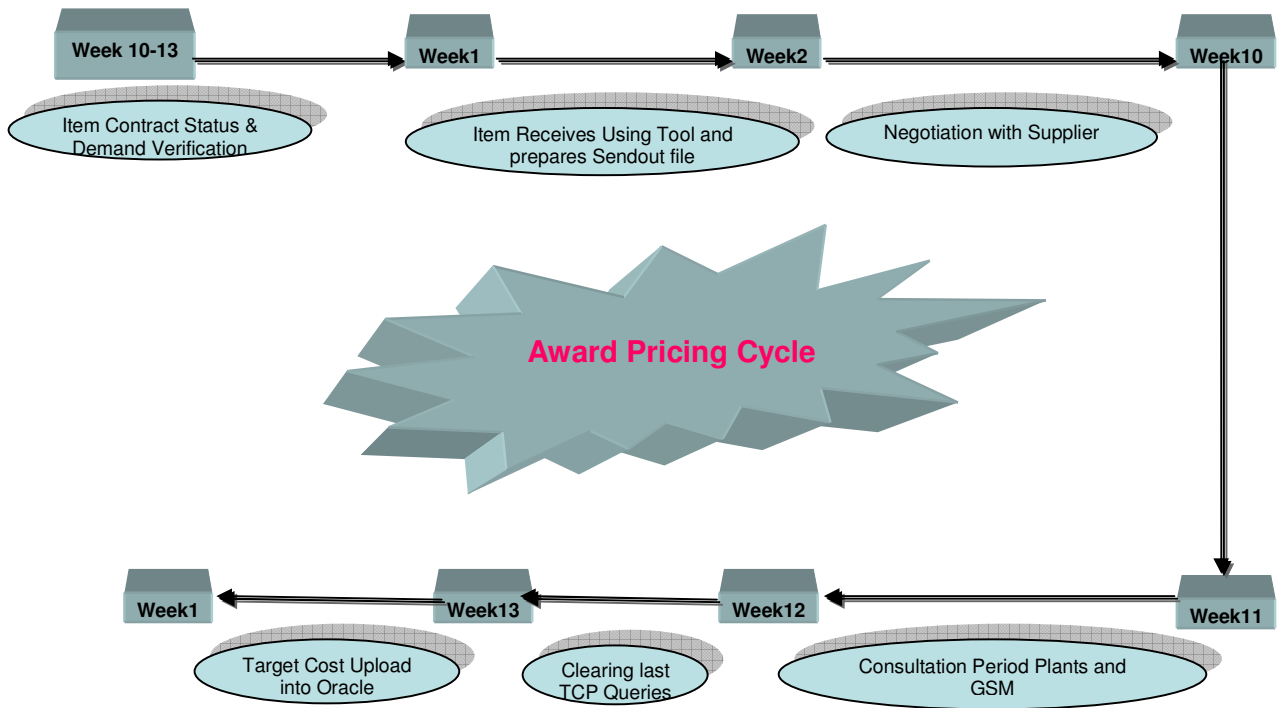


Figure 1

5.0 Methodology

The GRIT (Grimbling Reduction & Intelligence Tool) is used by the GSM community to data mine their TAM portfolio. The GSM are able for example sort their send-out files to suppliers grouped by supplier name. They can consolidate demand by cleaned MPN.

The GRIT is also used to upload the BID information back from the suppliers and supply the GSM with intelligence of which supplier has the lowest bid price. The GRIT is only used by GSM's.

5.1 Sending Items to Suppliers for Pricing

Below is the list of field headers that are sent out in the form of an Excel spreadsheet for completion by the CSCM's & Plant Program Managers. Only one entry per AVL is required unless there are split vendors. (Headers highlighted in Blue cannot be changed, headers highlighted in yellow are the fields which require to be populated).

Table 1

Column Header	Field Conditions
Tam Quarter	This identifies which quarter the pricing is valid for
Action	add or delete
Disty Price Available	If disty price is available there must be a Y in this column (Disty is defined as supplier name not on AVL)
Award	true if this is the line awarded
Record ID	number used to identify the item number by IT
Item Number	our internal part number (SSCI number)
Manufacturer	name of the manufacturer as shown on oracle or COPICS
Corrected Manufacturer	is the normalized mfg. name pulled from the last time the GSM corrected names
MPN	is the manufacturer part number
Plant	is the plant location
Bid Supplier	person supplier awarded business
Price	price quoted by supplier for qtr (firm pricing)
Bid Currency	currency price is supplied in (example USD)
Bid UOM	each, EA
Shipping Terms	ship terms supplier is quoting to, ex:FOB ship point, FOB

	destination
Apply To Backlog	does bid price apply to any backlog we currently have with supplier (y or n)
Award Start Date	is the date the award goes into effect
Award End Date	is the date the award ends
Award Price Start Date	is the date that the award price goes into effect
Award Price End Date	is the date that the award price ends
Payment Terms	is the payment terms supplier would like to be paid at ex: net60, net120
Correct Supplier MPN	provided by the supplier what their correct part number is if our AVL is incorrect
Lead Time Forecast	lead time of part in 5 day work week if forecast is provided, (MUST BE IN DAYS)
Lead Time No Forecast	lead time of part in 5 day work week if no forecast is provided,(MUST BE IN DAYS)
Minimum Order Qty	is the minimum quantity SSCI can receive quoted price
Multiple Order Qty	is the qty. SSCI must order in (package size of component)
Reschedule Window	is the window within that SSCI can reschedule an order
No Of Reschedules	is the number of times we are allowed to change the dock date
Cancellation Window	is the time frame that SSCI can cancel an order with no charges
Amnesty	If SSCI can return parts at no cost for any reason at any time with proper RMA number from supplier
Flex Terms	if SSCI has upside from customer how quick and at what percentage would supplier be able to deliver additional parts
OEM YN	is the pricing provided from an OEM contract yes or no
G R P	if the pricing provided is from an OEM contract is it Global (G), Regional (R), or Plant specific (P)
Country Of Origin	is the country the item originates from
Std Or NonStd	item considered standard (S)(used extensively in the industry) or non-standard (NS) (used by a small number in the industry)
Supplier Contact Name	is the name of the person GSM negotiates with
Supplier Contact Number	in the phone number of the person GSM negotiates with
Supplier Contact Email	email of person GSM negotiates with
Supplier Comments	any pertinent information the supplier needs to relay
Split PCT	If part is only to be awarded to 1 customer then this would be 100%, else what the split is between multiple vendors

5.2 Receiving Pricing details from Suppliers

The plants & CSCM's then send back the excel spreadsheets populated with their data. The data is then checked to ensure it is in the correct format for uploading through the GRIT. After format verification is complete, the data is uploaded through the GRIT Tool to the TAM. The GSM use the information available to them at the end of the negotiation period to make a decision on which suppliers gets awarded the business for the next 3, 6, 9 or 12 months.

The GSM takes into account, overall cost savings, quality of supplier, preferred supplier status, currency exchange rates, freight, Terms and Conditions with the supplier and of course price.

5.3 Updating the Pricing into System

The GSM are responsible for all data they receive in their TAM file whether the parts are awarded or not awarded. Where a part is awarded the award information is compared to target and where the target to bid price (awarded parts) increases >5% over target or decreases >25% from target a VP approval is required. If the VP does not action or if rejected the part will not be awarded and the target will revert to current target.

If the part is not awarded, the GSM are supplied the last 3 receipts and the current target cost for the item in a website for review. The last receipt is systematically selected but the GSM/VP may change to one of the other receipts or current target, using the website when necessary. Where the target to receipt (un-awarded parts) increases >5% over target or decreases >25% from target a VP approval is required. If the VP does not action or if rejected the part will not be awarded and the target will revert to current target. The price selected for parts in the receipt file (unawarded parts) will become the new Target in Oracle/COPICS but the receipt price will not be considered an award.

The GSM then makes the decision to give the suppliers with the best “total costs” the business. The TCP was introduced to allow plants to review the proposed target costs (FCST) for the new quarter as negotiated by GSM.

This would allow plant materials and finance understand any large changes in the target cost of any item from current quarter to the new.

The TCP can also be used by the plant to query with GSM reasons for changing suppliers for example where the plant has an EDI agreement with existing supplier.

The TAM award information is pulled from the GRIT download and loaded into Oracle by using the Quotation Module. The Vendor Code and Vendor Site information is assigned to each award and loaded by plant using a mass upload tool into Oracle. All data changes to be uploaded must be submitted into GRIT (TAM awards) or the award file (Local awards - items not in the TAM) by the close of business on Thursday of each week. This data is updated weekly on Friday and will be available for printing the Oracle RP's on Monday.

5.4 Supplier and GSM Price

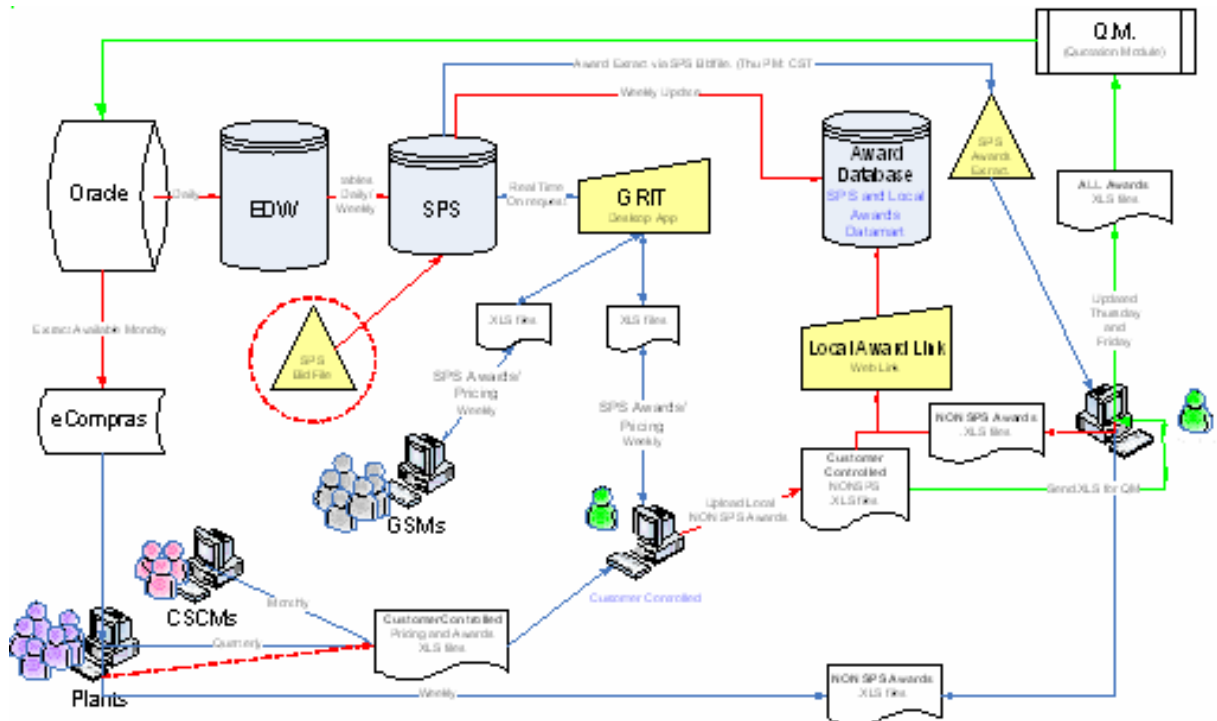


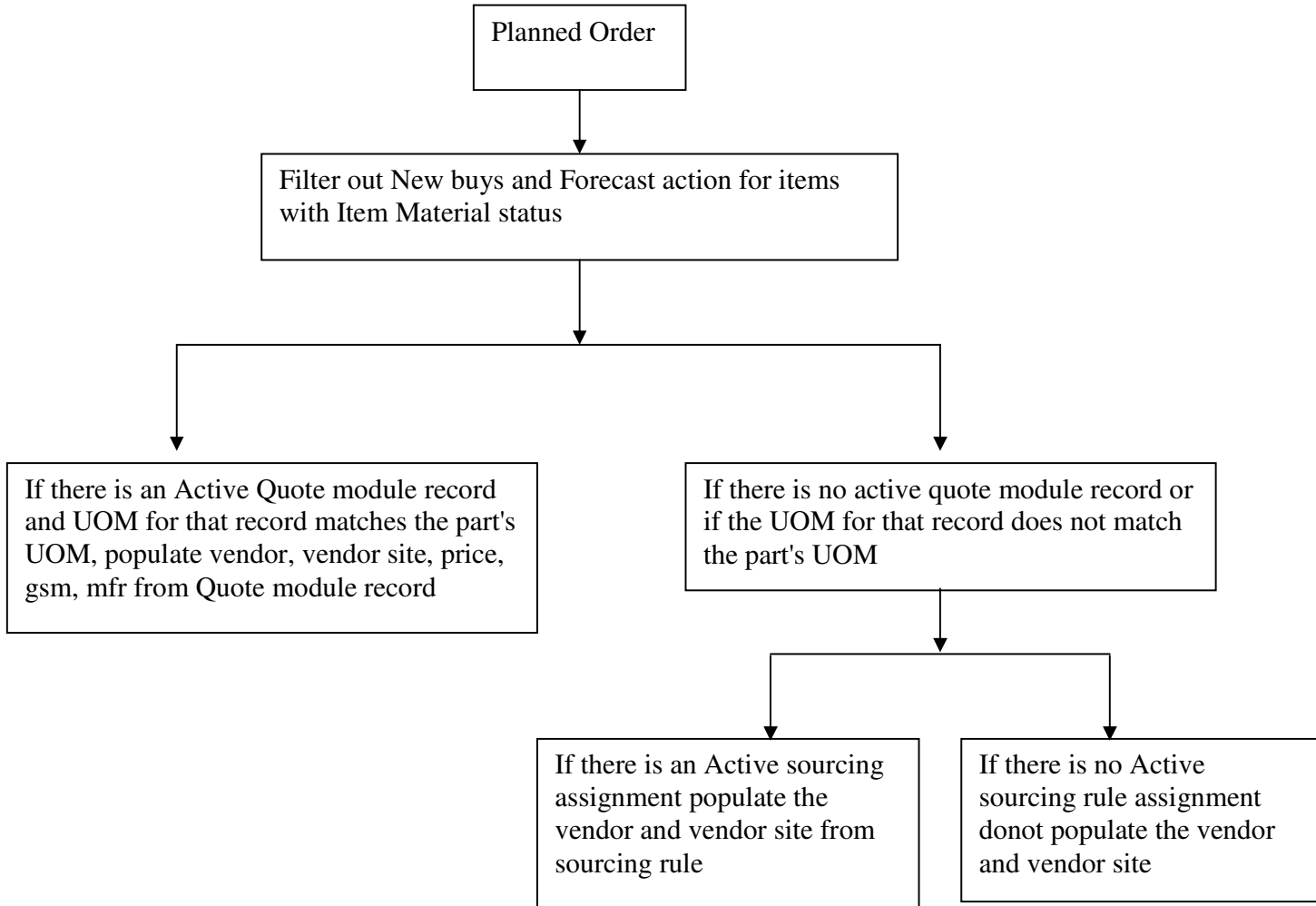
Figure 2

In collaboration with Global supplier management (GSM) group, this logic was designed to identify a supplier (Oracle supplier code and its associated site) and GSM price for planned orders whenever appropriate. The fundamental drivers behind this logic are as follows:

- Suppliers defined in quotation module precedence over sourcing rules / assignment set in oracle. In cases where planned orders are split by MRP for multiple suppliers and a quote exists for the part, the supplier information for both of the split deliveries will be the same supplier from the quote module.
- Two information only columns are included for buyer information. These columns are sourcing rule supplier and sourcing rule supplier site and they will display any active sourcing rule for that item.

- c) New buys / forecast / Reschedules / reconfirms will not be extracted for parts that do not have a target cost defined. The Target Cost can be 0, but there must be a row for target in the cost screen.

Supplier and GSM Price Logic Flow diagram



5.5 Plant Suppliers Table

It is expected that there will always be some new buys that would not be tied to a supplier (Based on the logic defined in section 3.1). These are either due to the fact that suppliers were never defined for them in Oracle or defined without following the logic in section 3.1 there will also be situation where a defined supplier is not able to meet the date or price. In this circumstance we wanted to provide a way for the buyer to still use eCompass. The solution is the planned suppliers table. The purchasing manager can define those suppliers and suppliers' site combination that he/she allows the buyers to use (i.e. 'Plant Suppliers'). These are the only suppliers the buyer can use for new buys other than suppliers in sourcing rules or quotation module. When a new supplier is defined in Oracle, it can be immediately added to plant supplier list. Once it is added to the plant supplier list; it will be immediately available to the use in eCompass.

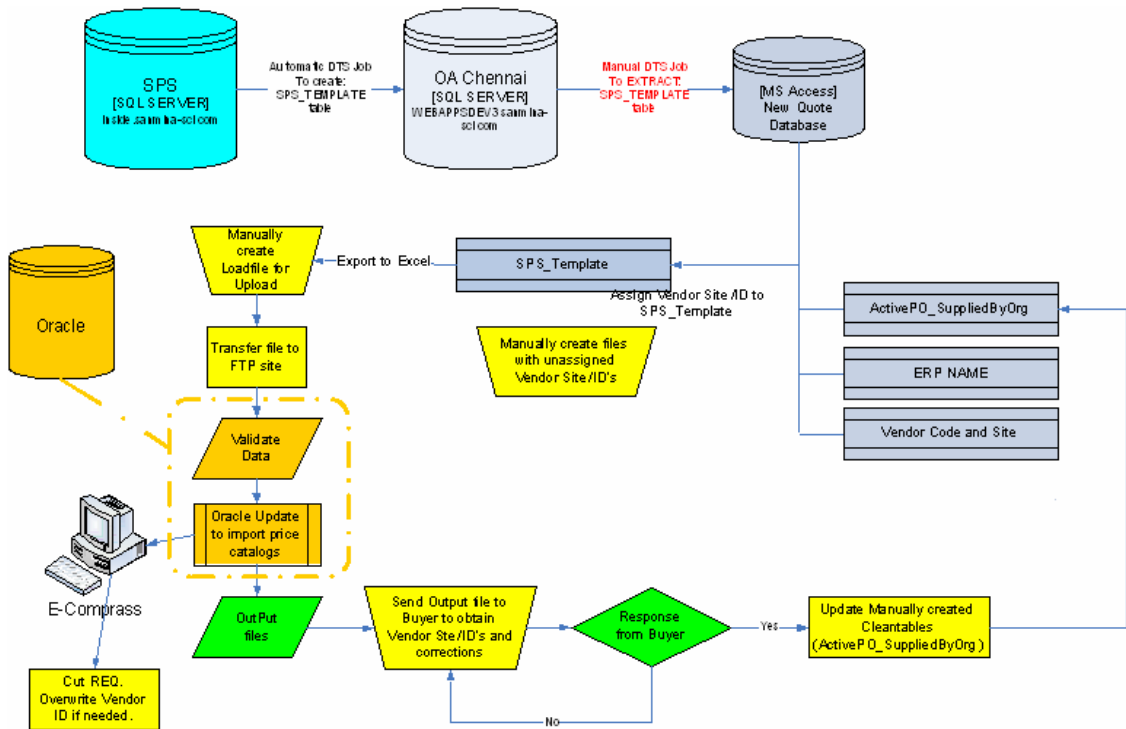


Figure 3

5.6 Limitation

The limitation for New Buys is in-active supplier, inactive supplier site, supplier site not enabled for purchasing, overdue date.

New Buys also fail in the case of incorrect setups in oracle, such as part inactive.

All New Buys (with no splits) sent to Oracle either create a release against the blanket PO or create a new PO.

Manufacturer/ Manufacturer part, which are part of the oracle cross-reference (Not the corrected Manufacturer/ Manufacturer part) are used for PO Creation.

6.0 Research

Main purpose of the QM upload process is to assign vendor code and vendor sites for each bid supplier. So that in plant level while creating Purchase order there will be good accuracy level. For this process file that is awarded with lowest bid price been downloaded from the SQL-Server database on weekly basis. Then it is exported to Access and run few queries to updated Vendor Code and Vendor site by making relationship with few tables like Active PO_Supplier by Org, ERP name and vendor code and Vendor Site. Once Vendor Code and vendor sites are updated the files are converted into unloadable formats into oracle.

While uploading into oracle there are some draw backs its not necessary that all the item numbers that are ready to upload they will get uploaded, So few item numbers error out and do not upload into oracle.

So there was an analysis done based on the upload and it was found that

Date	Total Number Items	Without Vendor Code And Vendor site	Validate	Uploaded	Fallout	Validate %	Upload %
03/07/2008	1901	352	1549	1403	146	81%	91%
03/14/2008	93861	12411	81450	68426	13024	87%	84%
03/21/2008	23021	5017	18004	15368	2636	78%	85%
03/27/2008	6135	1033	5102	4484	618	83%	88%
04/02/2008	3968	160	3808	2952	856	96%	78%
04/11/2008	6754	199	6555	5502	1053	97%	84%
04/17/2008	2887	978	1909	1720	189	66%	90%
04/15/2008	8449	615	7834	7424	410	93%	95%

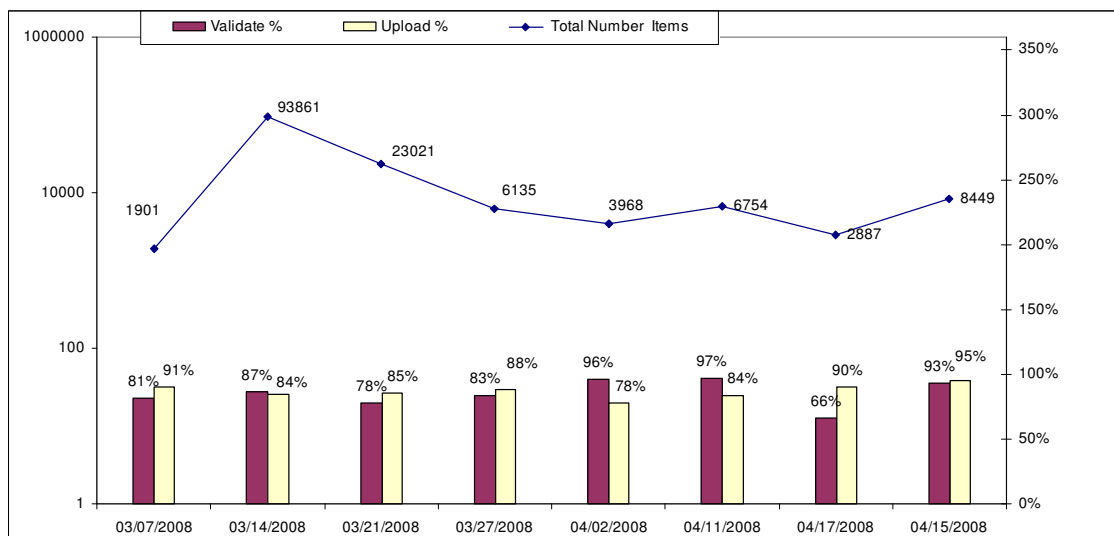


Figure 4

It was found that on an average 16% of items are not uploaded because not able to relate vendor code with bid supplier and 16 % of items error because of the assigned vendor code does not exist in the Active vendor list. In an whole approx 30 % donot get uploaded in oracle because of two main reason

6.1 Suggestions

On the basis of above analysis there was a proposal suggested, in that Vendor Codes and Vendor Sites can be updated form the Oracle DB itself. So accuracy level can be increased and the vendor code and vendor sites that are not available will be updated as VIDTBD so that all items will be updated into oracle. The vendor code that is assigned with VIDTBD can be changed in plant level when creating purchase order.

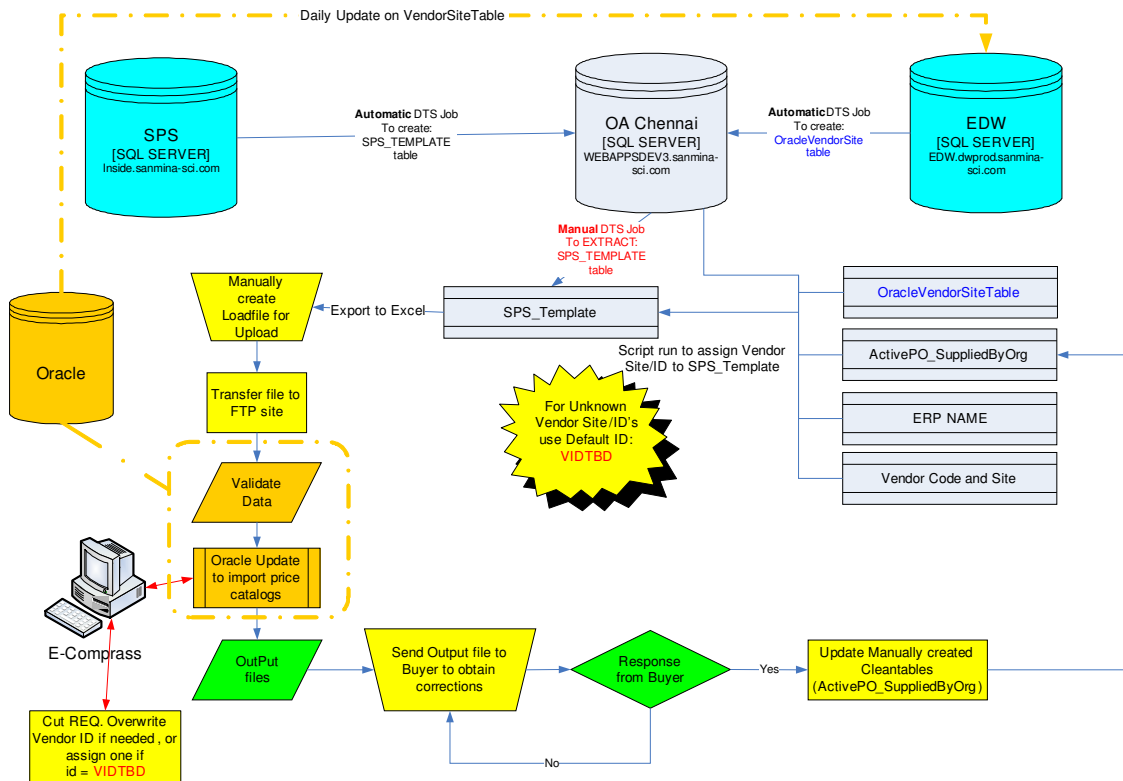


Figure 5

In Quotation Module, if a valid AVL entry exists, then that information is extracted to eCompass and is displayed as default. Based on cross-reference, other AVL entries for the part from Oracle are also extracted so that the buyer if necessary can choose a different manufacturer / manufacturing part number than what is loaded in the GSM quotation module

Any update to AVL information in Oracle is immediately reflected in the portal on the buyer's side. Suppliers can only see the AVL entry selected by the buyer.

For items that require RoHS compliance, buyers can only view specific AVL's depending on the RoHS compliance of the MPN.

7.0 Appendix

a) SQL Query used to extract Data

```
SELECT  A.Item_Contract_Status, B.Award, A.Item_Number, B.MPN,
        B.Bid_Supplier, ' ' as [Vendor Code], ' ' as [Vendor Site], B.Manufacturer,
        B.Bid_UOM, B.Ext_Price1 as Award_1_Price
        , A.Organization_Code, B.Bid_Currency, B.Minimum_Order_Qty,
        B.Multiple_Order_Qty, B.Lead_Time_Forecast, B.Award_Start_Date as
        Award_1_Start_Date, B.Award_End_Date as Award_1_End_Date
        , B.Award_Start_Date as Conversion_Rate_Date, B.Last_User
        , B.Last_Date, ' ' as ERP, ' ' as [ORG ID], 'Bid File' as Source
        , B.Price_Issue_Flag_YN, B.Price_Issue_Flag_Status2,
        B.Price_Issue_Flag_ChangeTime2, A.Major_Code
FROM
    Tam.dbo.Tam_Sendout_Items A WITH (NOLOCK), Tam.dbo.Tam_Sendout B WITH
    (NOLOCK), Tam.dbo.NoAwardReasons C WITH (NOLOCK)
    , Tam.dbo.NoQuoteReasons D WITH (NOLOCK)
WHERE A.ID = B.Tam_Sendout_Item_ID AND A.Reason_For_No_Award_id *=
    C.ID AND A.No_Quote_Reason_ID *= D.ID AND A.Tam_Quarter =
    dateName(YEAR, dateAdd(Quarter, 2, getdate())) + '0' + dateName(QUARTER,
    dateAdd(Quarter, 2, getdate())) AND A.Status = 'P'
    AND B.AWARD = 'TRUE' AND ( ( B.Last_Date > '4/30/2008 9:28:44' )
    AND ( ( B.Price_Issue_Flag_Status2 is NULL AND B.Price_Issue_Flag_YN = 'N')
    OR (B.Price_Issue_Flag_Status2 is NULL AND B.Price_Issue_Flag_YN is NULL)))
    OR (((B.Last_Date > '4/30/2008 9:28:44') OR (B.Price_Issue_Flag_ChangeTime2
    >'4/29/2008 18:18:50')) AND (B.Price_Issue_Flag_Status2 = 'ACCEPT' AND
    B.Price_Issue_Flag_YN = 'Y')))
```

b) SQL Query used to Assign Vendor Code and Vendor Site

```
UPDATE [SPS Template] LEFT JOIN [Vendor Code and Site] ON ([SPS
Template].Organization_Code = [Vendor Code and Site].[Org Code]) AND ([SPS
Template].Bid_Supplier = [Vendor Code and Site].[Vendor Name]) SET [SPS
Template].[Vendor Code] = [Vendor Code and Site].[Vendor Number], [SPS
Template].[Vendor Site] = [Vendor Code and Site].[Vendor Site]
WHERE ((([SPS Template].[Vendor Code]) Is Null) AND (([SPS Template].[Vendor
Site]) Is Null));
```

Softwares

- a) SQL server
- b) MS-Access
- c) GRIT
- d) EDW

Abbreviations

- a) **TAM** : Total Available Market
- b) **MDS** :Master Demand Schedule
- c) **CSCM** : Customer Supply Chain Manager
- d) **GRIT** : Grimbling Reduction Intelligence Tool

Reference:

- a) Department Document
- b) IT team
- c) Work process