EXPERT OPINION

CUSTOMER AND PRODUCT PROFITABILITY IN LARGE ENTERPRISES USING SAP S/4 OR ANY MAJOR ERP SYSTEM

Sarat Chandra Tella*

SAP S/4 HANA Solution Architect, Archer Daniels Midland Co., 1260 Pacific Ave, Erlanger, KY 41018, USA

ABSTRACT

In major organizations, to achieve customer and product profitability lot of manual processes is required at month end depending upon the systems involved in the organizations. Customer and product profitability can be referred as Gross Margin or Margin Analysis by customer and product. Margin Analysis is one of the key capablties to support business decisions globally for large organizations and also required for best and least performed products in different regions of the world. Different business processes and teams are involved with in organization to achieve customer and product profitability which includes production, purchasing, sales and Finance. Different ERP systems like SAP, Oracle are used as transactional system to perform daily activities like creation of sales order or purchase order, customer/vendor invoice. This article covers functional and technical aspects how gross margin can be achieved in an organization and this is broadly classified as 1. Business processes, 2. Maintenance of Master data, 3. Transactions from different modules in SAP S/4 to COPA (controlling – profitability Analysis), and 4. Reporting.

INTRODUCTION

Customer and product profitability is very important step in month end process for strategic business units such as sales, customer service and finance with in organization. This is the critical step for any organization to make important decisions from business leader perspective and also to perform analysis whether particular product line and customer is profitable or not.

SAP S/4 HANA system uses in-memory database and used as transactional system in major organizations. Although there is no specific defined process for profitability analysis, it is an important factor for management reporting which is used for analytical purposes across the organization. COPA data can be viewed as data cube that takes information with in transactional system from different modules like sales, purchasing and production and presented in different ways for analytical purpose with in organization. The purpose of gross margin capability is to provide visibility and insight into sales and margin activity by customer and product. As part of this functionality lot of other characteristics on customer and product are available to perform analysis in a flexible manner suited for different purposes within the organization.

PROCESS FRAMEWORK TO ACHIEVE PROTIFABILITY

This paper explains an approach to determine gross margin by customer and product using SAP S/4 HANA system. Almost all ERP systems are not configured correctly to pull much of the information that would normally goes to profitability analysis module, resulting in material differences in Finance ledger and Hyperion systems which is used for consolidation. Therefore to understand the complexity article is divided in to different sections as per below:

1. Business processes

The goal is to use profitability analysis module to deliver management reporting that is communicated to top management in an organization. Although this process never reconciles completely with Hyperion consolidation system due to exchange rates and other details involved with full consolidation process that will not occur in any transactional system. Fundamental requirement from leadership is to have profitability by region and in order to achieve this profitability analysis module will have to use ship to party information included in every sale as way to split all sales by region.

In terms of what level of profitability would be shown in an organization, the intention is to provide profitability to actual contribution and gross margin level before Sales General and Administrative costs. Since profitability analysis is exclusively used for managerial reporting the common practice is to include information directly related to sales and production of goods. Also planning information can be loaded to profitability analysis module which is used to compare actuals vs plan to make effective managerial decisions. Profitability reports are generated to analyze contribution margins of market segments along with other COPA characteristics like sold-to country, source/production plant, ship-to party, customer, distribution channel and profit center.

*Corresponding Author
Email:
sarat.tella@adm.com
Tel.: +1-217-450-7128

2. Maintenance of master data

In SAP S/4 system, defining and maintaining master data is a crucial task and in this section will explain what kind of master data is required in order to achieve customer and product profitability in an organization. First need to define organizational units like company code/legal entity, plant where production happens, sales organization, distribution channel and division where sales happen in an organization. In controlling module of SAP S/4 HANA system, controlling area is defined where company code is assigned to and in profitability analysis module operating concern is defined which represents a data cube with certain defined structure which contains predefined characteristics like customer, product and ship-to party [1], and value fields/GL accounts.

In SAP S/4 system there are two types of profitability analysis: Account based and costing based analysis. In Account based and costing based analysis, characteristics like customer, product, product hierarchy, sold-to party, ship-to party is created and included in operating concern so that we can analyze transactional information based on characteristics what we defined. Difference between account based and costing based analysis is that in account based General Ledger accounts are used where as in costing based analysis value fields are defined along with characteristics and assigned to operating concern. Characteristics include customer, product, segment, trading partner, payer, material account assignment group, customer account assignment group and Incoterms. Value fields which is required in costing based analysis include quantity and amount fields. Quantity fields include sale volume whereas amount fields include Gross Revenue, sales deduction and Net revenue fields.

Customer master/business partner, material master is defined in transactional system with certain defined characteristics in SAP S/4 HANA system. Business partner contains lot of information where in general view name of customer, address and in company code view contain reconciliation accounts, and in sales & distribution contains account assignment group which identify third party or intercompany, partner functions where Sold-To Party, Bill-To Party, Ship-To Party and payer is defined. Material master in transactional system which is an crucial thing to define and have lot of information like sales information, material type, material group, product hierarchy, foreign trade, accounting and costing view which contains standard cost.

3. Transactions from different modules in SAP S/4 HANA system to COPA (controlling – profitability analysis)

Mainly COPA is used as a data cube to gather information from different modules of SAP S/4 HANA system. In Sales and distribution module, product sold to customer starts with a process of creating a sales order where customer and material is being sold by customer service agent. Outbound delivery is created to ship product to customer location from warehouse. Finally invoice to customer and collect cash from customer. During billing all the information is passed to COPA via condition types defined in sales pricing procedure. It contains information like quantity sold to customer, gross revenue, sales deduction and other characteristics defined on customer and product are passed to COPA or derived by using derivations in COPA. And also there are certain characteristics that is derived during transactions or directly derived in the reporting layer based on values defined in customer and product.

From billing documents, net revenue can be calculated in COPA but costs need to be updated in each and every transaction to calculate gross margin by customer and product. Standard costs are calculated for every product at the beginning of the month in the organization. While posting a billing document standard costs is populated based on material and plant combination in COPA and used to calculate gross margin by customer and product. Standard cost comprised of variable and fixed costs and this will provide flexibility in COPA to calculate contribution margin and gross margin by customer and product. Fig 1 explains data flow from different modules such as sales, production, costing, overhead management and direct posting from finance to profitability analysis module.

4. Reporting

Transactional data from different modules are collected in profitability analysis and is passed to business warehouse system for reporting purposes. The main purpose of the report is to provide visibility and insight in to sales and margin activity. Actual costs are not available until month end processing is complete, so during the month standard costs and standard margins are available. The period end processing is finalized by the close of work day 4 and actual costs/periodic unit price is populated from material ledger. After actual costs are available, billing documents are revaluated with actual costs and post to COPA after month end close is completed. Statutory view reflects from legal entity perspective so inclusive of intercompany activity whereas management view eliminates intercompany transactions. The source data in BW system is replicated from SAP S/4 HANA system and extraction happens daily and during month end replication happens more frequently (usually every 4 works) to support month end reconciliation process

between finance and consolidation system. Table 1 depicts the information required for user selection criteria.
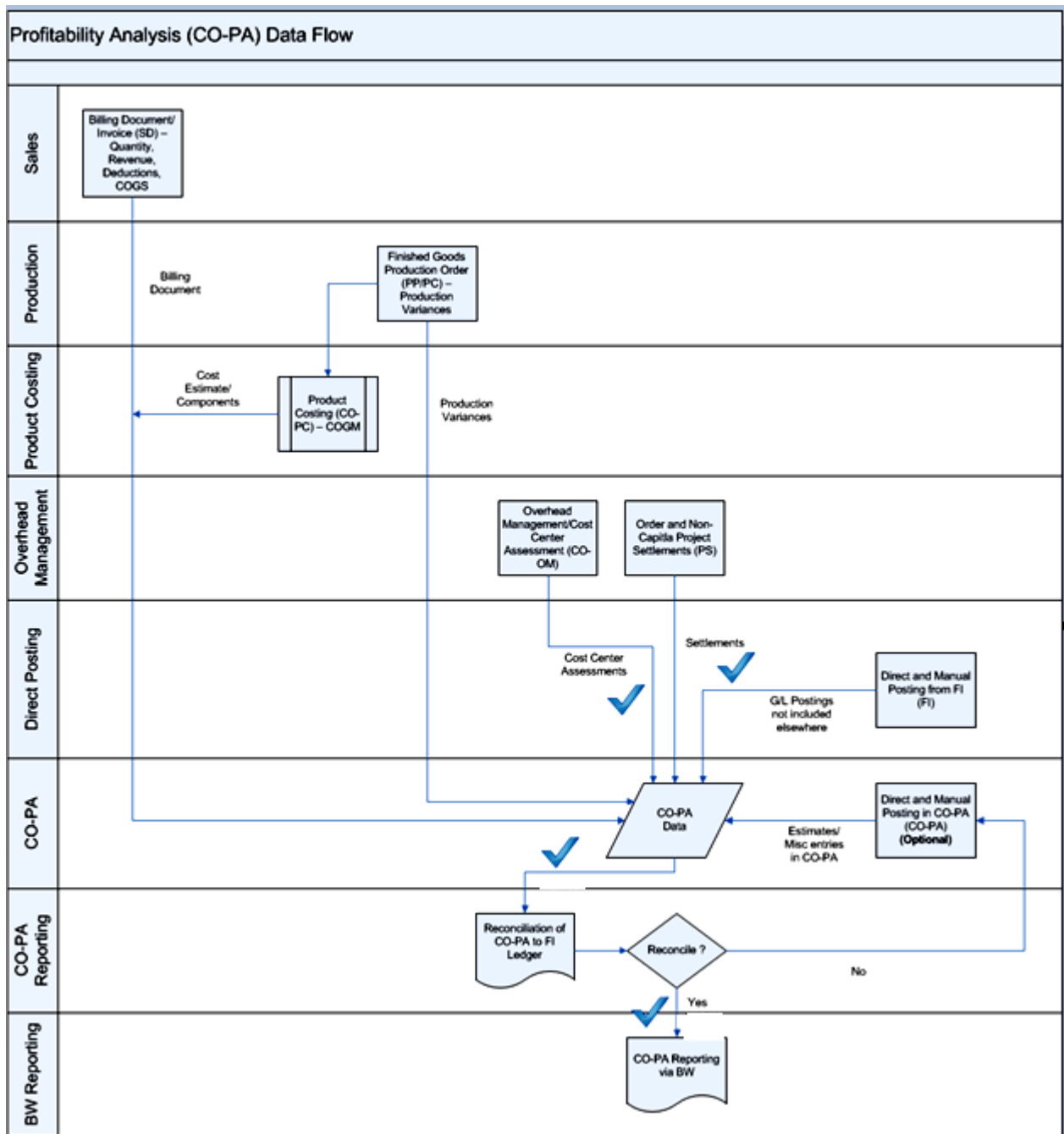

Fig. 1: Profitability data flow in an organization from different process teams
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Table 1: User Selection criteria for customer and product profitability report

Field	Multiple value	Range	Optional	Mandatory
Customer	X		X	
Product	X			X
Location	X			
Sales org	X			
Time Period		X		X

Report free characteristics should be defined in the report. If an aggregated level of the product or customer hierarchy is selected, the margin and other values should be displayed at that level. There should be ability to display multiple, single values and ranges in the report. Table 2 displays free characteristics usually available in any of the gross margin reports for drill down reporting. [2].

Table 2 : Free Characteristics in customer and product profitability report

Free Characteristics
Product Attribute
Customer Segmentation
Customer Group
Industry code
Application Code which is on product level
Contract validity date
Product Tiers
Target Price

Report will be displayed in columns and based on time period options report should display actual gross margin based on customer, customer group, product or product family, region or sales organization. Table 3 displays output of the report with necessary information to get customer and product profitability in an organization.

Table 3 : report output for customer and product profitability report

Label	Description
Sales Volume	Volume sold to customer
Gross Product Revenue	Sales Price of product to customer
Intercompany Revenue	Sales price sold between intercompany
Sales Deductions and allowances	Sales deductions provided to customer
Freight costs	Freight costs
Net Revenue	Net sales price charged to customer.
Standard Variable costs	Variable cost of product
Standard Contribution Margin	Calculated from Net Revenue and standard variable costs
Standard Fixed costs	Variable cost of a product
Standard Gross Margin	Calculated from Net Revenue, standard Variable and Fixed costs
Actual Variable Costs	Actual variable cost of product after month end is completed
Actual contribution Margin	Calculated from Net revenue and actual variable costs
Actual Fixed costs	Actual fixed cost of product after month end is completed
Actual Gross Margin	Calculated from Net revenue, actual variable costs and Actual Fixed costs
SG&A Costs	Sales, general and Administrative costs not allocated to customer and product
Commissions	Other expenses or any sales commissions. This alignment may differ from organization to another.
Net Income	Calculated from Net Revenue, Actual Gross margin, SG&A costs and other commissions.

RESULTS

As per defined approach, organization able to get better insights to customer and product profitability and also helps leadership to make decisions faster based on output. This paper defined an approach for successful implementation of gross margin or customer and product profitability using SAP S/4 HANA system in large complex organization. Approach followed is account based profitability where we don't have perform reconciliation between finance and COPA with in controlling where as all functionalities available in costing based still possible with Account based analysis. Gross margin reports can be useful for finance, sales and production teams to analyze the information and take informed decisions whether customer is profitable or not, product line is profitable or not and also used for planning and forecasting of production of that particular product.

CONCLUSION

Using SAP S/4 HANA system, customer and product analysis make it easier and also provides drill down capabilities up to actual gross margin by customer and products based on the defined approach. With out capabilities there will be lot of manual process involved to come up actual gross margin by customer and product which is a herculean task in any organization.

CONFLICT OF INTEREST
There is no conflict of Interest.

FINANCIAL DISCLOSURE
There are no financial conflicts of interest to disclose.

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