

# Analysis of Oros Modeler Data Reporting Process to SAP HANA in Activity based Costing for Indonesia Telecommunication Industry

Dennis Nigel Cunong<sup>1</sup>, Muhardi Saputra<sup>1</sup> and Warih Puspitasari<sup>1</sup>

<sup>1</sup>Information System, School of Industrial and System Engineering, Telkom University, Bandung 40257, Indonesia

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**Abstract:** PT.XYZ is involved in providing a wide range of telecommunications services and telecommunications networks throughout Indonesia. Oros Modeler is an application that has been used by PT.XYZ for a long time. There is no detailed product cost breakdown in Oros Modeler's funding and reporting process, so the information obtained from Oros Modeler is only the actual cost (total cost of production). As a result, the industry regulation PER-02 / MBU / 2013 was created, which can be designed to support applications for business process objectives, so PT.XYZ hopes to implement SAP HANA with the goal of reporting results that are expected to contain only SAP components. Components are formed to model the final product through cost-based activity modeling. The method used is the SAP Activate method. SAP HANA can be identified by its constituent components by reporting each product that constitutes a cost object, there by identifying each cost object product offered by PT.XYZ in more detail and more accurately.

## 1 INTRODUCTION

Oros Modeler is an application that is used to model Activity Based-Costing (ABC). Oros Modeler can map the cost of each division and can distribute it to each subdivision within it. Oros Modeler can store all information in one model by classifying each for costs, departments and each existing process (ABC Technologies, 2001).

Based on the Regulation of the Minister of State-Owned Enterprises Number: PER-02 / MBU / 2013, explains that in managing Information Technology, companies can design detailed applications that are tailored to the direction of the organization in the next 3-5 years.

Enterprise Resource Planning (ERP) is one of the latest technology technologies that many organizations have undertaken (Sadrzadehrafiei et al., 2013). ERP system is an enterprise package to integrates all necessary business functions into a single system with a shared database. This software package can be customized to the specific needs of each organization (Matende and Ogao, 2013). ERP management covers all the key areas of business, from accounting and budgeting, human resource management, document circulation to reporting (Ociepa-Kubicka, 2017). SAP is a proven and widely used ERP application capable of integrating multiple business modules, with each

module representing a specific business function (Junnarkar and Verma, 2017). Data analysis is the process to check the data with the goal of answer a business question to support decision making. Analysis can reveal powerful can uncover why something is happening and what can do about it. Reporting uses data to track the performance of business, while analysis uses data to answer a strategic question for business. Reporting and analysis rely on each other. Reporting explain about what question to ask, and analysis attempts to answer those questions. (Data Hero, 2019)

PT XYZ is the largest company in the field of telecommunications in Indonesia. previously PT XYZ had used the Oros modeler in allocating financial data and control, but the Oros modeler application was out of date because the Oros modeler was offline and not real-time and the reporting results only displayed the actual cost of various products made (total of the cost of the product made) so it is not known how many constituent components are in making a product so information is not detailed and specific. use SAP HANA especially using the activity-based costing module (CO-OM-ABC) so that each Cost Object Product produced can be known what compiler components are needed to produce the desired Cost Object so that the results of reporting become more detailed and more accurate in identifying each Cost Object in PT XYZ. This research aims to compare the results

of reporting on the Oros model and the SAP HANA which applications are suitable for the application of large amounts of data and help the process of identifying product cost objects become more specific.

## 2 LITERATURE REVIEW

### 2.1 Oros Modeler

Oros Modeler facilitates the creation of activity information to help manage, store and determine all resource expenditures in process, product and service activities. Oros Modeler stores all information in a database called a model. Each model has activity information for each specific activity (ABC Technologies, 2001). Oros Modeler can use fast and flexible Activity Based Costing (ABC) modeling. Information in the models governed by a structure called modules. Modules organize each model's information to make it easy to understand. A model in Oros Modeler is composed of three component modules consisting (ABC Technologies, 2001) :

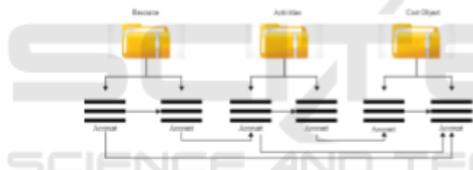


Figure 1: Component Oros Modeler. (ABC Technologies, 2001)

Figure 1 describes the flow component module information about resource (expenses), activities, and cost objects (products, services, or customers).

#### 2.1.1 Resource Module

The Resource Module contains expenses (costs) for the organization or department such as salaries, raw materials, and depreciation. These costs can be grouped into one center. Each center can contain many centers and other accounts (ABC Technologies, 2001).

#### 2.1.2 Activity Module

The Activity Module contains several activities. Each activity has a center and account data with varying cost elements. Costs can be provided for activities from resource accounts or other account activities. Thus, the total costs assigned to the account plus the cost element (ABC Technologies, 2001).

#### 2.1.3 Cost Object Module

The Cost Object module contains cost objects such as products, services, channels and customers. The cost object has a center and an account for each cost of the resource, activity, cost object or a combination of the three (ABC Technologies, 2001).

### 2.2 Enterprise Resource Planning (ERP)

ERP is enterprise-wide information system that integrates and controls the business processes in the entire organization. ERP system is an enterprise information system designed to integrate and optimize the business processes an transaction in company. ERP is industry-driven concept and systems, and is universal accept by business and organizational industry as a solution practice to integrated enterprise information system. ERP system have become vital strategic tools in today competitive business environment (Addo-Tenkorang and Helo, 2011).

#### 2.2.1 Benefits of ERP

The following are the benefits of ERP in company (Monk and Wagner, 2012) :

1. ERP system can minimize data duplication, so that ERP can produce operating cost savings. ERP systems can help company produce goods and services faster so that more sales can be generated each month.
2. ERP system can provide data and information that is real-time, so companies can improve communication to customers, which can improve relationships with customers and increase sales
3. ERP system which in its implementation can successfully save company, supplier, and customers from loss

### 2.3 SAP HANA

SAP HANA (High Performance Analytical Appli-ance) is the next generation SAP business package (SAP, 2019). SAP HANA is a new product that built on a platform in today memory, designed with the principle of experience using SAP Fiori (UX). SAP HANA provide simplifications in data models, user experience, decision making, business process, and models to help business run simply (SAP, 2019). SAP HANA is a data platform in memory that is used for on-site software and cloud. SAP HANA is the best suited for conducting real-time analysis with more data compared to applications on the market today.

### 2.3.1 History of SAP HANA

SAP began in 2011 when SAP introduced Hana as the next generation storage platform to dramatically simplify customer inventions and even replicate the business in real time. In January 2013, SAP introduced SAP Business Suite, based on SAP HANA (a suite on Hana), to help companies accelerate their real-time business and streamline their SAP Business Suite by consolidating transactions and analytics into a single storage platform become. Note that in this release, SAP is the only software vendor on the market that enables SAP Business Suite customers to integrate transactions and analytics into a single storage platform. The market response was so strong that more than 2,000 customers were won in just two years. It was the fastest growing product from SAP at that time. Based on its success so far, SAP released the next generation Business Suite in February 2015: SAP Business Suite 4 Hana (SAP S / 4Hana), a new product since SAP R / 3. The biggest change. SAP S / 4Hana is the complete SAP Business Suite based on the most advanced storage platform (SAP HANA). SAP S / 4Hana offers comprehensive simplification (customer acceptance, data model, user experience, decision making, business processes and models). With innovations (Internet of Things, Big Data, Enterprise Network and Mobile First) companies can easily operate in the digital economy.

### 2.3.2 Module SAP HANA

Modules on SAP HANA are individual components of SAP HANA implementation (Gaska, 2018) . Each module offers functionality for different business purposes such as general ledger, logistics, and material management. Simplicity is one of the main objectives of SAP in making SAP HANA modules. Over the decades, SAP has changed a lot because it was updated to take advantage of new computing capabilities. The SAP HANA module utilizes the benefits of the SAP HANA database so users can easily upgrade and quickly take advantage of new features after they are released by SAP. SAP HANA can also integrate third party applications (Gaska, 2018).

The SAP HANA module is growing rapidly. There are many modules under several categories. One of the most popular modules in SAP HANA is SAP Finance. In SAP HANA by integrating the database, SAP Finance can combine financial data with nonfinancial data .

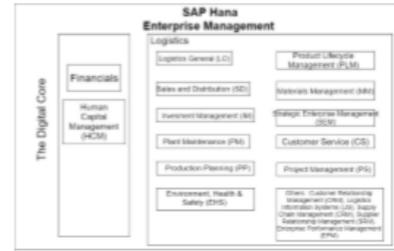


Figure 2: Modules in SAP HANA

Figure 2 Describe Additional modules include Plant Maintenance (PM), Product Life Cycle Management (PLM), Human Capital Management (HCM), Production Planning (PP), Project System (PS), Controlling (CO), Sales and Distribution (SD), Investment Management (IM), Strategic Enterprise Management (SEM) Customer Relationship Management (CRM) Logistics Information Systems (LIS), Supply Chain Management (SCM) Customer Service (CS), Materials Management (MM), Supplier Relationship Management (SRM), Enterprise Performance Management (EPM), Treasury NetWeaver, Environment, Health and Safety (EHS) (Gaska, 2018).

### 2.4 Activity based Costing

Activity-Based Costing is a method that assumes that each activity will produce costs and cost objects (products, services, customers) incurred will create demand for activities (SAP, 2019). The ABC system recognizes that a business must understand the factors that drive an activity, the costs incurred from an activity, and how those activities are linked to a cost object. First of all, ABC will place a cost on each activity. After that, the cost of each activity is only charged to products that do require that activity.

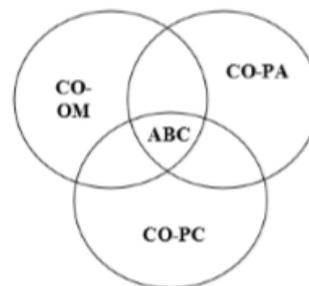


Figure 3: Component ABC (SAP, 2019)

Figure 3 describes a component of activity-based costing CO-PA (Profitability Analysis), CO-PC

(Product Cost Controlling), CO-OM (Overhead Cost Controlling)

**2.4.1 CO-PA (Profitability Analysis)**

Profitability analysis is one of the modules in ERP that users can report sales data and income data using different characteristics (such as customers and products) and numbers (such as the number of units, prices, and costs). CO-PA is used for strategic reporting rather than as a financial reporting tool.

**2.4.2 CO-PC (Product Cost Controlling)**

Product cost planning is used to plan costs and set prices. Determine the cost of goods produced and sales costs for each unit of goods. The purpose of setting costs is to estimate the standard costs, estimate the modified standard costs and actual costs according to the time of implementation. Standard costs are used to determine the level of stock of goods. Plan costs are recorded on the cost object and are scaled compared to those incurred on actual / target costs.

**2.4.3 CO-OM (Overhead Cost Controlling)**

Overhead cost controlling is used to allocate, plan, control, and monitor overhead costs. This is an important preparation for analyzing profitability and setting the right product costs. Planning overhead costs is used to control costs and evaluate internal activities. The SAP system provides many methods of allocating overhead. By using the method in SAP can allocate overhead costs according to provenance. At the end of the period, when all allocations have been made, the cost of the plan (target) is compared with the actual costs so that it can make a sourcebased analysis of the resulting target. Along with time-saving cost allocation, integration of overhead control in the SAP system can reduce actual data entry and reduce the work involved in planning.

**3 METHODOLOGY**

The SAP Activate method is a new method created by SAP that is designed for the SAP HANA system (Singh, 2017). The SAP Activate methodology supports projects that implement cloud-based, hybrid and on-premise SAP solutions. SAP Activate used on SAP HANA is a unique collaboration of SAP Best Practice, Methodology, and SAP Guided Configuration. So it allows companies that implement SAP HANA to start quickly, intelligent building and run simply while continuing to innovate in the cloud

(Singh, 2017). SAP Activate methodology have 6 phase for ERP implementation. Start from Discover, Prepare, Explore, Realize, Deploy, and Run.

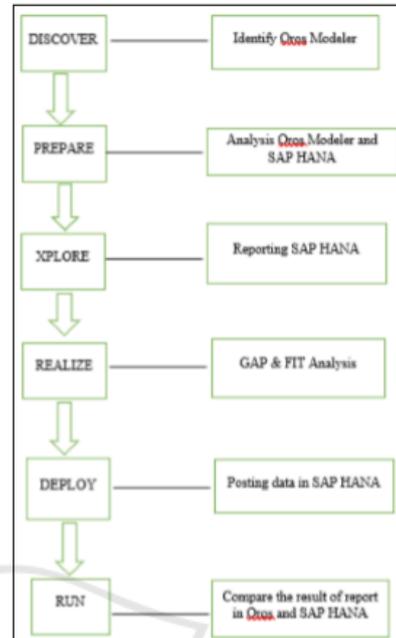


Figure 4: SAP Activate Methodology (Singh, 2017)

Figure 4 describes these phases of SAP Activate Methodology are illustrated in the flow diagram and detail explanation :

Phase of SAP Activate Methodology		
1	Discover	In stage discover, this stage identify all aspects and research environment that will be carried out, then determines the scope or scope of the research discussed until the reporting stage
2	Prepare	In stage prepare, Analysis template reporting Oros Modeler and process business in SAP HANA before reporting in SAP HANA
3	Explore	In stage explore, example reporting SAP HANA and identification data
4	Realize	In stage realize, Gap & Fit Analysis which is used in looking for process, needs, information existing, target and solutions
5	Deploy	In stage deploy, posting data on SAP HANA is based on data in the Oros Modeler, then data validation has been carried out that has been posted on SAP HANA
6	Run	In stage run, The data has been entered into SAP HANA then compares the results of reporting on Oros Modeler and SAP HANA

Figure 5: Flow Diagram SAP Activate.

In this study, focus in implementing 4 phase in SAP Activate Methodology from stage discover to stage realize, because stage deploy and run stages are still in the working stage for posting data into SAP HANA so that on this occasion researcher only explained to the stage of stage realize.

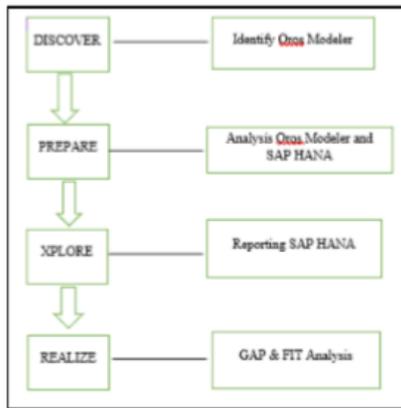


Figure 6: SAP Activate Methodology Research Method (Singh, 2017)

Figure 6 explain SAP Activate Methodology as the research method until Realize stage

## 4 ANALYSIS AND DISCUSSION

### 4.1 Discover

First time the researchers defined in PT.XYZ especially reporting in the Oros modeler and SAP HANA then analyzed the data equations of the two applications. Literature studies are used to find general knowledge related to research such as literature review and methodology



Figure 7: Creating a report (ABC Technologies, 2001)

Figure 7 explains the first step is to make a report in the Oros modeler, then generate a report to display the report and display it on the screen and then select the report module that we want to select, such as unit cost report. we can also choose the period of time and select data such as the module resources, activities and cost objects according to the report that we want



Figure 8: Data flow Oros Modeler (ABC Technologies, 2001)

Figure 8 explains about data flow cost allocation process in Oros Modeler, the allocation start from resource such as salary, depreciation, and flow to activity. Activity define all process such as business planning, policy and procedure development or evaluation, implementation and monitoring of business proposal. Last flow to Cost Object, In Cost Object, is the product-related cost or non-product related cost of PT.XYZ such as network cost split charge, network cost virtual private network (VPN) and Network Cost Premium Call.

### 4.2 Prepare

Once the information has been entered into the activity-based management model, the costs have been calculated, and the data reviewed, the next step in analyzing the data is generating reports. Benefits of generating reports include:

1. Validate the model
2. Produce printouts that present an overall view of your data
3. Analyze costs on the screen
4. Produce files for inclusion in other programs, such as spreadsheets or word processors
5. Focus on a specific area of interest
6. Emphasize certain data to other data

Oros Modeler can do all this and much more by allowing you to use report templates to determine the type of information reported and how it is presented. The report templates are:

Reports Template		
1	Assignments	Show the target allocation which shows where it goes
2	Attribute costs	Show the group in the information
3	Attributes	Show indicates grouping
4	Bill of costs	Show the unit price mechanism and fill volume (unit price of a cost element)
5	Contributions	Show the proportion of each type of cost
6	Drivers	Show the type of volume unit for each cost element and causes cost to occur
7	Idle capacity	Show indicates the excess capacity of a resource
8	Module hierarchy	Show the hierarchy structure of the resource, activity and product model
9	Notes	Show a warning if there are problems in an allocation
10	Performance measures	Show the value / output of a process
11	Process	Show a series of activities carried out for an object
12	Profit Accumulation	Show profit / accumulated data from one year's profit
13	Reciprocal Costing	Show several units that need one another (more to cost)
14	Resource contributions	Show the proportion of resource in a cost object
15	Unassigned Cost	Show unallocated costs
16	Unit Costs	Show the total cost of a resource, activity, and product
17	Unit Usage	Show indicates the portion used

Figure 9: The Report Template.

Figure 10 below explains the business process flow from the FI, HCM, PP, PM, SD and other modules towards internal orders, maintenance orders and cost centers. Business processes have own hierarchy. Internal flow orders can be related to maintenance orders, cost centers and related to others, the direction of the arrow (cost drivers) coming out of the cost center is called assessment and the direction of the arrow entering the cost center is called settlement. then the direction of the arrow from internal orders, maintenance orders, and cost centers enter the CO-PA (profitability analysis). CO-PA is the information used to make a report. CO-PA is a middle-up reporting model that must be simple, on information and flexible when

it has entered the COPA can not return to internal orders, maintenance orders and cost centers. report design combines value fields and characteristics. In making a report in SAP HANA using report painter

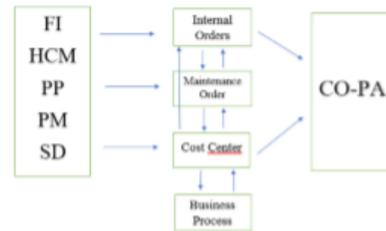


Figure 10: Process Business in SAP HANA

### 4.3 Explore

In stage explore, based on the reporting on SAP HANA and analysis of data that can be entered in the results of reporting.

Select Values	
Controlling Area	1000
Fiscal Year	2019
From Period	9
To Period	9
Plan Version	0
Selection Group	
Cost Center Group	T663G

Figure 11: The Sample Measurement of Three Tourist Destination.

Figure 11 explains about when filling in the table above in the Oros modeler it will display the report in SAP HANA the figure below the control area is the organizational element, fiscal year states the year you want to choose, then from period and to period explains the range of months, Plan versions all to depict alternative plans in the system and Finally, we fill in the cost center group which we want to display, for example, T663G.

Figure 12: Reporting in SAP HANA (2019)

Figure 12 explains the sample report that is available in Sap at the T663G (General Affair) cost center in the 9th 9th month of 2019, there are cost elements along with their explanations, actual costs, plan costs, variants.

#### 4.4 Realize

<b>Process</b>
The reporting process on the Oros modeler is still not integrated between the modules in Oros so we have to need a lot of time to see the results
<b>Needs</b>
Requires a system that is integrated between modules centrally so that it requires report templates to combine all modules into one
<b>Information Existing</b>
Data reporting is still not integrated because there are still many less effective template modules
<b>Target</b>
Integrate modules into one
<b>Solution</b>
Implementing SAP HANA in identifying the results of reporting so that the results of reporting become centralized and easy in identifying the constituent components of a cost object product

Figure 13: The Sample Measurement of Three Tourist Destination.

Figure 13 describes fit and gap analysis compare to the results of reporting on the Oros modeler and SAP HANA. Using the Oros modeler the resulting report cannot be integrated between other modules so it requires sap HANA to integrate the reporting results into one that we can customize according to what report we want to display so that SAP HANA can combine the desired report results into one result and make it easier the reader in identifying the results of the report.

### 5 CONCLUSIONS

The conclusion of this research in using the results of reporting SAP HANA which has been centralized and easy to find the data in a search for PT.XYZ. Oros modeler has started to be abandoned now and started to use SAP HANA to make the allocation process and reporting results into one so that it is easy to find the desired reporting data. SAP implementation in PT.XYZ using SAP Activate methodology starts from Discover, Prepare, Explore, Realize, Deploy, and Run. In this research, the researcher explains from Discover, Prepare, and Explore. Activity-based costing allocation method support cost allocation process to control and maintenance of the process in SAP HANA. The researcher also give recommendation to PT.XYZ to The result SAP HANA adjusts to the data needed by PT. XYZ to make the data search and make it easier to see the components of each product that are made so that it becomes more effective and efficient. For future research suggestions are building on a particular finding in research, re-evaluating and expanding a theory (framework and model).

compare the results of reporting sap R/ 3 and SAP HANA which results are easy to understand simple and clear information.

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