



INTERNATIONAL JOURNAL ON INFORMATICS VISUALIZATION

journal homepage : www.joiv.org/index.php/joiv



Customization of Cost Allocation Monitoring Report for Improving Activity-Based Costing Process

Risma Nur Damayanti^{a,*}, Muhardi Saputra^a, Tien Fabrianti Kusumasari^a

^a School of Industrial and System Engineering, Telkom University, Jl. Telekomunikasi No. 1, Bandung, 40257, Indonesia

Corresponding author: *rismanurdamayanti@student.telkomuniversity.ac.id

Abstract— In the age of a global competition environment, accurate costing measurement is essential for every company. The more accurate allocation process to final outputs indicates the potential impact a company's decision has on costs. Activity-based costing is a technique for allocating organizational costs to activities that utilize the organization's resources and then tracing the costs of these activities to products, consumers, or distribution channels that generate profits or losses for the business. With a large number of cost allocations in the business processes, it makes it difficult for companies to identify the number of costs that have been allocated, especially if the data that must be processed is in large quantities. To overcome this problem, it is necessary to require cost mapping for the business process from resource to cost center to compare the number of costs that have been allocated. This research discusses the application of monitoring reports by using ALV customization in XYZ Ltd. This report was created using an iterative and incremental model approach. The simulation results show a 50% reduction of the time to execute the customization monitoring report, and it only takes one step to generate reports and analyze data. The results of this research are expected to be used as a study to provide the right solution in facilitating the process of checking the cost allocation on ABC to objectively monitor and analyze each business process (resource, activity, and cost object) and support the decision-making process.

Keywords— Activity-based costing; cost allocation; enterprise resource planning; SAP, ABAP list viewer.

Manuscript received 11 Jan. 2022; revised 14 Mar. 2022; accepted 9 Apr. 2022. Date of publication 31 May 2022. International Journal on Informatics Visualization is licensed under a Creative Commons Attribution-Share Alike 4.0 International License.



I. INTRODUCTION

The more advanced developments in technology and information today make every company must be able to adapt to remain competitive globally. The rapid growth of technology and communication also affects the production process [1]. Innovation is crucial to a business improvement and plays a vital role in products and services to market, increasing efficiency and, most importantly, improving profitability [2]. However, this is not the only major problem in the fast-moving business world. One of the main problems besides innovation is cost accuracy [3]. The accuracy of cost for a product or service provides a more significant competitive advantage for a company [4].

In today's modern industrial era, production costs are dominated by direct material and direct labor costs [5]. Overhead costs only have a small portion of the overall production cost. Therefore, traditional costing techniques are still relevant for determining production costs. However, problems arise when these conditions change when

technology is developing rapidly. Overhead costs are significantly higher than direct materials and direct labor costs [6]. With the increase in the use of machines to replace workers, there is a shift in the trend where the composition of the company's production costs slowly decreases [7], and vice versa, there is an increase in overhead costs that are less observable [8]. The assignment of raw material and direct labor costs to a product can be done efficiently because these costs can be assigned directly to the finished product, while the imposition of Overhead Costs on the products produced needs to assign carefully because these costs cannot be identified directly on the product, so it requires a specific allocation method [9]. The implication is that a new costing technique is needed that fits the current business environment. The conventional information and management control allocation paradigm has come under fire in recent years for failing to suit today's organizational demands. In this sense developing an adequate costing system is very important in an organization [10]. When compared to the Traditional Costing method, all distortions and inefficiencies created by

traditional costing approaches may be avoided by utilizing activity-based costing (ABC) to ensure accurate product costs. [11].

Activity-Based Costing (ABC) is used to determine business process costs accurately by using a cost allocation process. It can be considered the modern alternative to absorption costing because activity-based costing is designed to assign costs to activities, enabling more accurate cost information. The focus of ABC is to identify the cost allocation and assign the cost based on relevance to cost objectives [7] (i.e., departments, services, or products). The cost allocation process in the Activity-Based Costing consists of three main components: cost center, business process, and product [12]. This cost allocation process starts from resource allocation to activities and then goes to business objects until finally, all these allocation processes transform into the product. The more accurate allocation process to final outputs indicates the potential impact a company's decision has on costs. Hence, it is necessary to allocate the cost correctly to track and monitor specific cost objects that generate profits or losses [3]. It is essential to understand how cost behavior relates to activities and the consumption of resources [13]. In its development, Activity-Based Costing has been widely implemented, one of which can be applied to ERP systems [14].

Enterprise Resource Planning (ERP) is a strategic tool that synchronizes, integrates, and streamlines organizational data and processes as a system to enhance competitive advantage in the business environment [15]. Integrating the ABC with the ERP system allows the ABC module to access data from the ERP system more efficiently and cost-effectively. As a result, the ABC system's critical input might be kept within the ERP system to minimize cost as a data source for the ABC module [16]. As one of the largest telecommunications companies in Indonesia, XYZ Ltd. uses one of the ERP applications, namely SAP S/4 HANA, to apply the concept of Activity Based Costing in controlling costs. With the large number of cost allocations in the business process that need to be allocated in activity-based costing, it makes it difficult for companies to identify the number of costs that have been allocated, especially if the data that must be processed is in large quantities. Given the importance of implementing Activity Based Costing in companies in supporting decision-making (i.e., pricing, outsourcing, identifying inefficient products, and inefficient activities or activities), it is necessary to maintain the cost allocation process in Activity Based Costing [17]. The SAP standard itself generates the business process report in Business Processes: Act. Line. However, these existing reports do not directly show the amount of cost allocation from the cost center and business process component.

Based on this analysis, to overcome this problem, it's necessary to require cost mapping for the business process from resource to cost center to compare the number of costs that have been allocated in a certain fiscal year. A company needs to improve business process flow through the aforementioned mapping by using ALV customization. This process mapping monitors the cost allocation process and compares all the amount of business process allocation from resource to cost object. The results of this research are expected to be used as a study to provide the right solution in

facilitating the process of checking the cost allocation on business process activity-based costing to monitor and analyze each process objectively and support the decision-making process in a recent and short time. The next section (Section II) describes the theoretical basis of this research. The research method is presented in Section III. Section IV contains the results and conclusions.

II. MATERIALS AND METHOD

A. Activity-Based Costing

Activity-Based Costing (ABC) is a method that identifies activities in a company and assigns the cost of each activity to all products that produce cost objects, such as products, services, and customers [18]. Activity-based costing allows a precise basis to make resource management and control of resources to other units more efficient. There are several different methods of allocating costs, such as indirect costs or "overhead" and its direct costs. This ABC system is implemented with the aim of a company being able to find out the resources used in an activity (resources), the factors that drive the activity (activity), the costs incurred by the activity, and how the activity is related to the cost object (cost object) [19].

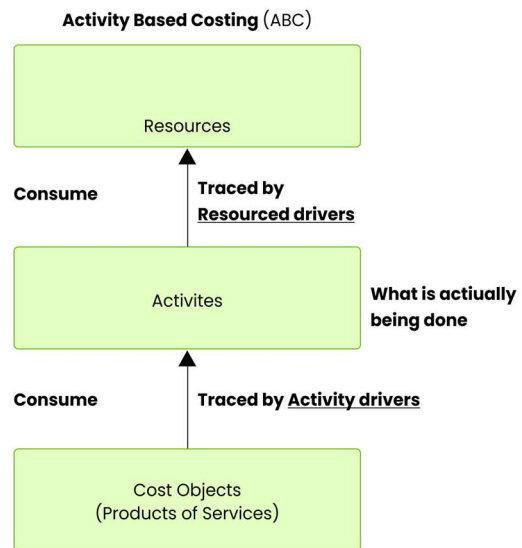


Fig. 1 Activity-Based Costing Process [20]

Fig.1 explains the allocation process in the activity-based costing module in SAP applications. Companies use many different terms to describe cost allocation in practice. When more than one business unit utilizes the same resource, but the parts of the resource used by each cannot be determined directly, cost allocations are implemented. In these circumstances, a cost driver is utilized to apportion the resource's expenses [21].

There are lots of ERP systems currently available in the market that apply the activity-based costing concept [16], which the medium and small-scale companies widely use. The main objective of implementing an ERP system is to enable data dissemination and data transfer in real-time to improve management activities and make organizations adapt more quickly whenever there is a desired change [22]. As we all know, there are several open-source and commercial ERP systems on the market. Top ERP systems such as SAP and

Microsoft Dynamics NAV, on the other hand, are regarded as commercial systems that are widely used by businesses today due to their functionality and ease of use [23]. This is under Minister of State-Owned Enterprises Regulation Number PER-02/MBU/2013, which stipulates that SAP is one of the programs that can be used to support strategic business goals [24].

The Activity Based Costing process is in the Controlling module in SAP itself. There are two types of reports in activity-based costing: analysis reports and regular reports. These reports both give an ongoing analysis of the company's business processes and periodic information on the business processes. Specifically, the reports generated in the activity-based costing process are as follows [25] ; (1) Regular reports on costs and allocations of business processes, (2) Analyses of the costs and allocation of business processes, (3) Analyses of the business process quantities, (4) Analysis of the business process prices, (5) Statistical key figures posted to business processes.

B. SAP Controlling

SAP Controlling (CO) is one of the important financial modules in SAP to an organization. SAP CO provides information to help management make decisions. It makes it easier to coordinate, monitor, and optimize all processes within the business. Fig.2 displays the basic Controlling architecture of SAP ERP. It contains information from all areas of SAP CO and integrated analyses across all areas [26].

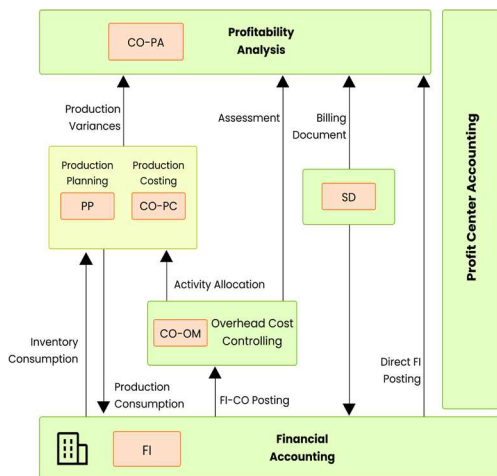


Fig. 2 Controlling Architecture of SAP ERP [27]

This involves recording both the consumption of production factors and the services provided by an organization. Table I shows SAP CO is divided into Overhead Cost Controlling and Product Cost Controlling [27].

TABLE I
STRUCTURE OF CONTROLLING

Overhead Cost Controlling	Product Cost Controlling
CO-OM-CCA: Cost Center Accounting	CO-PC: Product Cost Planning
CO-OM-OPA: Overhead Orders	CO-PC: Cost Object Controlling
CO-OM-WBS: Overhead Projects	CO-PC: Actual Costing
CO-OM-ABC: Overhead Cost Controlling	

For companies to analyze cross-departmental business processes, it is essential to use Activity Based Costing to optimize business process flow priorities. The Activity-Based Costing approach is crucial for accurate cost and profit analysis, particularly in businesses with high operational costs and a wide range of processes and products [28]. ABC is crucial since it is hard to control anything if it is not correctly assessed. Hence, Activity Based Costing itself is in Overhead management (CO-OM), oriented towards planning additional costs and monitoring costs. It consists of internal orders, cost centers, cost elements, and business processes [29].

C. Research Methodology

In the process of designing an ERP system report to monitor the Activity-Based Costing process, the authors adopt iterative and incremental development methods. Iterative and incremental development is an example of an agile model that supports and ensures the process itself is more iterative and as needed [30]. Iterative and incremental development works by defining and evaluating software requirements, producing a design specification for the program based on the analysis, and then coding based on the design specification [31]. Fig.3 shows the process outline of the sequence of steps required to develop or maintain the system iteratively and incrementally. Stakeholder feedback is obtained during the software development process, which employs iterative and incremental development methods. Especially throughout the requirements collecting, design specification, and coding phases before moving forward to the next software product increment phase or cycle. The essence of iterative and incremental development is ensuring that high-quality systems are delivered [32]

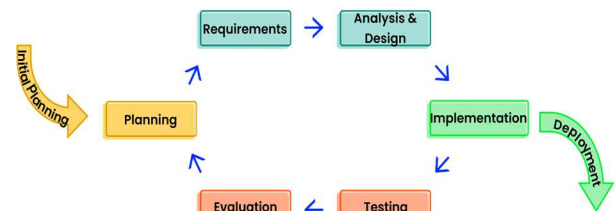


Fig. 3 Iterative Incremental Development Model [32]

Based on Fig.3, the first stage of this methodology is the initial planning. The initialization step creates a base version of the system. Then the next stage is the planning stage. At this stage, it should offer a sampling of the critical aspects of the problem and provide a simple solution to understand and implement quickly. The next stage is the requirement that contains a record of all tasks that need to be performed. The analysis and design stage includes items such as new features to be implemented and areas of redesigning the existing solution. Then after everything is complete, the implementation stage is carried out coding according to the requirements obtained. Any problem in designing, coding, or testing indicates the needs to be redesigned or recoded [33]. In this case, the iterative and incremental models consist of small iterative iterations aimed at relatively fast and low-cost production with subsequent testing and improvement. Each iteration produces a better version of the same product until the final version is ready.

III. RESULT AND DISCUSSIONS

A. Business Process Analysis

The Cost Allocation process in Activity-Based Costing (CO-ABC) consists of several stages. As can be seen in Fig.4, costs at the cost center are allocated based on the business process group, which consists of three levels: resource, activity, and cost object [34]. The allocation from the cost center to business processes and business processes to other business processes in SAP is carried out in the KSU5 transaction.

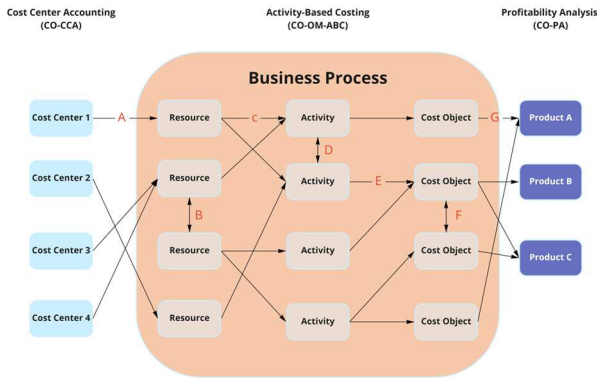


Fig. 4 Cost Allocation Process XYZ.Ltd

Each cost from the cost center was allocated to several destinations. The allocation process starts from the resource to the activity and ends at the cost object. In SAP, allocation from a cost center to a resource. The resource is the source of transaction data. The cost center allocated operational costs to the next cost object, namely the business process (resource, activity, and cost object). Lastly, the cost is allocated to each product and service from the cost object. This case requires the cost driver to allocate the right amount of cost from each business process level to another business process when more than one business unit uses a resource, but the resource's portions cannot be directly established [35]. The user has to post the cost drivers, known as a statistical key figure in SAP, using the KB31N transaction code to complete this process. After the cost allocation process is carried out from the cost center to the business process level, a business process report can be generated at each business process level. A business process report is a report that shows the total costs of resources, activities, and cost objects obtained through the allocations contained in the assessment cycle. This business process report can be accessed on SAP using the CPB1 transaction as shown in Fig.5.

The user needs to input the selected business process (resource/activity/cost object) and the posting date based on the user's need to execute the report. Fig.5 shows the SAP standard interface to display the selected business process group details data for each period. The report then displays one of the pre-selected business process information for a certain period. Each master data in the cost allocation process produces different reports at each level (reporting resource, reporting activity, and reporting cost object). This report, however, does not facilitate detailed information to check the total cost of business processes. As a result, it is quite a hassle

to trace and monitor specific business process allocation that has been and has not been allocated for each business process.

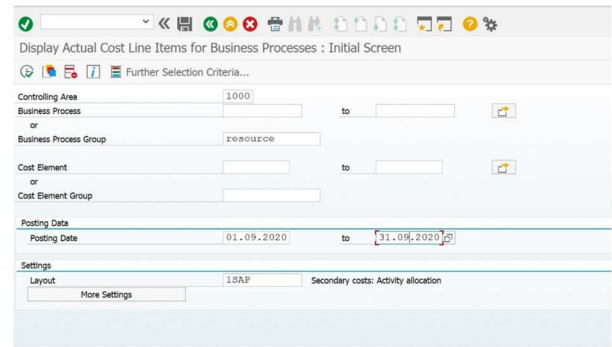


Fig. 5 Business Process Interface in SAP Standard

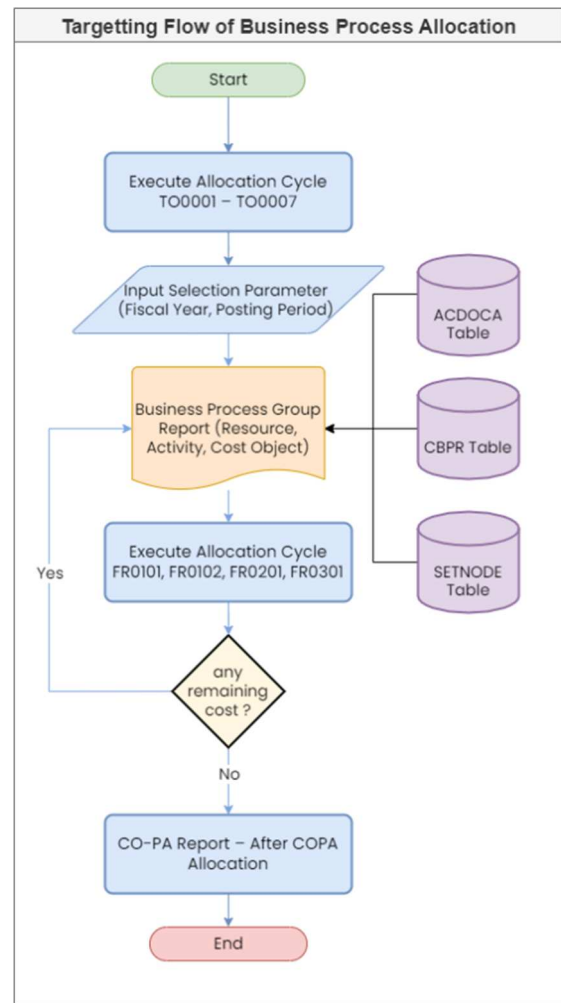


Fig. 6 Targeting Flow of Business Process Allocation

These activities can be customized by adding features that allow users to get all the information with single program execution. Fig.6 shows the proposed process flow to display business process information for each cost allocation in the fiscal year that SAP standards have not provided. This business process report customization is a report that shows the overall costs of resources, activities, and cost objects derived from the allocations contained in the assessment cycle [36]. The user needs to input the fiscal year or selected period to execute the report. Then the program executes a custom report program that has mapped throughout all levels in the

business process, starting with mapping the cost from the allocation from a cost center to resource, allocation from resource to the activity, and allocation from the activity to the cost objects. Thus, the custom cost report gives comparison information on the total amount of cost that has been allocated in each business process for a certain fiscal year.

B. Configuration of the Report

At the implementation stage in the incremental method, making ALV reports is done by defining the tables needed to be processed in the program. Based on the analysis and system exploration carried out, three tables were used in this report program: ACDOCA (Universal Journal Entry), SET NODE (Lower-level sets insets), and CBPR (CO-ABC for Activity Master Table).

The ACDOCA table is needed to get data from the business process group source from cost allocation, the amount allocated from each business process in a certain period, and the account number. Meanwhile, the CBPR table provides the master data needed to obtain information about the business process data by its area. As previously defined, the business process at XYZ Ltd. is divided into several levels, namely resource, activity, and cost object. Each of these business process levels is in the form of a tree, so a set node table is used to map all sections at the business process level (resource, activity, and cost object).

Fig.7 describes the relationship between each table that is used to create an all report. Mapping the business process level cannot be done using the ACDOCA table; this is because the ACDOCA table only displays the names of existing business processes. The CBPR table is needed to provide each business process area, where this area is obtained from the set node table mapping to map "resources, activities and cost objects" and its description.

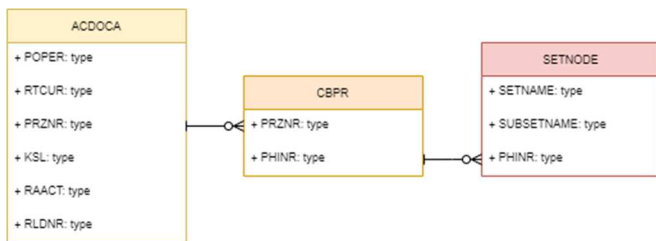


Fig. 7 Entity Relationship Diagram for Cost Allocation

Furthermore, Fig.8 shows a data flow diagram that defines the data flow of each existing process. Data flow diagrams also provide information about the inputs and outputs of each entity and the process itself. At this point, the query is performed five times on the set node table to map the subset name and set name.

The data from this table describes the business process area from the CBPR table. Then the query also defines a document filter based on the posting period and year. Lastly, the data is then stored in the internal table. In the custom report program, one internal table was used to gather the data of each entity retrieved from those three tables. The custom report of the business process group for monitoring cost allocation is displayed in the form of a two-dimensional ALV table [37]. The data that is processed in the internal table can be displayed if the user fills the selection screen according to the

predefined parameters. There are several parameters that the user must fill in to display the report, described in Table II.

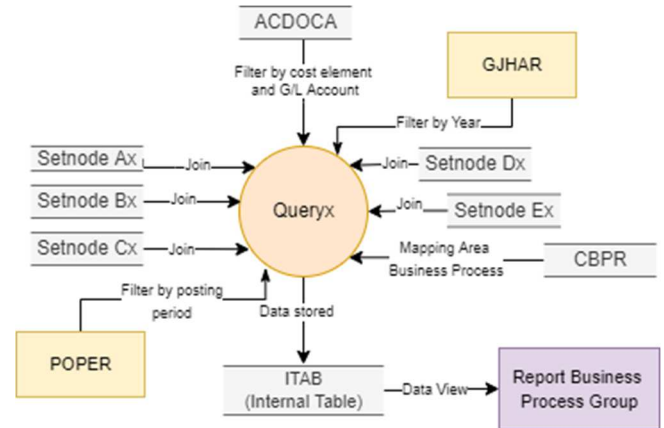


Fig. 8 Data Flow Diagram for ALV Program

TABLE II
PARAMETER OF SELECTION-SCREEN

Selection Parameter	Table-Field	Description
Fiscal Year	ACDOCA-GJAHR	Obligatory
Period	ACDOCA-POPER	Optional With Intervals

C. Simulation Process

In ABAP reports, defining a selection screen is essential to display the data so the user can filter data based on the desired elements, as shown in Table II. Selection criteria ensure that applications can process data faster by filtering out unwanted data in the database layer

The screenshot shows a report execution result with the following columns: Per, BeiTr C, RESOURCES, ACTIVITY, and COSTOBJECT. The data is as follows:

Per	BeiTr C	RESOURCES	ACTIVITY	COSTOBJECT
1	IDR	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
2	IDR	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
3	IDR	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
4	IDR	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
5	IDR	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
6	IDR	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
7	IDR	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
8	IDR	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
9	IDR	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
10	IDR	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
11	IDR	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
12	IDR	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
	IDR	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX

Fig. 9 Report Execution Result

After the selection screen is executed, the contents of the custom tracing of the source of the cost allocation report are displayed in the form of a two-dimensional ALV consisting of five columns shown in Fig.9. This report also contains information on the calculation of the subtotal of each G/L Account and Business Process Group per period as well as the total calculation of each business process group in each row. The findings of the simulation have been gathered and examined. The following were the primary variables evaluated in the analysis [38]:

- User perceived performance is primarily assessed in terms of the time or waiting time required to execute the report (e.g., the time between when the user submits a request for the report and when the report is shown).
- The steps that must be executed to process a report on a particular business process

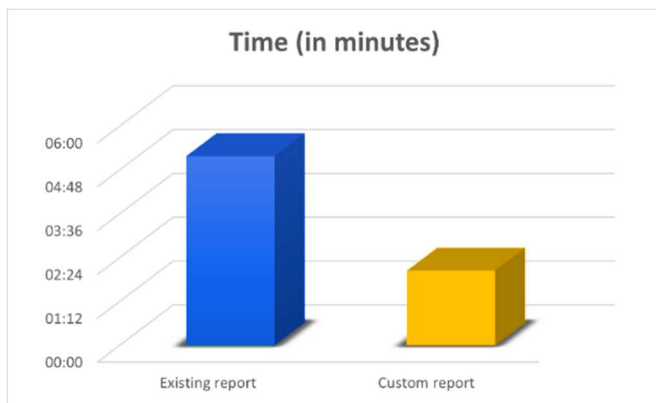


Fig. 10 Report Execution Result in times

One of the goals of Activity-Based Costing is to optimize the business processes. As a result, in Fig.10, there is a 50% reduction in the time to execute the business process group (resource, activity, cost object) report from this custom report. With this custom report, all this information can be known and processed in a short time; the company can compare how much cost has been and has not been allocated for each business process and how many resources, activities, and cost objects the process consumes.



Fig. 11 Report Execution Result in steps

On the other hand, it takes six steps to process the desired business process data report, but using the custom report only takes one single step to generate reports and analyze data, as shown in Fig.11. Moreover, these reports also show how this process can be utilized. The existence of this cost allocation turned out to support management in deciding essential data about the use of costs. This is because the cost object usually takes up most of the company's costs, making the product unprofitable through the department or even aiming to find out the correct allocation of costs. Company management can cut the allocated costs and divert the money to unprofitable cost objects for unprofitable cost objects. Both scenarios define an improvement in the performance from both the company and the user's point of view, as shown in Fig.10 and Fig.11 with customization of the reports.

The high integration of the Activity-Based Costing in the SAP System allows the company to constantly trace the costs and profitability of individual customers and products. This information also allows the company to take corrective measures immediately when needed. These calculations later also serve strategic aims in pricing products and services. Furthermore, this information also impacts the profitability

planning for the range of products and the enterprises' commitment to specific market segments [39].

IV. CONCLUSION

This study highlights how the customization report can be used to monitor cost allocation for activity-based costing. The conclusion obtained from this research is a report enhancement with ABAP List Viewer can be a solution to display information of business process group in the allocation process of Activity Based Costing report with one single execution for providing accurate information of cost allocation and supporting decision making in a company. Also, this result can contribute to adding new insight regarding the use of the configuration table settings in the customization to allow enterprises to customize certain aspects of the chosen system in running their business. We suggest more profound research into comparing ALV reports using different enhancement table type structures or different applications for the cost allocation monitoring process for further studies. Thus, the design comparison using different tools can be more visible and can provide an overview of better performance.

ACKNOWLEDGMENT

The researchers thank the XYZ Ltd. and all the research and publication teams that support this research.

REFERENCES

- [1] Kementerian Komunikasi dan Informasi, "Perkembangan Ekonomi Digital di Indonesia: Strategi dan Sektor Potensial," pp. 1–68, 2019.
- [2] H. Kim, S. Y. Park, and W. IL Joh, "A study on technology development performance and technology commercialization performance according to the technology development capability of SMEs focusing on a comparative analysis of technology business groups," *J. Open Innov. Technol. Mark. Complex.*, vol. 5, no. 3, pp. 1–16, 2019, doi: 10.3390/joitmc5030065.
- [3] I. S. Mulyani and H. Fitriyah, "Utilization of Activity Based Costing Method to Calculate the Cost of Production and Evaluate Profit," *Acad. Open*, vol. 4, no. 1, 2021, doi: 10.21070/acopen.4.2021.1974.
- [4] S. AEffiong and A. E Akpan, "Effect of Activity Based Costing (Abc) on the Productivity of Manufacturing Company.," *Int. J. Adv. Res.*, vol. 7, no. 1, pp. 753–765, 2019, doi: 10.21474/ijar01/8384.
- [5] B. Harahap and A. P. Prima, "Pengaruh Biaya Bahan Baku, Biaya Tenaga Kerja Langsung Dan Factory Overhead Cost Terhadap Peningkatan Hasil Produksi Pada Perusahaan Kecil Industri Tahu Tempe Di Kota Batam.," *J. Akunt. Bareleng*, vol. 4, no. 1, pp. 12–20, 2019, doi: 10.33884/jab.v4i1.1476.
- [6] M. E. Kaukab, "Implementasi Activity-Based Costing Pada UMKM.," *J. Econ. Manag. Account. Technol.*, vol. 2, no. 1, pp. 69–78, 2019, doi: 10.32500/jematech.v2i1.576.
- [7] S. Jassem, "Activity-Based Costing and Effective Product Offering Strategies: Evidence From Manufacturing Organisation," *Int. J. Soc. Sci. Manag.*, vol. 2, no. October, pp. 52–71, 2019.
- [8] T. Aprianto, I. Setiawan, B. Setiawan, F. Al Latif, and H. H. Purba, "Implementation of Activity Based Costing (ABC) Method for Industry in Indonesia.," 2021.
- [9] R. Lueg, "Activity-Based Costing as a Basis for Transfer Prices and Target Setting," *Int. J. Econ. Bus. Adm.*, vol. 8, no. Issue 3, pp. 489–499, 2020, doi: 10.35808/ijeba/539.
- [10] S. Inside and A. B. Costing, "Analisis Activity-Based Costing untuk Menentukan Harga Pokok.," vol. 2, no. 1, pp. 57–66, 2022.
- [11] Q. Huang, "Skylar, Inc.: Traditional Cost System vs. Activity-Based Cost System – A Managerial Accounting Case Study," *Appl. Financ. Account.*, vol. 4, no. 2, p. 55, 2018, doi: 10.11114/afa.v4i2.3496.
- [12] Gie, "Mengetahui Alokasi Biaya, Jenis, Mekanisme, dan Fungsinya pada Bisnis.," *accurate*, 2021. <https://accurate.id/akuntansi/alokasi-biaya/> (accessed Feb. 13, 2022).

- [13] H. Hammood, Y. N. Mohammed, and H. Talab, "Integration of the system of Activity Based Costing and liability accounting," vol. 1, no. 1, 2020.
- [14] SAP, *Activity-Based Costing (CO-OM-ABC)*. SAP AG, 2001.
- [15] E. Monk and B. Wagner, *Concepts in enterprise resource planning*. 2019.
- [16] T. Kitsantas, A. Vazakidi, and C. Stefanou, "Integrating Activity Based Costing (ABC) with Enterprise Resource Planning (ERP) for Effective Management: A Literature Review," *Tech. Rom. J. Appl. Sci. Technol.*, vol. 2, no. 7, pp. 160–178, 2020, doi: 10.47577/technium.v2i7.1882.
- [17] Maha Faisal Alsayegh, "Activity Based Costing around the World: Adoption, Implementation, Outcomes and Criticism," *J. Account. Financ. Emerg. Econ.*, vol. 6, no. 1, pp. 251–262, 2020, doi: 10.26710/jafee.v6i1.1074.
- [18] H. Hammood, Y. N. Mohammed, and H. Talab, "Integration of the system of Activity Based Costing and liability accounting," *Ishtar J. Econ. Bus. Stud.*, vol. 1, no. 1, 2020.
- [19] N. Kumar and D. Mahto, "A Review Current Trends of Application Activity Based Costing ABC," vol. 13, no. 3, 2016.
- [20] J. Zhu, B. Arsovska, and K. Kozovska, "Activity Based Costing System," *Int. J. Recent Sci. Res.*, vol. 11, no. 02, pp. 37471–37472, 2020, doi: 10.24327/IJRSR.
- [21] L. Sa'adah and C. Muchfaidzah, "Penerapan Metode Activities Based Costing (Abc) Terhadap Harga Pokok Produksi Pada Umkm Batik Sekar Jati," *J. Manag. Accounting, Econ. Bus.*, vol. 02, no. 01, pp. 56–70, 2021.
- [22] R. Shkurti and E. Manoku, "Factors of success in implementation of enterprise resource planning systems," *WSEAS Trans. Bus. Econ.*, vol. 18, pp. 1084–1093, 2021, doi: 10.37394/23207.2021.18.102.
- [23] A. Ganesh, K. N. Shanil, C. Sunitha, and A. M. Midhudas, "OpenERP/Odoo - An Open Source Concept to ERP Solution," *Proc. - 6th Int. Adv. Comput. Conf. IACC 2016*, no. February, pp. 112–116, 2016, doi: 10.1109/IACC.2016.30.
- [24] K. B. U. M. Negara, "Peraturan Menteri Badan Usaha Milik Negara Nomor PER-02/MBU/2013 Tentang Panduan Penyusunan Pengelolaan Teknologi Informasi Badan Usaha Milik Negara," *Peratur. Menteri BUMN No PER-02/MBU/2013*, 2013.
- [25] "Activity-Based Costing Structure Reports (n.d.)" https://help.sap.com/saphelp_nw73/helpdata/en/53/be8853630b3d58e10000000a174cb4/content.htm?no_cache=true (accessed Jan. 31, 2022).
- [26] A. Okungbowa, "SAP ERP Financial Accounting and Controlling," *SAP ERP Financ. Account. Control.*, 2015, doi: 10.1007/978-1-4842-0716-1.
- [27] Sylvia, Warih Puspitasari, and M. D. Idawicaksakti, "Design of Enterprise Resource Planning Controlling Module on SAP S / 4 HANA with SAP Activate Methodology in Transportation Services," *Int. J. Sci. Technol. Res. Vol. 9*, vol. 9, no. 06, pp. 310–315, 2020.
- [28] B. Su, Y. Q. Chen, X. R. Pi, and S. Q. Feng, "Research on the Application of Cost Accounting in Higher Education Based on Activity-based Costing - Take a Chinese Medicine University as an example," *E3S Web Conf.*, vol. 251, pp. 0–5, 2021, doi: 10.1051/e3sconf/202125103095.
- [29] S. Rizka, W. Puspitasari, and M. Saputra, "Analisis Perancangan Actual Cost Allocation Activity Pada Module Controlling Profitability Analysis Untuk Proses Migrasi Data Dari Aplikasi OROS ke SAP S/4 HANA," 2020.
- [30] A. Whiteley, J. Pollack, and P. Matous, "The Origins of Agile and Iterative Methods," *J. Mod. Proj. Manag.*, vol. 8, no. 3, pp. 21–29, 2021, doi: 10.19255/JMPM02502.
- [31] K. Singh, "Agile Methodology for Product Development: A Conceptual Study," *Int. J. Recent Technol. Eng.*, vol. 10, no. 1, pp. 209–215, 2021, doi: 10.35940/ijrte.a5899.0510121.
- [32] I. M. Ibrahim, "Iterative and Incremental Development Analysis Study of Vocational Career Information Systems," *Int. J. Softw. Eng. Appl.*, vol. 11, no. 5, pp. 13–24, 2020, doi: 10.5121/ijsea.2020.11502.
- [33] M. Paasivaara, "Using iterative and incremental processes in global software development," pp. 42–47, 2006, doi: 10.1049/ic:20040312.
- [34] P. Quesado and R. Silva, "Activity-based costing (ABC) and its implication for open innovation," *J. Open Innov. Technol. Mark. Complex.*, vol. 7, no. 1, pp. 1–20, 2021, doi: 10.3390/joitmc7010041.
- [35] R. Chompu-Inwai and T. Thaiupathump, "Optimal Cost Driver Selection in Activity-Based Costing Using Shuffled Frog Leaping Algorithm," *Proc. Int. Conf. Ind. Eng. Oper. Manag.*, pp. 973–980, 2017.
- [36] G. Teklay, D. Kitaw, and K. Jilcha, "Activity-Based Costing Applied To Automotive Manufacturing a Case of Mesfin Industrial Engineering," *Int. Res. J. Mod. Eng. Technol. Sci.*, vol. 3, no. 8, pp. 2582–5208, 2021, [Online]. Available: www.ijrmets.com.
- [37] "An Overview of ALV Tools (n.d.)." <https://help.sap.com/viewer/b1c834a22d05483b8a75710743b5ff26/751.13/en-US/4ebdce6912c256a2e10000000a421937.html> (accessed Feb. 02, 2022).
- [38] S. Sulistyono, R. Ferdiana, and Y. A. Adi Soetrisno, "Analisis Metode Kustomisasi Pada Enterprise Resource Planning," no. 2011, pp. 17–22, 2014.
- [39] A. A. S. Al-Dhubaibi, "Optimizing the value of activity based costing system: The role of successful implementation," *Manag. Sci. Lett.*, vol. 11, pp. 179–186, 2021, doi: 10.5267/j.msl.2020.8.017.