Designing Sustainability Accounting and Dashboard Monitoring Based on Open ERP using Quickstart Approach

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Abstract

This research aims to design Sustainability Accounting and Dashboard Monitoring for companies engaged in the manufacturing process using Open Enterprise Resource Planning (ERP). Open ERP is a system appropriate to be implemented for companies at the MSME level. ERP is an information system that can integrate and enable business processes in the company. This research focused on designing sustainability accounting and dashboard monitoring in the environmental cost for measurements accounting, and the financial process considers sustainability on environmental aspects. The research results are the model design of an ERP system regarding sustainability accounting and dashboard monitoring using Quickstart research methods.

Keywords
Sustainability Accounting, Dashboard Monitoring, Open ERP, and Quickstart Approach.

1. Introduction
Enterprise Resource Planning (ERP) becomes the software of information system to integrate the business process in the company. ERP support efficiently and effectively manages materials, information, and capital flows (Purwanto and Raharja 2019). The development of this ERP system uses Open ERP (Odoo) because it is appropriate to be implemented for companies at the MSME level. ERP system implementation using the Odoo application. Odoo is an open-source platform used for business purposes (Rahayu et al. 2019). Application or integrated modules are built on top of the platform, encompassing all business areas. Odoo application development improves business processes in the accounting module with methods used to develop the Odoo ERP system, namely Quickstart Methodology. This method allows the implementation of the Odoo software to be done with minimal speed and customization to the system. The ongoing business process will be monitored using the monitoring dashboard.

The role of Sustainability Accounting is based on external reporting and control systems that influence decisions internal company (Joshi and Li 2016). The environmental cost aspect in sustainability accounting serves to present costs related to the environment to the company's stakeholders. Its function is to promote identification of reducing costs when in that time at the same time the company improves environmental quality. The goal is to increase environmental management efficiency by assessing the environmental activities from the point of view of costs and benefits for industry players. Environmental costs include any internal and external costs or costs associated with environmental damage and protection costs. In the science of accounting, there is sustainability accounting, which is an information system that is interrelated and consistent with the overall business strategy (Kustinah and Dwi 2017). The environmental cost increases the efficiency of environmental management with an assessment of activities and benefits or effects. The result of the reports in environmental accounting is for environmental management. Various companies can apply environmental accounting to generate quantitative values in terms of environmental costs and impacts.

Based on this research, a system will be designed and implemented of enterprise resource planning and dashboard monitoring regarding sustainability accounting using a quickstart approach that integrates with the company's business process. This research Quickstart methodology consists of a five-phase Kick-off Call, Analysis, Configuration,

Production, and Support. This study describes and analyzes the relationship between the business process model, user requirements, and blueprint of the ERP system and monitoring dashboard. Then the system designed will be developed and implemented by the user.

1.1 Objectives
This research aims to design an Open ERP system and Dashboard monitoring to improve the business process based on sustainability accounting to help MSME level companies. To design the system using the quickstart approach methodology is a methodology intended for designing Odoo.

2. Literature Review

2.1 Enterprise Resource Planning
Enterprise resource planning is a system that takes place in the company and is integrated between ongoing business processes. According to Purwanto and Raharja (2019), Enterprise Resource Planning supports business activities that impact the reduction expenditure of operational costs and assist in decision-making by leaders with better negotiations (Purwanto and Raharja 2019). According to Govindaraju, Hariadi, and Sidiq, Enterprise Resource Planning consists of several integrated aspects, including operational, managerial, strategic, IT Infrastructure, and organizational (Caillaud et al. 2016).

2.2 Open ERP Software
Odoo (Open ERP) is an open-source ERP software; as such, Odoo provides access to publicly available source code for companies that can do Odoo development according to business needs at the company to be more efficient and flexible.

2.3 Sustainability Accounting
According to Joshi and Lie (2016), sustainability accounting is based on external reporting and control systems that influence internal company (Suminten et al. 2019). Kristina and Lestari describe environmental costs to present costs related to the environment to the company's stakeholders. Its function is to promote identification of reducing costs when in that time at the same time the company improves environmental quality (Hristov and Chirico 2019). The purpose of environmental cost is to increase the efficiency of environmental management with an assessment of activities and benefits or effects. Transactions grouped into accounting the environment are the cost of financing made by the company and government in carrying out environmental conservation into an environmental post and company practices and related financial elements environmental activities carried out by the company (Suminten et al. 2019).

2.4 Dashboard monitoringmonitoring
Dashboard monitoring software is the software used for designing a dashboard to help control and monitor the processes running within the company.

2.5 Quickstart Approach
The QuickStart methodology is a methodology intended for designing Odoo at companies at the UMKM level, which has five stages of implementation. QuickStart ensures that the Odoo software implementation is fast possible by minimizing the development of existing modules. According to Zelig, the stages of the methodology implementation quickstart; Kick-off call stage, the researcher will study and understand the business process companies for the proposed Odoo implementation plan, analyze the boundaries of each stage and determine the objectives of the implementation process. The next stage is *Analysis* relating to business processes taking place in the company (existing) with the targeting business process and producing a GAP analysis. Configuration do the Odoo system workflow with the company to validate business processes that match the company's needs. The Odoo system has been configured and finished customized according to company requirements in the production stage, and the Odoo system is readily used. The last stage is support for the Odoo system that has been used will be carried out performance appraisal by the established indicators and will happen improvement.

3. Methods

3.1 Conceptual Model
This study uses a conceptual framework model of information systems research by Hevner that business problems relevant to the proposal can be oriented to technology management (Caillaud et al. 2016).
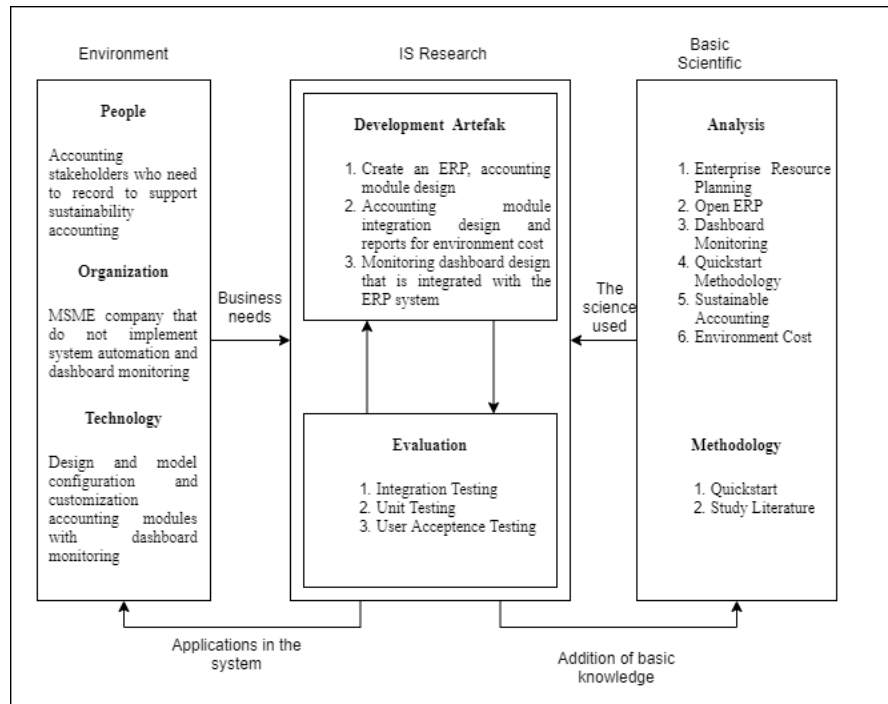

Figure 1. Conceptual models

Based on the figure 1 Conceptual Model, there are three aspects to that discussed: the environment, IS research, and basic science. On the environmental aspect consisting of people, organizations, and technology. People relate to stakeholders in the company, and the organization describes that the company is a company at the level MSME. Moreover, the technology analyzes the system requirements to be implemented. IS research describes the business processes that design in the ERP system and the monitoring dashboard. This research involves related scientific fields, such as enterprise resource planning, dashboard monitoring, sustainability accounting, with a Quickstart methodology for its implementation.

3.2 Quickstart Methodology Implementation
Figure 2 explains in order of steps during the research process. The Quickstart methodology consists of five stages: Kick-off Call, the Analysis stage, the Configuration stage, the Production and support stage, and only up to the configuration stage. In the Kick-off Call phase, there are two processes: strategic planning and goal determination to understand the business process in the company and determine the goals and requirements to design an ERP system. The analysis phase describes business needs Analysis and GAP analysis to perform GAP analysis based on the company's existing business process. Configuration phase there are three stages as onboarding to configuration and customization of the ERP system, integrating open ERP and dashboard monitoring to connecting the ERP system and dashboard monitoring, and the last stages are testing and validation.
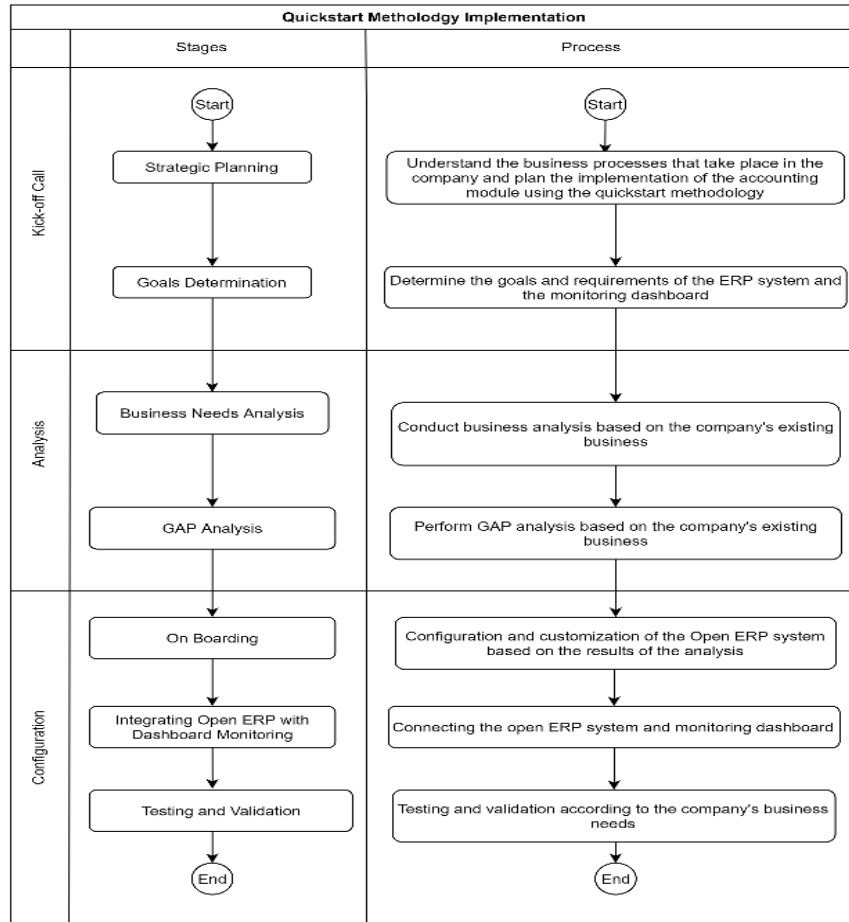
Figure 2. Quickstart methodology implementation

4. Results and Discussion

4.1 Kick-off Call
This Kick-Off Call stage will be conducted Analysis related to research needs to develop Sustainable Supply Chain Management in accounting modules.
    a.   Strategic Planning:

Table 1. Strategic planning

Environment	Research	Study Literature
There is no system to help the activity of automation business process, especially in sustainability accounting. All forms recording is still being done by manual and conventional use physical documents and processes that took place has not been able to Integrated.	Developing ERP System using Accounting modules in Odoo software to record the transaction about sustainable accounting and Develop design of Sustainable Accounting Dashboard	- Enterprise Resource Planning - Accounting - Sustainability Accounting - Odoo - Quickstart Methodology

At the Strategic Planning stage, researchers formulate and analyze research limitations according to the needs and conditions, as shown in Table 1.

b. Goals Determination :
The Goals Determination stages determine the goals in the study. The ERP system is designed based on Sustainable Supply Chain Management and Dashboard Monitoring in the Accounting module using QuickStart Approach.

4.2 Analysis and Design

a. Business Needs Analysis
Proposing a business process design, as shown in Figure 3, aims to show the process flow running and the stakeholders who play a role. This business process starts from the departments in the company to create and generate transaction documents and send them to the accounting department. After being received by the accounting department, based on references from existing documents, the accounting department makes adjustments to the transaction documents and generates a financial report, then the data will be generated into the monitoring dashboard.
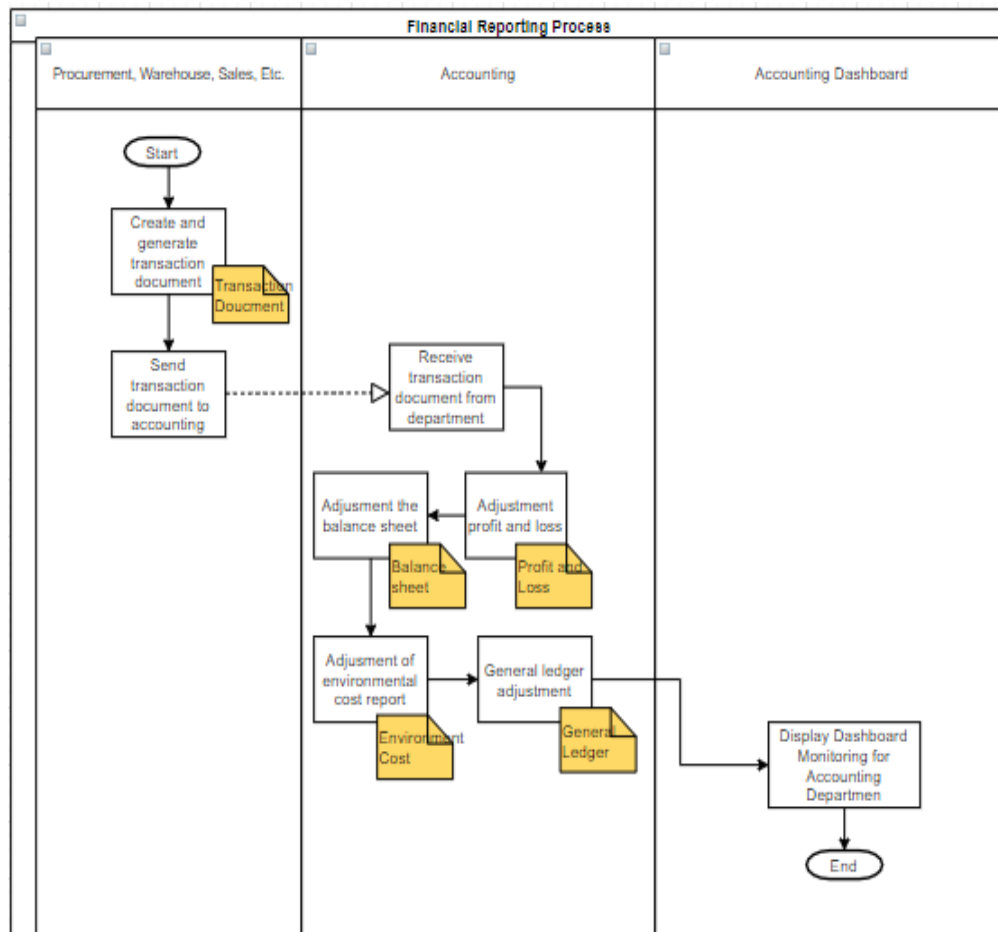

Figure 3. Business process design

b. Fit GAP Analysis (Table 2)

Table 2. Fit gap analysis

Process	Existing	Targeting
Record the Environment Cost	Transaction of environment cost still records manually by accounting staff and not implemented by the system.	There is an automation system to help the accounting department recording about environmental costs.
Reporting about Environmental Costs	No system that helps the accounting department to report environmental cost documents	There is an automation system to help the accounting department report the environmental costs to become a PDF document.
Dashboard Sustainable Accounting	There is no dashboard to monitor the business process about sustainable accounting in the company.	Using dashboard monitoring to monitor the business process about sustainable accounting in the company

4.3 Configuration
a. Design Configuration Chart of Account

On the chart of accounts, there are configurations made to the accounting account, such as adding an Environment Cost to an account related to sustainability accounting, as shown in Figure 4.

Figure 4. Design configuration of chart of account

b. Design Journal Entry For Environment Cost (Figure 5)
   Journal entry for input the transaction about Environment Cost in the Accounting Module.

MISC/2021/0001

| Replace Invoice Reference | Environment Journal | | Accounting Date | 05/25/2021 |
| Journal | | | | Miscellaneous Operations (IDR) |

Journal Items | Other Info

Asset Category	Account	Partner	Label	Taxes	Debit	Credit
	1-11000 AKTIVA LANCAR				Rp 0	Rp 120,000,000
	6-65100 Biaya Pencegahan				Rp 9,000,000	Rp 0
	6-65300 Biaya Kegagalan Internal				Rp 860,000	Rp 0
	6-65400 Biaya Kegagalan Eksternal				Rp 540,000	Rp 0
	6-65100 Biaya Pencegahan				Rp 10,000,000	Rp 0
	1-11100 Kas Besar				Rp 99,600,000	Rp 0
					120,000,000.00	120,000,000.00

Figure 5. Design journal entry for environment cost

c. Design Reporting General Ledger in Environment Cost Transaction (Figure 6)
   Based on transactions in the ERP system, a report in the form of a pdf will be generated in the ERP system, which can then be used as a document.

CV Surya Wahana Leather: General ledger

Journals:
MISC
Display Account
With movements
Target Moves:
All Posted Entries
Sorted By:
Journal and Partner

Date	JRNL Partner	Ref	Move	Entry Label	Debit	Credit	Balance
	1-11000 AKTIVA LANCAR				**Rp 0**	**Rp 120,000,000**	**Rp -120,000,000**
2021-05-25	MISC		Environment Journal	MISC/2021/0001	Rp 0	Rp 120,000,000	Rp -120,000,000
	1-11100 Kas Besar				**Rp 99,600,000**	**Rp 0**	**Rp 99,600,000**
2021-05-25	MISC		Environment Journal	MISC/2021/0001	Rp 99,600,000	Rp 0	Rp 99,600,000
	6-65100 Biaya Pencegahan				**Rp 19,000,000**	**Rp 0**	**Rp 19,000,000**
2021-05-25	MISC		Environment Journal	MISC/2021/0001	Rp 9,000,000	Rp 0	Rp 9,000,000
2021-05-25	MISC		Environment Journal	MISC/2021/0001	Rp 10,000,000	Rp 0	Rp 19,000,000
	6-65300 Biaya Kegagalan Internal				**Rp 860,000**	**Rp 0**	**Rp 860,000**
2021-05-25	MISC		Environment Journal	MISC/2021/0001	Rp 860,000	Rp 0	Rp 860,000
	6-65400 Biaya Kegagalan Eksternal				**Rp 540,000**	**Rp 0**	**Rp 540,000**
2021-05-25	MISC		Environment Journal	MISC/2021/0001	Rp 540,000	Rp 0	Rp 540,000

Figure 6. Design of general ledger

d. KPI of Sustainable Accounting Dashboard (Table 3)
   Based on the previous research and International Federation of Accountants (IFAC) (2011), Sustainability Framework 2.0 identifies the importance of accounting contribution to sustainable development such as strategic, operational, and reporting.

Table 3. Key performance indicators

KPI	Description
Environmental Revenue	Income received by a company as a result of its principal business conducted by sustainable-based companies
Sustainable Gross Profi	Profit earned by the company after deducting the cost related to the manufacture and sale of its sustainable product
Net Profit and Loss	Net income earned by good companies from the principal business
Cost of Sustainable Goods	All costs incurred by the company to produce products or services for the sake of a green environment
The expense for Sustainable Cause	deduct from the revenue that will generate profit before tax on income statements in installments sustainable

e.   Design Dashboard Monitoring for Sustainability Accounting (Figure 7)
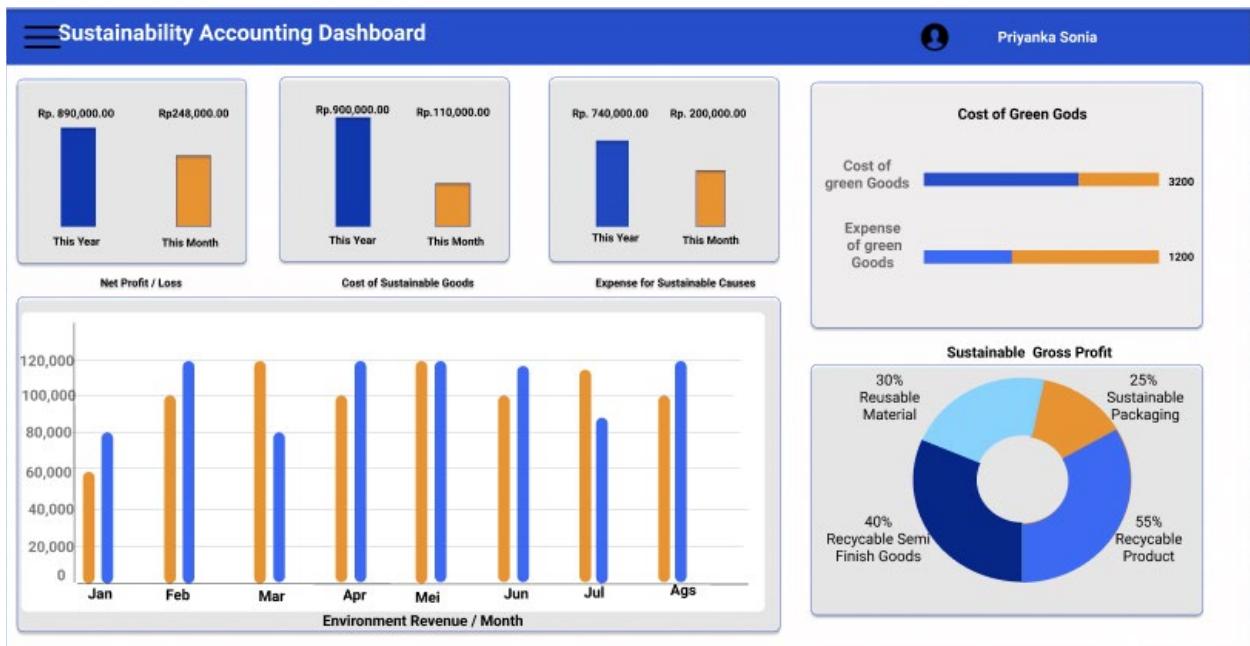

Figure 7. Design of dashboard monitoring for sustainability accounting

The monitoring dashboard helps monitor transaction results in accounting related to the sustainable process. The monitoring dashboard displays net profit and loss by month and year to display earned by good companies from the principal business. Cost of sustainable goods describes costs incurred by the company to produce products or services for the sake of a green environment. The expense for sustainable causes that deduct from the revenue will generate profit before tax on income statements in installments sustainable. Sustainable gross profit displays profit earned by the company after deducting the cost of the manufacture and sale of its sustainable product. An example is a gross profit from sustainable packaging, recyclable product, recyclable semi-finish goods, and reusable material. Furthermore, environment revenue the monitoring dashboard describes the Renevue obtained based on the environment cost by month with a histogram.

5. Conclusion
Based on the sustainable accounting study research, it can be concluded that the system is designed to successfully analyze the accounting module integrates with other modules and displays the reporting results of environmental costs. Based on the design of the monitoring dashboard, it can show accounting information related to sustainability accounting as a reference for decision-making.

Acknowledgments

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