

Implementation Of Erp-Based Open Source Odoo For Chicken Farm Procurement And Sales Operation Management System Using The Quickstart Method

(Studi Case: Cv. Cindil Laras)

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Development in the era of globalization is very dependent on the economic sector as a measure of success carried out by the government. The role of the community in national development, especially in economic development, is Micro, Small and Medium Enterprises (MSMEs). The position of MSMEs in the national economy has an important and strategic role. This condition is very possible because the existence of MSMEs is quite dominant in the Indonesian economy.

With the high number of needs that must be met, several challenges arise in the production process, namely monitoring, maintenance management. On CV. Cindil Laras maintenance management monitoring process can be said to be still conventional, resulting in a decrease in maintenance management. This research aims to develop an integrated ERP system using Odoo open-source software developed using the QuickStart method. QuickStart is an application development method suitable for implementation in MSMEs which has three stages in it, namely kick-off call, configuration and analysis. The system developed will be able to integrate existing business processes on CV. Cindil Laras can efficiently help in monitoring company data related to procurement and sales which can help company decision making and also to support the procurement and sales process.

Keyword— Enterprise Resource Planning (ERP), Procurement, Sales, QuickStart, Odoo

I. INTRODUCTION

Chicken meat is a good source of protein for the body. This animal protein is also very often used in various Indonesian and foreign dishes. According to a report from the Badan Pusat Statistik (BPS), the average consumption of chicken meat in Indonesia will increase to 0.14 kilograms (kg) per inhabitant per week in 2021. That figure is up 7.69% over 2020 and is the highest on record in the past decade,

according to the chart. Based on trends, per capita consumption of chicken meat in Indonesia will increase between 2011 and 2021. The biggest increase occurred in 2014, with an increase of 19.76% compared to the previous year. Chicken meat is consumed more than beef or buffalo meat. It was found that the average consumption of beef or buffalo meat in 2021 will be only 0.009 kg per head per week. Indonesian people's interest in consuming chicken meat as a substitute for beef or buffalo meat is caused by several factors. Partly because the price is lower and production is higher. BPS said that chicken meat production in Indonesia will increase to 3.42 million tons in 2021. Last year's beef production was 437.78 thousand tons, and buffalo meat production was 20.97 thousand [1].

CV. Cindil Laras is a company engaged in the poultry industry; its target market is local residents, and it markets in Batununggal and Bandung. The branch in Bandung has around 4000 chickens ready to be consumed for meat or eggs. For self-delivery, CV Cindil Laras already has a fleet of trucks, cars for long distances, and motorbikes for short distances. For now, CV Cindil Laras still doesn't use a special application to manage and record their own stock, products or procurement. This company, located in Bandung, is one of two owned by CV Cindil Laras.

An integrated information system is a concept that enables applications to work together, connect integrated functions, and enable the exchange of information within and outside the organization. One of the integrated information systems is Enterprise Resource Planning (ERP) In implementing this inventory management system using Odoo software, an open source inventory management system has been developed since 2005. Odoo is an open source ERP software that includes built-in modules to support business processes and goals [2].

II. THEORETICAL STUDIES

A. ERP Definition

ERP was originally designed for manufacturing companies, but has since spread to nearly every industry, each of which may have its own ERP specifications and products. For example, government ERP systems use Contract Lifecycle Management (CLM) instead of traditional purchasing and follow government accounting rules rather than GAAP [3].

ERP software can also share information with external parties. Investing in a company usually depends on how efficiently the company operates and how financially strong it is. Data within an ERP system provides relevant information to all stakeholders and provides information about a company's functions and revenue-generating capabilities [4].

B. Odoo

Odoo is a management application used not only by large companies but also by small and independent businesses. Odoo can be used in various fields such as business, textiles, agriculture, and others. This difference illustrates Odoo's very high flexibility to reach all types of existing businesses.

Here are the advantages that Odoo has:

1. Has access to reliable information.
2. Avoid redundancy in data entry and operation.
3. Avoid redundancy in data entry and operation.
4. Enterprise-level analysis can save time, reduce costs, and improve management.

C. MSMEs

MSMEs are able to become stabilizers and dynamicators of the Indonesian economy. As a developing country, Indonesia is very important to pay attention to MSMEs, because MSMEs have better performance in a productive workforce, increase high productivity, and are able to live on the sidelines of large businesses. MSMEs are able to support large businesses, such as providing raw materials, spare parts, and other supporting materials. MSMEs are also able to spearhead large businesses in distributing and selling products from large businesses to consumers [6].

D. Definition Procurement

The Procurement module, also known as the Purchasing module, helps businesses secure the materials and products they need to manufacture and sell their goods. Companies can maintain a list of approved suppliers in this module and tie these suppliers to specific items, supporting supplier relationship management. This module automates bid requests and allows you to track and analyze received bids. Once a company receives an offer, the Procurement module helps the purchasing department prepare and place orders. We then track those orders as the merchant converts them into sales orders and ships the goods, automatically updating inventory levels as orders come in [7].

E. Definition Sales

The sales department is the sole revenue generating department for an organization to run its business. Managing customers, sales orders, offers, and marketing campaigns is necessary to drive growth and attract more customers. The

Sales module creates leads within the system, converts them into opportunities, understands the customer list during the proposal stage, creates goals for the sales team, manages goals and commissions, and communicates quickly and directly with customers. To help you complete your project. Improved upselling and cross-selling, contract management, and customer interaction. The ERP software marketing module helps you create various marketing campaigns, newsletters, and email marketing that help you sell your products to existing and new customers [8].

F. Method Quickstart

Quickstart ERP is a technique for quickly and effectively establishing an enterprise resource planning (ERP) system. Usually, a pre-configured software package is used, which requires little customization or configuration and is intended to be simple to install and operate.



FIG. 1
QuickStart Method Stages

1. Kick-Off Call

This is the first phase in which the project manager explains to the client the method to be used, including the contents of the contract and the steps to be implemented. In addition, the project goal outline or implementation boundaries are defined in this phase.

2. Analysis

In this phase, an analysis of the company's existing business processes is carried out and then compared with the target business processes implemented in Odoo to make a GAP analysis.

3. Configuration

In this phase, configuration and customization are carried out by developing a system based on the results of the analysis of new business processes, using the results of the GAP analysis as a reference.

4. Production

In this phase, the implementation of the Odoo system for companies is carried out. The process includes system installation and configuration. A final project is also created at this stage, and if the system is configured correctly, Odoo is ready to use [6].

G. Blackbox Testing

Black box testing is software quality testing that focuses on software functionality. Black box testing aims to find incorrect functions, interface errors, errors in data structures, performance errors, initialization and termination errors [9].

H. User Acceptance Test

User test acceptance is carried out by users, customers, consumers or customers to see if they receive the product at the place of delivery. We can visualize our daily activities for a day, a week, a month, half a year and a year to understand the scope of the software. In addition, the software must be able to meet the needs of customers and solve problems according to their requests. Otherwise, the software is of course useless. UAT, often referred to as User Acceptance

Testing, is an important step in the software development process prior to user acceptance. UAT is the process of ensuring that software meets end user requirements. In other words: This way you can ensure that the software fulfills its intended function. This process is very important because it allows us to identify any bugs or issues before the app is released to the public. Moreover, it ensures that the software meets the user's expectations. Without UAT, products may come to market with significant bugs or issues that can present significant challenges to consumers [10].

III. METHOD

A. Conceptual Model

A conceptual model is a systematic approach to understanding and solving a problem. It involves defining the problem, identifying the key concepts or ideas related to the problem, and developing a framework or model to explain how these concepts fit together.

Conceptual model can be contrasted with empirical methods, which rely on collecting and analyzing data from observations or experiments. Conceptual methods are more abstract and theoretical, whereas empirical methods are more concrete and focused on the practical applications of research.

Some of the key characteristics of conceptual methods include:

- 1. They are focused on understanding the underlying principles or concepts that govern a particular phenomenon.
- 2. They often involve developing abstract models or theories to explain complex phenomena.
- 3. They may involve the use of logical reasoning and argumentation to support a particular conclusion.
- 4. They may involve the use of qualitative rather than quantitative data.

The conceptual model has three cycles, namely relevance, rigor, and design. a cycle of interests that explains the problems encountered in research. Cycle Rigor explains the basic theory and methods used in the research. Cycle planning, which explains what will be done in the research and evaluation of what will be done.

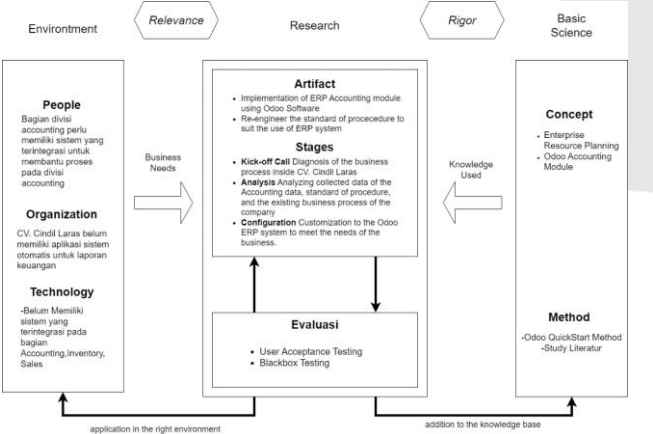


FIG. 2
Model Conceptual

The three components of the conceptual model, including environment, research, and basic science, are explained in Fig. 3 of the conceptual model described above.

B. Stage of Problem Solving

Stage of problem solving is a systematic approach that describes the steps of this research from start to finish. The method used in this research is QuickStart. The QuickStart method consists of five steps, namely call start, analysis, and configuration. Fig. 4 shows a Stage of problem solving research problems.

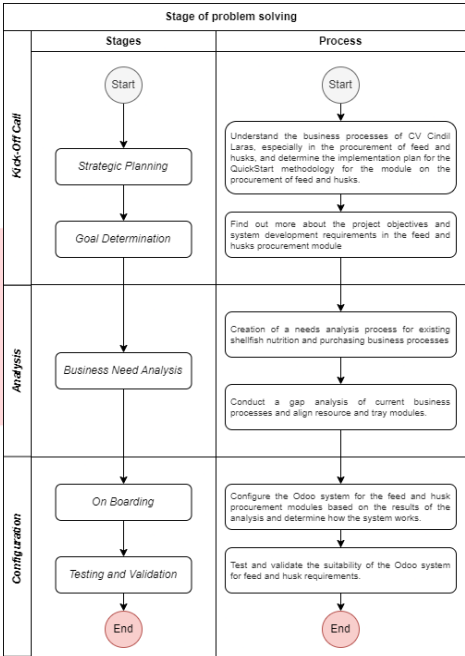


FIG. 3
Stages of problem solving

C. Evaluation Method

When developing a system, an evaluation process, namely testing and testing, is required. The purpose of testing is to determine whether the system that has previously been built and designed is in accordance with the needs and goals that have been established. In this study, blackbox testing will be performed on the system that was created through evaluation.

D. Data Collection

This research requires sources of information related to the process of procuring feed and husk products from CV Cindil Laras. The data used to complete this research uses primary and secondary data from CV Cindil Laras and related research. In this study, data or information was collected by interviewing traders and also from research conducted using similar methods. The information required includes company profiles, vision and mission statements, and business processes. Details of data collection methods are detailed in the data collection table.

Data Type	Data Collection Technique	Data Source	Obtained Data
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Primary data	Interview	Owner of CV Cindil Laras:	- Profile of CV Cindil Laras. - Vision and mission of CV Cindil Laras. - Address of CV Cindil Laras. - Chicken warehouse business process CV Cindil Laras.
Secondary Data	Study of literature	Related research	ERP implementation with the QuickStart method

IV. RESULT AND DISCUSSION

A. Kick-Off Call Stage

During the kick-off call phase, a research needs analysis was conducted to develop the ERP system and dashboard. Additionally, decide on a plan to implement a reverse logistics process that supports the circular economy concept. Results that meet research needs are expected. The kickoff call phase is divided into two phases: strategic planning and goal setting.

1. The Strategic Planing

the general environmental requirements for CV. Cindil Laras and research were conducted to suit the existing needs and the database used. Based on the company's environmental conditions, the ERP system development process is carried out through the Odoo software using the purchasing module which is then integrated with the relevant departments to produce data that can be processed directly. A system designed to track all procurement activities within the company.

2. Project Team

The role and focus of each team member, implementing several modules to implement the CV ERP system. Cindil Laras includes modules for Procurement, Warehouse, and Accounting.

No	Nama	Fokus Bidang
1.	Edward Yuliano	Implementation of the Odoo Procurement module-based ERP system with the Quickstart method on CV. Cindil Laras.
2.	Adam Yusuf Kartodiwiryo	Implementation of the Warehouse module Odoo-based ERP system with the Quickstart method on CV. Cindil Laras.
3.	Muhammad Afif Firdaus	Implementation of an ERP system based on the Odoo Accounting module with the Quickstart method on CV. Cindil Laras.

3. Goals Determination

At this stage, the researcher determines the purpose of this research. The purpose of this research is to develop an ERP system for the CV industry. Cindil Laras from the Odoo system and automation of procurement management in the industry.

B. Analysis Stage

In the steps of the QuickStart method, an analysis of the Existing Business Processes and Targeting Business Processes is carried out. After conducting the analysis, the researcher identified the company's current needs and gaps and the company's needs were used as a basic comparison for the development of new business processes in the procurement process. CV. Cindil Laras. After that, a GAP Analysis process will be carried out between the two business processes to find out the differences between the existing and targeting to solve existing problems.

1. Business Needs Analysis

At the business needs analysis stage, an analysis will be carried out related to existing business processes in the company and determine the deficiencies in targeting business processes that aim to improve processes and development of the proposed business processes within the company.

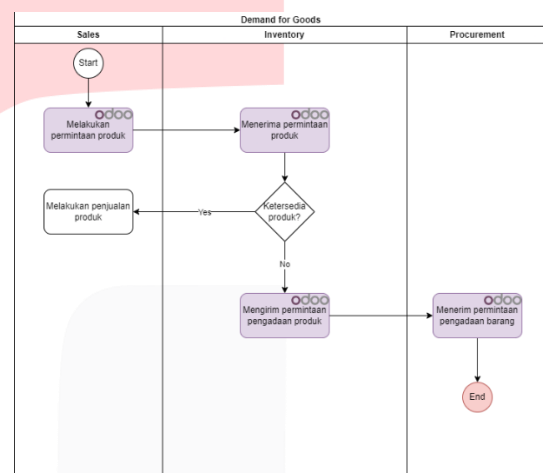


FIG. 4
Business Process Demand for goods

The process begins when the production department requests material through the inventory department. Then, the inventory section will check the availability of materials in the warehouse. If available, then the production department can directly run the production process. If it is not available, then the inventory section will make a request for procurement of goods, in which this process will generate a purchase order document to be purchased by the purchasing department.

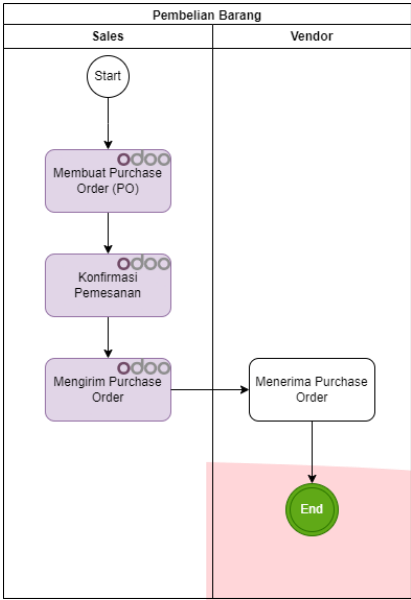


FIG. 5
Business Process Product Purchase

The process begins when the purchasing department creates a purchase order document, and confirms the order on the Odoo system. Then the purchase order document is sent to the supplier and the supplier will receive it.

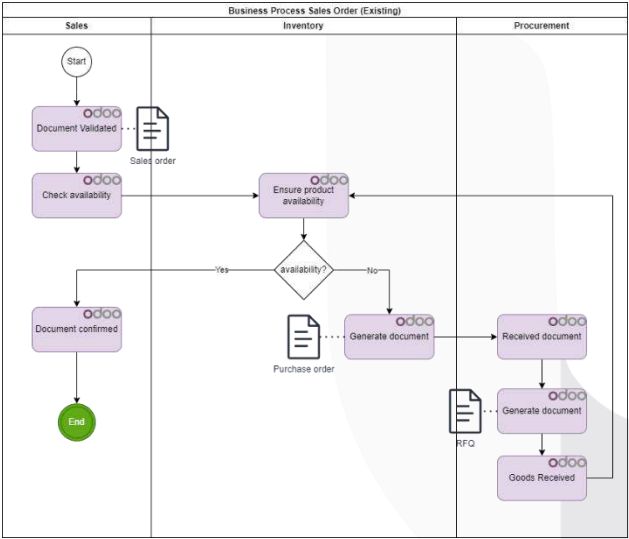


FIG. 6
Business Process Product Sales

This stage begins when the marketing (sales) party validates the sale order document and checks product availability. Furthermore, the warehousing (inventory) re-ensures product inventory in the warehouse. If it is not available, the Warehouse will create a purchase order document and send it to the procurement division to purchase these needs. Next, the document is received by the procurement party and then creates an RFQ document for product purchases. Furthermore, if the ordered product has been received, the factory can start carrying out the production process. After that, the finished product can be used to continue the sales process.

2. Gap Analysis

In this process, the researcher will analyze the differences between the existing and targeting business processes. So that later CV. Cindil Laras can find solutions to meet system requirements to optimize business processes.

Process	Existing	Targeting
Demand for Goods	The material request process is still carried out conventionally, namely by using physical documents created by the production department and addressed to the inventory department, then the inventory department also makes material request documents to the purchasing department.	By using the Odoo ERP system, the material request process can be done automatically. When the stock in the warehouse reaches the minimum stock, a purchase order will be generated automatically to be executed by the purchasing department.
Vendor Data Creation	Vendor data is still stored in Microsoft Excel.	Supplier data can be stored in vendor-specific master data.
Product Purchase	The material purchasing process is still carried out by sending physical documents to vendors.	The material purchasing process can be done by creating a purchase order document in the system to be sent to the vendor
Goods receipt	The process of receiving materials is checked directly by the inventory department by matching the incoming materials with the physical purchase documents	The process of receiving materials can be confirmed and validated on a system that refers directly to purchase orders recorded in the system
Payment	The payment process is still done by sending an invoice to the purchasing department. Then the invoice verification	The invoice verification process can be done on the system by creating vendor bills which will be validated by the accounting

	process is still carried out by matching each purchase document with the invoice from the supplier. After that, the invoice is sent to the finance department.	department and make the payment process
Product sale	The sales process will stop if the stock of raw materials is not available.	The sales process can continue with the help of the odoo system which can be integrated.
Product Delivery	The delivery process has not been able to check stock availability.	The shipping process can be carried out after payment is complete as well as the product and packaging.

3. Configuration

This configuration stage is a configuration stage that aims to adjust the analysis stages that have been designed with the Odoo system. At this stage there are several configurations carried out, including; server configuration, company configuration, user configuration, user access rights configuration, sales module configuration, and procurement module configuration. In addition to the configuration stage, the next stage is testing, this aims to ensure conformity between organizational needs and the integration of sales, purchase, inventory, accounting modules.

a. Configuration Result Can be Purchased

The result of the configuration in the Purchase module to check Can Be Purchased for materials that can be purchased.

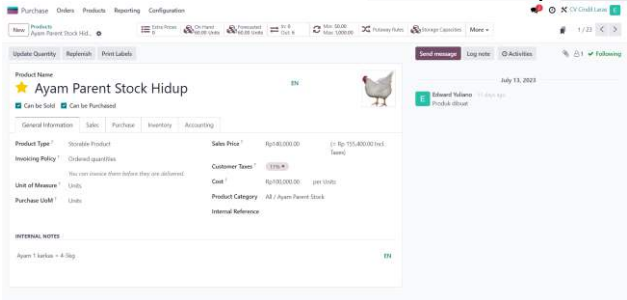


FIG. 7
Configuration Result Can be Purchased

b. Configuration Result Vendor Price

The result of configuring the Purchase module to input vendor data and its price

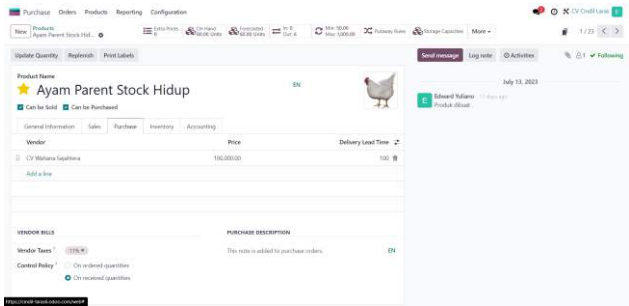


FIG. 8
Configuration Result Can be Purchased

c. Configuration Result Reordering Rules

The result of configuring the Purchase module to define the minimum and maximum quantity on the Reordering Rules tab.

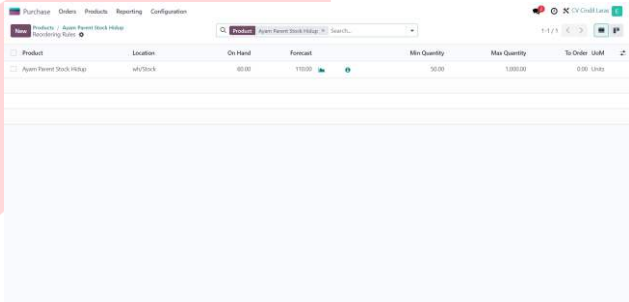


FIG. 9
Configuration Result Reordering Rules

d. Configuration Result Sales Order

Several changes were made, to be able to adjust to the company's business processes, it could run according to the company's needs

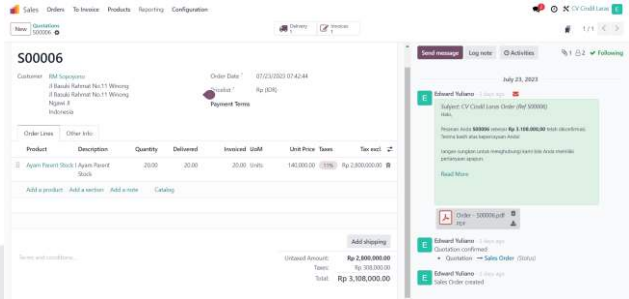


FIG. 10
Configuration Result Sales Order

e. Configuration Product

Several changes were made, to be able to adjust to the company's business processes, it could run according to the company's needs.

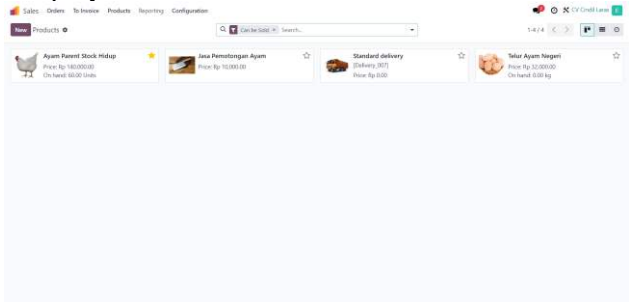


FIG. 11
Configuration Product

REFERENCE

f. Configuration Shipping Method

Several changes were made, to be able to adjust to the company's business processes, it could run according to the company's needs.

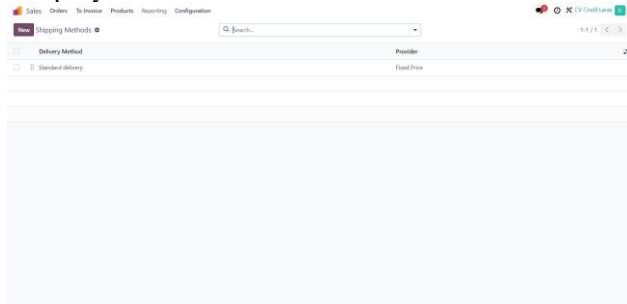


FIG. 12
Configuration Shipping Method

V. CONCLUSION

A. Conculsion

This study discusses the development of ERP systems, procurement and sales modules using Odoo software version 16.3 with the QuickStart method in the MSME case study CV. Cindil Laras. Following are the conclusions that can be drawn from this research :

1. The development of the ERP system in the procurement and sales module has been developed to meet several standards starting from the process of minimum and maximum quantity, sales order, product, and shipping methods that are carried out along with several configurations and customization processes that support the needs of CV. Cindil Laras.
2. The development of a procurement and sales system for this industry has been carried out to overcome the problems that exist in CV. Cindil Laras.

B. Suggestion

Based on the research that has been done, researchers have several suggestions for further research, namely:

1. In further research it is recommended to reach the sales stage because it only discusses the configuration stage.
2. Preferably, if the company has an IT division and wants to implement the Odoo application, then qualified training is needed for employees responsible for managing the Odoo system, because some adjustments are needed to the current business processes or organizational structure with the proposal

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