





Designing an Integrated Project Management System for Small and Medium Enterprises (SMEs) in the Information Technology Sector on Odoo using the Quickstart Method

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Abstract. Currently, the need for information technology-based systems is increasing significantly in line with technological advancements. Therefore, as technology continues to evolve, it holds great promise for CV XYZ to further develop as an IT service provider company. At present, CV XYZ has been utilizing several tools to manage ongoing projects, especially in service procurement projects. However, the use of these tools is temporary and limited to only a few projects, resulting in a lack of a comprehensive system that can manage projects from start to finish. Additionally, there is no specific system in place to handle complaints or maintenance requests from clients. As a result of these issues, clients have less confidence in the services or products provided by CV XYZ, ultimately leading to client dissatisfaction with the company's services. This research aims to develop an Enterprise Resource Planning (ERP) system module for project management using the open-source ERP software, Odoo. This system will support the integrated project management process using the Quickstart method, which reduces complexity in the development process. The ERP system will facilitate CV XYZ in designing a project management system, starting from the initial project stages to the maintenance processes, by utilizing the Kanban method in the project management module and ticketing processes in the helpdesk to manage customer complaints.

Keywords: Project Management, ERP, Odoo.

1 Introduction

Competition in the business world has become a primary concern for business practitioners and companies. Several companies propose strategies and innovations to attain profits, retain customers, and achieve higher sales compared to their competitors. One of the strategies currently suggested is the implementation of information system technology. Some companies adopt information systems to support their business processes [1]. One of the systems widely proposed to support business processes is Odoo. Odoo is an open-source Enterprise Resource Planning (ERP) system that

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encompasses features for project management, customer relationship management, human resources, sales, accounting, and inventory management [2]. Odoo is a comprehensive management tool that offers a range of business applications and complete management software to target various aspects of a business. Odoo is an open-source ERP system widely used by individuals and businesses worldwide to manage various business operations. This means that Odoo is the most widely adopted application in the market among all ERP systems [3].

CV XYZ is an information technology-based company that provides solutions in the form of products and services for IT technology development. Currently, the demand for IT-based systems has significantly increased in line with technological advancements. Every business entity and company require an efficient and effective IT system to streamline their business processes. CV XYZ, particularly in its service procurement projects, has been using several tools to manage the projects. However, the use of these tools is temporary and limited to specific projects. Additionally, these tools lack integration with other processes related to service procurement, resulting in difficulties in sharing information among staff members. Apart from that challenge, the company faces other issues, such as the absence of a real-time system to manage various projects from initiation to completion. There is also a lack of a dedicated system to handle complaints or maintenance requests from clients. Consequently, these problems lead to a lack of trust from clients regarding the services and products provided by CV XYZ, ultimately resulting in client dissatisfaction with the company's services.

Consequently, there is a requirement for an integrated information system to merge the diverse requirements of the company when it comes to project management. One solution that can be utilized is the implementation of Kanban methodology in project management and the utilization of a ticketing process to handle customer complaints. Project Management serves as a primary tool to align and shape the working style of team members according to the organization's objectives, making it more effective and efficient while ensuring that organizational standards are met. Evaluating project outcomes becomes easier when each management procedure has been established while maintaining a certain level of effectiveness [4].

Kanban is expected to assist all relevant departments in sharing information, aiding decision-making, and coordinating project teams. The use of Kanban as the foundation for the system is based on the utilization of boards and tasks present in Kanban [5]. A board- and task-based system is easier for users to manage projects and activities and is more familiar because department employees use task systems and self-assign tasks for their daily activities. By using the Kanban basis, users can become more acquainted with the system to be developed [5].

On the other hand, employing a helpdesk system in the ticketing process will provide a solution to ensure that submitted tickets are responded to as quickly as possible. Generally, a helpdesk complements the service function and is responsible for troubleshooting issues or problems. The Helpdesk department typically utilizes a Helpdesk system to handle support requests or client complaints. They can respond to client inquiries or complaints via telephone, email, web, or fax [6]. Companies often use Helpdesk systems to manage support requests or complaints from clients [7].

With the presence of an integrated project management information system, the company can control and track the status of ongoing or completed projects at any given time. This enables the company to provide support in making quick and accurate decision-making processes.

2 Literature Review

2.1 ERP (Enterprise Resource Planning)

Enterprise Resource Planning (ERP), often abbreviated as ERP, is an information system that helps companies manage challenges in integrating and optimizing business processes related to operations, production, or distribution within the organization. The integration in ERP aims to connect various streams of business processes, facilitate communication methods and techniques, and align the synchronization and coordination of business operations [8].

2.2 Project Management

Project Management is one of the series of actions that can be undertaken. A project can be considered effective when it achieves project goals by making appropriate decisions and executing them successfully. On the other hand, efficiency means utilizing resources in the most effective way to achieve maximum results. Initiation, planning, execution, monitoring, and closure are all processes included in project management [9].

2.3 Odoo

Previously known as OpenERP, Odoo is a software that supports an easy-to-launch open-source ERP system with various modules that can be easily integrated. There are several modules in Odoo, such as Sales, Customer Relationship Management, Warehouse Management, Manufacturing, Finance and Accounting, Project Management, Human Resources, and more [10]. According to [10], implementing Odoo offers several advantages. It is open source and easy to use download for various types of PC specifications, access reliable information, avoid duplication of procedures and data entry, cost reduction, time savings, and increased control with enterprise-scale analytics, it is easy to develop with an attractive interface and is web-based, and it can be used by small to medium-sized companies [11, 12]. The implementation of Odoo is highly suitable for small and medium-sized enterprises (SMEs) where only basic ERP modules supporting business processes are needed. Additionally, its open-source features can help reduce the costs required for implementation [13].

2.4 Project Management Module

The Project Management module of the Odoo platform allows users to create and manage both long-term and short-term projects based on the operational terminology

of the company. This efficient management tool enables users to allocate employees to projects and effectively manage them throughout the project duration. On the dashboard, all projects described/implemented in the platform can be viewed. From the available data, users can filter the necessary information using filtration and grouping options provided in the window. Additionally, users have the option to create new projects using the available creation window [14].

2.5 Kanban

When Kanban was initially developed, the automotive industry adopted it as a scheduling method. Its main function was to work in collaboration with the assembly line and maintain high output levels. To give the workflow the ability to improve and adapt, the renowned car manufacturer Toyota was the first to discover Kanban. Kanban evolved over time and transformed into something different. It developed into a pipeline process and began to be used by various business sectors and industries. The fundamental principle of Kanban is that going from point A to point B should be done as efficiently as possible. One thing to remember about Kanban is that its process emphasizes evolution rather than revolution, which means Kanban encourages teams to start from their current position and then begin building upon it using the people directly involved in the Kanban process [15].

3 System Development Method

3.1 Odoo Quickstart Methodology

QuickStart is a methodology offered by the Odoo team, formerly known as the Odoo Implementation Method [16]. Small and medium-sized enterprises that want to adhere to established business procedures should use QuickStart in particular. It is designed to be user-friendly and specifically tailored to match the working requirements of Odoo [17].

The content further references Figure 1 which presumably provides a visual representation of the QuickStart methodology.



Fig. 1. Quickstart Method

The following is an explanation of the stages in the QuickStart method:

- Kick-off Call, in this stage, it is important to ensure that the consultant explains the services provided to the client and ensures their understanding of the contract's contents regarding the activities to be carried out.

- Analysis, at this step, a comparison between the company's current business procedures and those that are recommended based on Odoo's characteristics is made. This study produces a gap analysis to identify the elements that need to be created and tailored in order to fill in the gaps that have already been identified.
- Configuration, in this phase, the consultant reviews the Odoo system flow with the client to check the business processes and customize the system in accordance with the demands based on the gap analysis performed earlier. After performing data migration into the system, the consultant gives the users instructions and training on using Odoo operations.
- Production, in this stage the consultant implements the Odoo system for the company. The process includes system installation and configuration.

In this study, the author only carried out the QuickStart method up to the configuration stage since the developed system was not implemented in CV XYZ.

3.2 Systematic Research

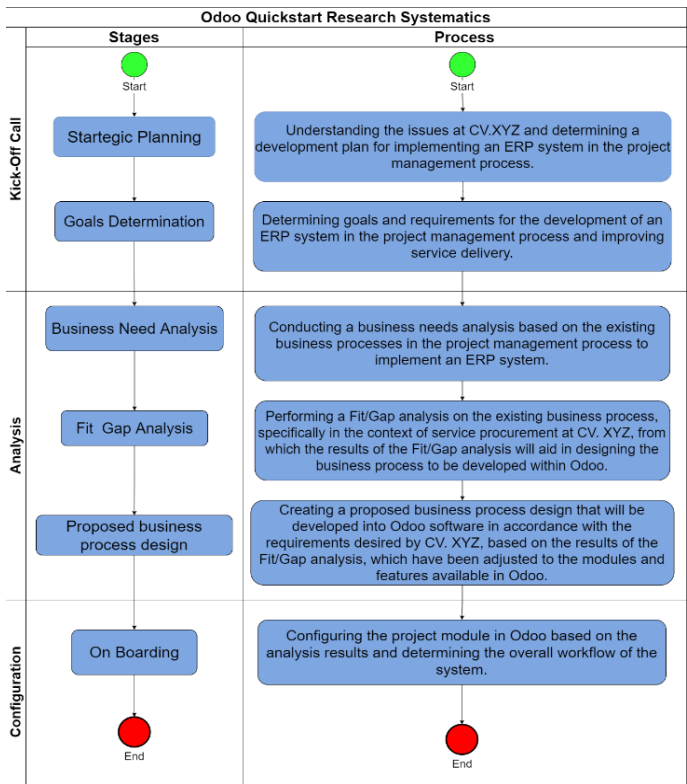


Fig. 2. QuickStart Research Systematics

The problem-solving methodology is a series of steps that explain how to solve a problem in this research from beginning to end. These stages follow a method called the QuickStart method. In the QuickStart method, there are five stages: kick-off call, analysis, configuration, production, and support [17]. However, in this research, only three stages of the QuickStart method are utilized, namely kick-off call, analysis, and configuration. Figure 2 illustrates the research framework using the QuickStart method.

4 Analysis and Design

4.1 Kick-off Call

An analysis of the research needs for enterprise resource planning systems has been conducted. This is done so that CV XYZ can understand the research methods and stages, allowing the author to provide final results that align with the requirements. This process consists of two stages: Strategic Planning and Goal Setting.

Table 1. Strategic Planning

Environment	Research	Basic Science
<p>The problems faced by CV XYZ, especially in service procurement projects, are:</p> <ol style="list-style-type: none"> 1. No system can manage projects from the beginning to the completion of the work. 2. There is no specific system to handle complaints and maintenance requests from clients. 	<ul style="list-style-type: none"> • Designing an Enterprise Resource Planning system on Odoo using the project module. • Designing a ticketing system by utilizing the helpdesk module to manage complaints or maintenance requests. 	<ul style="list-style-type: none"> • Enterprise Resource Planning • Odoo • Quick Start Method • Project Management

Table 1 shows that the environmental conditions in the service procurement project process at CV XYZ still lack a system capable of managing the project from the beginning to the end. Currently, project management relies on a few tools, such as Jira or Trello, resulting in limited capabilities in the service procurement project management process. Additionally, the company does not have a dedicated system for managing client complaints or maintenance requests, which leads to a slower response from the company when addressing client issues. Furthermore, there is a lack of integration between different processes. Based on these identified issues, the author has developed an enterprise resource planning system by utilizing the Odoo project module, integrated with module helpdesk.

4.2 Analysis

In this phase, the identification and analysis of existing business processes in the service procurement project at CV XYZ are conducted. This enables the researcher to determine the target business processes according to the business needs to achieve the research objectives. Additionally, this analysis was also performed to determine the blueprint of the system that will be developed.

Fit & Gap Analysis

In this phase, the researcher will conduct an analysis to identify the fit or gap that exists in the current business processes. It aims to determine whether the current business processes are functioning well or if any shortcomings need to be addressed. This analysis allows the researcher to provide solutions for the proposed business processes to meet the system requirements.

Table 2 illustrates the Fit & Gap Analysis of the existing business processes and their alignment with the system requirements. It highlights the current challenges and limitations in each business process and proposes solutions for improvement, outlining the transition from the "As-is" state to the "To-Be" state. This analysis provides valuable insights for addressing the identified gaps and enhancing the efficiency of CV XYZ's operations.

Table 2. Fit & Gap Analysis

Existing Business Process	Requirement	As-is Business Process	To-Be Business Process
Project Planning Business Process	It is possible to efficiently show the project's start and conclusion dates.	There is not enough documentation regarding how the project's start and end dates were chosen.	The determination of the start and end dates of the project can be directly specified and visualized in the project list
	The allocation of time in project execution can be determined directly.	The allocation of time in the project is not well-documented, resulting in the lack of accuracy in project completion time.	The project timeline can be determined upfront, and as the project progresses, the actual time spent on tasks can be accumulated and compared to the allocated time.

Existing Business Process	Requirement	As-is Business Process	To-Be Business Process
	It is possible to establish time benchmarks in project execution according to the project plan.	The absence of a time benchmark for completing project tasks is a current issue.	Time benchmarks in project task completion can be directly established by creating several milestones as project management tools.
	The project stages can be organized according to the steps that will be taken to complete the project.	The project stages in documenting project progress cannot be viewed in real time.	Project stages can be viewed in real time by the project team to ensure that everyone is aware of the progress of the project.
Project Development Business Process	Visualizing a Kanban board allows for real-time monitoring of each project and task.	In monitoring the project, social media is still utilized as a platform for discussions and updates on the project progress.	The project progress can be monitored in real time through the visualization provided by the Kanban board in the project management module.
	Each task can be assigned a deadline for completion and the responsible person can be identified.	The information regarding task deadlines is not well-documented, and the assignment of assignees for each task is not determined by the system yet.	Each task assignee is given a deadline to complete their respective tasks, and the assignment of assignees for each task can be determined directly when the task is created.
	Project progress can be shared with the client to enable direct monitoring of the project's development.	In monitoring the project's progress, clients can only inquire directly to the company about the progress of the project.	The project progress can be shared with the client, allowing them to monitor the project progress in detail and in real-time.

Existing Business Process	Requirement	As-is Business Process	To-Be Business Process
Project Maintenance Business Process	The system can display information on which projects require maintenance	The maintenance aspect of the project is not well-organized, resulting in frequent delays in the maintenance process for several projects.	With the implementation of project maintenance, projects can be carried out in an organized manner, and the progress of maintenance can be tracked effectively.
	In Maintenance tasks, can determine task priorities, deadlines, and team members responsible for the maintenance process.	The documentation of maintenance tasks and prioritization of tasks is not well-established, resulting in a lack of clarity regarding task priorities.	In carrying out maintenance tasks, the priority of each task will be determined, and the responsible person for each task can be directly assigned.
	Ticket tracking enables the recording, tracking, and management of tickets regarding client complaints received after the project has completed.	There is currently no specific system available for clients to report complaints regarding issues in the project.	Ticket tracking in the helpdesk can be used to record, track, and manage complaints experienced by clients.

Project Planning Business Process Design

This business process will describe the design of the project planning business process at CV. XYZ, which has been adapted based on the results of the FIT/GAP analysis. This process will primarily focus on project needs analysis, determination of general project information in Odoo, project design creation, and the determination and input of tasks to be performed into the project module. As depicted in Figure 3.

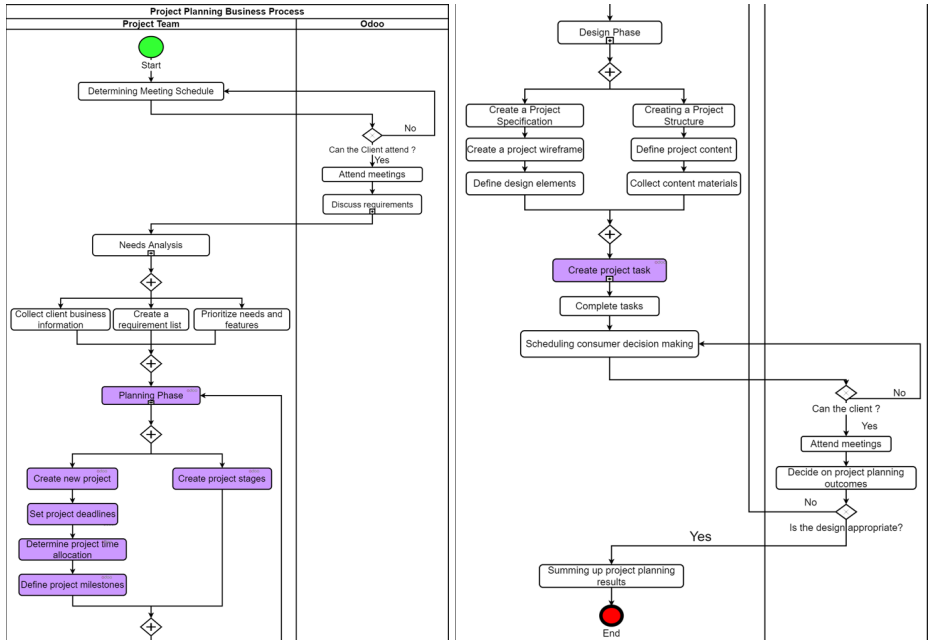


Fig. 3. Project Planning Business Process Design

Design of Odoo Project Planning Business Process

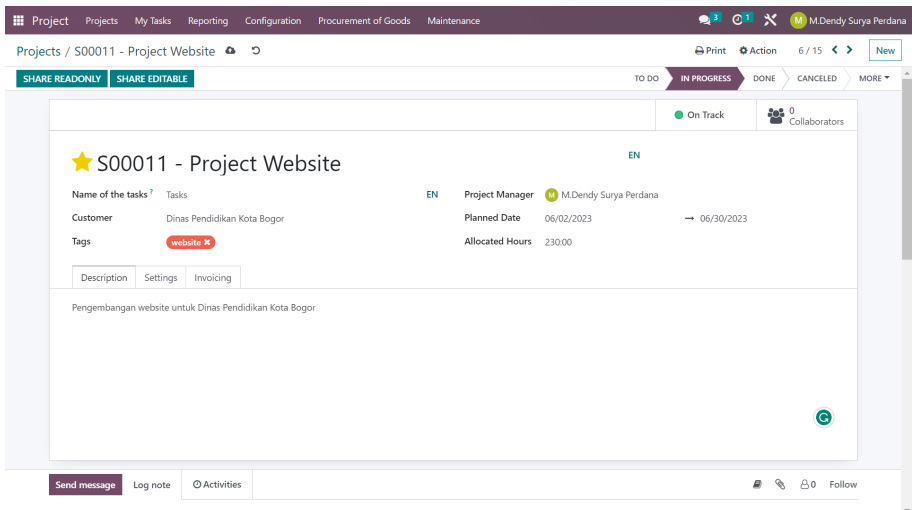


Fig. 4. Design of Odoo Project Planning Business Process

Figure 4 illustrates in the design of the business process for project planning in Odoo, the project management module within Odoo is used. This design has been tailored to align with the results of fit/gap analysis and the specific requirements of the company,

especially in the project planning process, such as creating a project, setting project deadlines, determining project time allocations, defining milestones, specifying project stages, and creating project tasks. With the implementation of this business process design for project planning, it is expected to facilitate and assist CV. XYZ in initiating initial project planning, particularly in service procurement.

Project Development Business Process Design

This business design process will depict the flow of the project development business process conducted by CV XYZ, which refers to the outcomes of the previous project planning stages. This process will primarily focus on the development of service procurement projects, such as front-end development, back-end development, testing, debugging, and reaching the project launch stage. As depicted in Figure 5.

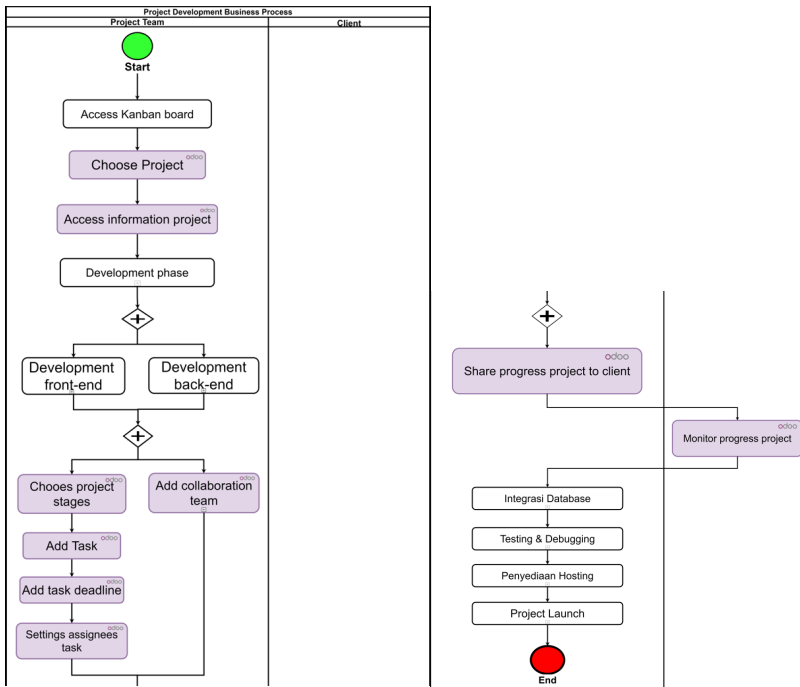


Fig. 5. Project Development Business Process Design

Design of Odoo Project Development Business Process

Figure 6 illustrates in the design of the business process for project development in Odoo, the project management module available in Odoo is used. This design has been adjusted to the results of the fit/gap analysis and the specific requirements of the company in the project development process, such as determining which projects to work on, accessing project information, defining project stages, creating and executing

tasks, setting task deadlines, assigning task responsibilities, and sharing project progress with clients so that clients can monitor the progress of the project. With the design of this business process for project development, it is hoped that it will facilitate and assist CV. XYZ in managing project development from start to finish.

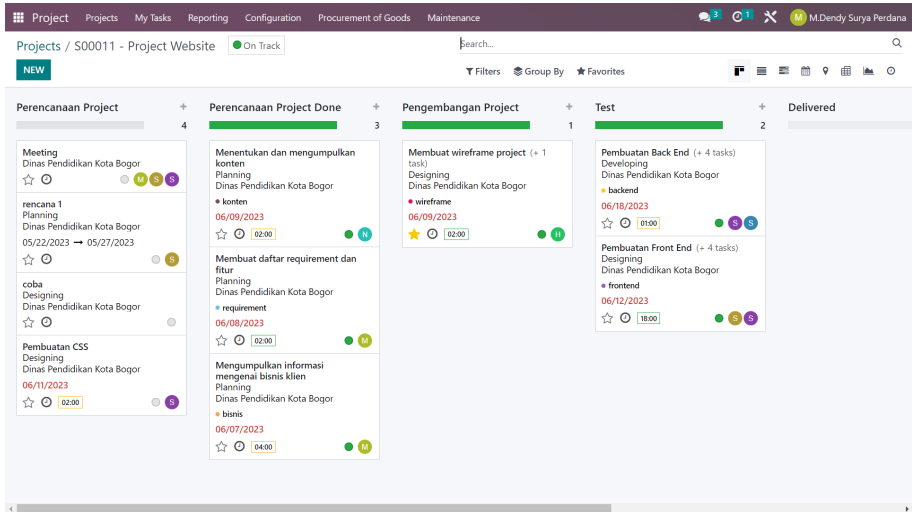


Fig. 6. Design of Odoo Project Development Business Process

Project Maintenance Business Process Design

This business design process will depict the flow of project maintenance activities conducted by CV XYZ as a company's response to client complaints or issues related to the projects they have received. In this stage, the company will receive maintenance tickets or requests from clients, which will be processed and evaluated by the project team for the subsequent maintenance process of the issues within the project. During the maintenance process, clients can also directly monitor the progress of the maintenance activities by accessing a shared link provided by the project team. As depicted in Figure 7.

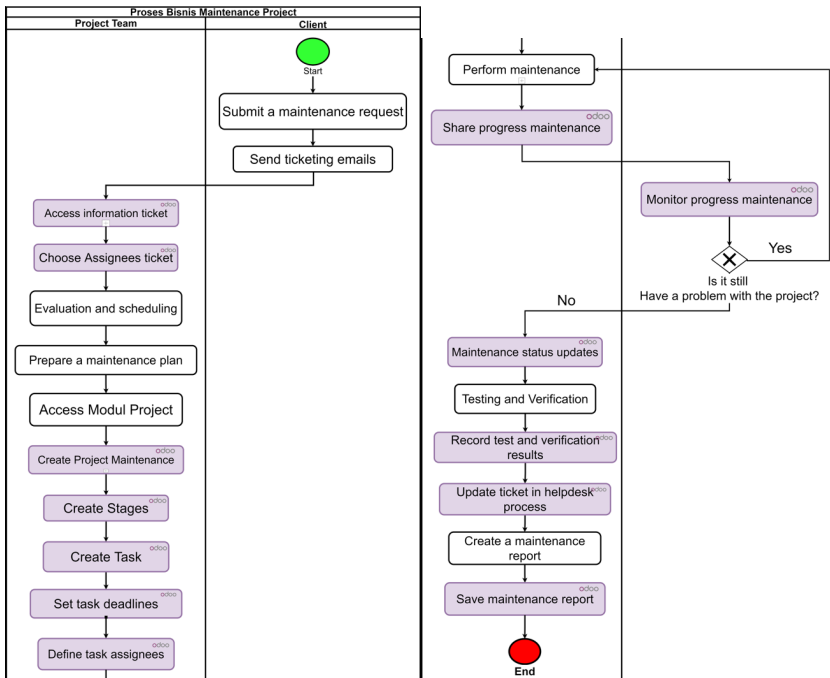


Fig. 7. Project Maintenance Business Process Design

Design of Odoo Project Maintenance Business Process

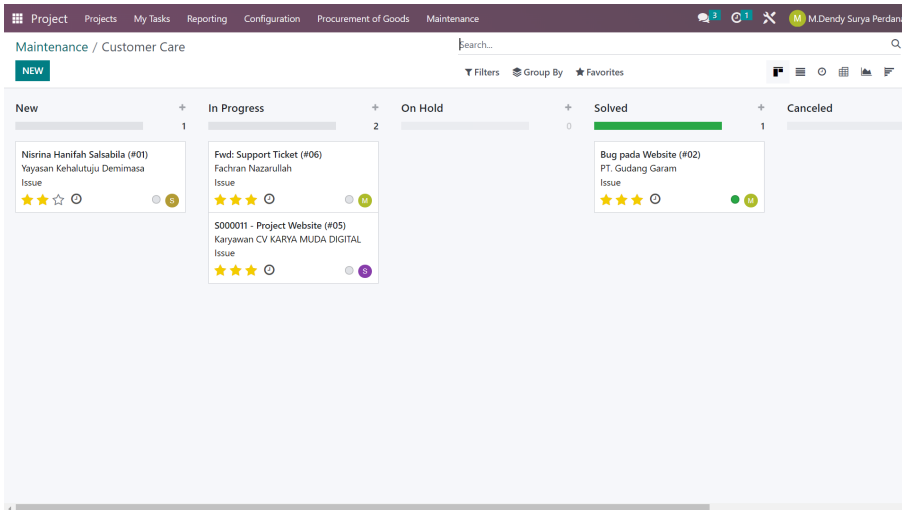


Fig. 8. Design of Odoo Project Maintenance Business Process

Figure 8 illustrates the design of the business process for project maintenance in Odoo, we use the project management module that has been designed by adding a helpdesk

process to it. This design has been adjusted based on the results of fit/gap analysis as well as the requirements of the specific company in the project maintenance process, such as accessing customer complaint tickets, determining the responsible party for maintenance tickets, creating stages and maintenance tasks, setting maintenance deadlines, and sharing maintenance progress with clients so that they can monitor the progress. With this design of the project maintenance business process, it is hoped that it will be able to address the issues faced by CV. XYZ in managing complaints or maintenance requests from clients.

5 Conclusion and Recommendations

5.1 Conclusion

Based on the research conducted on the design of a project management system for small and medium-sized enterprises (SMEs) in the information technology sector using the Odoo Quickstart method, the system designed aligns with the company's objectives and requirements. Therefore, the following conclusions can be drawn from this research:

1. The design of the project management system using the project module in Odoo has been customized to meet the company's needs, which were obtained previously through a Fit/Gap analysis. Specifically, the design of this project management module will enable the management of projects from initiation to completion by providing visualization on a Kanban board regarding project stages and tasks that need to be completed according to deadlines and assigned responsibilities.
2. Responding to client complaints and issues related to project maintenance has been addressed. This has been achieved by designing a ticket creation process to manage their complaints, utilizing and adapting processes from the helpdesk module within the project management module in Odoo.

5.2 Recommendations

Based on the research that has been conducted, Further research is needed on the ERP system's project management module up to the configuration and production stages so that this project management system design can be directly implemented at CV XYZ.

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