

Implementation of Smart Meeting Room Videowall All in One Using Project Management Framework Methodology at PT. Pupuk Sriwidjaja Palembang

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ABSTRACT

Smart meeting room is a "smart" meeting room that integrates hardware and software in one meeting room. The design of a smart meeting room videowall all in one at PT Pupuk Sriwidjaja Palembang is expected to facilitate communication, discussion and negotiation based on meetings, for which an audio-visual system is needed in each conference room. Starting with the pandemic that occurred in Indonesia in early 2020, some companies implemented remote work that did not require employees to come to the office, employees now work remotely more often. Therefore, advances in audio-visual technology and video conferencing are a growing trend that shows no signs of slowing down. This design system aims to create a productive meeting experience for employees of PT Pupuk Sriwidjaja Palembang, whether the participants join directly from the office or remotely. The design of all in one based meeting room at PT Pupuk Sriwidjaja Palembang using project management framework. The results of this research can facilitate interaction and communication during meetings, smart meeting rooms are equipped with audio and visual support technology. One form of realization of IoT technology in smart meeting room components is its ability to enable automatic settings, both in temperature settings and light settings that can be controlled easily and integrated from just one intuitive touch panel. Therefore, with the design of a smart meeting room based on all in one at PT Pupuk Sriwidjaja Palembang using togaf framework will facilitate the booking system automatically, because all smart meeting room booking processes will be automated easily and quickly. The smart meeting room is actually equipped with various supporting all components, such as a wireless smart screen, which can also function as a smart whiteboard, a set of video conference tools equipped with a microphone to facilitate communication, and a platform with integrated controls to manage all devices.

INTRODUCTION

Smart Meeting Room is a room where objects in the room are controlled easily and efficiently by its users, in this case these objects are electronic objects commonly found in a room such as a wireless smart screen that can be used as a smart whiteboard and a set of video conference tools and platforms with integrated controls to manage all devices. Smart Meeting Room is built using the all in one concept, a concept where an object has the ability to receive and send data over a network without requiring human interaction to the computer. All in one is a concept that aims to extend the benefits of continuous internet connectivity.

Videowall entered Indonesia starting with applications in the outdoor advertising industry and is still a favorite medium. The relatively large investment and few early adopters resulted in slow penetration. However, today we can see many different LED applications of Videowall as facades for buildings, modern office lobbies, music and art performances, auditoriums, retail stores, and more.

PT Pupuk Sriwidjaja needs a smart room meeting design to facilitate the implementation of digital transformation of communication between employees remotely and increase employee productivity. Communication, discussion is based on meeting in a conference room so advances in audiovisual technology and video conferencing are a trend in the era of efficiency in the business world. The design of the smart meeting room of PT Pupuk Sriwidjaja can be realized with technological advances both in the design process and in the system used in running a digital-based smart meeting room. The smart meeting room approach in this design process is to create a smart meeting room that integrates hardware and software in one meeting room to create a productive meeting experience for participants, whether the participants join directly from the office or remotely.

The purpose of this research is the implementation of a smart meeting room videowall all in one using the project management framework methodology at PT Pupuk Sriwidjaja Palembang.



LITERATURE REVIEW

Project Management Knowledge

Project management Knowledge applies knowledge, skills, tools and techniques to project activities to meet the needs or expectations of all stakeholders involved in an information systems project. The sequence in the project management framework is that stakeholder needs and expectations are incorporated into project management integration (PIM). These are nine knowledge areas and consist of two main functions: Core Functions and Support Functions

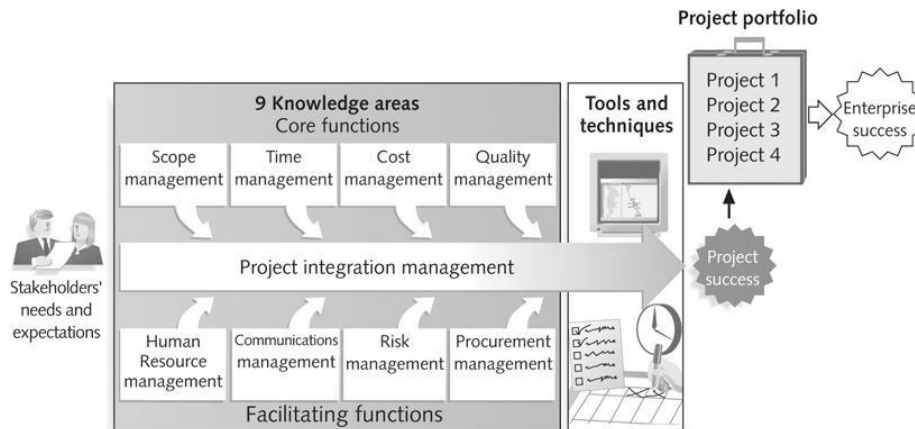


Figure 1. Project Management Knowledge

According to Schwalbe (2012: 11-12), the ten project management knowledge areas are:

1. Project Integration Management is an overarching function that affects all other parts of the knowledge field.
2. Project Scope Management involves the process of defining and organizing all the work requirements needed to complete the project successfully.
3. Project Time Management consists of estimating the time needed to complete the project, developing a schedule that is acceptable to team members and ensuring the project is completed on time.
4. Project Cost Management consists of preparing and managing the budget for the project.
5. Project Quality Management is ensuring that the project complies with the agreed requirements.
6. Project Human Resource Management is concerned with nurturing the individuals involved in the project to be effective.
7. Project Communications Management involves the process of collecting, disseminating and storing project information.
8. Project Risk Management consists of identifying, analyzing and responding to risks associated with the project.
9. Project procurement management involves the process of acquiring or purchasing goods and services for a project.
10. Project Stakeholder Management includes identifying and analyzing stakeholder needs while managing and controlling their involvement in the project.

Videowall Main Components

In this research, the led display used is the kslim II 3.9 brand with a large screen (500mm x 100/750 x 39.6mm) which can be used to visually display various data.

Table 1. Compound Led Display

Parameter	
Model	Kslim II 3.9
Pixel Pitch	3.9mm
LED Type	3-in-1 SMD
Brightness	800 cd/m ²
Pixels Per Panel	128 × 256 pixels 128 × 192 pixels
Pixel Density	65536 pixels/m ²
Module Size	500mm × 250mm
Panel Size	500mm × 1000/750mm × 39.6mm
Weight	10 kg/panel 7.5 kg/panel
Maintenance	Front & Rear
Ingress Protection	IP40/20
Material	Die-cast Aluminum
Color Temperature	2,000-9,300k (adjustable)
Viewing Angle	160°/160°
Contrast Ratio	6000:1
Input Power<Max>	≤480W/m ²
Input Power<Typical>	≤160W/m ²
Input Voltage	100-240VAC
Refresh Rate	1920-3840Hz
Input Power Frequency	50-60Hz
LED Life Time	100,000 Hours
Operating Temperature/Humidity	-10°C~+45°C/10~80%RH
Storage Temperature/Humidity	-20°C~+55°C/10~85%RH



Figure 2. Monitor A dan B

Video Controller/VWMC2-M4

To integrate input from the Operator's PC and output to Videowall or can be called all in one, a Videowall Controller is needed. In addition to integrating between Inputs such as PCs with videowall layers, the Videowall Controller also functions to display and compose one or more displays from connected inputs, of course using software provided by Digibird. The following is an example of a Videowall Controller device:



Figure 3. Video Controller

Design Topology

The following is a system that can be integrated using Videowall in accordance with the Digibird brand controller with the number of input cards and output cards adjusted to the approved configuration:

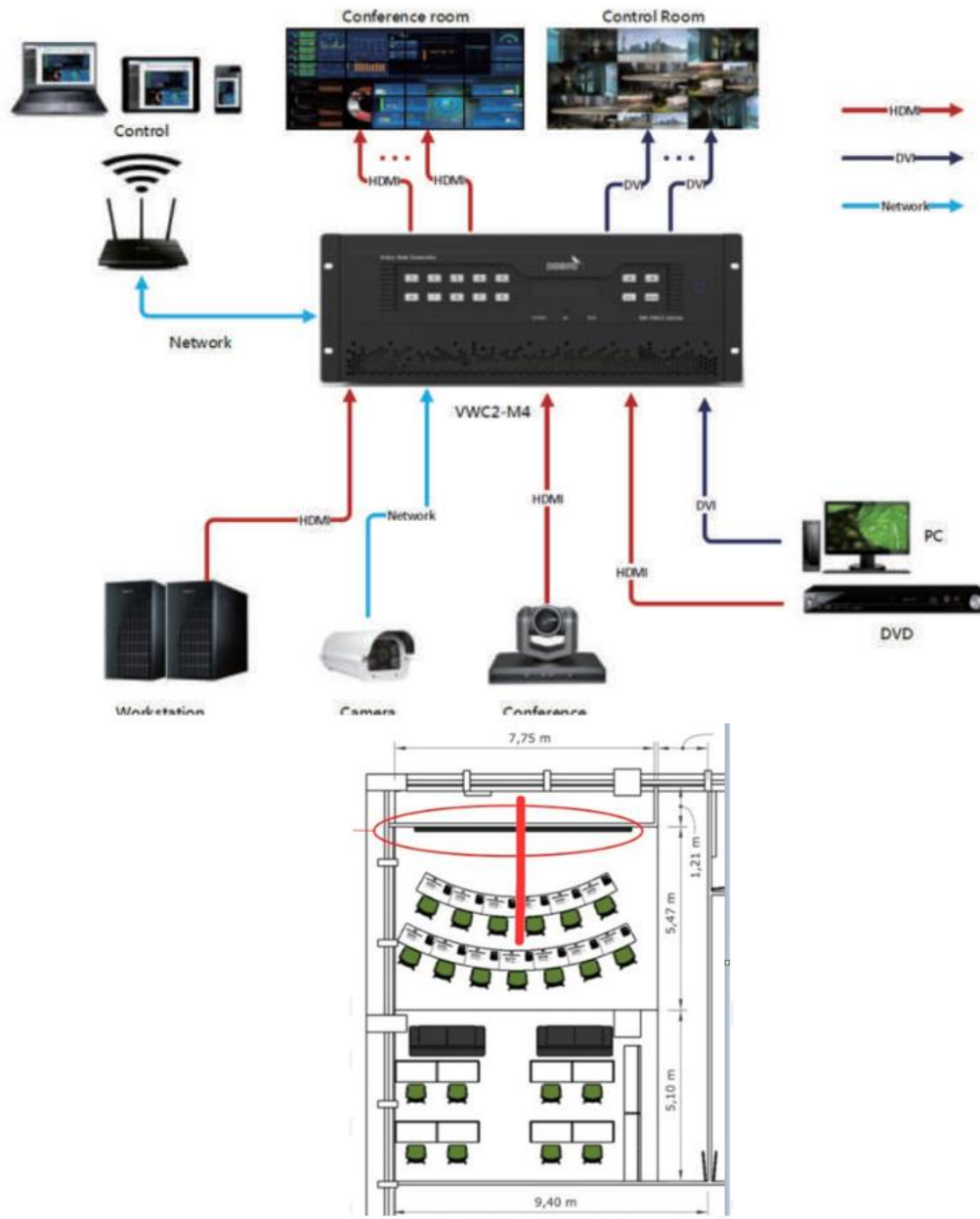


Figure 4. Design Topology

METHOD

Project Management Framework

This method is descriptive. The method with a descriptive qualitative approach is a method of data processing by collecting data based on factors that support research and then analyzing these factors to be able to find their role (Prabowo & Heriyanto, 2013). Research with a qualitative approach uses primary and secondary data (Dana & Durnez, 2015). In this study, researchers used the project management framework method, as for the stages of the project management framework method starting from Initiate, prepare, execute and control, and close.



Figure 5. Project management framework

Project management is a process or way for a business to carry out various project activities and events in the project management framework. According to Budi (2011) The thing that distinguishes project management from other management is the time span that is carried out and also project management is needed when the company wants to run a project or event. The project management methodology has several process stages in the Project management framework methodology as follows:

1. Initiate, is to determine the vision and mission of the project or approach, as well as document what is the target, and get approval from stakeholders or can be called users.
2. Prepare, at this stage there are 3 stages including:
 1. determine the infrastructure development phase and scope,
 2. the design that has been made will be executed according to the specified timeline, and
 3. Define requirements to achieve the specified time and budget goals
3. Execute and control, at this stage is carried out to monitor the progress of the ongoing project, and see if it is in accordance with the plan. In this phase, various corrective actions can also be made.
4. Close, at this stage where the results of the previous 3 stages

S-curve

The S curve is a calculation method in the form of a mathematical graph that shows the cumulative data of a project. Generally, the cumulative data in this case is the cost or duration of labor time (man hours) that has been used. According to M.Iskandar (2015) the S curve is used to control project implementation by using a combination of an "s" shaped project implementation time relationship graph and milestones, this method is useful in tracking the development or progress of a project. As you know, development or progress should not be ignored in the world of construction.

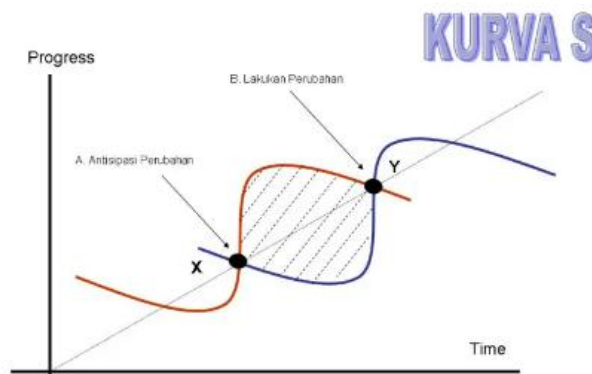


Figure 6. S-curve

RESULT

The implementation methodology approach is an approach used to design and implement approaches in research according to Iqbal (2021). researchers use an approach in this study where the research approaches the implementation of installation and maintenance as a scientific method that is often used and implemented, the research approach is

carried out to build knowledge through understanding and discovery. This research approach is also a process of research and understanding based on the project management framework method that investigates a social phenomenon and human problem. There are 3 stages in the research carried out on the implementation methodology, namely the installation method, maintenance, and experts:

Stages of the Installation Methodology Approach

The installation methodology approach according to Anggara (2015) is a method or approach used in planning and implementing the installation of a system or device. This approach includes various aspects of the timeline, such as technical, organizational, and work programs. This approach aims to ensure that the installation is carried out correctly and efficiently, and meets the needs of users, there are 2 phases in the installation methodology approach:

1. The Construction phase, is the phase where the devices are put into place:

- a. **Adjustment of Design**, First time done Kick off meeting needs to be done so that the job executor and the employer know each other and know their respective duties and authorities. At this Kick off meeting, the work plan of the job executor is also submitted in accordance with the bidding document. At this Kick off meeting, it is also expected from the owner to determine the field supervisor as a sparring partner for the job executor. With this kick off meeting, the work officially begins. And for its success, interested parties are expected to be notified for example licensing and so on. After the kick off meeting, the design inspection is carried out. The first work done in preparation is document inspection. From the documents offered, it must be seen whether the conditions in the field are in accordance with the assumptions of the bidding documents. It is necessary to carry out a careful field inspection to ensure that everything is in a condition that matches the assumptions. If there are any discrepancies, a meeting with the field supervisor must be held immediately to resolve the problem
 - b. **Re-Design**, Re-Design is done if there are things that cannot be adjusted, then a re-design is carried out so that the system objectives can run well. In addition to system design, the timeline schedule and order of work implementation must also be considered so that it remains within the completion time limit
 - c. **Material Approval**, If the design has been completed, then material approval is carried out, to ensure that the items to be installed are as expected.
 - d. **Procurement**, If the inspection of documents with conditions has been completed and no problems have been found and have been approved with material approval, then the next process is the purchase of equipment in accordance with the bidding document. Purchasing usually takes a long time, so the deadline for completion must be considered.
 - e. **Preparing the location**, Location preparation is something that needs to be done, because work without preparation will be difficult to achieve the goal.
 - Electrical Preparation, Preparation of electrical problems is needed even though the work is carried out by other parties. We need to make sure the work has been completed according to schedule so that it is ready to be done for the next process.
 - Data Network Cabling Preparation, Data network cabling will be monitored to ensure that the work is on schedule. If the work is not ready, then we will propose rescheduling according to the ability of the cable installer.
 - Ethernet Switch Preparation, Active network devices, namely ethernet switches and accessories, also need to be prepared by the customer before installation. If there are problems in this installation, we will propose a rescheduling according to the ability of the active network provider.
 - Pre-assembly and Testing Pre-assembly and testing needs to be done so that the installation work is certain without any concerns that the installed devices are not in good condition. After the goods arrive, Material on site (MOS) is carried out and condition tested.
 - f. **Documentation of the work**, After the site installation is nearing completion, documentation of the work is carried out such as: - Documentation of activities during the work period, including photographs, minutes, and other records of activities. - SN Number Documentation
- 2. Fase Commisioning**, In this phase, it will be checked whether the implementation in the construction phase has been completed and in accordance with the initial plan;
- a. **Trial**, Every device that has been installed and connected to the system, will automatically work as a trial Test runs continue and increase every day until handover.
 - b. **Repairs if needed** Repairs should be made if needed for cases related to the basic functions of the system and its components. These repairs should be carried out prior to inspection by the owner's team
 - c. **Inspection by the owner's team** 4 The final inspection is carried out by the owner's team to ensure that all work has been completed and can be handed over.
 - d. **Supervision Site training activities** will be provided if the inspection results by the owner's team are declared ready for use

- e. If the inspection has been completed and declared ready, then a handover notice will be submitted by both parties that the work has been officially completed and entered into maintenance. b. Buyer Methodology Approach

Stages of Maintenance Method Approach

The maintenance method approach according to Corder, P.A (2019) is an approach that researchers take in a series of activities carried out to keep a system, equipment, or facility operating or functioning properly. There are several maintenance method approaches that can be applied, depending on the type of system or equipment being maintained. Here are the approaches in the maintenance method:

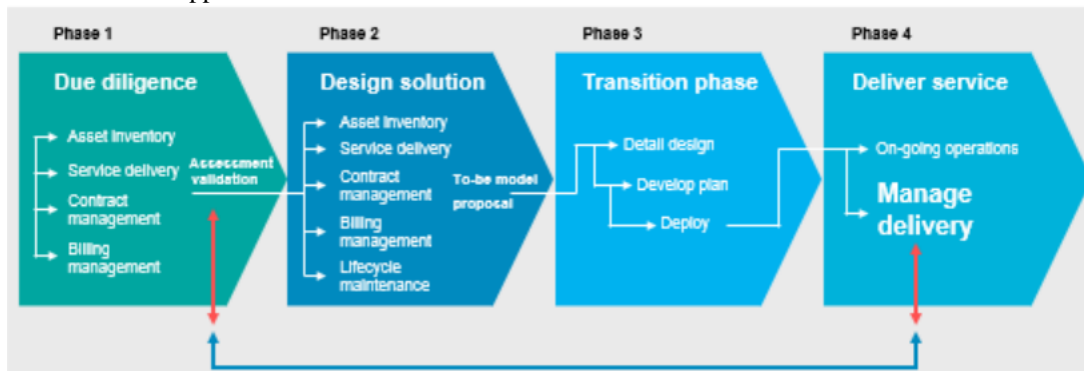


Figure 7. Maintenance methodology

The methodology that the researchers used has been proven to provide high quality output for hardware maintenance services. There are four phases or steps that need to be done in this methodology, namely:

1. The first stage, is to determine a solution based on an assessment of Pupuk sriwidjaja's organizational needs, what are the business goals and strategies and what assets are owned. Determination of business scope, geography, company, line of business, equipment, platform, business applications used today and future plans, availability and criticality of applications. Review of helpdesk information flows, escalation paths, exception processes, service level agreements and service reporting measures that are in place today and desired in the future.
2. The second phase was to develop a customized solution to meet the unique business needs and transition from legacy methods to Lintasarta-managed technical maintenance support. Aligning the collected data (Inventory data, supplier data, hardware and software services, service level requirements) with business initiatives and determining the elements of Technical Maintenance Support Services that are best suited to provide support and financial benefits.
3. The third stage, is for the execution of a transition plan customized to the platform, geography, application or business function required.
4. The fourth stage, is to provide added value and improvements to Pupuk sriwidjaja's business continuously. In addition, Researcher also regularly evaluates and adjusts the solution for Pupuk sriwidjaja, so that it meets Pupuk sriwidjaja's needs at the beginning of the contract-and throughout its duration

Expert

Project Management can be defined as a process of planning, organizing, leading, and controlling a project by utilizing resources as optimally as possible to achieve predetermined goals. The basic functions of project management consist of managing the scope of work, time, cost, and quality. Proper management of these aspects is the key to success in organizing a project. With the existence of Project Management, there will be restrictions on the duties, authorities, and responsibilities of the parties involved in the project both directly and indirectly, so that there will be no tasks and responsibilities carried out simultaneously, If the functions of Project Management can be realized clearly and structured, the ultimate goal of a project will be easily realized, namely:

- On Time
- Right Quantity
- Precise Quality
- Right Cost according to the plan cost

Close

Project implementation requires coordination and cooperation between organizations in a solid and structured manner. And this is the main key so that the final goal of the project can be completed according to the planned

schedule, the following is attached to the results of the 3 stages of the project management framework methodology:

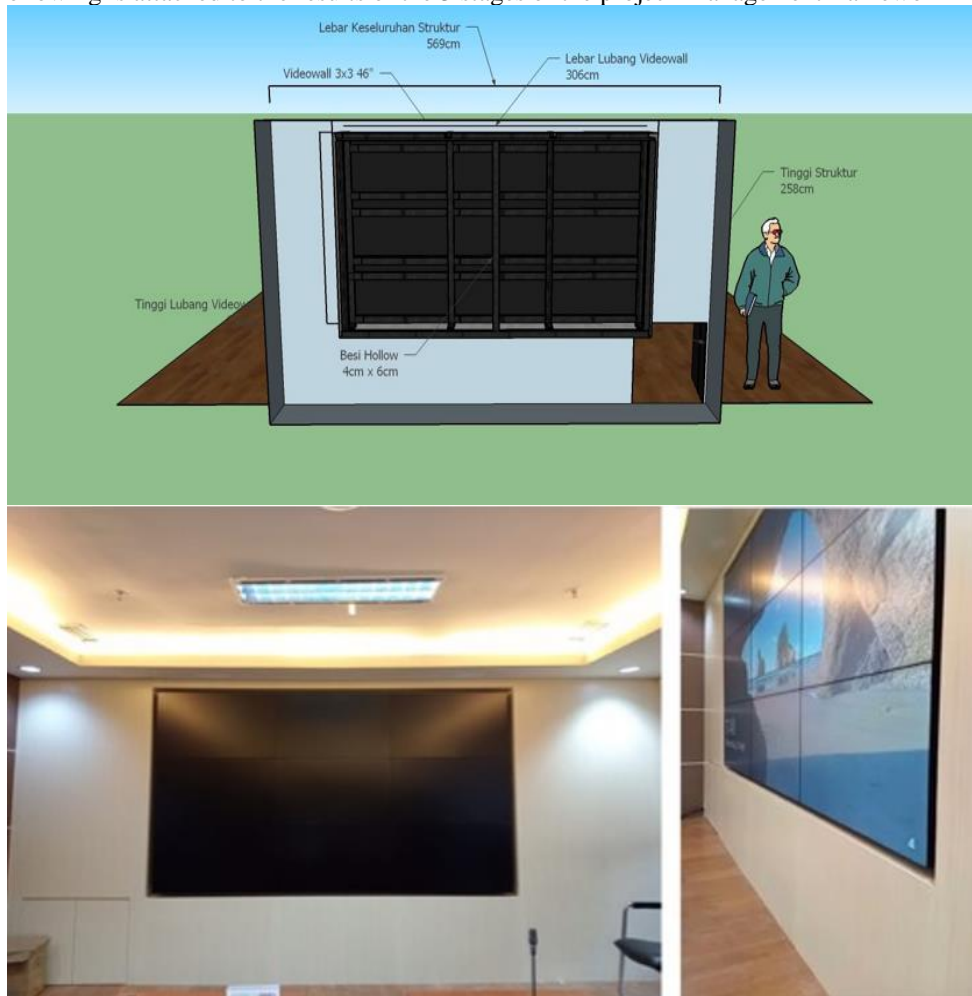


Figure 8. Videotron Installation Implementation

DISCUSSION

According to Duncan W.R (2008), a project timeline is a list of a series of tasks or activities arranged in time order in visual form. The importance of the project timeline cannot be ignored by researchers. The project timeline is one way to monitor the progress of an ongoing project. With a project timeline, you can see the progress and how far a project has been done:

Table 2. Time line

No	DESCRIPTION	DURATION DAY'S	MONTH 1				MONTH 2				MONTH 3				
			W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W17
1	Project Initiation														
	Penunjukan Pemenang	1	█												
	Kick Off Meeting	1	█												
	Clarification	1	█												
	Administration	3	█	█	█										
2	Ordering and Delivering														
	Ordering and Delivering Goods	30		█	█	█	█	█	█						
3	Pre-Implementation														
	Checking Goods Conditions	5						█	█						
	Preparing Materials for Implementation	5						█	█						
4	Implementation														
	Instalasi dan Konfigurasi Videotron	33							█	█	█	█	█	█	█
	Go Live	5												█	█
5	Commisioning and Hand Over														
	Transfer Knowledge	2													█
	Documentation Delivery	2													█
	BAST	2													█
	TOTAL	90													

From the results of the project management framework methodology that has been carried out, the researcher evaluates using the s-curve method. This method is one of the ways in which the evaluation to assess the level of efficiency of the project management framework method has been carried out:

Miller, Roger dan Donald Lesard, (2000). Understanding and Managing Risk in Large Engineering Project, International of Project Management / Universite du Quebec a Montreal, Canada
Schwalbe, K. 2012. Information Technology Project Management: Thomson Learning.

