

**Production Management and Labor Organization System (PMLOS)**

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| Capstone project code |  | |

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# Introduction

## Purpose

PMLOS is the system that helps to Quang Hanh TKV helps Quang Hanh TKV company to change the way manage production and labor from ineffective way (by excel) to manage by software to increase work efficiency and reduce risk.

## Project Information

* Project name: **Production Management and Labor Organization System**
* Project code: **PMLOS**
* Project group name**: Ready Team**
* Product type: **Web application**
* Timeline: **Dec 08 th , 2017 – Nov 13 th, 2018**

## The People

### Supervisor

|  |  |  |  |  |
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## Background

### History

### Organizational structure

### Department introduction

### Responsibility in business of each department

### Current system

- Recruitment: When the company wants to recruit an employee to working, the candidates will have to interview with a person responsible for interviewing in the company. If the applicant passes the interview, the interviewer will call the recipient of the basic application, including some information such as: Full name, age, gender, hometown, phone number phone, .... The person responsible for receiving that file will create a word file containing the applicant information and submit to the Board of Directors for confirmation. If the board of directors does not agree, the staff will notify the applicant that is not accepted to do, and if the board of directors agrees, the recipient will call to notify the applicant to bring additional documents to other recordkeepers so that they can proceed to receive and enter information profile into an excel file named ‘Inside Profile’. This new employee information needs to be informed to the Factory and the board of directors, so the record keeper needs to call the Control Room so they can add new information to the excel file and post it on the board of directors and The corresponding Factory (if the employee is in the Factory) for them to enter the excel file, the list of Factory employees to work on the next day.

-Changing employee information: When an employee wants to change the information in the record, they must meet directly with the person who has the right to change the profile and present the information to be changed such as phone number, address permanent resident, or can add qualifications .... If the person has the right to confirm the correct changes for employees, they will contact the recipient of the profile so that they can search for employees to edit in the excel file (if personnel Members who add additional information to the record they need to go to the person who stores the record to return the relevant documents to add). When the editing is complete, they will have to contact the control room and the (if the employee changes the information in that) for those department managers to edit in the excel file. corresponding edits.

-Payroll calculation: This payroll job only applies to factory workers, who in other departments will get a fixed salary every month. The salary calculation will take place every Monday to Friday at each, the attendance manager will track this by writing a notebook, then at the end of the day they will give it to the person who has it. task of calculating each employee's salary coefficient by volume, catches of the day to sum up in the excel file. The completed report form will be contacted to the Labor Organization department, the person in charge. General work in the Labor Organization will have a calculation formula to fill in an excel file called the labor productivity of employees in the department by day, month or quarter.

-Track meals: Every day the company will prepare meals for employees in each in 3 shifts: morning, lunch and dinner. The person in charge of recording each ration of each will ask one person for one ration a day for a week. The job will be recorded by a notebook, and it will take place by the end of the sixth day of the week, so the registration for this meal is planned for the next week. When the assembly of the is completed, they will call to notify the party organizing the work recorded on this day, ca to register how many meals for each in an excel file. The Labor Organization party will summarize all the meals, if any does not notify within the specified time, they will assume that the other party does not register any meals for the next week. After the summary, they will contact the life to give them an excel copy so that they can prepare the ration for each in the next week. This excel file will have the actual meal ration of the week for each shift so that the life will record it in each excel file. At the end of the week, they will return the excel file to the Labor Organization department, so that they can synthesize the actual meals and plan for each.

-Directing employees: When a certain needs people for a certain job, the person with the right to mobilize (the manager in the or the competent person). They will create a word file containing the basic information of that information and the job that they want to mobilize for the employee. Once completed, they will contact the Labor Organization room to send that word file. Then the Labor Organization department will check if the basic information of the employee is appropriate or not, if the information is appropriate, they will send the word file to the board of directors to request a decision to dispatch. The director agrees that they will print a word file with the dispatch number for this employee and send it to the Labor Organization. The Labor Organization will edit the employee's information in the excel files containing the information. news of that employee. After editing, they will first notify the control room for them to summarize the list of employees in the excel file to send to the board of directors, the next will send information to the new and the old of that dispatching staff to change each in the excel file of each.

- Contract Termination: There are 2 types of contract termination in the company: active and passive. Passive is the person who has the authority to make an application for the employee to quit. This termination applies to all employees in all departments. The resignation application will be sent to the Labor Organization office, the Labor Organization department will check and confirm basic information to send to Board of Director. The board of directors will contact the employee and the manager of the staff to confirm. After agreement, the board of directors will create a word file with the employee's decision to terminate with the reason for termination. send it back to the Labor Organization department. The Labor Organization department will search for employees in the internal file to delete and put in the external file. If the employee's profile change process is complete, the person who keeps the record will contact that terminated employee will let them come to the document store owner to get back the paperwork, this store keeper is responsible for recording in the excel file the file in addition to the information already given to the employee.

- Certificate management: With certificate management, the Labor Organization department will have 2 jobs to check the duties of employees in the and manage all certificates of employees and employees. Firstly, the certificate management, all employee certificates that the company has are summarized in the excel file including the name of the certificate, the certificate code, the expiry date ... and the certificates of the existing employees. including the employee name, employee code, certificate type information. The second is to check the duties of employees in the, with each they will have a list of certificates of employees at that so that they are assigned to work every day by the Labor Organization. the working day, the manager will assign tasks to each worker in the corresponding to the certificate of the existing employee, but to confirm this task is appropriate, the owner will send the file. excel the tasks of each employee in that to the Labor Organization room. The Labor Organization department will check if the list of employees assigned to the job matches the employee certificate that they have, or is available but is about to expire to notify the to let the worker. If an employee does not conform to the assigned duties and the is intentionally assigned to the worker, all consequences will be borne by the.

-Add a certificate: Workers at the after school to get a certificate, or need additional information about the certificate, they will go to the certificate manager directly to check and confirm. then they will contact the file keeper to get up the certificate. The Labor Organization department will update it in the file of the certificate of the worker, after completing this they will inform the certificate manager for updates in the certificate management file in the company and employees. When the whole process ends, the certificate manager will notify the corresponding so that they can update the certificate for the workers in the corresponding in the excel file so that the next day they can assign the task. Work

- Company-wide list: The Labor Organization department will summarize the list of all employees in the company's office in an excel file. This file will be posted to the board of directors whenever needed.

- Safety department: At the, if a worker has an accident during work, the manager will be responsible for sending that worker's status in a word file to the control room for them. Edit the file format to complete some requirements and they will send it to the labor safety room. The Safety department reviews the situation and sends people down to check the situation of the accident to confirm and send it to the Labor Organization office to see how the accident rate is to send an application to the board of directors. If the worker decides to quit, the employer will receive the decision to terminate and delete the worker in the internal and professional file. Go to the external file with the reason that termination is an occupational accident. All the profile information of the worker is updated, the Labor Organization department will contact the control room and the of the former worker. Jobs for them to update in the excel file the corresponding employee list.

### Business between TCLD department and other departments

### Existing system

### Conflict and difficulty of current system

## The Proposed system

### The idea

Considering the problems of the current manual system, PMLOS was created to solve all those problems. This will be an intuitive, comprehensive management system, help the management becomes faster, multitasking, simpler, more efficient, eliminating the limitations of the system manual, improve productivity efficiency, minimize risk of error. Employees will be managed by department and certificate will be managed by employee. PMLOS will provide searching employee feature and filter by department feature to make searching information of an employee and his/her certificate more easily.

### Technical requirement

Because the business of Quang Hanh Company involves work in the mines. Mine is an extremely dangerous place with difficult and complicated. It is difficult to carry many devices, equipment and in addition the managers do not know much about computers and complex technology. With the condition of a Wi-Fi pit, PMLOS is built to website, that will best suit with above conditions. With users using office IT to get acquainted with the software faster and more user-friendly during using. Software will manages the server power, automatically disconnects data, links and takes over the control of the Company's existing digital radio system for power outage operation.

### Functional requirement

Because there are many different positions in the labor organization department, the features and the screens will be assigned and only authorized people can handle the features and screens. There are positions in the labor organization department such as paperwork managers, certificate managers, mobilization managers, recruitment and termination managers, labor productivity managers, and department managers. So the features will be developed based on the positions and jobs in the labor organization department .

For paperwork managers, because their current difficulty is that the management on excel is scattered in many different files,this wastes a lot of time for searching to add new or update, due to the risk of lossing data, the software will help the paperwork manager to manage more focusly. There will be a screen of employees record management in the company by list. When selecting the employee will have a screen showing all the information of this employee. The manager can add and edit information in this employee's profile. The software will also provide the ability to search by employee code, employee name or employee filtering by department to help find information of employees to edit quickly. The manager can also easily see what the employee's profile is missing so that he can notify the employee to add. After the addition of the record, the history of the record addition will also be kept for the manager to manage.

For recruit and terminating contracts managers, their difficulty is the management of the recruited employee records as well as the employee termination records. This makes it difficult for the company's labor statistics as well as total of recruitment and termination. The software will support the feature of creating contract termination and recruitment of employees. After the manager has obtained a decision code from the board of directors, the manager will fill in the decision code on this form. The software will handle both decided and undecided form. After an employee has made a decision to recruit, it will be managed by the software in the company profile and with the decision to terminate the contract will be stored in the profile outside the company. The number of terminations and employment of the two departments : Mechatronics and Exploitation will be re-listed to serve for making monthly and annual reports on total termination and employment easily.

For the company's certificate and employee’s certificate manager, they are currently facing a lot of difficulties and are time-consuming with this, mainly focusing on looking for employee records and adding certificates as well as renewing certificates for them, besides managing whether employees are working have certificates for the assigned tasks or not. The software will support by having both the certificate management feature of both the company and the employee. For the whole company's certificate management, when it needs to add new, edit information or remove Out-of-date certificates, the software will make this easier and employees who have this certificate will automatically be dropped. Valid or expired certificate status will also be shown. The certificate manager can also track employees who are assigned to a task who have a certificate for that task yet in the task certificate tracking screen. At this screen, the manager can renew for the expired employee certificate and add a new certificate for the non-certified employee. Searching and filtering functions will also be added to the software to help managers find employees and certificates more easily.

For managers who mobilize employees, the difficulty they encounter is similar to recruit and terminating contracts managers when they have to manage the mobilization orders that have a decision code and have no decision code. from the board of directors. Besides, they have to notify the factory that employees are transferred to the factory to managers for assigning work and take daily attendance for this employee. The software will also assist the manager to easily manage the dispatched units that have decision and no decision. After the decision of the application is made, the assigned employee is automatically added to the list of employees in the assigned factory. The ability to search and filter employees by workshop is also added to make it easy and quick to find employees.

For labor productivity managers. The software will support the aggregate labor productivity entered by the factory. Labor productivity will be aggregated by two types : by month and by day. This will make it easier for managers to make reports as well as monitor labor productivity with the goals set out. In addition, in the management of labor productivity, managers can also track the number of long-term sick leave workers to serve the timely dispatch of workers to the workshop to be able to accomplish the set goals.

There will also be a dashboard screen to view quick reports: number of expired certificates, number of mobilizations, number of accidents, unreasonable number of unused employees, daily output report, human chart. This dashboard screen is accessible to all managers.

For the head of the labor organization department, the software will provide a history tracking feature for how managers take action during the day. For example, actions such as mobilizing employees, adding certificates, extending certificates, recruiting, terminating contracts with employees... will be saved as: action + performers + execution time. This feature is only available to the manager. The convenient feature for the head of the department to monitor all activities that occur in the labor organization room, and when an incident occurs, the task of accountability can be done more easily.

### Out-of-Scope Functions

Due to the time factor, some features will be developed in the next phase such as the feature to view the history of actions for the manager.

# Software project management

## Problem Definition

### Name of this Capstone project

### Problem Abstract

### Project Overview

## Project organization

### Software Process Model

### Roles and Responsibilities

### Tools and Techniques

## Project management plan

### Tasks

### Task Sheet: Assignments and Timetable

### All Meeting Minutes

## Coding Convention

## Other material

# Software Requirements Specifications (SRS)

## User requirement specification

## System requirement specification

# Software Design Description (SDD)

## Overview

## Overall System Architectural

## Architectural Layer Design

## Software detailed design

### Activity process

### Context diagram

### Detail description

## Database Design or Data Structures

### Entity Relationship diagram

### Data Description

## References

# Software Test Documentation (STD)

## INTRODUCTION

### Purpose

### Background information

## Test plan

### Scope of testing

### Constraints

### Risk list

### Requirements for Test

### Test strategy

### Resource

### Test milestones

### Deliverables

## Test Design

## Testcase

## Test Defect

## Test Report

# Software User’s Manual (SUM)

## User’s Guide

### Purposes

### Detailed Guidelines