5.0 The Proposed System

This chapter explains the details of the proposed system, including the proposed process, the system objectives, the scope, and the feasibility study of the system.

5.1 System Description

The proposed Project Management System will be able to handle all projects that TEI will implement. It will serve as a unified platform for the whole organization to monitor and control the projects they launch. Through the system, users can create projects by following a series of steps to add the certain details for the project. The system is also capable of monitoring ongoing projects through the use of a generated gantt chart and additional modules such as the Monitor Team and Monitor Project that will aid project owners and department heads to keep track of people assigned to them and the certain tasks that they are supposed to be doing. Changes can only be made through the system by submitting a request either to the immediate supervisor or the project owner. With this approval function of the system, it can save all requests made and it allows TEI to be fully transparent with the people involved in a project. There will be four (4) types of users, namely the Executives, Department Heads, Supervisors and Staff *(Refer to Appendix T for Business Rules)*.

Through the system, users with user types Executives, Department Heads, or Supervisors can create, monitor, and control projects *(Refer to Appendix T for Business Rules)*. These projects are not categorized into types as TEI does not want to be limited to the given types. Through this, the system will also be able to accommodate new projects if need be. Once a project has been initiated, a kickoff meeting will be done with all the departments involved in the project. Next, the project owner will login to the system and create a new project, he will input all the necessary details such as, name, description, and target start and end date. He will then identify all main activities, sub activities, and tasks and assign them to a department *(Refer to Appendix T for Business Rules)*. The system will process all inputs and generate a gantt chart at the end of project creation process. All departments that were tagged during project creation will be notified through the system and tagged department heads will then identify and assign the responsible, accountable, consulted, and informed for each task. To aid in identifying who can be responsible for a task, a workload assessment that shows the current projects and tasks their team handles can be viewed by the delegator. After delegating the task, the system will notify the assigned team member that they have been tagged as responsible for a certain task. In order to perform the task, the system will first

have to check if the task has any pre-requisite tasks, if there are any, the system will also need to check the status of the task. If the pre-requisite task is completed, it notifies the post-requisite actor. However, if the pre-requisite task is delayed, it constantly notifies the task owner, and also the post-requisite actor that the task pre-requisite to their task is delayed. In addition, it also notifies the immediate executive if the delay has prolonged for a week or five (5) working days. If the delay persists, the president will be notified by the system. After an actor performs their task, the system will check if it is the last task of the project, if not, it goes back to notifying the next task actor. However, if it is the last task of the project, it notifies all people involved that the project has been completed. A project summary report is generated by the system and will also be available for the project owner *(Refer to Appendix N for BPMN of Proposed Project Management Process)*.

5.2 System Objectives

The end product of the proposed information system is expected to accomplish certain standards/requirements which will be enumerated in this section. The objectives are inclined to the project's general objective, which is to develop a Project Management System to aid in monitoring and controlling projects.

5.2.1 General Objective

The information system aims to serve as the main tool for monitoring and updating projects in the project management process of the company.

5.2.2 Specific Objectives

The general objective can be broken down into three (3) specific objectives, which are:
- To provide project owners with an overview of the project/s he or she is spearheading to monitor the project team, pinpoint project delays, and to review project changes;
- To notify involved team members regarding project updates and follow-ups to increase interdepartmental transparency by 70%; and
- To store projects, planned, ongoing, and completed projects, to provide an easy-access repository for project documentation.

5.3 System Scope

The proposed project management system is composed of four (4) modules namely, Project Initiation and Planning, Project Monitoring, Project Control, and Project Closing. These four (4) modules follow one whole cycle of a project as it was designed to mirror that of the project management life cycle. Each module will be further discussed in detail later on in this section (*Refer to Appendix O for the Functional Decomposition Diagram*).

Project Initiation and Planning

This module houses the project creation process of the system. The project creation process consists of five (5) steps, Input Project Details, Add Main Activities, Add Sub Activities, Add Tasks, and Identify Dependencies. The project owner is in charge of inputting these details into the system. As the project owner adds the certain activities and tasks, they also schedule when these activities or tasks would be done by inputting the target start date and target end date. These dates will be used for measuring the actual project progress in the next module. As a prerogative from TEI, weekends would be included in the selection of dates as their are instances wherein projects that are rushed or constructions done during weekends to reach the deadline of a certain project. The details within the project creation composes the Project Profile function of this module. Everything done in this module applies to the pre-launching of a project. It is where department heads can delegate certain tasks to their staff while taking into account how much workload they already have. Executives, department heads, supervisors are the only ones allowed to delegate a task which is also restricted to those that they manage. Department heads are restricted to the employees within their department, while supervisors are restricted to the team they handle. Assigning of executives as responsible in the RACI chart are not allowed *(Refer to Appendix T for Business Rules)*.

As task delegation is done, the RACI chart is filled in, otherwise, the RACI chart integrated in the Gantt chart will remain empty. This is all captured in the project gantt chart that would be generated once a project is created and can be visited again in any point in time to see its progress. Projects that are successfully completed with good metrics can also be replicated in an effort to maintain the standard of excellence through the template function in this module. This also gives the organization a chance to provide the same quality of products and services to maintain their industry-leading standards.

Project Monitoring

This module focuses on the monitoring of projects for project owners and the monitoring of members within a project, or a certain department. Department heads can keep track of their staff members and the tasks they are doing, as well as whoever are accountable, consulted, and informed in their respective tasks. Project progress can be accessed through the project gantt chart. Completed projects are also included until they are automatically or manually archived for the project owner/heads/supervisors to review the tasks and the project as a whole. Included in this module would be the performance metrics of employees, departments, and project teams in terms of completeness and timeliness *(Refer to Appendix T for Business Rules)*. These metrics are also viewable for department heads and supervisors to monitor their team's overall and individual performance for all projects of that given year as these metrics will reset at the end of each fiscal year which, for TEI's case is every December. Departments will also be able to view their team gantt charts that composes of all their tasks for a certain project as to pace themselves if they have other projects to be executed.

The monitoring is not limited to department heads and project owners as staff members can also monitor their own tasks and in turn can decide which tasks to prioritize as they would be given an overview of their pending tasks and which of these would be delayed and their succeeding post-requisites. Tasks that are due two (2) days before the due date to alert the employee responsible of the task of their assignments. A task that is dependent on a delayed task will not automatically adjust once its delayed pre-requisite task is completed in order to pinpoint where delays may build up and occur *(Refer to Appendix T for Business Rules)*. The post-requisite task performer may then file a change request if the time allotted is not enough. This module will also be able to track the movement within projects through the project logs and project documents. Users who are apart of the project may view these logs and all documents uploaded to promote transparency within the organization to avoid miscommunications between departments.

Monitoring will also be aided by the use of system notifications for the movements within the system. Users will be notified if their pre-requisite tasks have been marked complete or if their tasks are delayed. These notifications will be system wide to ensure that each member of the project team is informed with what happens within a project.

Project Control

This module will mostly deal with requests and the performance of the project team, departments, and individual employees. For the requests, it handles the change in dates or change in performers for certain tasks that employees will request for supervisory approval coming from either their immediate supervisor, department head, or project owner. Change performer requests that are approved are prompted to reassign the RACI chart, wherein the consulted and informed will retain, and the responsible may be reassigned to another employee excluding the requester. As for the accountable, employees can be added or removed for this assignment *(Refer to Appendix T for Business Rules).*

This module focuses on controlling the things monitored in the previous module, more specifically, the assessment of the project team, departments, or employee's performance. This allows room for improvements that will be beneficial for the organization in their future projects. Performance assessment is highlighted by the metrics of completeness and timeliness of a project team, department, or employee. These metrics are seen in the project gantt, or in a department head and supervisor's monitoring function. Through these assessments, project owners, department heads and supervisors can gauge how well their department is doing and which people are right for the job for the right projects.

Project Closing

The system captures this module through the archiving of projects for reference to enhance their processes and projects. These are supplemented by the reports that are to be generated at the end of a project, mainly the project summary that contains an overview of a project team's performance metrics, all project members, all tasks that were delayed, requests and documents passed. This report captures all important details that the organization would need to better improve their future projects. Included in this module would be the ability to import a .csv file as to archive certain projects into the system based on previous data. This gets the .csv file and plugs it into the database in their respective fields. The import feature will also encompass that of templates as to avoid doing the whole project creation process even if they already have spreadsheets with the same data. This gets the .csv file and plugs it into the database in their respective fields.

Modules that would not be included within the system would be that of resource management and budget management. As their project resources are

mostly manpower based on how many people they will dispense to do certain tasks. As an organization within the food and beverage industry, this system will be used in the backend of the company as it will be used by the head office. As for budget management, it was not a problem for the organization as their main problem is that of the lack of monitoring of projects which causes the delay of process execution.

5.4 System Feasibility

The initiative for this project was requested by the top management of the organization to the MIS department last year. This then molded the MIS department's objective for 2018 which is to "*Make I.T. Happen*". Wherein I.T. abbreviates to Information Technology. To put it plainly, top management wants TEI to capitalize on the various technologies available at hand to gain competitive advantage in a very competitive industry. Since then, TEI has made it a point that they would be on top of system upgrades, and the use of technological tools that better enhance work and workflow within the organization. At the start of the year, MIS had planned to develop and deploy three (3) information systems, specifically, a task management system, a management information system, and a project management system. Once all three (3) systems are up and running, the MIS department would integrate all three (3) into one portal to create a business intelligence system. The developers had also conducted numerous interviews with staff level employees as well as a survey to gauge how willing they are to adapt to the proposed system in spite of the mandate from top management.

Operational

As mentioned before, the initiative for this system came from top management as they want to seek a better way to monitor projects that the company are currently working on, to be able to check on project progress and receive updates on these projects. Aside from this being mandated by top management, staff level employees were also interviewed for a better comprehension of the operational feasibility. The developers received a lot of positive feedback with regards to the proposed system as it would help them monitor projects and allow transparency in between departments and the project team. It was emphasized during these interviews that the system would require employees to input within the system which could add to their workload and they feedback was still positive. They were willing to add a few more minutes to their day to do the right thing rather than having to go into a project blind as there is little to no communication between departments and project owners (*Refer to Appendix I for Interview Transcripts*).

The developers had also conducted a survey as supplementary evidence of the employee's willingness to adapt to the new system, unfortunately, due to the employee's busy schedules, there were only a total of nine (9) respondents; correspondents were not previously interviewed staff members. Out of the nine (9) respondents, three (3) were from the Store Operations department, two (2) from the Marketing department, two (2) from the Facilities Administration department, and two (2) from the Human Resource department. The aforementioned respondents were coming from departments that have an abundant number of projects. Six (6) respondents answered that they would likely use the proposed project management system while the remaining three (3) respondents were neutral regarding the matter (*Refer to Appendix P for Survey Results*).

Despite the poor turnout of the conducted survey, the developers had received valuable feedback from the interviews and the willingness to cooperate between the MIS department as they provide the developers with the necessary requirements to develop and launch the proposed system.

Technical

Due to the support from top management, TEI has already acquired the necessary IT infrastructure such as server units in the previous year as being proactive to the initiatives expected to occur this year and to keep up with the technological trends in today's society. These server units are currently being tested and utilized to host a sample website that is currently accessible to the public. Another server unit is dedicated to host their internal systems such as the proposed project management system. Due to the nature of the proposed system being web based, there are no hardware requirements for the users to be able to access the system. The only requirement is the capability of their devices to be connected to the Internet, whether it be wired or not, and any web browser on its latest version. For this requirement, the TEI head office has equipped all of their employees with desktop PCs and laptops and each device has an updated web browser. All devices have the capability to connect to the Internet. As for employees who have to go on field duty, they are equipped with tablets or laptops that have access to mobile data which allows them to access the system from anywhere they are.

Economic

Intangible costs for this project are the time taken for the software to be developed as this requires hours of interviews for data and requirement gathering. A proper

understanding is needed for the developers to properly address the problem. This is time taken to what they could have just used for their work which could eventually disrupt business operations. Another could employee morale as a change in system is not something everyone accepts the same way, this could affect the performance and attitude of the employees towards their work. Given all this, intangible benefits could also be time saved for when the system have already been implemented as this will save operational time for projects. The system will also provide accountability and transparency among the departments and their corresponding employees. The system will also provide improvement on the timeliness of tasks and projects and can minimize delays and eventually remove them. Lastly, this will provide TEI the business development it requires as the employees are equipped with a tool to make their work easier

Schedule

Stated in the Gantt chart prepared by the developers (*Refer to Appendix E for the Gantt Chart*) that the development process will take a year for it to be finished. This is more than ample time to finish the development of the system as well as to conduct testing for the system. This schedule also fits in with the organization's timeline as they have marked the end of this year as the target completion date for the proposed systems mentioned above. The developers have also been able to meet their specified deadlines set on their gantt chart.