10.0 Cost Benefit Analysis

This section discusses the cost benefit analysis. Every information system consumes resources while it is being developed. This helps justify the need for the system in terms of the organization's tangible and intangible benefits against its corresponding costs to develop and deploy the system.

10.1 Intangible Costs

Adapting to a new system consumes time and may require training and learning the new system. With that, there is a cost of time due to adapting and transitioning to the new system. Another could be the decline in employee morale as employees are required to adapt the new system which may require more work, albeit the right kind of work. Some employees might not be open to this change as they are used to doing tasks in the method that they have been doing so.

10.2 Tangible Costs

The development costs for the system resulted into Php 0.00 because no hardware or software was required to be purchased in order to develop the system. The developers used personal computers and open-source development tools such as HTML5, CSS3, PHP, CodeIgniter framework, Bootstrap, Github, and MySQL. The developers also did not request to be paid as they saw this opportunity as a way to gain experience rather than profit.

The estimated installation cost is Php 7,245.00 which was utilized to provide all necessary documents for the system such as software development documents, manuals, and references. There was no need to acquire any hardware and software for installation as TEI is already equipped with the infrastructure in preparation for the system. The developers will also provide demo and training free of charge during the system handover with TEI.

The existing annual operation cost of Php 28,626,000.00 was an estimate that TEI has provided which covers the salaries of TEI employees including all three (3) executives, seven (7) managers, 25 supervisors and 37 staff members as well as monthly billings to keep their daily operations functional.

The proposed annual operation cost of Php 26,608,000.00 was an estimate given by the developers which still covers the same entities but exactly Php 18,000.00 less than the existing annual cost. This is due to a minimal decrease

with consumption of printed documents as well as lesser communication bills since the system would provide the users with project updates and information with regards to the tasks they need to do.

The new system is estimated to last for an approximate five (5) years at least as technology quickly evolves, the capabilities of systems will also improve. These developments could quickly make Kernel outdated and would fall behind the current technological trends.

10.3 Intangible Benefits

Employee satisfaction, especially that of the executives, is one of the main benefits as it would provide updates on all projects as well as a basis for improvement to prevent the same delays from occuring. Workload for employees will increase at first but as the system accumulates data, TEI employees can easily model their projects based on what is already existing in the system, hence workload will eventually lessen. Kernel will also be able to increase productivity as it reduces the repetition of work by the use of templates, and the reduction of recurring mistakes and problems. Kernel also minimizes human intervention which in return could increases employee satisfaction and morale in the long run.

10.4 Tangible Benefits

According to TEI, Kernel would greatly benefit them for the upcoming year as they plan to be more aggressive in opening stores. Kernel will be able to aid them with tracking the progress of each project as well as maintaining their quality. Given that they will increase the number of projects to be executed in the next year, they would still have to be able to continue managing all their other projects such as the time-triggered marketing projects, and event-triggered HR projects. With Kernel in place, TEI will have the capability to handle more projects which could later result in profit as they would avoid, if not eradicate, the delays they experience in their projects.

10.5 Analysis

It will take about five (5) years, 4.83 years to be exact, to payback the expenses incurred with developing Kernel. It is exactly the same as the expected lifespan of the system which makes it reasonable to be deployed. Return on investment is 148%. Not only will it return intangible benefits but as well as 1.5 times the investment to develop the system. Although the net present value is at around 114

million, the system was not designed to return quantifiable benefits which would lower TEI's existing operational cost. This should not contribute to the factor of the system's economic feasibility as the focus of the system is to minimize, or even completely eliminate delays for projects *(Please refer to Appendix X for the CBA Computation).*