**MIS 6349 – Digital Consulting Project**

**Deliverable 2**

**02/28/2023**

**Project Plan**

**ETC-Solar**

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Project Plan

# Project Justification:

The one major challenge the company is currently facing is with the competencies with the equipment, that is the major cause for the revenue generation. Having these equipment experiencing downtime during the active hours is causing the company major dips in the revenue and the operational profits.

One of the major reasons for the equipment downtime is due to the following reasons

* Climate conditions
* Equipment lifetime
* Unprecedented accidents
* Energy supply shortages

To explain the loss caused by the equipment downtime in terms of revenue, the following table explains the extent of impact caused by the current challenge

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Average Toll cost | Average miles travelled | Average number of cars that pass through a toll in a day | Revenue for whole day | Average number of cars that pass through a toll per hour | Revenue per hour |
| $ 0.18 | 10 | 19540 | $35,172.00 | 814 | $1,465.20 |
| $ 0.18 | 7 | 19540 | $24,620.40 | 814 | $1,025.64 |
| $ 0.18 | 5 | 19540 | $17,586.00 | 814 | $ 732.60 |

As per the report produced by the International Bridge, Tunnel and Turnpike Association, the average toll for a class- A vehicle on a U.S Toll Road was approximately $ 0.185 per mile. The average number of cars that pass through a single toll gate in a day is 19540 cars. Based on these figures, the above analysis has been produced from which we can understand the amount of loss in revenue just from malfunctioned equipment in one toll gate.

Considering the impact generated from all the toll gates in a state during a climate crisis, the revenue loss is phenomenal and a huge loss in operational profits and increase in maintenance costs.

Given the challenge the company is currently facing, our team is currently identifying the alternative solutions to the existing solution in the areas of solar powered resources to increase the efficiency and productivity of the equipment thereby increasing the revenue.

# Project requirements and technical requirements

## Functional Requirements:

The expected solution that we are working to propose shall avoid the company from facing challenges in revenue generation increased operational costs and labour costs.

Along with the financial benefits, the solution will also provide an increased life expectancy with reduced maintenance efforts and low latency with added benefits.

The delivered solution will be capable of providing,

* An expected lifespan of 15 years along with a valid full warranty.
* Competent to perform for 14 hours straight without any human intervention during the situation of loss of energy supply.
* Functionality to completely adapt to the centralized cloud-based control and monitoring with the costs similar to the existing solutions.

## Technical requirements

The system currently works on the backup provided by the UPS systems. As the existing solution is incompetent, we’d like to provide the solar powered energy back up systems to increase the efficiency and reduce the downtime.

The system will include solar panels attached to the top of the each scanner pole which will provide the energy supply during the power shortages from the energy grid. The system will require the same capacity of storage as the existing equipment by completely replacing them

The system will integrate with the cloud-based platform the company is currently utilizing to provide effective monitoring and regulatory functions.

As per the expectations and efforts being made into the business case, the potential solution is to perform continuously during the time on energy outage.

# Project scope

## In-scope

* The project will provide a presentation of recommended solution with a clear designed analysis on the
  + Real and potential revenue loss due to the recorded outages for the existing solutions
  + Total cost ownership analysis comparing solar to UPS - generator solution for 15 years.
  + Design of Enphase Solar vs APC UPS/Honda Genset
  + Atlanta vs San Francisco impacts based on actual data.
  + Advantages and Disadvantages of Either Solutions
  + Any caveats or additional advantages or add-ons for each approach at each location
  + Sales deck for a Solar install
  + Briefing to CTO, Principal Architect, Principal Engineer, Product Manager, and Program Manager
* The contacts of the recommended solution provider along with the cost quotation draft and other solution providers

## Out-scope

The project proposal will not cover,

* Engagement in the installation of the solution
* Maintenance provision of the installed solution
* Does not provide guarantee on the services promised by the contractor or in the equipment failure
* Do not offer any services beyond the agreed timeline of the project.
* Will no provide any legal and regulatory assistance in the contract made by both parties.
* Will not provide any advisory services in case of change or modification in the objectives.
* No engagement in the budgetary or monetary transactions involving the service provider.

# Project Deliverables

The project deliverables include a series of documents pertaining to the solar supply equipment to the stakeholders and the others responsible along with a detailed analysis of the financial statements, costs analysis and the terms and conditions of the project

Presentations providing analysis on the

* Industry analysis
* Top performing players in the industry
* Strategic alignment of the solution with the company’s business model
* Revenue and cost analysis
* Implementation of the plan
* Risk assessment
* Recommendation review and assessment
* Service providers and the contract details list
* Design of the recommended solution vs existing solution
* Advantages and disadvantages
* Sales deck for the solar installation
* Briefing to the CTO, Principal architect, principal engineer, product engineer, Product and program managers

# Project Schedule

# Timeline Description automatically generated

# Team member roles and responsibilities

|  |  |  |
| --- | --- | --- |
| Team Members | Roles in Project | Responsibilities |
| Austin Mosley | Executive Sponsor | Provide appropriate resources to the project team and assist each phase of the project development |
| Awatif Ismail | Consultant | Design and implement SQL queries to consolidate data to determine the current status of ETC systems. Develop the data model and presentation to achieve client goals |
| Vishnu Yadav Goutam | Consultant | Point of contact for the client in exchanging information and requirements. Managing all the required deliverables and submitting each task/plan. |
| Shivangi Gupta | Consultant | PowerBI dashboard and views creator for the client to easily access and understand the data portrayed |
| Shekhar Subedi | Consultant | Help develop the data model and sales pitch. Ensure the project is organized and all the data provided is structured to achieve the clients’ goals. |

# Quality assurance plan

This is the set of activities to ensure the completed project is comprehensive and works properly (0.5 pt).

The Quality Assurance Plan is a document that outlines the quality control procedures that will be implemented to determine and ensure that the project needs are met with the correct quality standards. It is a systematic approach that helps with documenting, validation, and verifying that all activities and processes are in accordance. We are taking extra steps to review each data set, graphs, and charts. We are developing a table that will be managed as the project develops. We will document the consolidated data that will be needed to create our sales pitch in regard to the transition of UPS systems to Solar/Lithium batteries.

|  |  |  |  |
| --- | --- | --- | --- |
| Test Type | Criteria | Date | Status |
| Module | Data test | 3/12/2023 | Planned |
| Performance | Data reports/validation | 4/18/2023 | Planned |
| Functional | Functionality for the software to be used without any issues | 4/24/2023 | Planned |

# Communication plan

To make sure we have effective communication with stakeholders outside the project team and provide updates as the project progresses. We will communicate with stakeholders outside the project team and the maintenance department, purchase invoices team and SRTA/ACTC team.

Ways of Communication**:**

Progress Reports: Bi-weekly progress reports will be shared with the stakeholders to provide a summary of completed tasks.

Email Updates: Bi-weekly updates will be sent out to the stakeholders to provide status or any issues that may hinder the project.

Meeting Minutes: This document will outline any notes, discussions, updates, and decisions the team makes in the meetings.

|  |  |  |  |
| --- | --- | --- | --- |
| Project Meeting | Purpose | Location | Frequency |
| Initial Meeting | Discussion of project, objectives, and goals | In person | Once |
| Project Team Meeting | Weekly updates and intial analysis of project | In person | Weekly |
| Client Meeting | Data Related Questions  Status Update | MS team | Weekly |
| Presentation | Adding on slowly to the presentation as the project progresses | In person or MS team | Weekly |