FEASIBILITY ANALYSIS

**Feasibility Study for AQUA MOTUS: A Dynamic Web Application for Water Metro Ticket and Facility Management System**

The AQUA MOTUS project addresses the need for an efficient and user-friendly platform for managing water metro services, focusing on ticket booking, facility management, and operational oversight. The system targets individuals seeking boat transportation services, station masters managing daily operations, and administrators overseeing the entire system.

Feasibility is conducted to identify the best system that meets all requirements. It is both necessary and important to evaluate the feasibility of a project at the earliest possible time. Feasibility study includes an identification description, an evaluation of proposed system and selection of the best system for the job. During the system is to be carried out this is to ensure that the proposed system is not A burden to the shop.

This feasibility study evaluates the practicality and viability of developing the AQUA MOTUS, a dynamic web application designed to streamline ticket and facility management for water metro systems. The system aims to enhance user experience through simplified ticket booking processes and comprehensive facility information access. The study covers technical, operational, and economic feasibility to determine the project's viability.

The feasibility study should be relatively cheap and quick. The results should inform the decision of whether to go ahead with a more detailed analysis, some understanding of the major requirements for the system is essential. Four key considerations involved in the feasibility analysis are,

➢ OPERATIONAL FEASIBILITY

➢ TECHNICAL FEASIBILITY

➢ ECONOMICAL FEASIBILITY

➢ BEHAVIORAL FEASIBILITY

**Technical Feasibility**

The technical feasibility centers on the existing system and what extend it can support the proposed addition. The technical feasibility assessment is focused on gaining an understanding of the present technical resources of the organization and their applicability to the expected needs of the proposed system. The minimum requirements of the system are met by average user. The developer system has á modest technical requirement as only minimal or null changes are required for implementing system.

Normally associated with the technical feasibility includes:

* Development risk
* Resource availability
* Technology

The proposed system can work without any additional hardware or software support other than the computer system and networks. So, I analyzed that the proposed system is much more technically feasible than other systems when comparing with the benefits of the new system.

*Current Resources and Technology*

* Python serves as the backend logic engine, leveraging its robustness and wide community support.
* Django, a Python web framework, provides a solid foundation for building secure and scalable web applications.
* SQLite database management system is suitable for small to medium-sized applications, offering ease of use and integration with Django.
* Machine Learning enhances system capabilities, including weather forecasting for safe travel planning, boat safety and security measures, and route optimization for efficient service delivery.

*Analysis*

* The development team possesses the necessary technical skills in Python, Django, and machine learning, ensuring the successful implementation of the system.
* Existing technologies are stable, widely adopted, and supported by a vast community, minimizing risks associated with technology adoption.
* Integration with other systems, such as weather forecasting APIs and payment gateways, is feasible and beneficial for enhancing user experience and operational efficiency.

**Operational Feasibility**

Operational feasibility is a measure of how well a proposed system solves the problems, and takes advantage of the opportunities identified during scope definition and how it satisfies the requirements identified in the requirements analysis phase of system development.

*Alignment with Business Objectives*

* The AQUA MOTUS system directly addresses the need for improved ticket booking and facility management within water metro systems, aligning with the business objectives of reducing wait times and enhancing customer satisfaction.
* The system's modular design allows for flexibility and scalability, adapting to future changes in service offerings or operational needs.

*User Acceptance*

* Preliminary market research indicates strong demand for such a system among water metro users, station masters, and administrators.
* The system's user-friendly interface and comprehensive feature set are expected to facilitate quick adoption and acceptance by the target audience.

**Economic Feasibility**

Economic feasibility is the most frequently used method for evaluating the effectiveness of the candidate system. It is very essential because the main goal of the proposed system is to have economically better result along with increased efficiency.

A cost evaluation is weighed against the ultimate income or product. Economic justification is generally the bottom-line consideration that includes cost benefit analysis, long term corporate income strategies and cost of resources needed for development and potential market growth. When compared to the advantage obtained from implementing the system its cost is affordable. Proposed system was developed with available resources since cost input for the software is almost nil the output of the software is always a profit. Hence software is economically feasible.

*Revenue Generation*

* Potential revenue streams include transaction fees from ticket sales, advertising revenue, and partnership agreements with service providers.
* The system's ability to handle peak loads efficiently could lead to higher ridership, indirectly contributing to increased revenue.

**Behavioral Feasibility**

People are inherently resistant to change and computer is known for facilitating the changes an estimate should be made of how strongly the user, staff reacts towards the development of the computerized system. In the existing system more manpower is required and time factor is more. The more manpower for managing many files for dynamic data replication and more time for search through these files is needed. But in the proposed system, both manpower and time factors are reduced and also unnecessary burden is reduced. Thus the remaining people are made to engage in some other important work. Also there is no need to wait in case of downloading the data for the users therefore, the system is behaviorally feasible.

**CONCLUSION**

The AQUA MOTUS project demonstrates technical, operational, and economic feasibility, with a clear alignment with the business objectives of enhancing water metro service management. The system's development and deployment are supported by current technology, promising operational efficiencies and economic benefits. With careful planning and execution, the AQUA MOTUS system stands as a viable solution for improving water metro service management.