**DEVELOPMENT OF A WEB-BASED TASK MANAGEMENT SYSTEM FOR**

**QONNEC SOFTWARE SOLUTIONS INC.**

**Undergraduate Capstone Project Submitted to the Faculty of the**

**Cavite State University – Bacoor Campus**

**Bacoor, Cavite**

**In partial fulfillment**

**of the requirements for the degree of Bachelor of Science in Information Technology**

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# INTRODUCTION

A task management system comprises an online interface that allows users to create and assign tasks, monitor progress, and work together with colleagues. It is a tool for organizing, planning, and coordinating the activities of a team or project (Hermitte, 2023).

Task management system is a crucial tool for enhancing an organization's or group's capabilities. It assists in assigning the best task to a team so that they can work on a particular project quickly and effectively. It also keeps track of incoming and pending inquiries and deadlines to help the organization manage its time effectively while working on a project. Additionally, it fosters communication between staff members and clients. Additionally, it encourages productivity and efficiency. Management system is a very important tool to boost the capabilities of an organization or group, it helps prioritize the suitable task for a team to efficiently address a specific work, keep tracks of incoming or pending inquiries and deadlines to help the organization to effectively manage their time on completing a project. It also helps build communication between employees or their client. As per profit.to, task management enables project managers to keep an eye on every task within the project. They can also keep a smooth project flow and react quickly to problems, which boosts output and keeps the project on schedule. Issues are resolved and the tasks are reviewed on a regular basis. The team can work together and the project manager can step in. It is continuously expected of the workers who are completing the tasks to be productive (Team, 2023).

## Project Context

Qonnec Software Solutions Inc is a technological company, with three dedicated professionals in a small team and a broad client. Their main business is to provide their customers with rental systems, they specialize in giving creative solutions that meet each individual client’s demands.

Based on the researchers' observations, the organization has trouble keeping up with the excessive volume of emails, messages and inquiries that need to be addressed. It has been challenging for the staff to deal with the sheer volume of these communications. To make problems worse, customers use several platforms to communicate, like Messenger and Viber. Currently, some concerns and communications are inadvertently ignored or forgotten because of the relatively random sequence in which clients are addressed based on what is seen first.

## Objectives of the Study

The purpose of this project is to develop a web-based task management system. By addressing the difficulty of effectively managing the large amount of client communications and inquiries across several platforms, the system should increase operational efficiency, customer satisfaction, and responsiveness within Qonnec Software Solution Inc.

It specifically aims to:

1. Design a web-based task management system that tailored to the specific needs of Qonnect Software Solutions Inc that:
   1. act as platform to serve as a focal hub for employee and customer communication;
   2. assign a workload for methodical task distribution;
   3. monitor incoming and pending inquiries using dash board.
2. Develop the designed system using:
   1. C# as programming language to ensure compability with the existing infrastructure of Qonnec Software Solutions Inc.
   2. Vscode as a development platform
   3. Mysql for Database.
3. Test the developed web based task management system's usability, performance, and functionality in both test runs or simulation and real-world scenarios. Pay special attention to locating and fixing any issues or potential bottlenecks that may arise as the system is develop.
4. Evaluate the quality of the developed system in terms of functionality, usability, performance, reliability and maintainability using ISO 25010
5. Prepare Qonnec Software Solutions Inc. in implementing the communication management system successfully by training employees, and assisting with a seamless transition from current communication methods to the new system.

## Purpose and Description

By creating a task management system, the project will enable employees of the company to assess the problems of each client and help managers effectively handle internal work. When the system is put into place, it will act as the focal point of the company, making it easier to monitor and handle problems that clients bring to light. It will also be a useful instrument for coordinating tasks inside the company. This all-inclusive solution is intended to improve productivity, simplify processes, and offer a single platform for handling internal organizational duties as well as client concerns

The Task Management System has the following capabilities:

user-friendly interface designed with an intuitive layout, ensuring easy navigation and accessibility for all users. Integrated communication tools, such as an in-system messaging system, facilitate seamless interaction among team members and clients. A centralized dashboard provides comprehensive task monitoring and viewing capabilities, displaying both customer-reported issues and internal tasks. Users benefit from customization options, allowing them to personalize their dashboard settings according to their preferences. Task coordination is streamlined through features like task assignment, tracking, and priority settings, enhancing efficiency in managing and prioritizing tasks. Real-time updates and SMS notifications keep both customers and internal team members informed of issue progress and task updates, even when they're not actively using the system. The platform also excels in efficient issue reporting, offering attachment support for detailed information and a simplified submission process. User permissions and access control are ensured through role-based access control mechanisms. Editable ticket statuses provide flexibility in tracking the lifecycle of issues, while features like customer and ticket history serve as valuable resources for review and future use. Additionally, the platform includes sections such as company profiles, introductions to key personnel, services offered, sales monitoring, software contract management, client inquiries and details, timelines, and comprehensive record-keeping functionalities, ensuring a robust and versatile solution for organizational needs

Once the task management system is implemented for the Qonnect Software Solutions Inc., it will give the significance particularly to the following:

To Qonnec Solutions Software Inc. putting the Task Management System into place will be essential to improving the small organization's performance. This system has the potential to improve the organization's ability to immediately handle customer complaints, maximize time management, and enable more efficient duty distribution among team members. The company may greatly increase operational effectiveness and customer service by simplifying these crucial components, which will ultimately lead to a more flexible and responsive work environment.

Researchers would benefit greatly from this proposed project's opportunity to get practical expertise and knowledge in the design and execution of a complete system intended to manage and track difficulties while effectively organizing duties. Furthermore, the researchers were able to successfully come up with a solution to deal with the particular problems the business was facing. This project offers helpful insights on performing research efficiently in addition to acting as a real-world application of research abilities. The project is a singular chance for the researchers to learn about the complexities of system development, problem-solving, and the practical application of research methodology.

Future scholars who are interested in this subject will get great insights from this study. Even if they were designed with a particular organization in mind, the techniques and lessons discovered can be used as a base for researchers who want to suggest comparable solutions in many settings. The project's results and experiences will be added to the body of knowledge, providing a starting point for further research and development in the field of task management systems.

## Scope and Limitation

This study's main objectives are to assess and resolve the issues brought up by the clients' customer, make it easier for internal chores to be managed effectively within the organization, and improve Qonnec Software Solutions Inc.'s overall operating capabilities. With the goal of optimizing their operations, Qonnec Software Solutions Inc. stands to gain the most from this research First, the system is tailored to meet the specific needs of the client, potentially adding more features in the future base on the organization’s demand. To improve the user experience, the system includes an enhanced user interface, a dashboard for detailed task visibility, task management tools for organizing internal tasks enabling personalized interactions, and integrated communication capabilities to centralized the inquiries in one platform. The system is design to be scalable and flexible to accommodate future growth. The addition of SMS notification enhances the system even further and makes organizational workflow more responsive and dynamic.

However, research is never complete without its limitations. First off, automated system might not be possible given the variety of client inquiries and the complex solutions they frequently demand. In most situations, human judgment and intervention will still be required to guarantee precise and satisfying resolutions. Second, because the system depends on internet connectivity, it is susceptible to interruptions from technical problems or failures, which may impair its responsiveness and functionality. Furthermore, even with the implementation of strong security measures, such as access controls, the system might still be vulnerable to data breaches or unauthorized access, so constant watchfulness and risk mitigation techniques are required. Moreover, the lack of artificial intelligence (AI) functionalities restricts the system`s capacity to evaluate and react to queries on its own, which might have an impact on how well it manages intricate or changing customer requirements. These drawbacks highlight the necessity of human oversight, ongoing development, and proactive monitoring in order to reduce risks and guarantee that the system is successful in achieving the organization's communication goals.

## Conceptual Framework

**EVALUATION**

USING ISO 25010



**OUTPUT**

DEVELOPMENT OF A WEB-BASED TASK MANAGEMENT SYSTEM FOR QONNEC SOFTWARE SOLUTIONS INC.

**PROCESS**

**Planning**

* Plan the whole process of the system

**Design**

* Design a system based on the requirements

**Develop**

* Creating an outline of the system

**Test**

* Testing the system

**Deploy**

* Deployment of the System

**Review**

* Reviewing of the finished system

**INPUT**

**Knowledge Requirement**

* C#
* Database Developing
* UI Design

**Software Requirement**

* Microsoft SQL
* Browser
* Visual Studio Code

**Hardware Requirement**

* Intel i5 64-bit architecture
* 8gb RAM (minimum)
* 256gb storage
* Windows 10 22H2

**Figure 1:** Conceptual Framework

The conceptual structure of the project is depicted in the figure. The input of hardware and software requirements are essential to guarantee the beneficiary's capacity to use the system, whilst the knowledge requirements and development tools serve as a guide for the programmer as they develop it. The steps of the model that forms the basis of the process section are Planning, Designing, Develop, Test, Deploy and Review. After the application is developed using the model, a task management system will be produced. The developers will polish the System during the review process by fixing bugs and difficulties.

**REVIEW AND RELATED LITERATURE**

This chapter discusses various literatures and studies related to the Task Management System and its importance. This literature and studies will further assist the researchers in gaining familiarity and understanding the chosen study.

**Related Studies**

A task management system is a supporting tool for individuals or organizations to efficiently manage their work and easily navigate through the project. It is also a systems approach to management (Nicholas & Steyn, 2020), thus being an aid for facilitating communication, collaboration, and expansion of access between project teams (Fachrizal et al., 2020) which enables them to have smooth digital interaction.

According to Nicholas and Steyn’s study, every project has a set of objectives regarding cost, time, and performance that should be thoroughly crafted and seized. Project operations would be considerably improved with the assistance of a management system for the purpose of computerized tracking and prompt advancement. Additionally, it is anticipated to boost their learning productivity (Nurzi & Wahab, 2022), which should enable them to complete their tasks more quickly and competitively. This will make the company improve its service and can change how the clients view them.

By preserving customer relationships and interactions, innovative technology assists a business in pursuing customer happiness and loyalty (Baashar et al., 2020). Due to this, companies under the term of subscription such as product-as-a-service put the focus on the underlying shift from a product-centric to a subscriber-centric business approach (Holst et al., 2021) to further accommodate clients on their needs.

**Systems Technical Background**

System. An information technology system is a computer system that contains hardware, software, and/or additional equipment that is mainly used for collecting, storing, processing and transmitting data for an individual or organization that can assist them in crucial decision making.

A management system aids companies in processing raw data into translated and useful information that stakeholders can use.

**Synthesis**

A company’s productivity will improve with the help of a task management system. It will help track their tasks efficiently, easily let them establish a clear communication platform within the organization, control task submission and monitoring. Once it is implemented, the people within the organization will be able to do their work, accordingly, thus increasing productivity of service in the institution. In line with this, the company will be able to accommodate their clients’ concerns and inquiries easily by using a task management system that can also authorize them to have an uninterrupted communication channel with the clients.

**Related Literature**

Task management can help simplify the process of complex data (Almeida et al., 2019) or be of use to individual goals and group collaborations to achieve a common goal (Mufaqih et al., 2019), which is securing the company’s reputation through the customer’s satisfaction (Khan et al., 2020). However, despite its usefulness to the people, some of these systems today do not catch the attention of their intended user.

Due to the vast amount of human-computer interaction, task-oriented dialogue systems are catching the attention of people in both academic and industrial (Zhang et al., 2020). It provides communication services for people, serving as a bridge between human and intelligent machine (Zhao at el., 2019) for them to understand one another. It has already become one of the most prominent virtual assistants for people who use technology and have access to the internet.

**Systems Technical Background**

Dialogue System. It is the natural language processing (NLP) components that enables chatbots to understand and be able to communicate with users using easy to understand vocabulary. The dialog management system contains a module that examines the information and provides responses based on the user input.

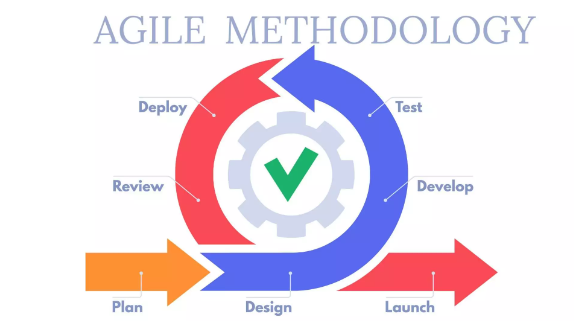
**Synthesis**

As discussed in the related literature, although a task management system is an asset to an organization or company because of its’ features, it will not work well if the user is not interested in using it. On the other hand, the dialogue system is one of the most used technologies in today’s time and has gathered lots of attention because of its portability and usability. Adding a task-oriented dialogue system into a task management system makes it more interesting and easier for the user to interact with the system. It also demonstrates a lot of information regarding human-computer interaction that can later be used for different research findings and purposes.

**METHODOLOGY**

This chapter discusses the methods and processes that were utilized to gather data, evaluate the results, and understand how the system flows and its phases.

**Software Development**

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## Figure 2: Agile Method

**Planning phase**

The researchers will conduct an interview during the planning phase in order to find the issue of the organization. This will help them to organize the project's overall vision and goals.

## Design phase

In order to have a plan for the system's appearance, the researchers will create a layout, sketch, diagrams, and system features during the design phase.

## Development phase

The system will now be developed by the researcher, who will also create all the features required for the system and tailor it to the organization.

## Testing phase

The system will be tested by the researchers to see if there are any bugs, mistakes, text or image misplacements, and to make sure that everything is operating as it should.

## Deployment phase

At this stage, the system will be used by the client to ensure that it is stable and satisfies the suggested requirements. The researchers are prepared for system deployment.

## Review Phase

During this stage, the researchers plan a design for upcoming updates after reviewing the system based on user feedback.

## Requirement Analysis

The researchers gathered important information regarding what parts they should include in the system and the relevant data that the system requires. This action was carried out by means of a client interview.

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