University of Winnipeg
Applied Computer Science Department
ACS-4901: Senior System Development Project

Unified Operations & Intelligence Platform

Project Proposal

Team Members	Role
Royce Nathan Arugay	Project Lead
Hina Ahmad	Technical Lead
Sohaila Hafiz	Lead Quality Assurance Specialist
Hitesh Bhasin	Lead Programmer
Dristi Rauniyar	Lead Programmer
Felicity Ann Malong	Lead Systems Analyst/Designer

IS Director: Professor James Deng

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1 Introduction

The Finnson Group of Companies (FGC) consists of two sister companies: Nest Host Ltd. and First Class Property Services. Nest Host provides premier corporate and short-term housing solutions. Meanwhile, First Class Property Services is responsible for maintaining the properties managed by Nest Host, ensuring they meet high standards of cleanliness and operational efficiency. This project aims to develop a unified dashboard and an AI-powered customer service and internal agent solution. This proposal highlights the intended features and requirements of this project, ensuring clarity to the stakeholders.

1.1 User Environment

As FGC evolve, the current operational environment is proving inadequate to handle the increased demand, posing an issue to the company's ability to maintain its growth trajectory and meet client expectations.

2 Current System

2.1 Description

FGC currently relies on a wide range of digital tools across its two divisions, Nest Host Ltd. and First Class Property Services. Platforms such as Zenya, Monday.com, QuickBooks, Aircall, Tidio, and others are used to manage reservations, finances, communications, marketing, and property maintenance. While these platforms are effective individually, they operate in isolation, creating a fragmented operational environment.

2.2 Functions of the Current System

Collectively, these tools support FGC's core activities, including booking and client management, financial operations, communication, marketing, and property care. Limited workflow automation is achieved through Zapier; however, integration between platforms remains minimal. As a result, while the ecosystem supports day-to-day operations, it lacks overall cohesion.

2.3 Shortcomings of the Current System

FGC has identified its current user environment as having an inefficient workflow, primarily due to the fragmentation of software and data storage. The reliance on manual information gathering from disparate sources creates a substantial bottleneck in the company's workflow. The major shortcomings of the current system can be listed as follows:

1. Fragmentation and Data Silos
2. Operational Inefficiencies
3. Limited Automation and Integration
4. Underutilization of Existing Tools
5. Customer Service Challenges
6. Scalability Limitations

3 Proposed System

3.1 Description

The proposed solution is a **Unified Operations and Intelligence Platform** designed to centralize FGC's core digital tools into a single, integrated dashboard. This platform will consolidate Zenya, Monday.com, QuickBooks, DoorLoop, Tidio, and Google Analytics, providing a unified source of truth for operational, financial, and customer data. Key features include workflow automation for bookings, invoicing, maintenance, and KPI tracking, alongside an AI-powered chatbot and booking form that will improve customer engagement and ensure seamless data synchronization across systems.

3.2 Objectives

The primary goal of the platform is to deliver centralized visibility, workflow automation, and AI-driven insights. Specific objectives include:

- Integrating existing tools into a unified, real-time dashboard.
- Enabling comprehensive property and tenant management.
- Automating maintenance scheduling and financial reporting.
- Providing a single, consolidated customer view.
- Deploying an AI chatbot to handle routine inquiries, escalate complex issues to staff, and log customer interactions.
- Introducing a website booking form to automate reservations and synchronize data across systems.

3.3 Benefits

By consolidating multiple platforms into a single dashboard and automating key workflows, the system will significantly improve operational efficiency, reducing time spent on manual data entry, repetitive tasks, and cross-checking. Staff productivity will increase, while automation in booking, invoicing, maintenance, and reporting minimizes errors and ensures consistent, accurate data. These improvements also deliver cost and time savings across the organization.

At the same time, the AI chatbot and unified customer view will enhance client experiences with faster, more personalized responses. Managers gain real-time visibility into operational, financial, and marketing metrics, enabling timely, data-driven decisions. With a modular, scalable design, the platform supports future integrations and expansion, ensuring long-term flexibility and sustainable growth

3.4 Scope Issues

The success of this project relies on the assumption that all third-party software platforms, including Zenya, QuickBooks, Monday.com, and other relevant applications, will provide stable, accessible, and well-documented APIs to facilitate the necessary data retrieval and integration. Any modifications or disruptions to these APIs by their respective providers may impact the project

timeline and the functionality of the integrated dashboard.

Furthermore, the performance of the AI-powered chatbot is contingent upon the quality and comprehensiveness of the training data supplied by FGC, such as FAQs and typical customer inquiries. Inadequate or incomplete data could reduce the chatbot's effectiveness in handling routine inquiries, potentially increasing the reliance on manual staff intervention.

3.5 Project Schedule

Estimated Timeline	Phase No.	Objectives
Sept 2 - Sept 16	**1.0**	**Project Initiation & Planning**
Sept 16 - Sept 26	**2.0**	**Requirements Analysis**
Week of Sept 28, 2025	Milestone 1	Project Proposal sign-off
Sept 30 - Nov 9	**3.0**	**System Design**
Week of Nov 10, 2025	Milestone 2	Project Plan Review
Nov 10 - Jan 10	**4.0**	**Development and Implementation**
Week of Jan 12, 2026	Milestone 3	Mid-Project Review
Jan 12 - Feb 6	**5.0**	**System testing**
Week of Feb 9, 2026	Milestone 4	Development Review
Feb 9 - Mar 13	**6.0**	**Deployment and Training**
Week of Mar 16, 2026	Milestone 5	Final turnover to user and sign-off from user
Mar 27, 2026	Milestone 6	Project Completion Seminar and System Demo
Week of Apr 6, 2026	Milestone 7	Sign-off on Course Completion Checklist

Figure 1: Project Schedule

4 Methodology (SDLC)

The project follows a Waterfall framework overall, but includes Agile practices during the design phase to allow for prototyping and iterative feedback from the Sponsor. This creates a hybrid Agile-Waterfall methodology that has flexibility with structure.

In the project proposal, the sponsor preferred a Waterfall methodology. However, the project has some uncertainties involving the sponsor's vision and the technical capabilities required, making detailed requirements gathering and careful planning important.

Balancing these needs is the reason why the project is using a hybrid methodology. Waterfall will ensure that the sponsor's expectations for phased delivery, planning, and documentation are met. This provides more structure throughout the lifecycle of the project.

However during the early stages of the project, specifically during prototyping and design, an Agile approach will be applied. Using iterative design cycles, we will develop and present deliverables to the sponsor. This flexibility allows for immediate feedback, ensuring that the solution aligns with the sponsor's vision. Once the prototype meets the sponsor's expectations, the project will transition back to the waterfall model, where that chosen design will be fully developed.

5 Stakeholders/ Teams

The project team includes six members, each with dedicated roles that ensure the project is successful. Together, the team has leadership, technical knowledge, quality assurance, programming, and analysis to complete the project with high quality and efficiency.

5.1 Team Members and Roles

Name	**Waterfall Role**	**Agile Role**
Royce Nathan Arugay	Project Lead	Scrum Master
Hina Ahmad	Technical Lead	Product Owner
Sohaila Hafiz	Lead Quality Assurance Specialist	Developer
Hitesh Bhasin	Lead Programmers	Developer
Dristi Rauniyar	Lead Programmers	Developer
Felicity Ann Malong	Lead Systems Analyst/Designer	Developer

Table 1: Project Team Roles and Responsibilities

5.2 Stakeholders

Stakeholder	**Name/Department**
Project Sponsor	Cameron Finnson
Departments	Operations, Accounting, Sales, Customer Service
IS Director	Professor James Deng
External Stakeholders	Customers/Clients of Nest Host and First Class Property Services

Table 2: Stakeholders

6 Finances

FGC has provided the following guidelines for project-related expenditures:

- Any individual expense exceeding $100 must be communicated to and approved by the project sponsor, including a justification for the expenditure.
- Any subscription or recurring cost over $25 must also be reported with an explanation to the sponsor and approved by the sponsor.
- Total project spending should not exceed $1,000 in any given month.
- Costs associated with using FGC's applications through their access are considered a project expense.

7 Assumption/ Noteworthy Issues

The company currently does not maintain a centralized database; instead, its data is distributed across multiple applications. This decentralized storage structure may present challenges for data integration, consistency, and accessibility, and could require additional effort to consolidate information effectively during the project implementation.

8 Conclusion

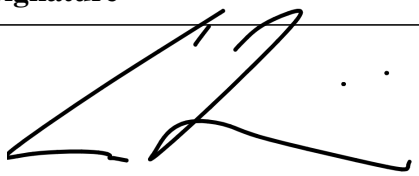
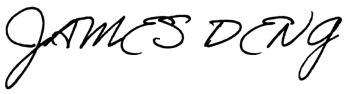
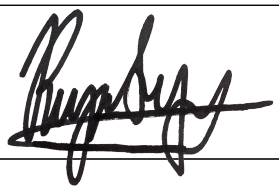
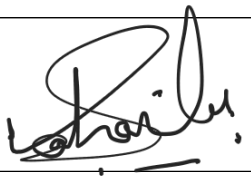
FGC currently faces operational inefficiencies and data silos due to a fragmented digital ecosystem. The proposed Unified Operations and Intelligence Platform addresses these challenges by providing a single, integrated solution. Through a centralized dashboard and AI-powered chatbot, the platform will consolidate key systems, including Zenya, QuickBooks, Monday.com, and other applications, eliminating manual data entry, automating core workflows, and delivering real-time operational insights. The AI chatbot will further enhance customer engagement by improving response times and ensuring a seamless client experience.

Ultimately, the successful implementation of this project will unlock significant benefits for FGC, including:

- Streamlined workflows and improved operational efficiency.
- Faster, personalized customer service.
- Data-driven decision-making through real-time analytics.
- Scalable infrastructure to support FGC's continued growth.

Overall, this project represents a strategic investment, transforming disconnected tools into a unified, intelligent platform that enhances FGC's agility, competitiveness, and long-term sustainability.

9 Project Proposal Sign-off

Name and Role	**Signature**
Cameron Finnson , Project Sponsor	
Prof. James Deng, IS Director	
Royce Nathan Arugay, Project Lead	
Hina Ahmad, Technical Lead	
Sohaila Hafiz, Lead QA Specialist	
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