**Nami Sushi**

Project Management 7002 ICT Systems Development

Chien Huang S5333270

Zhanrui Liao S5290972

**1. System Vision Document**

**1.1 Problem Description**

Brisbane's growing appetite for Japanese cuisine, particularly sushi, presents challenges like the need for faster, more convenient service. Nami Sushi Society struggles with peak-time delays, manual ordering inefficiencies, and not fully meeting customer preferences. Operational challenges include complex inventory management and food waste, affecting service quality and the restaurant's reputation. To address these issues, Nami Sushi Society requires a comprehensive information system to streamline service processes, enhance ordering efficiency, manage inventory effectively, and maintain high food quality standards to improve the overall dining experience.

**1.2 System Capabilities**

Nami Sushi Society's information system will integrate key features, covering four main areas: dine-in ordering, takeaway ordering, cashier, and inventory management:

* Customers can order directly from their table using an iPad or an app.
* Multilingual service support, including English, Chinese, and Japanese.
* Quick ordering from a recommended menu, convenient and efficient.
* Clear categorization of food and beverages, such as meat, vegetables, soups, and desserts.
* Order status tracking, from placing orders to kitchen preparation, serving, and estimated time.
* Customers can pre-order from home using the app.
* The system seamlessly interfaces with mainstream takeaway platforms, providing accurate order tracking.
* Options for customers to request bill payment and takeaway containers.
* Supports various payment methods, simplifying the customer checkout process.
* Creates customer accounts, recording, and analysing customer preferences.
* Offers loyalty membership registration and guest options for non-members.
* Efficiently monitors stock and intelligently predicts demand.
* Tracks daily inventory and food waste.
* Stores order data, providing weekly and monthly reports.

**1.3 Business Benefits**

The implementation of this system is expected to bring the following business benefits:

* Significantly reduce customer waiting time from ordering to payment.
* Increase customers through online and delivery partnerships.
* Collect customer information, streamline processes, and improve staff efficiency.
* Gain a more comprehensive understanding of inventory status.
* Enhance positive feedback from customers using the system.
* Increase customer loyalty.
* Attract new customers through online and delivery partners.
* Improve the efficiency of restaurant staff.
* Increase revenue by controlling and managing the budget better.

**2. Quantifying Project Approval Factors**

**2.1 Estimated Time for Project Completion**

The table 1 illustrates the development and estimated time for the project, encompassing four subsystems: dine-in, takeaway ordering, cashier, and inventory. We anticipate a 10-week timeline for the entire project. Among these subsystems, the dine-in ordering system is projected to take the longest time to develop. This subsystem aims to enable customers to place orders using tablets, reducing manual order-taking time, and enhancing the overall ordering experience for customers.

****

Table 1. Estimated Project Completion Time

**2.2 Development Costs of Project**

The estimated cost for the project development is approximately 110,000 AU dollars. This is divided in Table 2 between personal costs and other costs. personal costs encompass expenses for the project manager, business analyst, programmer/developer, systems analyst, and support technician, totalling around 88,320 AU dollars. The remaining expenses fall under other categories such as equipment/installation, licenses, facilities, utilities, travel/miscellaneous, and training, totalling 15,000 AU dollars. The overall projected expenditure amounts to approximately 103,320 AU dollars.

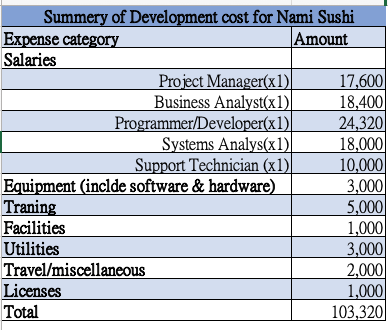
****

Table 2. Estimated Project Development Costs

**Personnel Costs:**

* Project Manager: 20 hours/week \* 8 weeks \* $110/hour = $17,600
* Business Analyst: 23 hours/week \* 8 weeks \* $100/hour = $18,400
* Programmer/Developer: 32 hours/week \* 8 weeks \* 95/hour = $24,320
* Systems Analyst: 30 hours/week \* 8 weeks \* $75/hour = $18,000
* Support Technician: 25 hours/week \* 8 weeks \* $50/hour = $10,000

**Total Personnel Costs:** $88,320

**Other Costs:**

* Equipment/Installation: $3,000
* Training: $5,000
* Facilities: $1,000
* Utilities: $3,000
* Travel/Miscellaneous: $2,000
* Licenses: $1,000

**Total Other Costs:** $15,000

**Total Project Budget: $103,320**

**2.3 Estimated Annual Operating Costs of Project**

For Annual Operating Costs, the primary expenditures include employee training, IT support, and connectivity. Employee training accounts for the largest proportion because if employees are not familiar with how to properly use these systems or haven't received adequate training and support, it can affect the efficiency and effectiveness of system utilization, subsequently lowering the overall organizational productivity and performance.

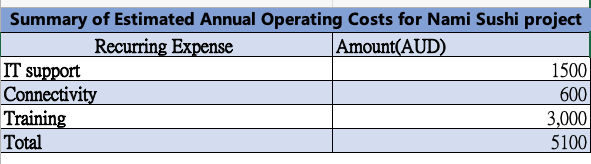


Table 3. Estimated Annual Support and Operating Costs

**2.4 Cost/Benefit Analysis**

2.4.1 Anticipated Benefits of the Proposed System

**Tangible benefits:**

* **Significantly reduce customer wait times** The notable reduction in wait times from ordering to payment directly diminishes customer wait times within the restaurant, enhancing satisfaction.
* **Increase customer base through online and delivery partnerships**  Collaborations with online platforms and delivery services result in an increased customer base, potentially leading to tangible sales growth.
* **Collect customer information, optimize processes, and boost employee efficiency** System-driven data collection enhances customer information gathering, streamlines operational workflows, and directly impacts operational costs and efficiency.
* **Comprehensive inventory insights**  Intelligent inventory forecasting and monitoring aid in superior inventory management, reducing overstock or stockouts, thereby controlling costs.
* **Enhanced customer perception and loyalty to the system**  Improved service provision via the system elevates customer perceptions and fosters loyalty to the establishment.

**Intangible benefits:**

* **Improved customer loyalty**  Although difficult to quantify, system improvements often increase customer loyalty and repeat visits.
* **Attraction of new customers**  Collaborations with online and delivery platforms attract new customers, impacting brand dissemination and reputation, which are often challenging to quantify directly.
* **Increased restaurant staff efficiency** While difficult to precisely assess, system implementation is expected to boost restaurant staff efficiency, aiding them in managing busy periods and orders effectively.
* **Increased revenue through improved budget control and management** Enhanced budget control typically results in more efficient expenditure, consequently boosting overall revenue.

2.4.2 Estimated Annual Benefits of Project

* **Reduced Waiting Time** An estimated 25% reduction in customer waiting time, from an average of 10 minutes per transaction, this reduction would save 4 hours per day. considering an average cost of $20 per hour, this reduction could lead to approximately **$29,200**.
* **Increased Customer Base** A conservative 15% annual increase in customer influx due to expanded online and delivery partnerships could potentially generate an additional revenue of around $**75,000**.
* **Enhanced Operational Efficiency** An estimated 20% improvement in staff efficiency, considering a total annual employee cost of $150,000, might lead to potential savings of approximately $**30,000** per year.
* **Improved Inventory Management** Assuming current annual expenses on wasted inventory amount to $20,000, a 30% reduction in stock wastage could result in savings of about **$6,000** annually.

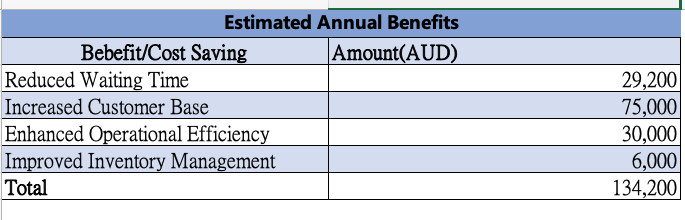
****

Table 4. Estimate Annual Benefits

**3. Risk & Feasibility Analysis**

**3.1 Organizational Risk & Feasibility**

* **Adaptation to New Technology & Staff Training**:

Considering the varying adaptability levels among staff towards new technology, we plan to implement a tailored training program, covering basic operations, advanced features, and routine maintenance, ensuring every employee can effectively use the new system.

* **Employee Involvement and Feedback**:

Encouraging staff participation in system design and improvement processes, collecting their feedback and suggestions, to enhance the system's practicality and employee engagement.

* **Cultural Transformation in the Organization**:

Through internal marketing and communication activities, we aim to reinforce teamwork and foster a shift in organizational culture towards more technology-driven and innovative directions.

* **Management Support & Leadership**:

Ensuring the management’s support and guidance for the new system, including providing necessary resources and direction, to facilitate the project's success.

3.2 **Technological Risk & Feasibility**

* **System Compatibility & Integration**:

Assessing the new system's compatibility with existing technologies to ensure seamless integration, including data migration and interface development.

* **Data Security & Privacy Protection**:

Implementing stringent data security policies and measures to ensure the safety and privacy of customer and business data.

* **System Reliability and Maintenance**:

Opting for stable and reliable technological solutions, along with a long-term system maintenance and upgrade plan, to ensure the system's longevity and stability.

3.3 **Resource Risk & Feasibility**

* **Cost Control & Budget Effectiveness**:

Conducting a detailed cost analysis and budget planning, including initial investment and long-term operational costs, as well as expected benefits and returns.

* **Resource Allocation and Priority Setting**:

Appropriately allocating project resources, including financial, human, and technological resources, and adjusting them according to project phases and priorities.

* **Vendor Management and Collaboration**:

Choosing suitable technology vendors and partners, establishing good cooperation to ensure the reliability of technical support and services.

3.4 **Schedule Risk & Feasibility**

* **Project Timing Planning and Management**:

Developing a detailed project timeline, including start and end dates for each phase and key milestones, and strategies to address potential delays.

* **Phase Assessment and Adjustment**:

Regularly assessing project progress and adjusting plans and resource allocation based on actual situations, to keep the project on schedule.

* **Risk Management and Contingency Planning**:

Developing a risk management plan and contingency strategies to deal with unforeseen events and challenges, ensuring the project proceeds as planned.

**4. Establish the Project Environment**

**4.1 Project Tools & Software**

Table 5 is an information captured detailing tool usage and personnel allocation. It includes:

The Project Proposal, which provides an overall framework for the project's direction and objectives. The Risk Matrix Analysis identifies, assesses, and manages potential risks within the project. User Definitions & Function involves collecting and determining user requirements and functional specifications. Screen and Report Layout refers to the project's interface, screen layouts, and report styles. Program Code Management involves version control of the project's code. Issue Tracking tracks issues within the project. Team Communication establishes and maintains internal and external communication channels. Information Management involves organizing, storing, and managing project documents, data, and information. Project Update involves regularly updating project progress, achievements, and information.

|  |  |  |
| --- | --- | --- |
| Information Capture | Electronic Tools | Who can assess |
| Project Proposal | Microsoft Word | Project Manager, Client |
| Risk matrix analysis | Excel | Project Manager, Developers, Client |
| User Definitions & Function | Trello | Analysts, users/all |
| Screen and Report Layout | Power point Cocoa | Analysts, users/all |
| Program Code Management | Git | Analysts, programmer |
| Issue Tracking | Trello Git | Project Manager/ Analysts  Programmers |
| Team communication | Microsoft Team | Project Team |
| Information Management | Trello | Project Team |
| Project update | Trello | Project manager/all |

Table 5. Information captured.

**4.2 Project Work Environment**

The project environment should ensure conducive conditions for successful project management and completion. This necessitates providing the right tools, equipment, workspace, and necessary support to facilitate the project's realization.

In the context of implementing a comprehensive information system at Nami Sushi Society, establishing the project environment is paramount. The project environment will encompass the following aspects:

* **Hardware/Software**  
  In our project, we've opted for laptops from the Windows series as our primary hardware equipment. These computers are equipped with the latest processors and substantial memory to ensure our team can handle various complex tasks and workloads.

To ensure smooth and efficient collaboration, we've chosen Trello as our primary project management software. Trello offers an intuitive, visual interface enabling team members to clearly understand project stages, task assignments, and progress status. We also use Microsoft Teams for online meetings and communication among team members. These choices are aimed at ensuring our project team operates at the highest efficiency and under optimal conditions, fulfilling our expectations for successful project management and completion.

* **Physical Environment**  
  Our development team operates in a vibrant and creative workspace. To provide the best working experience, we've set up spacious and comfortable office space furnished with ergonomic desks and chairs, ensuring team members can work for extended periods without fatigue.
* **Technical Support Team**  
  The technical support team is responsible for resolving user technical issues, conducting system maintenance, assisting in setting up and installing various devices, providing user training, and effectively managing technical resources.

**4.3 Project Processes & Procedures**

The Nami Sushi project aims to introduce a new information system to the restaurant to enhance service efficiency and customer satisfaction. Here are the main processes and steps of the project:

* **Reporting & Documentation**
  + **Report Storage**: Use Microsoft Word as the primary tool to record and store reports for easy retrieval and updates of project-related documents.
  + **Meeting Records**: Document client meetings and important discussions, including meeting highlights, discussion outcomes, and action plans, ensuring clear project direction.
  + **Client Requirement Records**: Analysts communicate and record client requirements, ensuring full consideration throughout the project.
  + **Requirement Confirmation**: Project supervisors verify client requirements and develop corresponding plans to align with client expectations.
  + **Document Updates**: Continuously update reports, requirement documents, and client communication records for accurate and timely information.
* **Programming**
  + **Client Requirement Analysis**: Developers thoroughly study and understand client-provided requirements to ensure code accuracy.
  + **Collaboration with Analysts**: Developers and system analysts jointly assess client needs to determine the best programming approach.
  + **Discussion with Project Managers**: Developers collaborate with project managers to ensure the written code aligns with the timeline and achieves expected outcomes.
  + **Requirement Implementation**: Developers transform client needs into actionable code, ensuring quality, efficiency, and stability.
* **Testing**
  + **Internal Testing**: Developers conduct internal testing using software to verify functionality and performance, addressing internal issues.
  + **Customer Feedback and Updates**: Update based on customer feedback to ensure changes meet the requirements.
* **Deliverables**
  + **New Software Program**: Provide a new software program to enhance internal restaurant operations.
  + **Employee Training Plan**: Offer a training program to familiarize staff with the new software for smooth restaurant system operations.
* **Code & Version Control**
  + **Maintenance of Edit Records**: Use Git to track team members' edit history, facilitating collaborative work.
  + **Version Tracking & Management**: Use Git to track, recover, and merge code versions, ensuring stability and traceability.

**5.** **Schedule the Work**

5.1 Project Work Breakdown Structure (WBS) for Inventory Subsystem

The Work Breakdown Structure (WBS) for the Inventory Subsystem project is designed to systematically execute the development and implementation of the inventory management system. It encompasses six phases: Requirement Analysis, System Design, Development, Testing, Deployment and Training, and Project Conclusion. The process begins with understanding client needs and analysing system requirements, then progresses to designing the data model, user interface, and functional features. Development includes creating a comprehensive inventory database and both front-end and back-end systems. The testing phase ensures system reliability, leading to deployment and comprehensive staff training. The project concludes with user feedback integration and a final evaluation, spanning a total duration of 33 days. Effective collaboration and information exchange among team members are pivotal, making the WBS a vital tool for streamlining task management and boosting overall project productivity.

|  |  |  |  |
| --- | --- | --- | --- |
| Work Breakdown Structure for inventory subsystem | | | |
| Task ID | Task Description | Duration | Predecessor |
| Requirement Analysis | | | |
| 1 | Discuss inventory management requirements with the client | 1 day | - |
| 2 | Detailed analysis of system requirements | 2 days | 1 |
| 3 | Determine key features for inventory management | 2 days | 2 |
| System Design | | | |
| 4 | Design the data model for inventory management | 3 days | 3 |
| 5 | Design the user interface for inventory management | 3 days | 4 |
| 6 | Design inventory updating and reporting features | 3 days | 5 |
| Development Phase | | | |
| 7 | Develop inventory database | 4 days | 4 |
| 8 | Implement back-end logic for inventory management | 5 days | 7 |
| 9 | Implement front-end interface for inventory management | 4 days | 8 |
| Testing Phase | | | |
| 10 | Unit testing | 3 days | 9 |
| 11 | Integration testing | 3 days | 10 |
| 12 | User acceptance testing | 2 days | 11 |
| Deployment and Training | | | |
| 13 | System deployment | 2 days | 12 |
| 14 | Staff training | 2 days | 13 |
| Project Conclusion | | | |
| 15 | Final user feedback and adjustments | 2 days | 14 |
| 16 | Staff training | 1. days | 15 |

Table 6. Work Breakdown Structure.

* 1. **Critical Path Analysis**

In this Work Breakdown Structure (WBS) for the Inventory Subsystem, the critical path is the longest path through the project, meaning any delays on this path will result in a delay of the overall project. The potential critical path is: Task1 → Task2 → Task3 → Task4 → Task7 → Task8 → Task9 → Task10 → Task11 → Task12 → Task13 → Task14 → Task15 → Task16.

This path encompasses all the key steps from Requirement Analysis to Project Conclusion, indicating that any delays in these tasks will lead to a delay in the entire subsystem project.