

# **ENPM637 Final Project Notebook**

## **BiteBlend Group 2**

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# 1. Deliverable 1

## 1.1 Weighted Scoring Model

### Overview

Our weighted scoring model is based on budget, profit, market size, and retention potential. Out of the three projects, the Food Finder app was the most promising project to pursue in terms of economic viability.

### Food Finder

The basic concept is to help individuals quickly decide what to eat with a fun-to-use app that shows pictures of available foods that fit the user's preferences and provides a way to order food. The market value for online food delivery will be a whopping \$1.22 trillion in 2024 (Statista, 2024). Food is an everyday necessity, with many eating out at least once daily. Current food ordering platforms do not have a gamified interface recommending food options. Instead, all these platforms only recommend restaurants. Given the niche and market value, this project has a high potential for profit and long-term customers. However, given the complexity of the recommendation algorithms and information-pulling procedures, the chance of low development costs is low. Overall, this project is the most promising in terms of profitability.

### Subscription Canceller

This app reminds the user to cancel a subscription at a self-prescribed date. This can be when a user wants to cancel their subscription before the free trial expires or before the next billing cycle. The streaming industry is vast, comprising an estimated market value of \$375 billion in 2021 (PrecedenceResearch, 2022). Additionally, developing an app that can give several reminders across various platforms should be achievable within a 12-month timeframe and a \$150k budget. However, setting a reminder on one's phone or computer can be accomplished very quickly and easily with existing tools, like a phone's calendar app or Google Calendar. Not to mention, people looking to cancel their subscriptions are not the type looking to spend money on a phone app when there is a free alternative. It is also unlikely for there to be long-term users since the app will no longer be needed once the subscription is canceled. As a result, this project

has no earning potential, low potential for long-term customers, high potential for low development costs, and low potential for a fun user experience.

### Grad Student Job Finder

This app will help graduate students find an entry-level position. Unlike other job searching platforms, this app specifically caters to those who just graduated with a graduate degree and are looking for entry-level jobs. There is a huge market share for job searching platforms, estimated to be \$10 billion in 2022 (FortuneBusinessInsights, 2022). However, our relatively small customer base consists of recently matriculated graduate students. In addition, once the customer lands an entry-level position, it is unlikely the individual will need to apply for another entry-level position; instead, the individual will apply for a position that requires more experience. Not only will finding success on the app cause customers to no longer need the app, but those on the app for an extended period of time will become disgruntled by the lack of success and look to other platforms. Job-searching platforms are also relatively complex. Information must be accurate, quickly changeable, and easy to search. As a result, this project has a healthy earning potential, low potential for long-term users, relatively high development cost, and low potential for user enjoyment.

### Must Meet Objectives

	<b>Food Finder</b>	<b>Reminder to Cancel Subscription</b>	<b>Entry Level Job Finder for Grad Students</b>
Can be developed and deployed within budget of \$150k	Yes	Yes	Yes
Can profit at least \$150k 12 months after release	Yes	No	Yes
Frontend and Backend development can be finished in 9-12 months	Yes	Yes	Yes
Sizeable market demand	Yes	No	No

## Want Objectives

	Relative Importance	Impact	Food Finder	Reminder to Cancel Subscription	Entry Level Job Finder for Grad Students
Earning potential	90	0: \$1k - \$10k 1: \$10k - \$50k 2: \$50k - \$100k 3: > \$100k	3	0	2
Long term users	80	0: no potential 1: low potential 2: high potential	2	1	1
Low development and maintenance costs	70	0: no potential 1: low potential 2: high potential	1	2	1
Entertaining for users	20	0: no potential 1: low potential 2: high potential	2	0	1
Total score			8	3	5
Priority			1	3	2

## References

- Online food delivery - worldwide: *Statista market forecast*. Statista.  
<https://www.statista.com/outlook/dmo/online-food-delivery/worldwide>
- *Online recruitment technology market: Forecast report [2030]*.  
<https://www.fortunebusinessinsights.com/online-recruitment-market-103730>
- *Video streaming market (by streaming type: Live video streaming, non-linear video streaming; by component (USD): Software, Content Delivery Services; by solutions: Internet protocol TV, over-the-top, cable TV, pay-TV; by Platform: Gaming Consoles, laptops & desktops, smartphones & tablets, Smart TV; by service: Consulting, managed services, training & support; by revenue model; by deployment type; by user) - global*

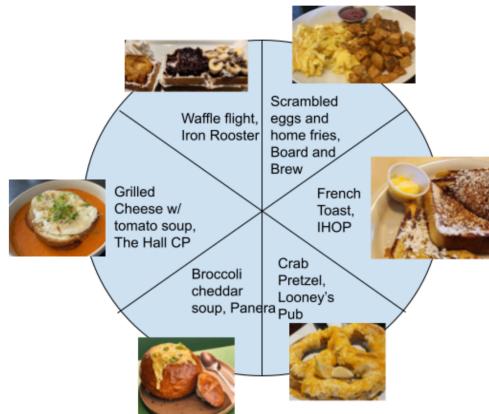
*industry analysis, size, share, growth, trends, regional outlook, and forecast 2022-2030.*  
*Precedence Research.*

<https://www.precedenceresearch.com/video-streaming-market>

## 1.2 Product Vision

Have you ever found yourself scrolling through countless reviews and pictures, wondering what you should get to eat? Well say goodbye to your scrolling woes with <product name>. Our product is a phone application that makes choosing what to eat both fast and fun. With a user-friendly interface, our app quickly recommends food options based on user preferences regarding cuisine, distance, price point, and mood. Feeling tired after a late night out and hankering for some comfort food? Just let the app know and it'll recommend some homey breakfast options. Below is a rough sketch of what our user interface would look like. The interface will mainly consist of a filter and wheel.

Location	Distance	Cost	Cuisine	Mood	Reviews
College Park, MD	1-5 miles	\$10-\$15	American, Breakfast	Tired	> 4 stars



The wheel will present possible options with pictures of dishes that match the user's preferences. The pictures remove a lot of the uncertainty and indecision users feel when deciding what to eat by showing them exactly what they're getting instead of having to rely on just dish names and descriptions. To provide a fun and interactive experience, the user can "spin the wheel", having the app pick the dish of choice. Alternatively, the user can select a dish and have the app make another round of recommendations similar to the selected item.

Our app will have two types of customers: individuals and restaurants. Individuals can use the app for free or pay for a premium version that allows exclusive features such as remembering past favorite foods and giving recommendations based on user history. Restaurants can pay for ads that promote their restaurant on the app.

We deem the following attributes necessary for the success of our product: A simple yet effective filter that narrows down possible food selections. An algorithm for selecting foods that best match the filter criterias. A method of retrieving accurate information, i.e., restaurant location and open hours, dish name, pictures, and prices, as well as delivery/takeout status. And, a method of recording and analyzing user preferences to make more personal recommendations.

We have found that our app fulfills a niche not fulfilled by the apps currently on the market. Unlike other platforms, our app recommends dishes as opposed to restaurants. For example, the app, Restaurant Roulette, utilizes a filter to recommend restaurants. Food delivery platforms like Grubhub and UberEats, provide user reviews, prices and pictures, but are limited to recommending only restaurants. Yelp, the popular review platform, also falls short. Even Yelp's surprise me feature chooses a random restaurant for the user. We predict this app will be very popular with parents of picky eaters who want to make sure they go to a restaurant their child will enjoy, travelers who are unfamiliar with the cuisine/restaurants in the area, as well as individuals who are curious to try something new but unsure of what to choose.

Proposed Timeline: Total estimated timeframe: 12-18 months

Development Phase	Testing Phase	Launch Preparation
Design, Coding, Testing	Beta Testing, Refinement	Marketing, Final Checks
9-12 months	2-3 months	1 month

Proposed Budget

Our budget allocation will encompass various aspects of development, marketing, operations, and contingencies to ensure a successful product launch.

<b>Category</b>	<b>Tasks</b>	<b>Estimated Cost</b>
Development Costs	Design and Coding	\$ 20,000
Development Costs	Testing and QA	\$ 15,000
Infrastructure and Hosting	Servers, Databases, Maintenance	\$ 15,000
Personnel	Developers, Designers, QA Team	\$ 40,000
Marketing and Promotion	Campaigns, Ads, Partnerships	\$ 20,000
Operational Expenses	App Maintenance, Updates	\$ 25,000
Contingency	Unforeseen Costs	\$ 15,000
<b>Total Estimated Budget</b>		<b>\$ 150,000</b>

## **1.3 Business Case**

### **1.3.1 Executive Summary**

BiteBlend wants to completely transform the online meal delivery market by providing an extremely user-friendly and customized experience. BiteBlend aims to improve consumer pleasure and engagement by offering customized recommendation engines, dynamic menu displays, and advanced filtering options that adapt to individual preferences and dietary needs.

### **1.3.2 Introduction**

Although the market for food delivery has expanded rapidly, consumers still want more individualized and user-friendly services. In order to satisfy these needs, BiteBlend offers a novel solution that raises the bar for the user experience in food delivery apps.

#### **1.3.2.1 Background**

With the proliferation of food ordering apps, users are often overwhelmed by choices and find it challenging to locate meals that fit their specific dietary preferences or current desires. BiteBlend addresses this gap by offering tailored recommendations and an enhanced discovery process.

#### **1.3.2.2 Current Situation**

With multiple food ordering applications, consumers are frequently overloaded with options<sup>1</sup> and need help to choose meals that satisfy their particular dietary requirements or present cravings. BiteBlend fills this void by providing personalized suggestions and an improved search interface.

#### **1.3.2.3 Description of the problem and opportunity**

User satisfaction diminishes due to decision fatigue caused by the current platforms' need for more personalization and interaction. The proposed features of BiteBlend are intended

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<sup>1</sup> Naren Bhati. (2023, November 23). *Challenges Faced by Food Delivery App Businesses*. Tech Blog | Mobile App, ECommerce, Salesforce Insights; EmizenTech.

<https://www.emizentech.com/blog/food-delivery-mobile-app-business-challenges.html>

to revolutionize this process by improving the intuitiveness, fun factor, and compatibility of meal ordering with personal preferences.

#### 1.3.2.4 MOV

Area of Impact	The project will be successful if it:
Customer	Achieves interaction from 50% of customers at least 2 times over a month within 3 months.
Strategic	Has at least 10 restaurants using the app for promotion within 6 months.
Financial	Gained over 50 premium users within 6 months.
Operational	Launched an update to fix bugs and address user recommendations within 3 months.
Social	Increased social media presence across Facebook, Instagram, TikTok, and Youtube within 2 months.

#### 1.3.2.5 How Achieving the project's MOV will support the organization's goal and strategy

Achieving the MOV is consistent with BiteBlend's strategic objective to dominate the food delivery industry in terms of client retention and satisfaction. BiteBlend will stand out in a crowded market and build a devoted user base by offering a personalized and simple ordering experience.

### 1.3.3 Alternatives

#### 1.3.3.1 Mood-Based Recommendation:

People's moods frequently affect the foods they choose to eat. Including recommendations based on mood can offer highly customized options, increasing user happiness and streamlining the purchase process.

### 1.3.3.2 Customized Filters:

Users have a wide range of needs and preferences, from dietary limitations to flavor preferences. Users may locate precisely what they want, when they want it, with the use of personalized filters based on category, user activity, delivery time, and other factors.

### 1.3.3.3 Gamification and Reward for Fast Ordering:

By adding fun and competitive aspects, gamification can dramatically improve user engagement. Fast ordering rewards encourage prompt decision-making and boost order frequency, which is advantageous for the platform and users alike.

### 1.3.3.4 Use Voice Search:

For consumers who are multitasking, voice search provides a quick, hands-free way to place orders. This feature can potentially increase the app's attractiveness and accessibility, reaching a more extensive user base.

### 1.3.3.5 Display Ongoing Deals:

Emphasizing current specials and promotions might entice customers to try new foods and eateries, resulting in a rise in order volume. Additionally, it improves consumers' overall experience and happiness with the platform, adding value for them.

## 1.3.4 Analysis of alternatives

For a thorough evaluation, we'll consider the following criteria with assigned weights reflecting their importance:

- User Adoption (30%),
- Implementation Complexity (20%),
- Cost (20%),
- Potential Revenue Increase (15%), and
- User Satisfaction (15%).

The estimated risk value indicates the likelihood of successful implementation and positive impact, with higher values representing lower risk.

#### 1.3.4.1 Data Collection & Metrics

- **User Adoption:** Track feature usage rates and new user sign-ups attributed to the feature through app analytics.
- **Implementation Complexity:** Evaluate based on development time estimates, required technical expertise, and integration complexity with existing systems.
- **Cost:** Estimate based on development, maintenance, and any additional operational costs.
- **Potential Revenue Increase:** Project based on anticipated increases in average order value, order frequency, and user base growth.
- **User Satisfaction:** Measure through post-implementation surveys, user reviews, and Net Promoter Score (NPS).

#### 1.3.4.2 Alternative Analysis

Criteria	Weight	Mood-based recommendation	Customized Filters	Gamification and Rewards	Voice Search	Ongoing Deals Display
User Adoption	30%	8	8	8	6	7
Implementation Complexity	20%	6	6	5	6	8
Cost	20%	5	6	6	5	7

Potential Revenue Increase	15%	9	8	7	7	6
User Satisfaction	15%	9	8	7	8	4
Estimated Risk Value		7.3	7.2	6.7	6.25	6.6

**Note:** The composite score determines the risk values. Higher score alternatives have less risk and better chances of successful implementation and a positive impact on the company.

#### 1.3.4.2.1 Mood-based Recommendation

- **User Adoption:** High potential due to the unique and personalized nature of recommendations, likely attracting users interested in a tailored dining experience.
- **Implementation Complexity & Cost:** Moderate complexity and cost, as developing mood-recognition algorithms requires advanced technology and expertise, but the investment is justified by the high potential for user engagement.
- **Potential Revenue Increase & User Satisfaction:** The highest scores in these categories reflect the strong appeal of personalized experiences, likely leading to increased order frequency and a loyal user base.

#### 1.3.4.2.2 Customized Filters

- **User Adoption:** Similar to mood-based recommendations, offering users the ability to fine-tune their search based on specific preferences can significantly enhance the user experience.

- **Implementation Complexity & Cost:** Comparable to mood-based recommendations, with a slightly higher cost due to the need to categorize and tag a vast array of menu items accurately.
- **Potential Revenue Increase & User Satisfaction:** Slightly lower than mood-based recommendations, as while highly useful, they may not offer as unique a selling proposition.

#### 1.3.4.2.3 Gamification and Rewards:

- **User Adoption:** Expected to be high as gamification adds an element of fun and competition, encouraging more frequent use.
- **Implementation Complexity & Cost:** Lower complexity and cost compared to more technologically advanced features, making it a cost-effective way to engage users.
- **Potential Revenue Increase & User Satisfaction:** Lower scores in these areas reflect the challenge of translating game elements into sustained revenue growth and long-term satisfaction.

#### 1.3.4.2.4 Voice Search

- **User Adoption:** Potentially lower due to varying user comfort levels with voice technology and its applicability in noisy environments.
- **Implementation Complexity & Cost:** Similar complexity and cost to mood-based recommendations, but potentially lower user adoption reduces its risk value.
- **Potential Revenue Increase & User Satisfaction:** Moderate impact expected, as while convenient, it may not significantly alter ordering habits or frequency.

#### 1.3.4.2.5 Ongoing Deals Display

- **User Adoption:** Expected to be moderate, as deals and promotions are common features in food ordering apps.
- **Implementation Complexity & Cost:** Higher complexity due to the need for real-time updates and partnerships with restaurants, justifying the higher cost.
- **Potential Revenue Increase:** Lower potential revenue increase as deal-seekers may not convert to regular customers.

- **User Satisfaction:** Significantly lower, as constant promotion of deals may not contribute to a personalized or satisfying user experience.

#### 1.3.4.3 Financial Analysis

<b>Discount rate</b>	<b>6.00%</b>				
Assume the project is completed in Year 0	<b>Year</b>				
	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>Total</b>
Costs	<b>150,000</b>	<b>40,000</b>	<b>40,000</b>	<b>40,000</b>	
Discount factor	1.00	0.94	0.89	0.84	
<b>Discounted costs</b>	<b>150,000</b>	<b>37,600</b>	<b>35,600</b>	<b>33,600</b>	<b>256,800</b>
Benefits	<b>0</b>	<b>200,000</b>	<b>200,000</b>	<b>200,000</b>	
Discount factor	1.00	0.94	0.89	0.84	
<b>Discounted benefits</b>	<b>0</b>	<b>188,000</b>	<b>178,000</b>	<b>168,000</b>	<b>534,000</b>
Discounted benefits - costs	(150,000)	150,400	142,400	134,400	<b>277,200</b>
Cumulative benefits - costs	(150,000)	400	142,800	277,200	
<b>ROI</b>	<b>108%</b>				
	<b>Payback in Year 1</b>				

Our analysis shows a fantastic positive NPV of 108%. This means we can expect a profitable return on our investment.

#### 1.3.4.4 Proposed Recommendation

The suggested strategic improvement for BiteBlend is a Mood-Based Recommendation based on the most significant assessed risk value. Its strong potential for user acceptance, revenue growth, and user pleasure outweighs the modest implementation difficulty and expense. By providing a highly customized experience consistent with the app's goal of reinventing the meal ordering experience via innovation and customization, this feature sets BiteBlend apart in the industry.

## 1.4 Project Charter

**Project Title:** BiteBlend

**Project Start Date:** 4/1/2024

**Projected Finish Date:** 4/1/2025

**Budget:** The project has been allocated with a budget of \$150,000.

**Project Manager:** Sindhura Padhuri, (240)714-6516, [psreddy@umd.edu](mailto:psreddy@umd.edu)

### Project Description/Objectives:

The proposed development focuses on launching a mobile application designed to transform the process of deciding what to eat into an enjoyable and effortless experience. Leveraging a user-friendly interface, the app stands out by offering highly personalized dish recommendations, tailored to individual preferences, past orders, and even situational factors like the weather or time of day. Utilizing sophisticated machine learning algorithms, it will analyze users' dining habits, favored cuisines, and frequently visited restaurants to provide spot-on suggestions. Additionally, the app will adjust its recommendations based on the user's current context—proposing comforting meals on chilly days, for instance. The inclusion of a feature for users to rate and review their experiences further refines the app's recommendation engine, ensuring that suggestions continually evolve to meet and exceed user expectations. This project aims not only to introduce a novel tool in the market but also to create a dynamic platform that learns and grows with its user base, making meal decisions simpler, personalized, and contextually relevant.

### Main Project Success Criteria (MOV):

<b>Area of Impact</b>	<b>The project will be successful if it:</b>
Customer	Achieves interaction from 50% of customers at least 2 times over a month within 3 months.
Strategic	Achieves interaction from 50% of customers at least 2 times over a month within 3 months.

Financial	Gained over 50 premium users within 6 months.
Operational	Launched an update to fix bugs and address user recommendations within 3 months.
Social	Increased social media presence across Facebook, Instagram, TikTok, and Youtube within 2 months.

### Approach:

We will need to ensure restaurant data is accurate and up to date. We must ensure robust data privacy and security measures to protect user information, such as location and contact info. We will continuously update and refine the recommendation algorithms based on user feedback and evolving preferences.

### Assumptions/Risks:

Assumption	Risk
The product's popularity will grow over time through word of mouth and a social media campaign	Advertisement doesn't reach individuals who would be interested in the app
As the product's popularity grows, more restaurants will want to advertise on our app	Restaurants don't see the value in advertising on our app
Users will like the recommendations given by the app	App recommendations are not meeting minimum user satisfaction, e.g., inaccurate, and repetitive.
Users will use the app consistently, at least once a month	Users will view the app as a novelty that is easily forgettable

## Roles and Responsibilities:

Name	Position	Role	Contact
Sindhura Padhuri	Project Manager	Has clear idea of final product, interact with stakeholders	<a href="mailto:psreddy@umd.edu">psreddy@umd.edu</a>
Kanishq Sunil	Scrum Master	Lead team during daily standups, resolve developers' challenges	<a href="mailto:kanishqs@umd.edu">kanishqs@umd.edu</a>
Barath Bhaskaran	QA	Develop test plans, document test process, create standards and specifications	<a href="mailto:bbhaskar@umd.edu">bbhaskar@umd.edu</a>
Erica Lee	Tester	Create automated and manual tests, defect reports, troubleshoot	<a href="mailto:elee1220@umd.edu">elee1220@umd.edu</a>
Shivangi Srivastava	Team Lead	Main liaison between team members and project manager	<a href="mailto:shvngsri@umd.edu">shvngsri@umd.edu</a>

## Sign-off:

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# **2. Deliverable 2**

## **2.1 Requirements Elicitation Approach**

**Link to Document →** [!\[\]\(e664663439e6ace920117d2b3d75b910\_img.jpg\) Requirement collection.docx](#)

We follow a structured process for collecting requirements to ensure that we cover all aspects of user needs, system functionalities, and technical specifications for the BiteBlend project. This approach enables us to achieve comprehensive coverage and make the necessary adjustments to ensure the project succeeds. This process will leverage a combination of methods to gather input from various stakeholders, including potential users, development team members, and market research. Our strategy encompasses the following steps:

### **Stakeholder Interviews:**

Conduct interviews with a diverse set of stakeholders, including future app users, restaurant owners, and culinary experts, to gather a wide range of needs and expectations for the application.

### **Surveys and Questionnaires:**

Deploy surveys targeting potential users to understand their preferences, dietary restrictions, and desired features in a meal recommendation app. This method helps quantify preferences and identify common trends.

### **Focus Groups:**

Organize focus group discussions with potential users to delve deeper into their meal selection processes, preferences, and how they would like technology to aid their dining experience. Focus groups allow for interactive discussions that can uncover nuanced insights.

### **Competitive Analysis:**

Perform an analysis of existing meal recommendations and food-related apps to identify market gaps and innovation opportunities. This analysis will help define features that can differentiate our app from competitors.

### **Prototyping:**

Develop preliminary prototypes and conduct usability testing sessions to gather feedback on the app's design and functionality. This iterative process allows for the refinement of requirements based on direct user interaction with the app concept.

## 2.2 Requirements Traceability Matrix

Requirement No.	Name	Category	Source	Status
1	The product shall provide mood-based suggestions for food choices.	Functional	User Experience Requirement	Documented
2	Provide personalized meal suggestions based on dietary preferences and food allergies.	Functional	Customer	Documented
3	The product shall streamline the food selection process, reducing the ordering time.	Functional	Stakeholder Interview	Documented
4	Customized filters shall be available to enhance streamlining, catering to user preferences.	Functional	Stakeholder Interview	Documented
5	Regular feedback mechanisms shall be implemented to increase user satisfaction.	Functional	Developers	Documented
6	Users shall have access to their ordering history within the app.	Functional	Stakeholder Interview	Documented
7	Recommendations for food choices shall be based on the user's ordering history.	Functional	Stakeholder Interview	Documented
8	The app shall be compatible with both iOS and Android platforms.	Non-Functional	Developers	Documented
9	Users shall have the option to rate and review food items and overall experience.	Functional	Focus Group	Documented

<b>10</b>	The app shall comply with privacy measures to securely handle user data.	Non-Functional	Security Experts	Documented
<b>11</b>	The app shall be integrated with local weather data for meal recommendations.	Functional	Focus Group	Documented
<b>12</b>	The app shall have load times under 2 seconds.	Non-functional	Developer	Documented
<b>13</b>	The app shall be integrated with existing restaurants and cloud kitchens.	Functional	Business Requirement	Documented
<b>14</b>	The app shall suggest food items by contextually adapting based on demand.	Functional	Focus group	Documented

## 2.3 Project Scope Statement

Link to document → [W scope\\_statement.docx](#)

<p><b>Project Title:</b> BiteBlend</p> <p><b>Date:</b> March 15, 2024      <b>Prepared by:</b> Sindhura Padhuri</p>
<p><b>Project Justification:</b></p> <p>The development of the personalized meal recommendation mobile application (BiteBlend) aims to revolutionize the dining experience by offering users tailored meal suggestions based on their preferences, current mood, past orders, and situational contexts like weather and time of day. This project leverages advanced machine learning algorithms to ensure recommendations are both personalized and contextually relevant, enhancing user satisfaction and engagement.</p>
<p><b>Product Characteristics and Requirements:</b></p> <ol style="list-style-type: none"><li>1. Intuitive design for mood-based selection.</li><li>2. ML-driven mood analysis algorithm.</li><li>3. Integration with existing restaurants and cloud kitchens.</li><li>4. Secure user data handling and privacy measures.</li><li>5. Cross-platform compatibility for wider accessibility.</li><li>6. Contextual adaptation based on factors like demand, weather, and user history.</li></ol>
<p><b>Summary of Project Deliverables</b></p> <p><b>Project management-related deliverables:</b> Requirements specification document, requirements traceability matrix, scope statement, comprehensive WBS, detailed project schedule (Gantt Chart), regular status reports, comprehensive testing report, final presentation, RBS, COS, RACI, priority matrix, and final project document.</p> <p><b>Product-related deliverables:</b></p> <ol style="list-style-type: none"><li>1. User research report</li><li>2. Mood-analysis algorithm documentation</li><li>3. Mobile application.</li><li>4. Design prototypes</li><li>5. User manual</li><li>6. Training materials</li></ol>

## 7. Feedback documentation

### **Project Success Criteria:**

- Achieves interaction from 50% of customers at least twice a month within three months post-launch.
- Integrate a minimum of 10 restaurants using the app for promotion within six months post-launch.
- Secure 25,000 active users within three months post-launch.
- Achieve an average of 10,000 daily orders within three months post-launch.
- Achieve an NPS score of 20 or higher within the first year of launch.
- Roll out at least one major update based on user feedback within six months.
- The application must load within two seconds while handling 1,000 concurrent users without significant degradation in performance.

## **2.4 Work Breakdown Structure**

Link to document → [!\[\]\(7fd808d098fc71ab2be986223535f4b7\_img.jpg\) BiteBlend WBS.docx](#)

### **0.0 Start BiteBlend Project**

#### **1.0 Initiate Project**

- 1.1 Identify Stakeholders
- 1.2 Define Project Objectives
- 1.3 Establish Project Governance

#### **2.0 Plan Project**

- 2.1 Develop Project Management Plan
- 2.2 Outline Resource Requirements
- 2.3 Set Milestones and Deadlines
- 2.4 Milestone: Sign-Off Initial Project Report

#### **3.0 Market Research**

- 3.1 Analyze Competitor Landscape
- 3.2 Identify Customer Personas
- 3.3 Conduct Focus Groups
- 3.4 Discuss Learnings with Stakeholders
- 3.5 Milestone: Sign-Off Requirement Specification Document

#### **4.0 Design App Interface**

- 4.1 Create Wireframes and Mockups
  - 4.1.1 Mockup for home screen
- 4.2 User Interface (UI) Prototyping
  - 4.2.1 Design Icons and Graphics
  - 4.2.2 Determine Font and Theme
- 4.3 User Experience (UX) Design
  - 4.3.1 Identify Animations and Transitions
- 4.4 Milestone: Stakeholders Final Application Design Sign-Off

#### **5.0 Develop App**

- 5.1 Set Up Development Environment
- 5.2 Collect Relevant Data
  - 5.2.1 Gather Licensed Data for Training Models

### 5.2.2 Implement Data Anonymity

## 5.3 Code Core Application Functions

### 5.3.1 Develop Home Dashboard Interface

### 5.3.2 Develop Recommendation System

#### 5.3.2.1 Recommendation based on Mood

#### 5.3.2.2 Recommendation based on User Preferences

#### 5.3.2.3 Recommendation based on Order History

#### 5.3.2.4 Recommendation based on Special Events

#### 5.3.2.5 Recommendation based on Weather

### 5.3.3 Develop Order History Interface

### 5.3.4 Develop User Profile

## 5.4 Integrate Payment Gateway

## 5.5 Milestone: Demo Working Application to Stakeholders

## 6.0 Testing Phase

### 6.1 Unit Testing

### 6.2 Integration Testing

#### 6.2.1 Interface Testing

#### 6.2.2 Database Integration Testing

### 6.3 System Testing

### 6.4 User Acceptance Testing

#### 6.4.1 Beta Testing with Target Demographics

#### 6.4.2 Collect and Implement Feedback

## 6.5 Milestone: Testing Sign-Off

## 7.0 Prepare for Launch

### 7.1 Finalize App Store Submissions

### 7.2 Develop Launch Marketing Strategy

### 7.3 Train Customer Service Team

## 7.4 Milestone: Customer Service Passes Mock Requests

## 8.0 Launch App

### 8.1 Monitor Initial Release

### 8.2 Execute Marketing Campaigns

8.3 Collect Launch Feedback

8.4 Milestone: BiteBlend App Launch Successful and Operational

## 9.0 Post-Launch

9.1 App Performance Monitoring

9.2 Ongoing Customer Support

9.3 Feature Updates and Maintenance

9.4 Milestone: Submit Performance Analysis to Stakeholders

## 10.0 Project Closure

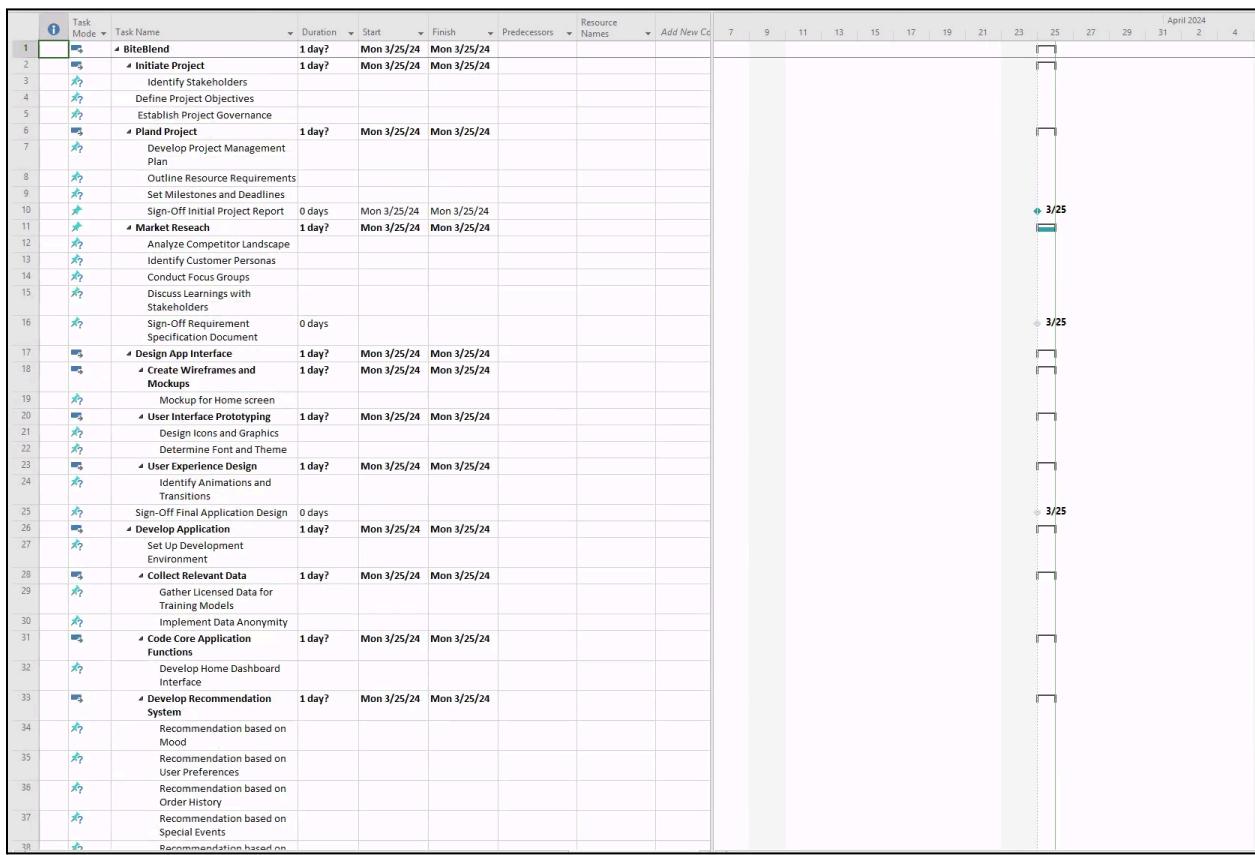
10.1 Document Project Learnings

10.2 Release Project Resources

10.3 Celebrate Successes

10.4 Milestone: Successfully Transition Project to Clients

## 2.5 Gantt Chart



	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names	Add New Col	7	9	11	13	15	17	19	21	23	25	27	29	31	April 2024	
35	▶	Recommendation based on User Preferences																					
36	▶	Recommendation based on Order History																					
37	▶	Recommendation based on Special Events																					
38	▶	Recommendation based on Weather																					
39	▶	Develop Order History Interface																					
40	▶	Develop User Profile																					
41	▶	Integrate Payment Gateway																					
42	▶	Demo Working App to Stakeholders	0 days																3/25				
43	▶	Testing Phase	1 day?	Mon 3/25/24	Mon 3/25/24																		
44	▶	Unit Testing																					
45	▶	Integration Testing	1 day?	Mon 3/25/24	Mon 3/25/24																		
46	▶	Interface Testing																					
47	▶	Database Integration Testing																					
48	▶	System Testing																					
49	▶	User Acceptance Testing	1 day?	Mon 3/25/24	Mon 3/25/24																		
50	▶	Beta Testing with Target Demographics																					
51	▶	Collect and Implement Feedback																					
52	▶	Sign-Off Testing	0 days																3/25				
53	▶	Prepare for Launch	1 day?	Mon 3/25/24	Mon 3/25/24														3/25				
54	▶	Finalize App Store Submissions																					
55	▶	Develop Launch Marketing Strategy																					
56	▶	Train Customer Service Team																					
57	▶	Customer Service Passes Mock Requests	0 days																3/25				
58	▶	Launch Application	1 day?	Mon 3/25/24	Mon 3/25/24																		
59	▶	Monitor Initial Release																					
60	▶	Execute Marketing Strategy																					
61	▶	Collect Launch Feedback																					
62	▶	BiteBlend App Launch Successful and Operational	0 days																3/25				
63	▶	Post-Launch	1 day?	Mon 3/25/24	Mon 3/25/24																		
64	▶	App Performance Monitoring																					
65	▶	Ongoing Customer Support																					
66	▶	Feature Updates and Maintenance																					
67	▶	Submit Performance Analysis to Stakeholders	0 days																3/25				
68	▶	Project Closure	1 day?	Mon 3/25/24	Mon 3/25/24																		
69	▶	Document Project Learnings																					
70	▶	Release Project Resources																					
71	▶	Celebrate Success																					
72	▶	Successfully Transition Project to Client	0 days																3/25				

## 2.6 Project Setup

Link to document → [BiteBlend COS](#)

### Conditions of Satisfaction

1. User experience
  - a. Client: The app needs intuitive navigation and aesthetic design
  - b. Response: We can create designs and transitions for the home, order, and transaction pages
  - c. Agreement: We have agreed on designs for the landing page, order page, and transaction page
2. Personalization
  - a. Client: The app should be personalized to each user and make mood based recommendations
  - b. Response: We can create user profiles and an algorithm that will recommend food options based on the user's past order history as well as mood, weather, time of day, and special occasions
  - c. Agreement: We have agreed that the user will be able to make a unique profile that contains info on past orders and favorite foods and the app will make recommendations by incorporating the user's past order history and current mood, time of day, current weather, and if there's a special occasion
3. Financial Transactions
  - a. Client: The app should handle financial transactions for food orders and user subscriptions
  - b. Response: We can create a payment system that allows multiple payment options and secure payment processing as well as a refund process that automatically handles cancellations and refunds
  - c. Agreement: We have agreed that there will be an in-app payment platform that can take multiple payment options securely as well as handle refunds
4. Performance and scalability
  - a. Client: The app should be able to handle large number of users

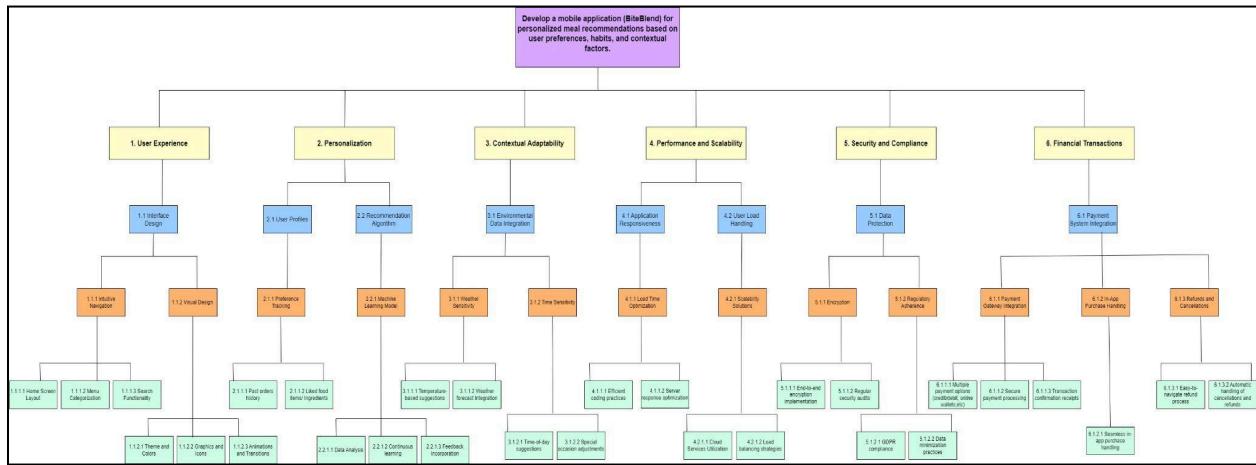
- b. Response: We can ensure the app can handle up to 25,000 simultaneous users after launch and increase capacity as needed
  - c. Agreement: We have agreed that the app should be able to handle 1,000 simultaneous users without degradation in performance. The app's backend will be transferred to a cloud platform with load balancing capabilities given 25,000+ simultaneous users
5. Security and Compliance
- a. Client: The app should handle customer information securely
  - b. Response: We will have industry standards in place to handle customer information, such as name, address, phone number, and credit card information
  - c. Agreement: The app will utilize industry-standard encryption algorithms while handling customer credit card information to ensure GDPR compliance.

#### 2.6.1 Prioritized scope triangle

Variable	1	2	3	4	5
User experience			X		
Personalization	X				
Financial Transactions		X			
Performance and Scalability					X
Security and Compliance				X	

## 2.7 Requirement Breakdown Structure

Link to document →  RBS



## 2.8 Best fit PMLC Model

Link to document → [BiteBlend Final Project Report](#)

Based on the project characteristics and requirements for BiteBlend, the best-fit PMLC is the Iterative model, specifically the Scrum framework. Agile methodologies excel in projects with evolving requirements, high user involvement, and a focus on delivering value incrementally.

Scrum ensures quick adaptation to changing user preferences and market trends. It promotes continuous user feedback, which is essential for refining personalized meal recommendation algorithms. The Scrum's short sprints align with the need for rapid development and integration with existing restaurants and cloud kitchens.

### Specific PMLC Approach:

The project will adopt the Scrum framework, consisting of two-week iterative sprints. The team, led by a Scrum Master, will conduct daily stand-up meetings to track progress, address challenges, and prioritize tasks. The Product Owner will ensure alignment with user needs and oversee the product backlog, including features for mood-based selection and ML-driven mood analysis.

Sprint reviews will gather feedback from stakeholders and users to refine the application continuously. Integration with restaurants and cloud kitchens will occur incrementally, ensuring a seamless user experience. Cross-platform compatibility and security measures will be iteratively enhanced.

This approach aligns project tasks with customer demands, fosters collaboration, and ensures rapid delivery of a user-centric mobile application.

## 2.9 RACI

Link to document → [BiteBlend Final Project Report](#)

Task	Responsible	Accountable	Consulted	Informed
Develop Mood-Analysis algorithm	Data Scientist/Developer	Project Manager	UX Designers, Business Analysts	-
Design Intuitive User Interface	UX Designers	Project Manager	-	Developers, Product Owners
Integrate with Partner Restaurants	Developers	Project Manager	-	Business Analysts, Operations
Implement Data Security Measures	Security Experts	Project Manager	-	Legal Team, Compliance
Develop iOS and Android Applications	Developers	Project Manager	-	QA Testers, Deployment Team
Conduct User Research	Business Analysts	Project Manager	UX Designers, Data Analysts	-
Create Training Materials	Training Team	Project Manager	-	-
Generate User Manual	Technical Writers	Project Manager	-	-
Roll Out Updates based on Feedback	Developers	Project Manager	UX Designers, Product Owners	-
Regular Status Reports	Project Team	Project Manager	-	Stakeholders
Conduct Comprehensive Testing	QA Testers	Project Manager	Developers	-

Final Presentation Preparation	Project Team	Project Manager	-	Stakeholders
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## 2.10 Responsibility Assignment Matrix

Link to document → [BiteBlend Final Project Report](#)

Task/Deliverable	Project Manager	Developers	Designers	Testers	Stakeholder
Start BiteBlend Project	A	R	C	I	I
Initiate Project	A	R	C	I	I
-Identify Stakeholders	R	I	C	C	A
-Define Project Objectives	R	I	C	C	A
- Establish Project Governance	R	I	C	C	A
Plan Project	A	R	C	I	I
- Develop Project Management Plan	R	I	C	C	A
- Outline Resource Requirements	R	I	C	C	A
- Set Milestones and Deadlines	R	I	C	C	A
- Milestone: Sign-Off Initial Project Report	A	C	I	R	I
Market Research	A	R	C	I	I
- Analyze Competitor Landscape	R	I	C	C	A
- Identify Customer Personas	R	I	C	C	A
- Conduct Focus Groups	R	I	C	C	A

- Discuss Learnings with Stakeholders	R	I	C	C	A
- Milestone: Sign-Off Requirement Specification	A	C	I	R	I
Design App Interface	A	R	C	I	I
- Create Wireframes and Mockups	R	I	A	C	A
- User Interface(UI) Prototyping	R	I	A	C	A
- User Experience(UX) Design	R	I	A	C	A
- Milestone: Stakeholders Final Design Sign-Off	A	C	I	R	I
Develop App	A	R	C	I	I
- Set Up Development Environment	R	I	C	C	A
- Collect Relevant Data	R	I	C	C	A
- Code Core Application Functions	R	A	I	C	A
- Integrate Payment Gateway	R	A	I	C	A
- Milestone: Demo Working App to Stakeholders	A	C	I	R	I

Testing Phase	A	R	C	I	I
- Unit Testing	R	A	I	C	A
- Integration Testing	R	A	I	C	A
- System Testing	R	A	I	C	A
- User Acceptance Testing	R	A	I	C	A
- Testing Sign-Off	A	C	I	R	I
Prepare for Launch	A	R	C	I	I
Finalize App Store Submissions	R	I	C	C	A
Develop Launch Marketing Strategy	R	I	C	C	A
Train Customer Service Team	R	I	C	C	A
Milestone: Customer Service Passes Mock Requests	A	C	I	R	I
Launch App	A	R	C	I	I
Monitor Initial Release	R	I	C	C	A
Execute Marketing Campaigns	R	I	C	C	A
Collect Launch Feedback	R	I	C	C	A
Milestone: BiteBlend App Launch Successful and	A	C	I	R	I

Operational					
Post-Launch	A	R	C	I	I
App Performance Monitoring	R	I	C	C	A
Ongoing Customer Support	R	I	C	C	A
Feature Updates and Maintenance	R	I	C	C	A
Milestone: Submit Performance Analysis to Stakeholders	A	C	I	R	I
Project Closure	A	R	C	I	I
Document Project Learnings	R	I	C	C	A
Release Project Resources	A	R	C	I	I
Milestone: Successfully Transition Project to Clients	A	C	I	R	I

# 3. Deliverable 3

## 3.1 Risk Register

Attached below is the link to Risk Register file.

### Risk register

A	B	C	D	E	F	G	H	I	J	K	L	M
No	Rank	Risk	Description	Category	Root Cause	Triggers	Potential Responses	Risk Owner	Probability	Impact	Risk Score	Status
1	3	Ingredient Availability	Any disruptions in the food supply chain can affect menu availability.	Operational Risk	External factors such as weather transportation issues	Changes in supplier availability	Diversify suppliers to mitigate risks.	Operations Team	5	8	40	Ongoing
2	7	Legal Issues	Security breach leading to legal issues.	Compliance and Legal Risk	Weaknesses in cybersecurity measures, lack of data encryption	Unauthorized access or data breach	Implement robust cybersecurity protocols.	IT Team	3	9	27	Ongoing
3	2	Opportunity	The competitor loses market share and the demand for applications increases.	Market Risk	Competitor weaknesses, market trends favoring food delivery apps	Competitor's decline in market share	Capitalize on competitor's loss with targeted marketing campaigns.	Marketing Team	8	7	56	Ongoing
4	6	Disruption	Technical bugs in the application cause delayed delivery to customers.	Implementation and Execution Risk	Software development flaws, compatibility issues with devices	Testing phase issues	Conduct thorough testing before app release.	IT Team	4	8	32	Ongoing
			The project might face risks from dependencies									
A	B	C	D	E	F	G	H	I	J	K	L	M
5	4	Dependency	APIs or data sources, which could change or become unavailable, affecting app functionality.	Technology and Infrastructure Risk	Unreliable API providers, changes in third-party data sources	PI or data source unavailability	Have backup plans or alternative data sources.	IT Team	6	6	36	Ongoing
6	5	Legal	Breaches of contracts with restaurants, delivery drivers, or customers can lead to legal disputes.	Compliance and Legal Risk	Miscommunications, failure to meet contract terms	Failure to fulfill contractual obligations	Ensure clear and transparent contract agreements.	Legal Team	4	8	32	Ongoing
7	1	Reputation	Positive user feedback and high ratings could enhance the company's brand and reputation, leading to new opportunities in other markets or segments.	Strategic and Reputational Risk	Exceptional service, quality food offerings	User satisfaction and reviews	Engage with users, respond to feedback, and maintain quality standards.	Marketing Team	9	7	63	Ongoing
			Emerging technologies could be leveraged to enhance the app's features				Stay updated with industry trends and					

### 3.2 Probability/ Impact Matrix

Probability	Low	Medium	High
Low			
Medium	risk 5	risk 4 risk 6	risk 2
High	risk 7, risk 8	risk 3	risk 1
Impact	Low	Medium	High

## Rationale

**Positive Risk: Competitor Loses Market Share, Increasing App Demand**

Probability: 8

Impact: 7

Risk Score: 56

This risk holds a high probability of occurrence (8) due to the competitive nature of the market. If competitors lose market share, there would likely be an increased demand for alternative apps such as BiteBlend. This demand surge could put pressure on BiteBlend's infrastructure, customer service, and scalability. The impact score of 7 reflects the significant opportunity this presents, as it can lead to rapid growth and market dominance.

By multiplying the probability (8) by the impact (7), we get a risk score of 56. This suggests that while the risk is high, the potential benefits outweigh the challenges. To capitalize on this, BiteBlend should ensure its systems are robust enough to handle sudden spikes in users, have scalable delivery options, and implement effective marketing strategies to attract new customers.

### **Negative Risk: *Disruptions in Food Supply Chain***

Probability: 5

Impact: 8

Risk Score: 40

This risk represents the potential for disruptions within the food supply chain, a concern often prevalent in the food service industry. With a probability score of 5, there is a moderate chance of such disruptions occurring due to various factors such as natural disasters, supplier issues, or transportation challenges. These disruptions can lead to delays or shortages in the availability of ingredients, impacting BiteBlend's ability to offer its complete menu.

The impact score of 8 reflects the significant consequences such disruptions can have on BiteBlend's operations and customer experience. Menu items becoming unavailable or delayed could result in dissatisfied customers, loss of sales, and harm to the brand's reputation.

Multiplying the probability (5) by the impact (8) gives a risk score of 40. While not the highest in the register, this risk score indicates the importance of addressing this potential issue. BiteBlend can mitigate this risk by implementing strategies such as maintaining relationships with multiple suppliers, creating backup plans for ingredient sourcing, and developing a flexible menu that can accommodate ingredient substitutions if necessary.

### **3.3 Response Strategy**

#### **Negative Risk: Security Breach Leading to Legal Issues**

Impact: High

Category: Negative

Probability: Medium

##### Response Strategy: Mitigation

Response Plan: Implement a comprehensive security program that includes regular security audits, employee training, data encryption, and the establishment of a rapid incident response team. Invest in cybersecurity insurance to cover any potential legal costs.

Owner: Security Manager

Time Estimate: Initial setup: 3 months, Ongoing: continuous

Cost Estimate: USD 50,000 initial setup, USD 10,000 annually for maintenance and insurance premium

Implementation Tasks:

1. Security Audit: Hire an external firm to conduct a thorough security audit of the entire application infrastructure.
  - Time: 1 month
  - Cost: USD 15,000
2. Employee Training Program: Develop and conduct regular cybersecurity training sessions for all employees.
  - Time: 1 month for development, quarterly sessions
  - Cost: USD 5,000 development, USD 2,000 per session
3. Incident Response Team: Establish and train an incident response team with clear protocols for different types of security incidents.
  - Time: 1 month
  - Cost: USD 10,000
4. Cybersecurity Insurance: Research and purchase a comprehensive cybersecurity insurance policy.

- Time: 2 weeks
- Cost: USD 20,000 premium

## **Positive Risk: Emerging Technologies to Enhance App Features**

Impact: High

Category: Positive

Probability: High

### Response Strategy: Enhance

Response Plan: Set up a dedicated innovation team to monitor technological trends and implement them into the app's development cycle. Allocate budget for R&D and pilot projects to test new technologies.

Owner: Chief Technology Officer (CTO)

Time Estimate: Ongoing monitoring, Quarterly implementation reviews

Cost Estimate: USD 50,000 per year for R&D and pilot projects

### Implementation Tasks:

1. Innovation Team Formation: Assemble a cross-functional team to track and assess emerging technologies.
  - Time: Continuous
  - Cost: USD 20,000 annually
2. R&D Budget Allocation: Set aside funds specifically for research and development of new technologies within the app.
  - Time: Annually
  - Cost: USD 20,000 annually
3. Pilot Project Implementation: Run pilot projects for promising technologies before full-scale implementation.
  - Time: Varies per project
  - Cost: USD 10,000 per pilot project

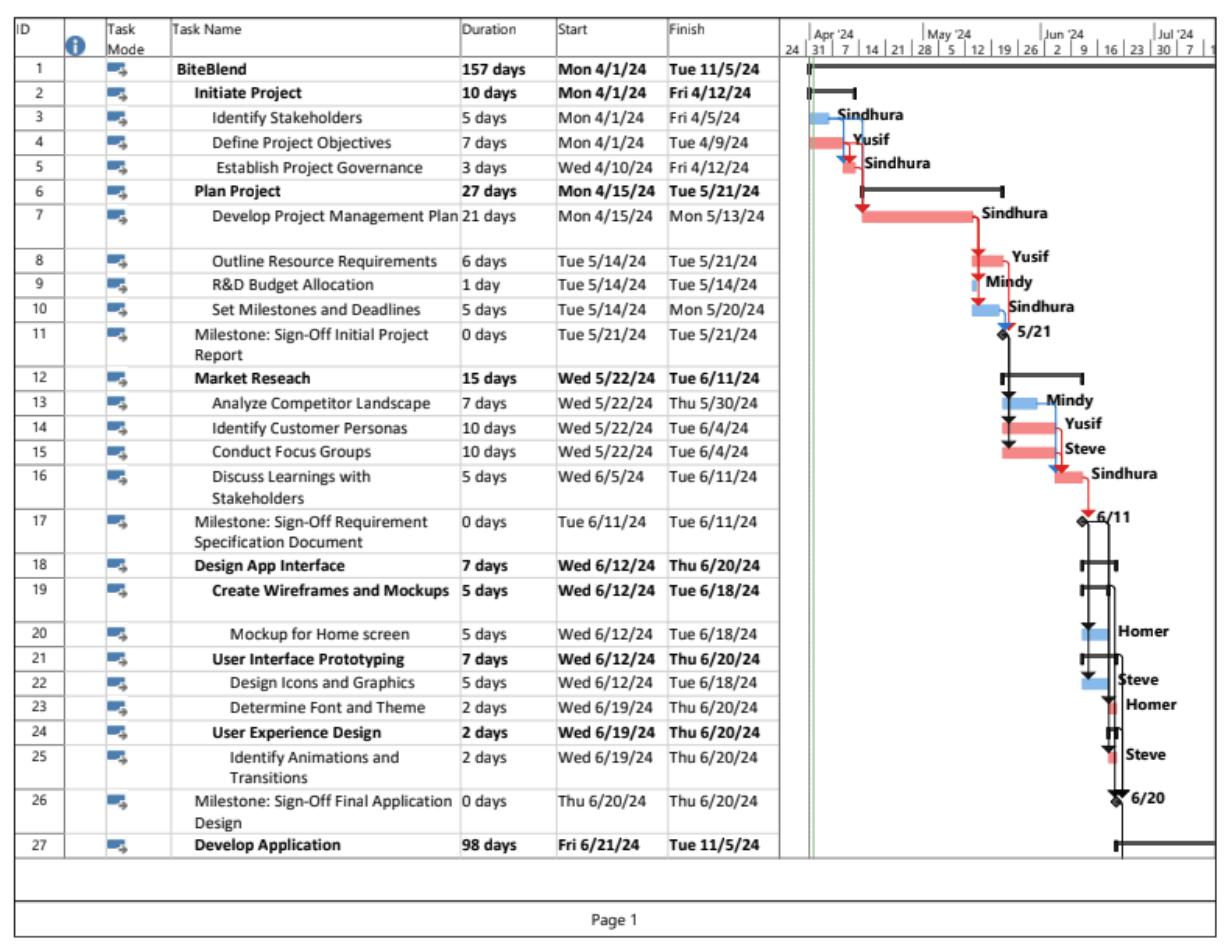
### **3.4 Milestones**

- Release update within 2 weeks of initial launch which addresses the most pressing bugs. Bugs will be addressed in order of greatest to least importance: issues with downloading the app, transaction handling, placing orders, showing incorrect information, updating filters. This will be accomplished by keeping a log of user feedback through reviews from the app, comments from the app store, or emails. Our maintenance team will then replicate the bug and create a patch for the next release. It is imperative that our customers have an easy time downloading and using the app to encourage long term use and recommendations to others, boosting sales and attracting new restaurant partners.
- Achieve bimonthly interactions from 50% of current customers within 3 months of launch to maintain an economic and social foothold within the marketspace. Have the development team create an option for phone notifications which remind users to visit the app after a period of inactivity. Create incentives for users to open the app, such as special deals and discounts after opening and ordering through the app a certain number of times. It is important that a significant portion of customers use the app on a regular basis to ensure relevance and competitiveness.

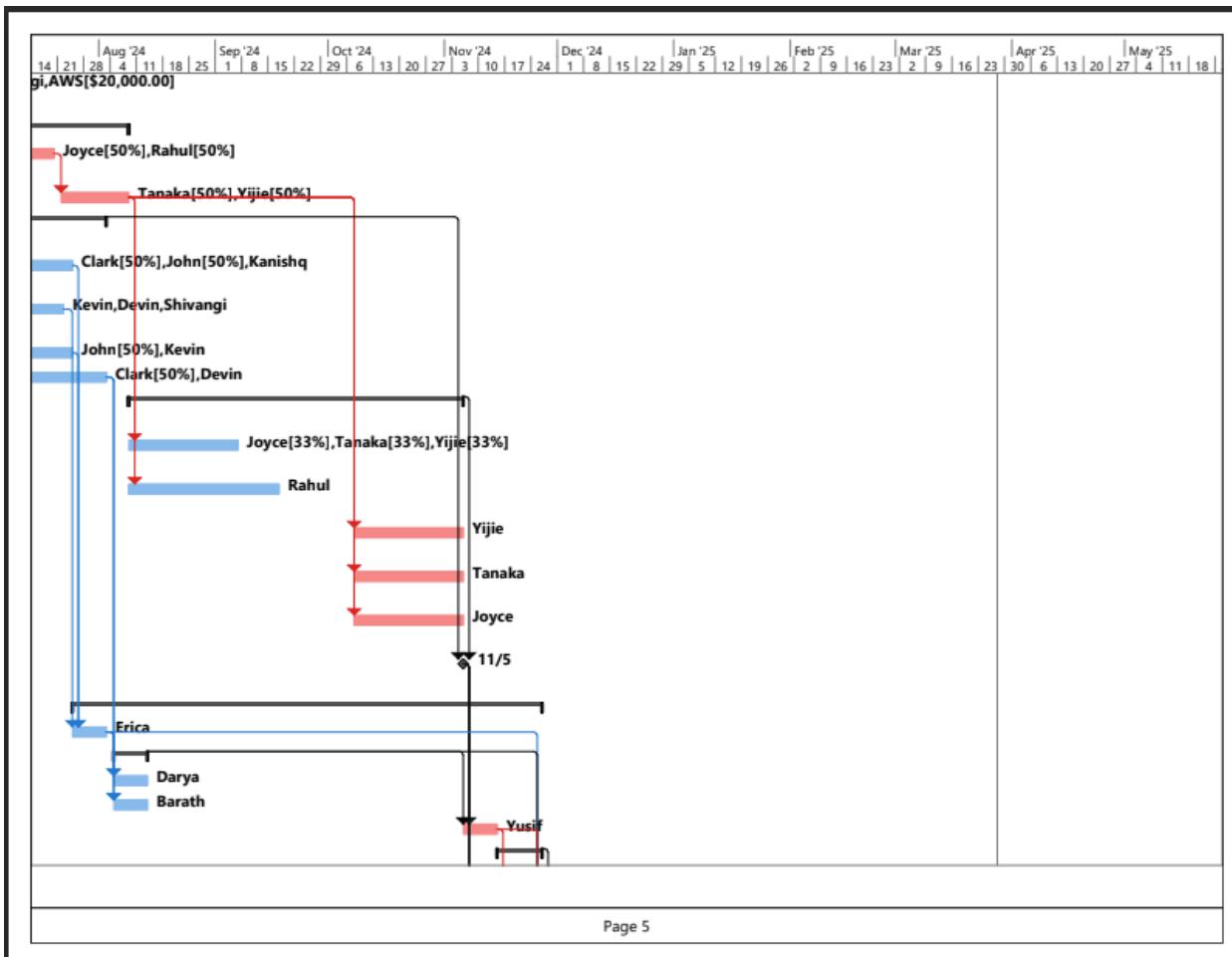
### 3.5 Updated Gantt Chart

Attached below is the Gantt chart for BiteBlend.

[Task\\_5\\_BiteBlend\\_Gantt\\_Chart.pdf](#)

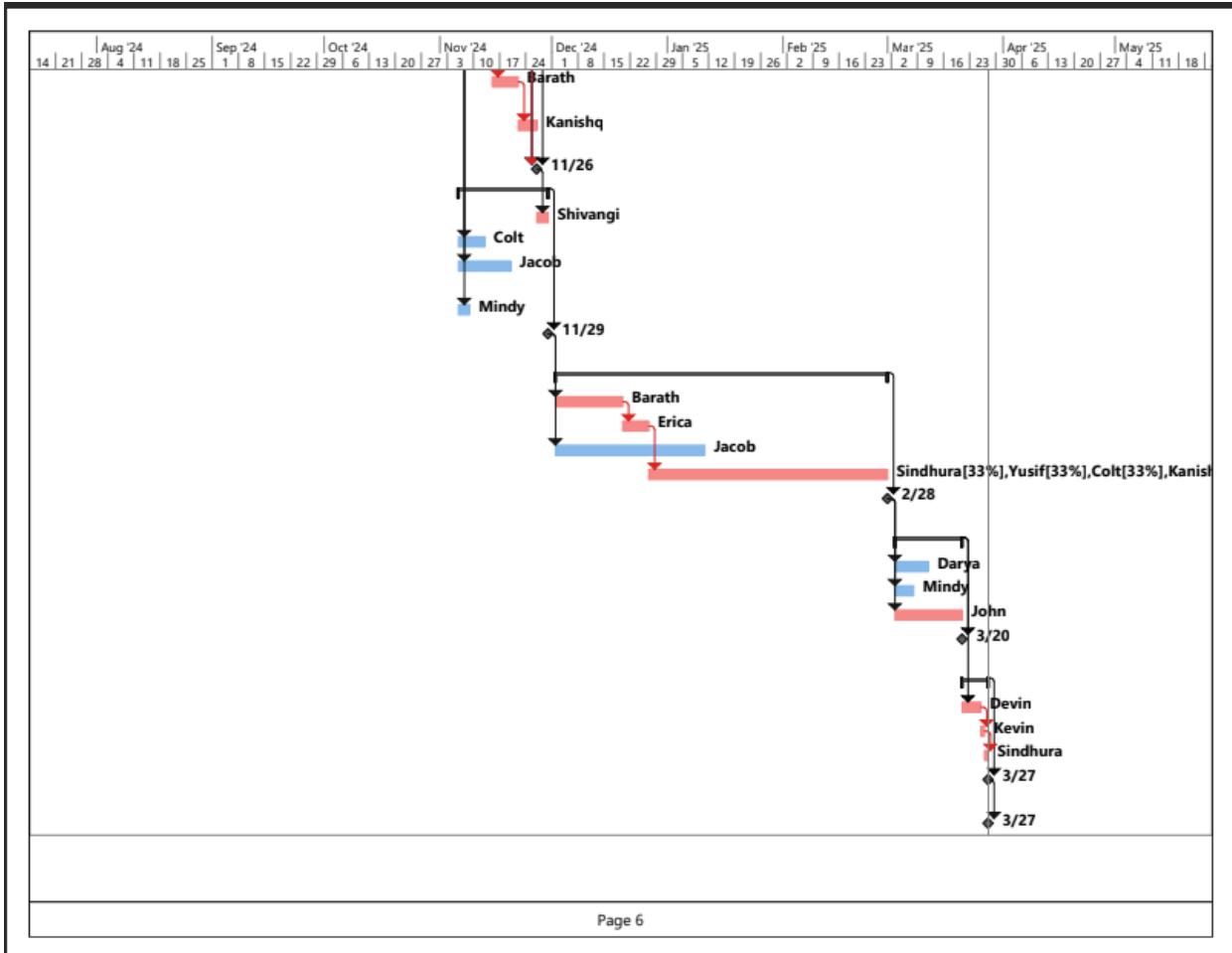






ID	Task Mode	Task Name	Duration	Start	Finish												
						Apr '24			May '24			Jun '24			Jul '24		
24	31	7	14	21	28	5	12	19	26	2	9	16	23	30	7	1	
51	INFO	Beta Testing with Target Demographics	5 days	Fri 11/15/24	Thu 11/21/24												
52	INFO	Collect and Implement Feedback	3 days	Fri 11/22/24	Tue 11/26/24												
53	INFO	Milestone: Sign-Off Testing	0 days	Tue 11/26/24	Tue 11/26/24												
54	INFO	Prepare for Launch	<b>18 days</b>	<b>Wed 11/6/24</b>	<b>Fri 11/29/24</b>												
55	INFO	Finalize App Store Submissions	3 days	Wed 11/27/24	Fri 11/29/24												
56	INFO	Security Audit	5 days	Wed 11/6/24	Tue 11/12/24												
57	INFO	Develop Launch Marketing Strategy	10 days	Wed 11/6/24	Tue 11/19/24												
58	INFO	Train Customer Service Team	3 days	Wed 11/6/24	Fri 11/8/24												
59	INFO	Milestone: Customer Service Passes Mock Requests	0 days	Fri 11/29/24	Fri 11/29/24												
60	INFO	Launch Application	<b>65 days</b>	<b>Mon 12/2/24</b>	<b>Fri 2/28/25</b>												
61	INFO	Monitor Initial Release	14 days	Mon 12/2/24	Thu 12/19/24												
62	INFO	Collect Launch Feedback	5 days	Fri 12/20/24	Thu 12/26/24												
63	INFO	Execute Marketing Strategy	30 days	Mon 12/2/24	Fri 1/10/25												
64	INFO	Monitor Application	46 days	Fri 12/27/24	Fri 2/28/25												
65	INFO	Milestone: BiteBlend App Launch Successful and Operational	0 days	Fri 2/28/25	Fri 2/28/25												
66	INFO	Post-Launch	<b>14 days</b>	<b>Mon 3/3/25</b>	<b>Thu 3/20/25</b>												
67	INFO	App Performance Monitoring	7 days	Mon 3/3/25	Tue 3/11/25												
68	INFO	Ongoing Customer Support	5 days	Mon 3/3/25	Fri 3/7/25												
69	INFO	Feature Updates and Maintenance	14 days	Mon 3/3/25	Thu 3/20/25												
70	INFO	Milestone: Submit Performance Analysis to Stakeholders	0 days	Thu 3/20/25	Thu 3/20/25												
71	INFO	Project Closure	<b>5 days</b>	<b>Fri 3/21/25</b>	<b>Thu 3/27/25</b>												
72	INFO	Document Project Learnings	3 days	Fri 3/21/25	Tue 3/25/25												
73	INFO	Release Project Resources	1 day	Wed 3/26/25	Wed 3/26/25												
74	INFO	Celebrate Success	1 day	Thu 3/27/25	Thu 3/27/25												
75	INFO	Milestone: Successfully Transition Project to Clients	0 days	Thu 3/27/25	Thu 3/27/25												
76	INFO	Milestone: Project Completion	0 days	Thu 3/27/25	Thu 3/27/25												

Page 3



## 3.6 Resource Usage

Attached below is the resource usage for BiteBlend.

 Task\_6\_BiteBlend\_Resource\_Usage.pdf

ID	Resource Name	Work Details	M	T	W	T
	Unassigned	0 hrs Work				
	<i>Milestone: Sign-Off Initial Project Report</i>	0 hrs Work				
	<i>Milestone: Sign-Off Requirement Specification Document</i>	0 hrs Work				
	<i>Milestone: Sign-Off Final Application Design</i>	0 hrs Work				
	<i>Milestone: Demo Working App to Stakeholders</i>	0 hrs Work				
	<i>Milestone: Sign-Off Testing</i>	0 hrs Work				
	<i>Milestone: Customer Service Passes Mock Requests</i>	0 hrs Work				
	<i>Milestone: BiteBlend App Launch Successful and Operational</i>	0 hrs Work				
	<i>Milestone: Submit Performance Analysis to Stakeholders</i>	0 hrs Work				
	<i>Milestone: Successfully Transition Project to Clients</i>	0 hrs Work				
	<i>Milestone: Project Completion</i>	0 hrs Work				
1	John	280 hrs Work				
	<i>Develop Home Dashboard Interface</i>	84 hrs Work				
	<i>Develop User Profile</i>	84 hrs Work				
	<i>Feature Updates and Maintenance</i>	112 hrs Work				
2	Clark	196 hrs Work				
	<i>Develop Home Dashboard Interface</i>	84 hrs Work				
	<i>Integrate Payment Gateway</i>	112 hrs Work				
3	Devin	173.33 hrs Work				
	<i>Develop Order History Interface</i>	149.33 hrs Work				
	<i>Integrate Payment Gateway</i>	0 hrs Work				
	<i>Document Project Learnings</i>	24 hrs Work				
4	Kevin	157.33 hrs Work				
	<i>Develop Order History Interface</i>	149.33 hrs Work				
	<i>Develop User Profile</i>	0 hrs Work				
	<i>Release Project Resources</i>	8 hrs Work				
5	Joyce	308 hrs Work				
	<i>Gather Licensed Data for Training Models</i>	84 hrs Work				
	<i>Recommendation based on Mood</i>	56 hrs Work				
	<i>Recommendation based on Weather</i>	168 hrs Work				
6	Yijie	280 hrs Work				
	<i>Implement Data Anonymity</i>	56 hrs Work				
	<i>Recommendation based on Mood</i>	56 hrs Work				
	<i>Recommendation based on Order History</i>	168 hrs Work				
7	Tanaka	280 hrs Work				
	<i>Implement Data Anonymity</i>	56 hrs Work				
	<i>Recommendation based on Mood</i>	56 hrs Work				
	<i>Recommendation based on Special Events</i>	168 hrs Work				

8	Rahul	308 hrs	Work				
	Gather Licensed Data for Training Models	84 hrs	Work				
	Recommendation based on User Preference	224 hrs	Work				
Page 1							

ID	Resource Name	Work	Details	M	T	W	T
				8h	8h	8h	8h
9	Sindhura	441.44 hrs	Work	8h	8h	8h	8h
		40 hrs	Work	8h	8h	8h	8h
		24 hrs	Work				
		168 hrs	Work				
		40 hrs	Work				
		40 hrs	Work				
		121.44 hrs	Work				
		8 hrs	Work				
10	Yusif	361.44 hrs	Work	8h	8h	8h	8h
		56 hrs	Work	8h	8h	8h	8h
		48 hrs	Work				
		80 hrs	Work				
		56 hrs	Work				
		121.44 hrs	Work				
11	Kanishq	560 hrs	Work				
		168 hrs	Work				
		24 hrs	Work				
		368 hrs	Work				
12	Shivangi	197.33 hrs	Work				
		24 hrs	Work				
		149.33 hrs	Work				
		24 hrs	Work				
13	Erica	96 hrs	Work				
		56 hrs	Work				
		40 hrs	Work				
14	Barath	208 hrs	Work				
		56 hrs	Work				
		40 hrs	Work				
		112 hrs	Work				
15	Darya	112 hrs	Work				
		56 hrs	Work				
		56 hrs	Work				
16	Homer	56 hrs	Work				
		40 hrs	Work				
		16 hrs	Work				
17	Steve	136 hrs	Work				
		80 hrs	Work				

17	Steve	136 hrs	Work				
	<i>Conduct Focus Groups</i>	80 hrs	Work				
	<i>Design Icons and Graphics</i>	40 hrs	Work				
	<i>Identify Animations and Transitions</i>	16 hrs	Work				
18	Jacob	320 hrs	Work				
	<i>Develop Launch Marketing Strategy</i>	80 hrs	Work				
	<i>Execute Marketing Strategy</i>	240 hrs	Work				
19	Mindy	128 hrs	Work				
	<i>R&amp;D Budget Allocation</i>	8 hrs	Work				
	<i>Analyze Competitor Landscape</i>	56 hrs	Work				
	<i>Train Customer Service Team</i>	24 hrs	Work				
	<i>Ongoing Customer Support</i>	40 hrs	Work				
20	Colt	161.44 hrs	Work				
	<i>Security Audit</i>	40 hrs	Work				

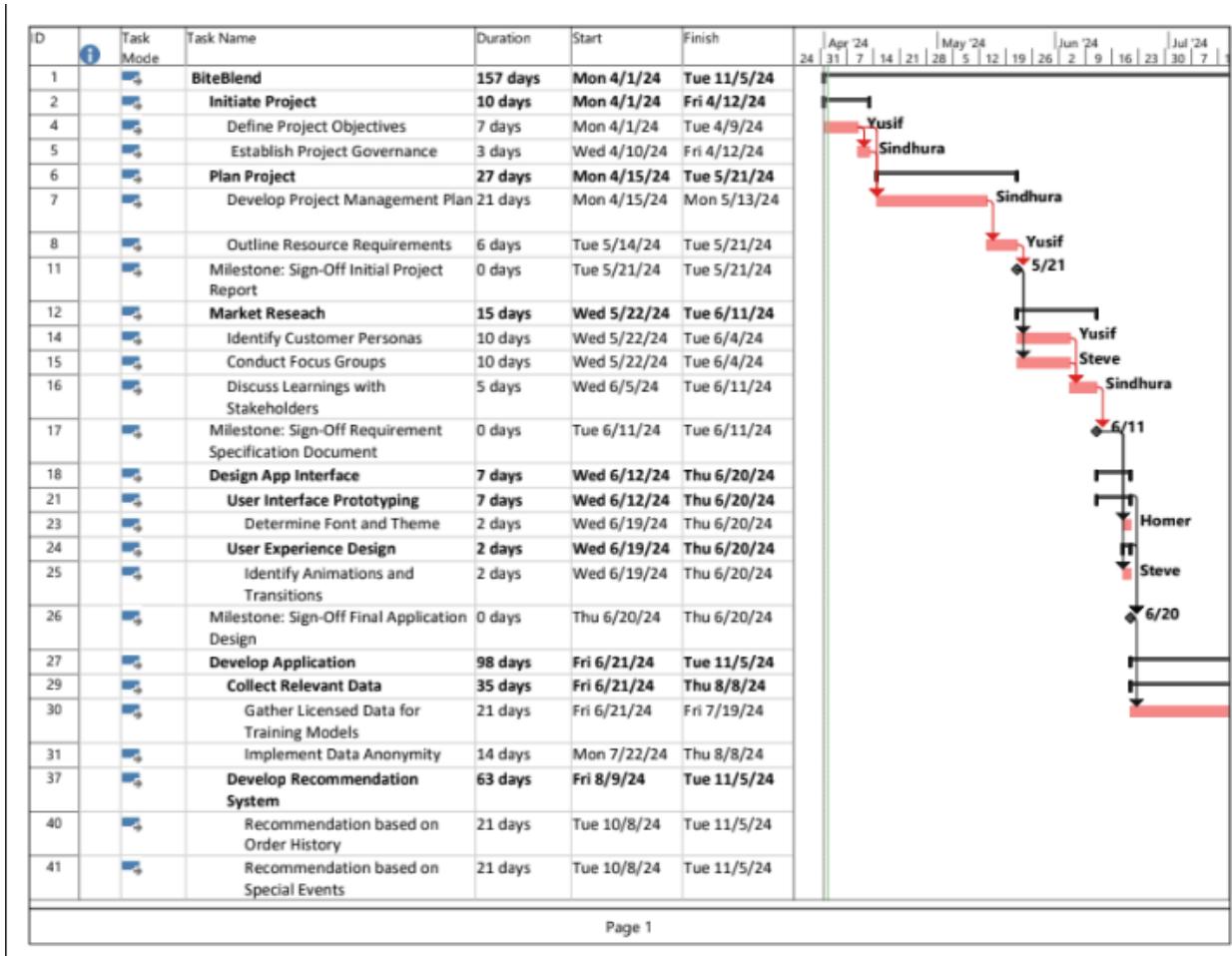
Page 2

ID	i	Resource Name	Work	Details	M	T	W	T
		<i>Monitor Application</i>	121.44 hrs	Work				
21		AWS		Work				
		<i>Set Up Development Environment</i>		Work				

### 3.7 Critical Path

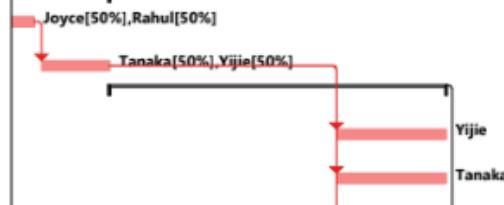
Attached below is the critical path for BiteBlend.

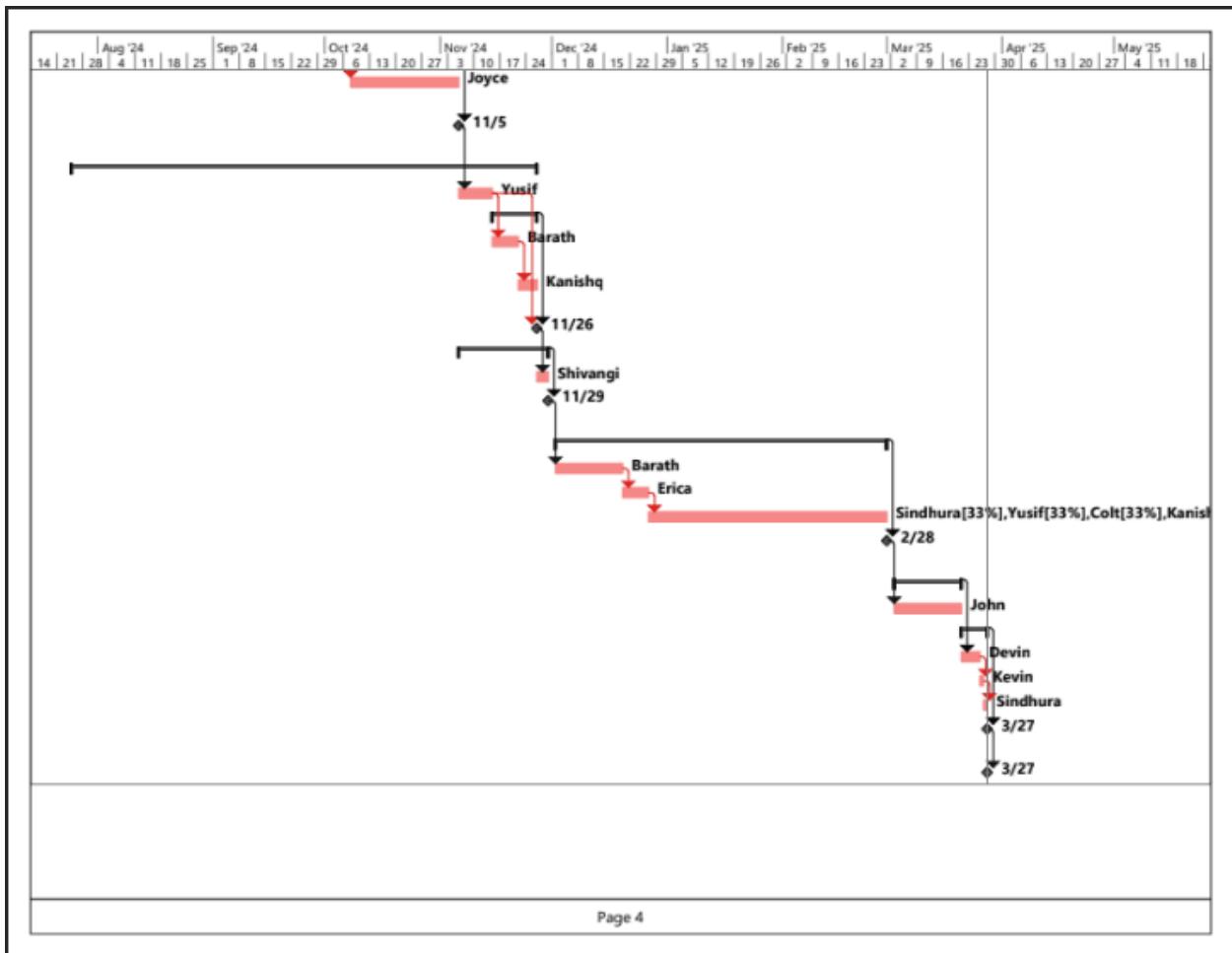
Task\_8\_BiteBlend\_Critical\_Path.pdf



ID	Task Mode	Task Name	Duration	Start	Finish		Apr '24	May '24	Jun '24	Jul '24	
							24 31	7 14 21 28	5 12 19 26	2 9 16 23 30	1
42	+	Recommendation based on Weather	21 days	Tue 10/8/24	Tue 11/5/24						
43	+	Milestone: Demo Working App to Stakeholders	0 days	Tue 11/5/24	Tue 11/5/24						
44	+	<b>Testing Phase</b>	<b>89 days</b>	<b>Thu 7/25/24</b>	<b>Tue 11/26/24</b>						
49	+	System Testing	7 days	Wed 11/6/24	Thu 11/14/24						
50	+	<b>User Acceptance Testing</b>	<b>8 days</b>	<b>Fri 11/15/24</b>	<b>Tue 11/26/24</b>						
51	+	Beta Testing with Target Demographics	5 days	Fri 11/15/24	Thu 11/21/24						
52	+	Collect and Implement Feedback	3 days	Fri 11/22/24	Tue 11/26/24						
53	+	Milestone: Sign-Off Testing	0 days	Tue 11/26/24	Tue 11/26/24						
54	+	<b>Prepare for Launch</b>	<b>18 days</b>	<b>Wed 11/6/24</b>	<b>Fri 11/29/24</b>						
55	+	Finalize App Store Submissions	3 days	Wed 11/27/24	Fri 11/29/24						
59	+	Milestone: Customer Service Passes Mock Requests	0 days	Fri 11/29/24	Fri 11/29/24						
60	+	<b>Launch Application</b>	<b>65 days</b>	<b>Mon 12/2/24</b>	<b>Fri 2/28/25</b>						
61	+	Monitor Initial Release	14 days	Mon 12/2/24	Thu 12/19/24						
62	+	Collect Launch Feedback	5 days	Fri 12/20/24	Thu 12/26/24						
64	+	Monitor Application	46 days	Fri 12/27/24	Fri 2/28/25						
65	+	Milestone: BiteBlend App Launch Successful and Operational	0 days	Fri 2/28/25	Fri 2/28/25						
66	+	<b>Post-Launch</b>	<b>14 days</b>	<b>Mon 3/3/25</b>	<b>Thu 3/20/25</b>						
69	+	Feature Updates and Maintenance	14 days	Mon 3/3/25	Thu 3/20/25						
71	+	<b>Project Closure</b>	<b>5 days</b>	<b>Fri 3/21/25</b>	<b>Thu 3/27/25</b>						
72	+	Document Project Learnings	3 days	Fri 3/21/25	Tue 3/25/25						
73	+	Release Project Resources	1 day	Wed 3/26/25	Wed 3/26/25						
74	+	Celebrate Success	1 day	Thu 3/27/25	Thu 3/27/25						
75	+	Milestone: Successfully Transition Project to Clients	0 days	Thu 3/27/25	Thu 3/27/25						
76	+	Milestone: Project Completion	0 days	Thu 3/27/25	Thu 3/27/25						

14	21	28	4	11	18	25	1	8	15	22	29	6	13	20	27	3	10	17	24	1	8	15	22	29	5	12	19	26	2	9	16	23	2	9	16	23	30	6	13	20	27	4	11	18
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# 4. Deliverable 4

## 4.1 Cost Model

Prepared by: Kanishq Sunil

Date: 4/15/2024

WBS Items	# Units/Hrs.	Cost/Unit/Hr	Subtotals	WBS Level 1 Totals	% of Total
<b>Initiate Project</b>				<b>\$6,360</b>	<b>4%</b>
Project Manager Tasks*	8	120	960		
Team Members Tasks**	72	75	5400		
<b>Market Research</b>				<b>\$8,340</b>	<b>6%</b>
Project Manager Tasks*	12	120	1440		
Team Members Tasks**	92	75	6900		
<b>Design App Interface</b>				<b>\$4,770</b>	<b>3%</b>
Project Manager Tasks*	6	120	720		
Team Members Tasks**	54	75	4050		
<b>Develop Application</b>				<b>\$56,400</b>	<b>39%</b>
Project Manager Tasks*	20	120	2400		
Team Members Tasks**	720	75	54000		
<b>Testing Phase</b>				<b>\$34,785</b>	<b>24%</b>
Project Manager Tasks*	18	120	2160		
Team Members Tasks**	435	75	32625		
<b>Prepare for Launch</b>				<b>\$8,730</b>	<b>6%</b>
Project Manager Tasks*	4	120	480		
Team Members Tasks**	110	75	8250		
<b>Launch Application</b>				<b>\$23,400</b>	<b>16%</b>
Project Manager Tasks*	0	120	0		

Team Members Tasks**	312	75	23400		
<b>Total Cost Estimates</b>	<b>1863</b>			<b>\$142,785</b>	<b>100%</b>

### **List of Assumptions:**

- The project will only incur labor costs; no hardware or outsourcing costs.
- The labor rate is fixed at \$120/hour for the project manager and \$75/hour for other team members.
- The reserve fund will be 20% of the total budget, not included in the direct cost estimates but set aside for unforeseen expenses.
- The work is distributed such that the project manager is not the primary labor resource for tasks, except for management-specific activities.

Estimated labor hours are calculated based on the task durations provided in the Gantt chart and assume a standard workweek.

## 4.2 Quality Standards/ Requirements

### Quality Standards:

1. Recommendation accuracy:
  - a. How well do the algorithms recommend food choices that the user is interested in
  - b. How effective are the filter options in providing good input for the algorithms
  - c. Standard: The machine learning algorithms must have an accuracy rate of at least 85% in predicting user preferences based on past interactions and current filter settings
2. User experience:
  - a. Navigating the app should be intuitive such that users can quickly find something they like and put in an order
  - b. Standard: User response times for all app interactions should be five seconds or less
3. Real-time data accuracy:
  - a. The app should display up to date menu items, restaurant open times, prices, deals
  - b. Standard: Data displayed by the app must have an accuracy rate of 99% or higher
4. Data availability
  - a. Standard: Data backup and recovery must allow a recovery time objective of no more than four hours given system failure
5. User feedback platform: easy to leave a review and rating
  - a. Users should be able to quickly and easily give feedback
  - b. Standard: User feedback must be logged and sorted, with critical issues having a response time of less than 2 business days
6. Data security: conforms to standards for handling payment info
  - a. The app should ensure sensitive data is protected against unauthorized access
  - b. Standard: All sensitive data must be encrypted while in transit and at rest
  - c. Standard: The app must comply with PCI regulations
7. Code maintainability: design with maintainability in mind
  - a. The app should be designed such that it is easy to maintain
  - b. Standard: All functions must have a cyclomatic complexity of 10 or less

## 8. Code defects

- a. The code should be architected such that testing is easy and consistent - automated
- b. Standard: Software must have at least 90% condition coverage

## **4.3 Approach to Measure Progress for Quality Requirements**

Our app creates profit through membership fees and advertisements, is centered around machine learning algorithms to make accurate food recommendations, and depends on presenting accurate, real-time data to maintain customer satisfaction. Given the nature of our app and the industry, our stakeholders would be most concerned with the efficacy of the food recommendation algorithms, security of the platform, and ease of use in order to maximize user satisfaction and engagement. The stakeholders would expect users to enjoy using the app both due to its ability to recommend something the user would be interested in as well as its streamlined platform that makes ordering food both fast and secure. The stakeholders' expectations can be met by creating quality requirements that focus on enhancing the user's experience on the app, allowing quick turnaround from bug detection to fix, and incorporating changes based on user feedback and market shifts. The quality requirements can be tracked using the following metrics and by the following people:

### Quality Requirements

1. The machine learning algorithms must have an accuracy rate of at least 85% in predicting user preferences based on past interactions and current filter settings
2. User response times for all app interactions should be five seconds or less
3. Data displayed by the app must have an accuracy rate of 99% or higher
4. Data backup and recovery must allow a recovery time objective of no more than four hours given system failure
5. User feedback must be logged and sorted, with critical issues having a response time of less than 2 business days
6. The app must comply with PCI (Payment Card Industry) regulations
7. All sensitive data must be encrypted while in transit and at rest
8. All functions must have a cyclomatic complexity of 10 or less
9. Software must have at least 90% condition coverage

<b>Requirement</b>	<b>POC</b>	<b>Objective/Document</b>
1	Barath Shivangi (Developers)	> Monitor user actions, with success defined as an order placed within 10 minutes of opening the app > Randomly collect 5% of user data every hour to calculate average order completion time
2	Steve Homer Darya (Frontend developers)	> Monitor user engagement metrics > Randomly collect 5% of user data every hour to calculate average app interaction time > Conduct A/B testing after each major interface redesign
3	Kanishq (Developer)	> Evaluate accuracy of restaurant data (location, open times, menu items) > Conduct testing of displayed data prior to releasing software update to validate 99% accuracy rate
4	Colt (Data and security manager)	> Monitor data backup and recovery processes and ensure compliance with RTO > Conduct monthly testing to ensure data is being backed up properly and can be recovered within stated RTO
5	Erica(QA Tester)	> Track response times for user complaints > Weekly check that user feedback is being logged with correct time stamps and labels > Daily check for critical issues
6	Sindhura (Project Manager)	> Conduct regular audits ensuring app complies with the PCI's 12 security standards required of businesses that accept credit card payments > Create monthly reports tracking compliance with PCI standards

7	Colt (Security manager)	<ul style="list-style-type: none"> <li>&gt; Conduct weekly security audits to ensure data is being correctly encrypted for the first month after initial launch. Taper to monthly audits after</li> <li>&gt; Conduct penetration tests before every major release to identify any vulnerabilities</li> </ul>
8	Kanishq (Developer)	<ul style="list-style-type: none"> <li>&gt; Use static analysis tools to calculate cyclomatic complexity</li> </ul>
9	Erica Yusif (Testers)	<ul style="list-style-type: none"> <li>&gt; Use static analysis tools to calculate condition coverage</li> </ul>

## 4.4 RACI Chart

Project Tasks	Project Manager	Developers	QA Testers	User Representatives	Consulting Firm
Write Test Plan	R	C	A	I	I
Unit Testing	R	A	I	C	I
Integration Testing	R	A	I	C	I
System Testing	R	C	A	I	I
User Acceptance Testing	R	C	A	I	I

**Assumptions:**

**Project Manager (PM):** Responsible for overseeing the testing process, ensuring it aligns with project goals and requirements.

**Developers:** Accountable for writing and executing unit tests for the modules they develop. They also take part in integration testing to ensure their modules integrate correctly.

**QA Testers:** Accountable for creating and executing test cases for system functionality, conducting system testing, and coordinating user acceptance testing (UAT). They also involve User Representatives in UAT sessions.

**User Representatives:** Involved in user acceptance testing (UAT), providing feedback on the system's usability, functionality, and whether it meets user needs.

**Consulting Firm:** Offers additional expertise and support as needed. They may assist in writing the test plan, providing best practices for testing, and assisting in complex test scenarios.

**Legend:**

**R:** Responsible    **A:** Accountable    **C:** Consulted    **I:** Informed

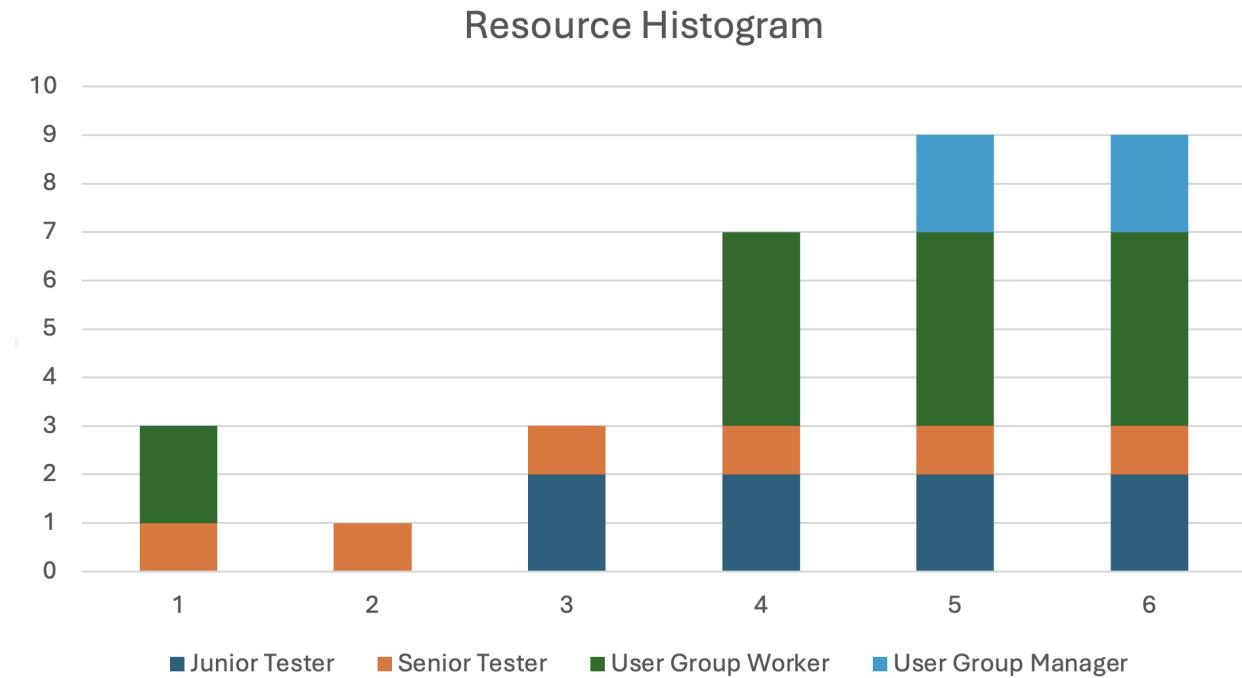
## 4.5 Resource Histogram

A resource histogram was devised based on the given scenario. Table # illustrates the data in tabular form, while Figure # depicts it as a stacked bar chart. These visualizations provide insight into the required resources for testing across different weeks.

*Table #:* Testing Resource Data

Resource Type/ Weeks ➔ ↓	1	2	3	4	5	6
Junior Tester			2	2	2	2
Senior Tester	1	1	1	1	1	1
User Group Worker	2			4	4	4
User Group Manager					2	2

*Figure #:* Testing Resource Histogram



## 4.6 Memo

To: Project Steering Committee

From: Shivangi Srivastava

Date: 04/15/2024

Subject: Addressing Challenges in Working with User Groups During Testing

Dear Committee Members,

I am writing to address a significant challenge that our project is currently facing regarding effective collaboration with the user group during testing. This challenge revolves around differences in personality types, particularly as identified by the Myers-Briggs Type Indicator (MBTI).

According to MBTI classifications, it has become evident that several members of our project team exhibit introverted tendencies and are inclined towards strong thinking, while conversely, several members of the user group demonstrate extroverted traits and lean towards strong feeling preferences. This diversity in personality types presents potential communication and teamwork obstacles, which could impede our testing efforts and impact project success.

To address these challenges and ensure a harmonious working relationship with the user group during testing, I propose the following options:

- **MBTI Awareness Workshops:** Conduct MBTI awareness workshops for both project team members and the user group to promote understanding and appreciation of different personality types and communication preferences. By fostering empathy and insight into each other's perspectives, we can mitigate potential misunderstandings and strengthen collaboration during testing activities.
- **Regular Feedback Mechanisms:** Establish regular feedback mechanisms to gather input from both project team members and the user group on their communication and collaboration experiences during testing. Encourage honest feedback to identify areas for improvement and implement targeted interventions to address concerns or challenges promptly.
- **Assigned Communication Liaisons:** Designate communication liaisons within the project team to act as intermediaries between introverted team members and extroverted

user group members. These liaisons can bridge communication gaps, simplify technical language, and facilitate smooth information flow, fostering mutual understanding and effective collaboration.

- **Customized Communication Strategies:** Develop tailored communication strategies that accommodate the diverse personality types within both our project team and the user group. For introverted team members, encourage written communication channels such as emails or instant messaging to allow for thoughtful expression of ideas. Conversely, prioritize face-to-face interactions and group discussions for extroverted user group members to facilitate open dialogue and emotional expression.
- **Emotional Intelligence Training:** Provide training sessions focused on developing emotional intelligence skills for both project team members and the user group. By enhancing emotional awareness, empathy, and interpersonal communication skills, individuals can navigate interpersonal dynamics more effectively and build stronger relationships based on mutual respect and understanding.
- **Flexible Meeting Formats:** Offer flexible meeting formats to accommodate varying communication styles and preferences. Incorporate a mix of structured agenda-driven meetings and informal gatherings where individuals can engage in relaxed and spontaneous interactions. Providing options for participation ensures that all team members feel valued and comfortable during collaborative sessions.

In conclusion, effectively addressing the challenges of collaborating with the user group during testing requires a comprehensive approach that acknowledges and accommodates the diverse personality types and communication preferences of team members. Implementing the proposed options can create an inclusive and supportive environment that fosters collaboration, creativity, and project success.

Thank you for your attention and consideration.

Sincerely,

Shivangi Srivastava

## 4.7 Communications Plan

### 1. Stakeholder communications requirements:

This communication management plan outlines strategies for effectively communicating with various project stakeholders. The goal is to ensure timely, transparent, and consistent communication to maintain project momentum, proactively address concerns, and foster team collaboration.

#### Targeted Stakeholder Engagement:

- User Group Focus Sessions: In addition to regular stakeholder feedback sessions, consider dedicated focus sessions specifically for the user group. This allows introverted user group members to contribute comfortably in a smaller setting.
- Pre-Testing Communication: Before user testing, provide the user group with clear expectations and an overview of the testing process. This will help them feel prepared and involved, reducing anxiety for introverts.

#### Collaborative Platforms:

- Asynchronous Feedback Channels: Utilize platforms like online surveys or forums alongside synchronous communication channels (e.g., meetings). This allows introverted user group members to provide thoughtful feedback on their own time.
- Document Collaboration Tools: Use shared documents with commenting features (e.g., Google Docs) to facilitate asynchronous feedback on testing issues and suggestions.

#### Tailored Communication:

- Open-Ended Questions: During user testing, ask open-ended questions that encourage detailed explanations rather than simple yes/no answers. This allows introverted user group members to express their thoughts without feeling pressured to speak first.
- Active Listening: Train project team members on active listening techniques to ensure they are fully engaged with user feedback, even if delivered quietly or indirectly.

### **Training and Support:**

- MBTI Team Building: Consider a brief MBTI team-building session for the project team and user group. This can foster understanding of different communication styles and create a more inclusive environment.
- Communication Skills Training: Provide communication skills training for the project team, focusing on techniques to effectively engage with introverted individuals and elicit valuable feedback.

### **Transparent Reporting:**

- Detailed reports, including progress, challenges, and mitigation strategies, will be provided clearly and concisely.
- Any risks or issues affecting the project will be communicated openly, along with proposed solutions.

### **Stakeholder Engagement:**

- Stakeholder feedback sessions will be organized to gather input on project direction and outcomes.
- Regular communication channels will be established to address stakeholder queries or concerns promptly.

### **Collaborative Platforms:**

- Utilization of project management tools such as JIRA or Trello for real-time task tracking and updates.
- Dedicated communication channels on platforms like Slack or Microsoft Teams for team discussions and quick exchanges.

### **Risk Communication:**

- Timely notification of identified risks along with risk mitigation plans to ensure proactive management.
- Establishing a protocol for urgent risk communications to address critical issues swiftly.

## **2. Communications summary:**

This plan aims to address the following communication challenges:

- Reduced HR Support: The departure of the HR representative necessitates establishing new communication channels with that department.
- Dominant User Group Member: A specific user representative monopolizes discussions, potentially hindering input from other users.
- Ineffective Status Reports: Current status reports lack crucial information about project roadblocks and challenges.
- Communication and Documentation Confusion: The team needs clarity on how to communicate different project reports and where to store project documentation.

<b>Stakeholder Group</b>	<b>Communication Name</b>	<b>Delivery Method/Format</b>	<b>Producer</b>	<b>Due/Frequency</b>
HR Department	Project Status Updates	Monthly Email with Highlights & Key Decisions	Project Manager	Monthly
User Group	User Group Meeting Agenda & Minutes	Distributed Electronically & Meeting Discussion	Project Lead & User Representative	Bi-Weekly Meetings, Minutes after Meetings
User Group (All Members)	Project Progress Reports	Quarterly Newsletter & Internal Website Updates	Project Team	Quarterly
Project Team	Team Status Reports	Internal Project Management Tool (e.g., Asana)	Team Members	Weekly
Project Team (Introverted Members)	Weekly Team Check-In (Optional)	Individual or Small Group Calls	Project Manager	Weekly (Optional)

### **3. Comments/Guidelines:**

- Communication Style:
  - Strive for clear, concise, and objective communication in all formats.
  - Consider MBTI preferences:
    - For Introverted team members, offer optional one-on-one check-ins to encourage participation.
    - For extroverted team members, encourage active listening and respect for others' time.
- Meeting Management:
  - User Group Meetings:
    - Establish an agenda in advance with clear discussion topics and time allocation.
    - Utilize tools like polls to encourage participation from all members.
    - Project Lead acts as a facilitator, ensuring all voices are heard.
  - Team Meetings:
    - Encourage focused discussions on project progress, challenges, and solutions.
    - Utilize status reports to guide discussions and identify areas needing attention.
- Documentation and Storage:
  - Develop a central document repository using a project management tool or shared drive.
  - Clearly categorize documents by type (e.g., meeting minutes, reports, presentations).
  - Maintain version control to ensure everyone accesses the latest information.

### **4. Escalation procedures for resolving issues:**

This communication management plan is a living document and may require adjustments as the project progresses. The Project Manager is responsible for reviewing and updating

the plan as needed. Stakeholders can raise concerns about communication gaps or suggest improvements directly by contacting the Project Manager.

## **5. Revision procedures for this document:**

This communication management plan is a living document and may require adjustments as the project progresses. Here's how to revise this document:

- Initiating a Revision
  - The Project Manager can initiate a revision by reviewing and updating the plan.
  - Stakeholders can suggest revisions by contacting the Project Manager directly.
- Revision Process
  - The Project Manager will document the suggested revision and assess its impact.
    - Minor revisions (e.g., updating contact information) are implemented directly with a version note.
  - Significant revisions involve:
    - A meeting with relevant stakeholders to discuss changes and gather feedback.
  - After revisions are finalized:
    - The revised plan is distributed to all stakeholders with an explanation of the changes.
    - The latest version of the document is readily accessible in the central document repository.

## **6. Glossary of common terminology:**

- MBTI: Myers-Briggs Type Indicator: A personality assessment tool that categorizes individuals based on preferences in four areas: Extraversion (E) or Introversion (I), Sensing (S) or Intuition (N), Thinking (T) or Feeling (F), Judging (J) or Perceiving (P).
- Project Management Tool: A software application that helps manage project tasks, timelines, resources, and communication (e.g., Asana, Trello).

- Central Document Repository: A designated location for storing and organizing all project-related documents.
- Version Control: System for tracking changes made to documents over time, ensuring everyone accesses the latest version.

# 5. Deliverable 5

## 5.1 Memo to Steering Committee

To: Project Steering Committee Members

From: Sindhura Padhuri, Project Manager, *Biteblend* Project

Date: 04/28/2024

Subject: Recommendation for In-House Training for Biteblend System Rollout

### Introduction

I am writing to address the recent decision regarding outsourcing employee training for our upcoming Biteblend system rollout. While I fully support the proposal to outsource the management of the incentive program associated with this new application, I believe it would be more beneficial for our organization to handle the training component internally.

### Background

Senior management has proposed outsourcing the training sessions, developing training videos and manuals, and handling incentive programs related to the Biteblend system. While outsourcing the incentive programs aligns with our objectives, training is critical to the system's long-term success and would be best managed within our existing infrastructure.

### Rationale for In-House Training

#### *- Leveraging Existing Expertise*

Our organization has a robust history of developing and delivering successful internal training programs. Our in-house training team is intimately familiar with our company's operational and cultural nuances, which ensures that training materials are highly customized and resonate better with the staff, leading to improved learning outcomes.

*-Enhancing System Support*

Internal training will allow us to tailor the educational content to address common issues and optimize system functionality use. This approach is projected to reduce the volume of support calls and streamline the post-deployment support process, directly impacting our operational efficiency.

*-Control and Flexibility*

By managing training internally, we maintain control over the quality and delivery of the training content. This control enables us to adapt and respond immediately to feedback from trainees during the initial phases of rollout, ensuring that any gaps in training are quickly addressed and that the training remains up-to-date with any system updates or changes.

*-Cost-Effectiveness*

While outsourcing may seem like a reduction in immediate overhead, the long-term benefits of in-house training, such as reduced dependency on external vendors and deeper integration of system knowledge within our team, will lead to significant cost savings.

**Conclusion**

The strategic importance of the Biteblend system to our operational workflow cannot be overstated. Ensuring our team is well-equipped to use and support this system through tailored, in-house training is paramount. I strongly recommend that we leverage our internal capabilities to develop and execute the training program for the Biteblend system. This approach will safeguard the quality and relevance of the training and align with our strategic goals of enhancing internal competency and reducing long-term costs.

**Recommendation**

It is proposed that the committee approve the retention of the training process within our organization and allocate the necessary resources toward developing a comprehensive in-house training program for the Biteblend project.

I look forward to your feedback and discussing this proposal further during our meeting.

Thank you for your consideration.

Sincerely,  
Sindhura Padhuri

## 5.2 Weighted Scoring Model

Link to Spreadsheet → [ENPM 637 FPD 5 Task 2.xlsx](#)

		Proposal 1		Proposal 2		Proposal 3	
Selection Criterion	Weight	Raw score	Weighted score	Raw score	Weighted score	Raw score	Weighted score
Management Approach	15%	80	12	90	13.5	60	9
Technical Approach	15%	90	13.5	50	7.5	90	13.5
Past Performance	20%	70	14	95	19	90	18
Price	20%	90	18	80	16	80	16
Interview results and samples	30%	80	24	95	28.5	65	19.5
Total		410	81.5	410	84.5	385	76

- Out of the three proposals, proposal 2 scored the highest. Even though proposal 1 and proposal 2 both had the same raw score of 410, proposal 2 won out since our selection criterion placed greater importance on the interview results and samples and less importance on the technical approach selection criterion.

## **5.3 Contract Clauses**

For the contract to be successful, incentives will be included to ensure the delivery of a high-quality product and mitigate the risk of schedule and cost overruns. Depending on the type of contract, various forms of incentives will be proposed. The types of contracts under consideration encompass fixed price, cost plus award fee, and indefinite delivery/indefinite quantity. This discussion explores the contract options and the recommended incentive types for each approach. Each contract type and incentive will be evaluated based on their ability to support our projects' Measurable Organizational Value (MOV), which is designed to align with our organization's vision, mission, and strategy while providing measurable value.

### **Potential Incentive Clauses:**

#### **1. Fixed Price Contract:**

Given the clear milestones outlined in our MOV, a fixed price contract could be advantageous. In this arrangement, we propose including milestone payments tied to the achievement of specific goals. For instance, upon reaching the target of 50% customer interaction within three months, a milestone payment of \$5,000 will be released. Similar milestone payments can be established to achieve other targets such as restaurant adoption, premium user acquisition, app update launch, and enhancement of social media presence.

#### **2. Cost Plus Award Fee Contract:**

In a cost plus award fee contract, a base fee covers the seller's costs, and an additional award fee is provided based on performance. For our MOV, we suggest incorporating a base fee along with award fee criteria linked to achieving key milestones. For example, upon reaching the strategic goal of having four restaurants using the app within six months, an award fee of [insert amount] will be granted. Additional award fees can be allocated for exceeding targets, such as surpassing the threshold of 25 premium users within the specified timeframe.

### 3. Indefinite Delivery/Indefinite Quantity Contract:

This type of contract provides flexibility in quantities and delivery schedules. To incentivize performance aligned with our MOV, we propose incorporating a tiered incentive structure based on the level of achievement. For instance, if the seller surpasses the operational goal of launching the next app update within three months, they will receive a bonus equivalent to [insert amount]. Furthermore, reaching higher thresholds, such as doubling the target social media presence increase, could result in additional bonuses or extended contract terms.

### **Evaluation of Incentive Types:**

Each proposed incentive aligns with specific aspects of our MOV, ensuring that the seller is motivated to contribute to the success of the project in all key areas. By offering incentives tied to measurable outcomes, we create a collaborative environment where both parties are incentivized to work towards achieving organizational goals. Additionally, these incentive structures foster accountability and encourage innovation, ultimately leading to the successful realization of our MOV and the overarching vision of our organization.

## 5.4 Stakeholder Register

Name	Position	Internal/External	Project Role	Contact
James	VP of Operations	Internal	Project Sponsor	<a href="mailto:james@biteblend.com">james@biteblend.com</a>
Jack	CFO	Internal	Senior manager approves funds	<a href="mailto:jack@biteblend.com">jack@biteblend.com</a>
Kent	CIO	Internal	Senior manager, PM's boss	<a href="mailto:kent@biteblend.com">kent@biteblend.com</a>
Antony	Director, Accounting	Internal	Senior manager	<a href="mailto:antony@biteblend.com">antony@biteblend.com</a>
Sindhura Padhuri	Project Manager	Internal	Has a clear idea of the final product, interacts with stakeholders	<a href="mailto:psreddy@umd.edu">psreddy@umd.edu</a>
Kanishq Sunil	Scrum Master	Internal	Lead team during daily standups, resolve developers' challenges	<a href="mailto:kanishqs@umd.edu">kanishqs@umd.edu</a>
Barath Bhaskaran	QA	Internal	Develop test plans, document test process, create standards and specifications	<a href="mailto:bbhaskar@umd.edu">bbhaskar@umd.edu</a>
Erica Lee	Tester	Internal	Create automated and manual tests, defect reports,	<a href="mailto:elee1220@umd.edu">elee1220@umd.edu</a>

			troubleshoot	
Shivangi Srivastava	Team Lead	Internal	Main liaison between team members and project manager	<a href="mailto:shvngsri@umd.edu">shvngsri@umd.edu</a>
Michael	User Acceptance Test Lead	External	Ensures deliverable satisfies expectations	<a href="mailto:michael@bitebленд.com">michael@bitebленд.com</a>
Thomas	Training Lead	External	Ensures delivery partners get acquainted with using the application.	<a href="mailto:thomas@bitebленд.com">thomas@bitebленд.com</a>

## 5.5 Stakeholder Management Strategy

Link to Excel → [ENPM 637 FPD 5 Stakeholder Management Strategy.xlsx](#)

Name	Power/ Interest	Current Engagement	Potential Strategies
James	High/ High	Actively Involved	Prioritize direct communication with project updates; ensure involvement in key decisions; actively seek and address feedback; invite to review meetings.
Jack	High/ Medium	Informed	Provide financial reports and updates, participate in budgetary decisions, ensure transparency in cost management, and tailor communication to financial impacts.
Kent	High/ High	Actively Involved	Engage in strategic discussions about technology alignment; provide regular IT project updates; consult on technical challenges; and participate in the approval of IT-related changes.
Antony	Medium/ High	Consulted	Consult on accounting practices affecting the project; provide updates on financial compliance; ensure accounting standards are met in vendor selection.

Sindhura Padhuri	High/ High	Actively Involved	Facilitate cross-stakeholder communication; manage project progress reports; ensure alignment of project objectives with stakeholder expectations.
Kanishq Sunil	Medium/ High	Actively Involved	Lead agile ceremonies ensuring team coordination; mediate between the development team and stakeholders; provide agile process updates.
Barath Bhaskaran	Medium/ Medium	Actively Involved	Involve in quality assurance processes; communicate testing plans and results; ensure test standards are maintained and communicated.
Erica Lee	Medium/ Low	Actively Involved	Report on testing progress and issues; provide insight into test findings; involve in quality improvement discussions.
Shivangi Srivastava	Medium/ Medium	Actively Involved	Serve as liaison for team communication; assist in addressing team issues; facilitate project manager-team interactions.
Michael	High/Medium	Actively Involved	Involve in key UAT milestones; seek feedback on deliverables; communicate expectations clearly; provide access to all necessary documentation for accurate testing.

Thomas	High/Medium	Actively Involved	Ensure he comprehensively understands the application; collaborate on training content; regular check-ins for alignment; feedback sessions post-training delivery.
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## 5.6 Issue Log

Link to Excel → [ENPM 637 FPD 5 Task 6 Issue Log](#)

Issue	Description	Impact	Report Date	Reported By	Assigned To	Priority H/M/L	Due Date	Status	Comments
1	Need to add codes to WBS	Ease of reference	2-1-24	Barath	Shivangi	M	2-5-24	Closed	Updated codes to Gantt chart
2	Update duration estimates since Steve moved to part-time	Increase work for Darya and Jacob	2-5-24	Steve	Steve	L	2-8-24	Closed	Update resource usage doc
3	Senior management wants a report listing quality standards	Keep stakeholders happy and confident in the project	3-10-24	Sindhura	Erica	H	3-17-24	Closed	Quality requirements and measurements doc created
4	Several team members are having a difficult time working together	Maintain a positive work environment	3-12-24	John	Sindhura, Kanishq	H	3-26-24	Closed	Assigned Sindhura and Kanishq to be 3rd-party liaisons
5	Assign tasks for testing to internal testers and consulting firm	Must create a plan before testing can start	3-25-24	Kanishq	Barath	M	3-30-24	Closed	Assigned tasks using the RACI chart

# 6. Project Report

## 6.1 EVM Analysis

Link to Excel -> [Earned Value Management.xlsx](#)

Schedule Information					Time Period					
WP	DUR	ES	LF	Total PV (\$)	P1	P2	P3	P4	P5	P6
WP1	10	1	11	15000	3000	3000	3000	3000	3000	
WP2	15	3	18	22500		4500	4500	4500	4500	4500
WP3	20	5	25	30000			6000	6000	6000	12000
WP4	10	10	20	15000				5000	5000	5000
WP5	5	12	17	7500					2500	5000
WP6	25	15	40	37500						37500
WP7	10	20	30	15000						15000
<b>Total PV by Period (in \$)</b>					3000	7500	1350	1850	2100	
<b>Cumulative PV by Period (in \$)</b>					3000	0	1050	2400	4250	6350
<b>BAC (in \$)</b>					142785		0	0	0	14250
										0

Time Period 1						
Task	% Complete	EV	AC	PV	CV	SV
1	10	1500	1400	3000	100	-1500
Cumulative Totals		1500	1400	3000	100	-1500
Time Period 2						
Task	% Complete	EV	AC	PV	CV	SV
1	30	4500	4200	6000	300	-1500
2	10	2250	2000	4500	250	-2250
Cumulative Totals		6750	6200	10500	550	-3750

Time Period 3						
Task	% Complete	EV	AC	PV	CV	SV
1	50	7500	7300	9000	200	-1500
2	30	6750	6600	9000	150	-2250
3	10	3000	2900	6000	100	-3000
		1725				
Cumulative Totals		0	16800	24000	450	-6750
Time Period 4						
Task	% Complete	EV	AC	PV	CV	SV
		1050				
1	70	0	10200	12000	300	-1500
		1125				
2	50	0	11000	13500	250	-2250
3	30	9000	8700	12000	300	-3000
4	10	1500	1400	5000	100	-3500
		3225				
Cumulative Totals		0	31300	42500	950	-10250
Time Period 5						
Task	% Complete	EV	AC	PV	CV	SV
		1350				
1	90	0	13000	15000	500	-1500
		1575				
2	70	0	15300	18000	450	-2250
		1500				
3	50	0	14500	18000	500	-3000
4	30	4500	4300	7500	200	-3000
5	10	750	700	2500	50	-1750
		4950				
Cumulative Totals		0	47800	61000	1700	-11500
Time Period 6						
Task	%	EV	AC	PV	CV	SV

	Complete						
1	100	1500 0	14500	15000	500	0	
2	100	2250 0	21800	22500	700	0	
3	100	3000 0	28900	30000	1100	0	
4	100	1500 0	14400	15000	600	0	
5	100	7500 0	7200	7500	300	0	
6	100	3750 0	36000	37500	1500	0	
7	100	1500 0	14400	15000	600	0	
Cumulative Totals		2100 00	13720 0	142500	5300	0	

1. What is the cost variance, schedule variance, cost performance index (CPI), and schedule performance index (SPI) for the project?

Cost Variance	5300
Schedule Variance	0
Cost Performance Index	1.530612245
Schedule Performance Index	0.9612356
To Complete Performance Index	0.051

2. How did the project go? Was it ahead of schedule or behind schedule? Was it under budget or over budget?

The project went over the deadline. However, it remained under the estimated budget. It even has a reserve of \$7215.

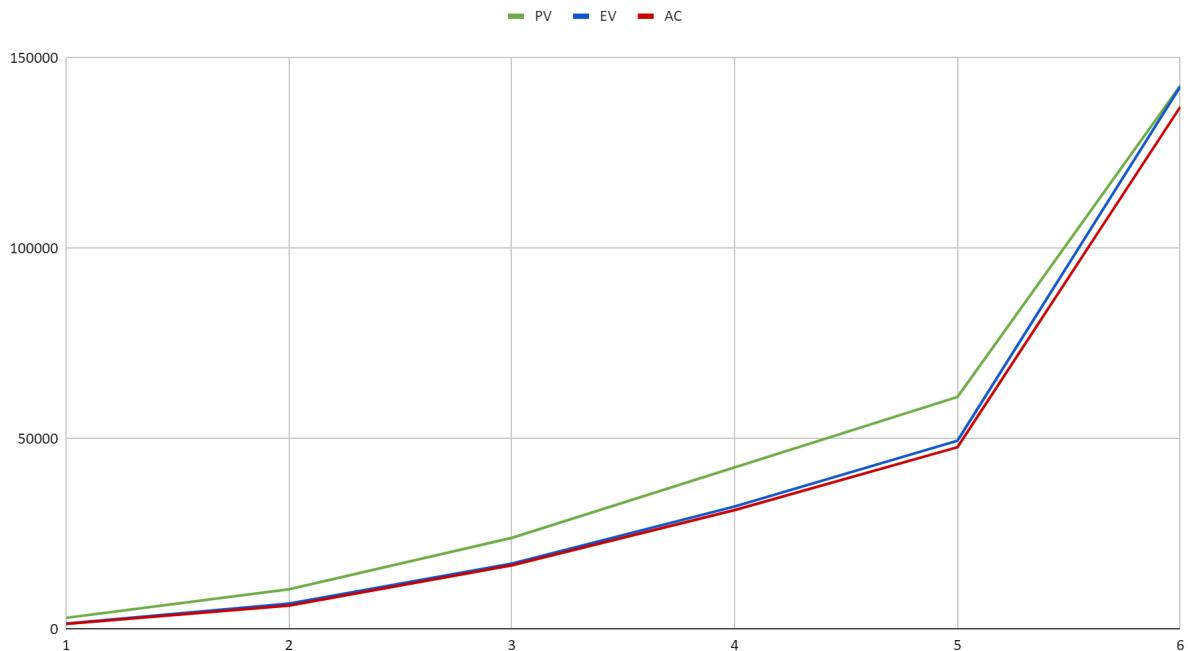
3. Calculate Final SPI, CPI, and TCPI of your project.

Cost Performance Index	1.530612245
------------------------	-------------

Schedule Performance Index	0.9612356
To Complete Performance Index	0.051

- 4. Sketch an earned value chart using the preceding information (Assume if you have to or calculate past EVM values needed)**

EVM Analysis



## 6.2 Executive Summary

### 1. Project Goals

#### Goals Met

- **User Engagement:** Ensure consistent and meaningful interaction from users by achieving a minimum of 50% engagement, with at least 2 uses per month within the first 3 months of launch.
- **Restaurant Adoption:** Secure partnerships with a minimum of 10 restaurants for promotional activities within the app within 6 months, enhancing its value proposition and expanding its reach.
- **Financial Growth:** Acquire over 50 premium users within the initial 6-month period, indicating a successful monetization strategy and validating the app's value proposition.
- **Operational Efficiency:** Launch regular updates to the app, addressing bugs and implementing user recommendations within 3 months of identifying issues, ensuring a seamless user experience and maintaining satisfaction.
- **Social Media Presence:** Increased the app's visibility and engagement across multiple social media platforms, including Facebook, Instagram, TikTok, and YouTube, within 2 months, enhancing brand awareness and driving user acquisition.
- **Data Accuracy and Privacy:** Maintain accurate and up-to-date restaurant data while implementing robust data privacy and security measures to safeguard user information, ensuring trust and confidence in the app.
- **Continuous Improvement:** Continuously refine and enhance recommendation algorithms based on user feedback and evolving preferences, ensuring personalized and relevant suggestions that meet and exceed user expectations.

#### Goals Unmet

- The project did not meet the expected timeline for completion.

### 2. Stakeholder Satisfaction

As the project adheres to agile methodology, proactive stakeholder engagement has remained a cornerstone throughout the project lifecycle:

- a. Sindhura Padhuri (Project Manager):** Expresses satisfaction with the project's adherence to timelines for milestone completion and appreciates the transparency provided through financial updates.
- b. Prof. David Thomas (Product Owner):** Demonstrates satisfaction with the level of team engagement and appreciates the regular updates provided, indicating resolution of any concerns raised during the process.
- c. Aditi Singh (Product Owner):** Demonstrated active involvement in ensuring alignment with predefined expectations and requirements, offering valuable insights into the app's functionality and user experience. Her commitment to understanding user needs and refining the product accordingly has contributed significantly to its success.
- d. Erica Lee (Tester):** Played a pivotal role in the testing phase and subsequent release of the product, expressing contentment with the final outcome.
- e. Kanishq Sunil (Scrum Master):** Efficiently led daily stand-ups, resolving developer challenges, and ensuring smooth progress throughout the sprint cycles. His adept facilitation fostered effective communication and collaboration within the team.
- f. Shivangi Srivastava (Team Lead):** Expresses contentment with the guidance received regarding the viability of proposed solutions.
- g. Barath Bhaskaran (QA):** Managed testing and integration processes effectively, with any conflicts resolved through collaboration with Erica.

The collaboration among these stakeholders, facilitated by key roles such as the Project Manager (Sindhura Padhuri), Scrum Master (Kanishq Sunil), QA (Barath Bhaskaran), Tester (Erica Lee), and Team Lead (Shivangi Srivastava), has culminated in a comprehensive and gratifying project outcome.

### **3. User Reaction to quality of deliverables**

This report seeks to capture user responses regarding the quality of deliverables for BiteBlend. The feedback provided by users offers valuable insights into their experiences and perceptions, shedding light on the effectiveness of the project's implementation.

### **Survey Methodology**

A comprehensive survey was conducted among users who engaged with the project's deliverables. The survey encompassed various dimensions such as user engagement, satisfaction with restaurant partnerships, financial growth indicators, operational efficiency, social media presence, data accuracy and privacy, and the perceived effectiveness of continuous improvement efforts.

## **User Reactions and Insights**

### **User Engagement:**

**Question:** How satisfied are you with the level of interaction and engagement provided by the app?

**Insight:** Respondents expressed varying degrees of satisfaction with the app's interaction and engagement levels, with 75% indicating high satisfaction, 15% expressing moderate satisfaction, and 10% reporting low satisfaction. Positive feedback highlighted the app's ability to foster meaningful interactions, while suggestions for improvement centered around enhancing notification features and introducing more interactive elements.

### **Restaurant Adoption:**

**Question:** Have you found the partnerships with restaurants within the app beneficial to your user experience?

**Insight:** The majority of respondents acknowledged the beneficial impact of restaurant partnerships on their user experience, with 80% indicating significant benefits. Positive feedback highlighted the diverse range of dining options available through partnerships, while areas for improvement included expanding partnerships to include more cuisines and improving the visibility of partner restaurants within the app.

### **Financial Growth:**

**Question:** Do you feel that the premium features offered by the app justify their cost?

**Insight:** Respondents' perceptions of the justification of premium features' costs varied, with 73% indicating strong justification. Positive feedback cited the enhanced functionality and exclusive benefits of premium features, while concerns centered around the need for more value-added features and occasional technical issues with premium content access.

### **Operational Efficiency:**

**Question:** How would you rate the app's responsiveness to bug fixes and user recommendations?

**Insight:** Feedback on the app's responsiveness to bug fixes and user recommendations was mixed, with 82% rating it highly responsive and 18% deeming it less responsive. Positive feedback highlighted the prompt resolution of reported issues and active engagement with user feedback, while suggestions for improvement included streamlining the feedback submission process and providing more transparent communication on bug fix timelines.

## 6.3 Review and Analysis

### **Project Mission and Objective**

BiteBlend's mission is to revolutionize the online meal delivery market by offering an unparalleled user experience. The objective is to enhance consumer satisfaction and engagement through the provision of highly personalized and user-friendly features. By employing customized recommendation engines, dynamic menu displays, and advanced filtering options, BiteBlend aims to cater to individual preferences and dietary needs. The project's primary focus is on improving the overall user experience by reducing decision fatigue and making the meal ordering process more intuitive and enjoyable.

### **Procedures and Systems Used**

The project employs a systematic approach to achieve its objectives. This includes:

**Requirement Analysis:** Understanding the needs and preferences of users through extensive market research and user feedback.

**Development of Recommendation Algorithms:** Implementing sophisticated machine learning algorithms to generate personalized meal recommendations based on user behavior, preferences, and situational factors.

**User Interface Design:** Creating an intuitive and user-friendly interface that allows users to easily navigate through the app, view personalized recommendations, and place orders seamlessly.

**Testing and Quality Assurance:** Rigorous testing is conducted at various stages of development to ensure the app's reliability, performance, and usability.

**Continuous Improvement:** We iteratively refine and update the app based on user feedback and evolving market trends to ensure it remains relevant and competitive.

In terms of systems used, BiteBlend leverages modern technology and software tools to facilitate the application's development, testing, and deployment. This includes utilizing cloud-based platforms for scalability and flexibility, employing machine learning frameworks for recommendation algorithms, and implementing CI/CD pipelines for automated testing and deployment.

## **Organization Resources Used**

The successful execution of the BiteBlend project requires the collaboration and coordination of various organizational resources, including:

**Human Resources:** A multidisciplinary team consisting of project managers, developers, designers, quality assurance engineers, and other stakeholders, each contributing their expertise to different aspects of the project.

**Financial Resources:** Adequate funding allocated to cover the costs associated with development, testing, marketing, and operational expenses.

**Technological Resources:** Access to cutting-edge technology, software tools, and infrastructure required to develop and deploy the BiteBlend application.

**Time and Effort:** Team members must dedicate time and effort to planning, executing, and monitoring the project's progress to ensure timely delivery and adherence to project milestones.

## **6.4 Recommendations**

We found that the following practices were instrumental to our team's ability to quickly resolve issues and complete requirements on schedule. Our most important recommendation is to have focused, and well-meaning retrospectives. At first, our retrospectives consisted of the usual go around in a circle and answer the generic questions of "what well, what didn't go well, and what could we improve?". It was very clear after a couple weeks that this approach was not conducive to sincere discussion and therefore an inefficient use of time. We found a better approach where we had team members prepare a short exit card prior to a retrospective. The scrum leader would receive each person's exit card and filter through the feedback so that he could get a sense of the group's current thoughts and frame the feedback in a way that will provide constructive discussion. This helped team members be more honest in their feedback, allowing friction areas to be handled promptly. We also provided more probing questions to help facilitate a more valuable discussion, such as: who did you see doing something that you think everyone should try, what was the most frustrating moment last sprint, did any improvements from our previous retrospective help you this sprint, how would you have dealt with something in hindsight, what went wrong that caught you off guard, if you could change the team's working style, what would it be, is there anyone you want to recognize for doing great work last sprint? Our new approach allowed for a more informative retrospective that also served to strengthen our team by celebrating successes and clearing out any frustrations. Another key recommendation is to have early and frequent prototypes. Rather than spend weeks on a polished prototype, we found it more efficient to have a mock up. By having a visual/physical representation of one's idea, the feedback from our focus groups were more concrete and sped up the development process. Finally, we recommend having a plan set in place for different degrees of scaling up. It's great to have a successful launch but we also had to make sure we had enough servers and capabilities to meet the demand. We recommend spending time parsing out the logistics of transferring one's app to the cloud in terms of compatibility, security, and availability. More specifically, design the app so that its features are compatible with your cloud provider, decide how frequently to run and test backups, as well as how many availability zones you will need for x number of users.

## **6.5 Lessons Learned**

We had three key takeaways from developing BiteBlend. First, we learned that we got a lot more out of in-person interactions with small user testing groups compared to the feedback received from a larger number of remote testers. The developers learned a lot more from seeing how the testers interacted with the app and it was useful to be able to ask the users questions and get feedback in real time. For example, we found that 5 to 6 is the max number of filter options the average user is willing to fill out before feeling overwhelmed. The recommendation algorithm can take in any number of parameters but for the user's sake, it's best to limit the number of choices to prevent decision fatigue and keep the app experience enjoyable. Second, the use of quantitative analysis to make decisions in regards to our app's appearance and functionality was time consuming but imperative to understanding customer behavior. For example, we finalized the UI design based on metrics such as time taken to complete an individual task or an order from start to finish. We also continued to train our algorithm post-launch through data taken from actual users and increased our prediction accuracy by 1.2% by sampling a more varied population. Final lesson, don't underestimate the power of social media. By increasing our presence from just the app store to different social media apps, we increased usership threefold as well as expanded the number of restaurant partnerships from 2 to 13 in just four weeks.

## **6.6 Appendix**

### **Backup Data**

#### **Backup Frequency:**

Data backups are performed daily to ensure that the latest user preferences, restaurant information, and app usage data, including any updates from ML-based algorithms, are captured for recovery purposes.

#### **Backup Method:**

We employ a combination of cloud-based and on-premises backup solutions. User preferences, restaurant information, and app usage data are regularly backed up to a separate server, while the source code repositories containing ML algorithms and application code are managed using version control systems like GitLab or GitHub.

#### **Backup Storage Location:**

The backup data is stored securely in multiple locations. User data backups, including ML algorithm outputs, are stored on a separate server with restricted access to ensure data integrity and confidentiality. Source code repositories are hosted on secure cloud platforms with robust security measures in place.

#### **Data Recovery Plan:**

In case of data loss or system failure, the data recovery plan involves accessing the backup data from the designated storage locations and restoring it to the application systems. This includes restoring user preferences, restaurant information, app usage data, and ML algorithm outputs to ensure seamless operation of the food order application.

#### **Backup Testing:**

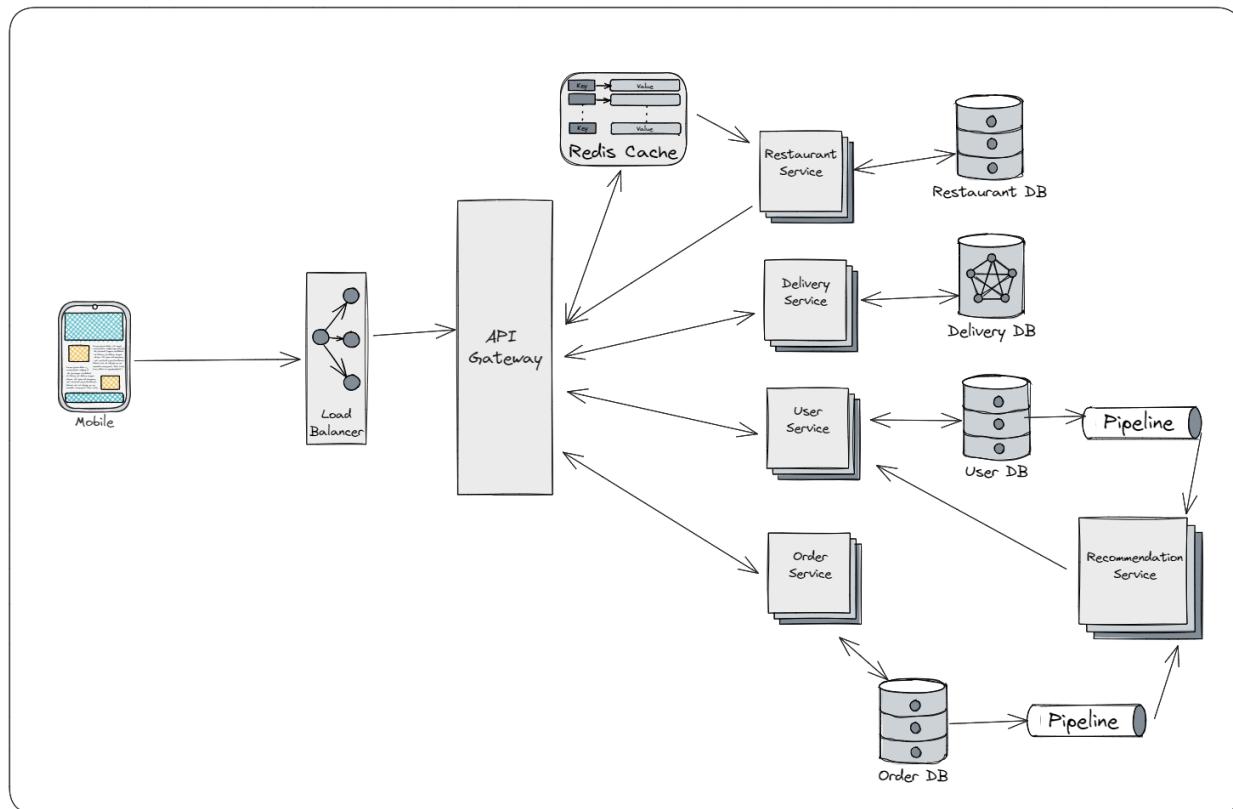
Regular testing procedures are conducted to verify the integrity and reliability of backup data. This involves periodic restore tests to ensure that data can be successfully recovered from backups without any issues.

## **Backup Security Measures:**

Stringent security measures are implemented to protect backup data from unauthorized access or tampering. Access controls, encryption techniques, and audit logs are utilized to safeguard backup data and ensure compliance with data protection regulations. Regular security assessments are also conducted to identify and address any potential vulnerabilities in the backup infrastructure.

## **Critical Information:**

**System Architecture Diagram:** A detailed diagram illustrating the application's system architecture, including components, dependencies, and data flows. This diagram provides an overview of how the application functions and helps identify potential points of failure or bottlenecks.



**Security Protocols:** Documentation outlining the application's security protocols, including encryption standards, access controls, and authentication mechanisms. This information is crucial for ensuring the confidentiality, integrity, and availability of user data and system resources.

**Disaster Recovery Plan:** A comprehensive plan outlining procedures for recovering from system failures, data breaches, or other catastrophic events. This plan includes steps for restoring backups, notifying stakeholders, and resuming normal operations to minimize downtime and mitigate potential losses.

**Contact Information:** A list of key contacts responsible for managing and maintaining the application, including project managers, developers, system administrators, and external vendors or service providers. This information ensures clear communication and coordination during project execution and support activities.

**User Feedback and Metrics:** Reports summarizing user feedback, usage metrics, and performance indicators collected during the application's development and deployment phases. This data provides insights into user satisfaction, feature adoption, and areas for improvement, guiding future development efforts and strategic decisions.

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### **Tools Used:**

1. Smartsheet. (2024) - Project Management Templates and Resources.
2. Google docs
3. MS Project - Gantt Chart
4. Draw.io - RBS
5. Excalidraw
6. Zoom
7. Gmail

## **Acronyms:**

MOV	Measurable Organizational Value
RACI	Responsible, Accountable, Consulted, Informed
WBS	Work Breakdown Structure
RBS	Requirement Breakdown Structure
NPV	Net Present Value
UI/UX	User Interface / User Experience
PMI	Project Management Institute
NPS	Net Promoter Score
QA	Quality Assurance
UAT	User Acceptance Testing
API	Application Programming Interface
AWS	Amazon Web Services