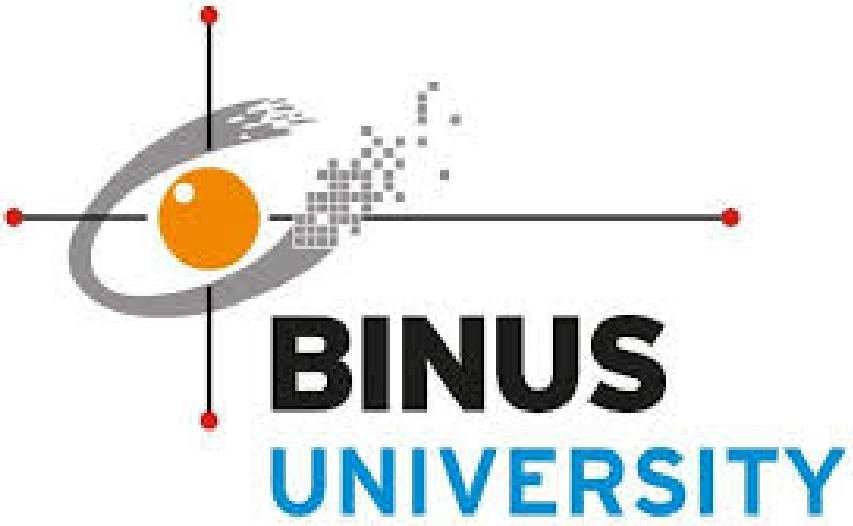
BACHELOR OF INFORMATION SYSTEMS
FACULTY/SCHOOL OF SCHOOL OF INFORMATION SYSTEMS
BINA NUSANTARA UNIVERSITY
JAKARTA

ASSESSMENT FORM

Course: ISYS6256-Information System Project Management

Method of Assessment: Group Project

Semester/Academic Year : Odd / 2024 -2025



Name of Lecturer : **D2972 - Indra Kusumadi Hartono, S.S., M.M., CBDMP**

Date : **4 - Desember - 2024**

Class : **LB11**

Topic :

1. **The Introduction of Project Management & Scrum**
2. **Project Integration Management**
3. **Project Scope Management**
4. **Project Schedule Management**
5. **Project Cost Management**
6. **Project Quality Management**
7. **Project Risk Management**

Group Members(Group 2) :	1. Ammar Said - 2702266404 2. Andra Sofari - 2702329550 3. Andrean - 2702301294 4. Antonius Jose - 2702273624 5. Anthony Sutanto - 2702275705

Student Outcomes:

SO 1.1 Able to explain project management concepts and project management book of knowledge

SO 1.2. Able to identify project management process area and project life cycle in IS/IT project

SO 2.1. Able to identify project management methods for IS/IT project
SO 2.2. Able to apply project management knowledge to IS/IT project

SO 3.1. Able to demonstrate the knowledge and skill of project management
SO 3.2. Able to develop project management plans using knowledge and skill

Learning Objectives:

LO1: Describe The project management concepts, project management process area, project life cycle, and the project management book of knowledge for managing the information technology projects

LO2: Apply the project management knowledge and methods to the information technology project

LO3: Demonstrate the knowledge and skills of project management with use of the tools and techniques to plan, organize and manage an information technology project

No	Assessment criteria	Weight	Excellent (85 - 100)	Good (75-84)	Average (65-74)	Poor (0 - 64)	Score	(Score x Weight)
1	Prepare the product backlog and the business case	**30%**	The product backlog and business case are completed and clearly stated	The product backlog and business case are completely stated but some is not relevant	The product backlog and business case are not completely stated.	Not able to develop the product backlog and business case		
2	Develop the project charter, schedule, and budget	**30%**	The project plan, project schedule, and budget are completely stated and visible	The project plan, project schedule, and budget are completely stated.	The project plan, project schedule, and budget are not completely stated	The project plan, project schedule, and budget are not completely stated and not visible.		
3	Describe the Project Risk Management Plan	**20%**	The Project Risk Management Plan is completely stated and visible	The Project Risk Management Plan is completely stated.	The Project Risk Management Plan is not completely stated and it have a mistake.	The Project Risk Management Plan is not completely stated and not visible		
4	Develop a quality management plan.	**20%**	The quality management plan is completely stated and visible	The quality management plan is completely stated.	The quality management Plan is not completely stated and it have a mistake	The quality management Plan is not completely stated and not visible.		
	Total Score: ∑(Score x Weight)							

Remarks:

ASSESSMENT METHOD

Instructions

- Students need to work in groups (4 - 6 persons/group). The groups are formed in the first session (week 1). The questions and guidelines will be given by the lecturer in the class.
- Students must create an IT (Information Technology) project for the group project assignment. This group project serves as a semester-long group project. For example:
    - build a website for small business or local business
    - create a startup to bring awareness about mental health
- week 2 & 3 (session 3-6)
    - Students must develop business case and product backlog of the IT project and submit the report before session 5-6.
    - Lecturers give feedback for the business case & product backlog.
- week 4 (session 7-8)
    - Students continue to develop the project Charter of the IT project and submit the report before session 9-10
    - Lecturers give feedback for project charter.
- Week 5 (session 9-10)
    - Students develop Work Breakdown Structure (WBS) and submit the WBS before session 11-12.
    - Lecturers give feedback for the WBS
- Week 7 (session 13-14).
    - Students list activities and schedules for the project
    - Students create Critical Path Analysis.
    - Students create Gantt Chart.
    - Students must submit all the deliverables before session 15-16
    - Lecturers give feedback for the schedule, Critical Path Analysis and Gantt Chart.
- Week 8 (session 15-16)
    - Students develop Risk Plan for the IT project and submit the risk plan before session 17-18.
    - Lecturers give feedback for the risk plan
- Week 9 (session 17-18)

- Students develop cause and effect diagram and submit before session 19-20.
- Lecturers give feedback for the diagram.

Project output

1. Product Backlog
2. Business Case
3. Project Charter
4. Work Breakdown structure
5. Project Schedule (Critical Path Analysis Diagram and Gantt Chart).
6. Risk Plan
7. Cause and Effect Diagram

ISPM PROJECT: FLYBOX

Fly Box is an innovative logistics service leveraging autonomous drone technology to revolutionize package delivery. It offers fast, efficient, and eco-friendly delivery solutions by bypassing traditional road-based challenges such as traffic congestion. Through a user-friendly mobile application, customers can place orders, track deliveries in real-time, and receive proof of delivery, while advanced AI ensures optimal drone scheduling and route planning. Fly Box not only enhances delivery speed and accuracy but also reduces environmental impact, making it a cutting-edge solution for modern logistics needs.

A. PRODUCT BACKLOG

To ensure the successful development of the Fly Box application, a product backlog defines the features and functionalities from the perspective of the end user. User stories are structured as "As a [user], I want to [do something], so that [I can achieve a goal]." This helps prioritize and clarify development tasks to meet user needs effectively.

PRODUCT BACKLOG			
No.	**As a ...**	**I want to ...**	**So that ...**
1	Customer	Place a delivery order through the app	My package can be delivered quickly
2	Warehouse	Receive order notifications	I can prepare the package for shipping
3	Staff	Scan packages with QR codes	Ensure accurate tracking
4	System	Schedule drones automatically	Optimize delivery routes
5	Technician	Check drone conditions	Ensure safe and efficient deliveries
6	Customer	Track drone location in real-time	Stay informed about my package's status
7	Drone	Deliver packages to designated locations	Complete deliveries efficiently
8	Customer	Receive proof of delivery	Verify my package has arrived safely
9	Admin	Monitor system performance and data	Identify issues and improve operations
10	Customer	Provide feedback on service	Help improve the Fly Box experience

The prioritized product backlog organizes features based on their importance to the core functionality and overall success of the Fly Box application. The priorities are categorized as High, Medium, or Low to ensure efficient development and deployment.

PRIORITIZED PRODUCT BACKLOG		
ID	Feature Name	Priority
F001	Order Placement	High
F002	Drone Scheduling	High
F003	Real-Time Tracking	High
F004	Proof of Delivery	High
F005	Notification System	High
F006	Drone Maintenance and Safety	Medium
F007	QR Code Scanning for Tracking	Medium
F008	Performance Monitoring Dashboard	Medium
F009	Customer Feedback System	Low
F010	Advanced Analytics and Reports	Low

Explanation of Priorities

- High Priority: These features are the core functionality of the Fly Box service. They enable essential operations such as order placement, scheduling, real-time tracking, and proof of delivery. Without these, the application cannot fulfill its primary purpose.

- Medium Priority: These features enhance operational efficiency and ensure the reliability of the system, such as maintaining drone safety and enabling accurate tracking through QR codes.
- Low Priority: These features are "nice-to-have" additions that improve user experience and offer advanced capabilities, such as detailed analytics and customer feedback mechanisms, which can be developed after the core features are operational.

B. BUSINESS CASE

BUSINESS CASE	
Section	**Details**
1.0 Introduction/Background	FlyBox aims to revolutionize logistics through the innovative use of autonomous drone technology. By addressing traditional road-based delivery challenges such as traffic congestion, FlyBox provides an eco-friendly, fast, and efficient solution for modern package delivery. This project seeks to leverage cutting-edge AI and drone technology to redefine delivery standards in the logistics industry.
2.0 Business Objectives	The business objective of FlyBox is to revolutionize the logistics industry by leveraging autonomous drone technology to enhance delivery efficiency and reliability. By addressing challenges such as traffic congestion and rising delivery costs, FlyBox aims to provide fast, eco-friendly solutions that align with growing demands for sustainability. The project focuses on developing a seamless user experience through an advanced mobile application that enables real-time order placement, tracking, and proof of delivery. Ultimately, FlyBox seeks to establish itself as a leader in modern logistics by delivering unparalleled service quality while reducing environmental impact.
3.0 Current Situation and Problem/Opportunity Statement	The current logistics landscape is plagued by inefficiencies caused by traffic congestion, rising delivery costs, and increasing demands for faster and more transparent services. Traditional delivery methods often fail to meet customer expectations for real-time tracking and quick delivery, leading to reduced satisfaction and market competitiveness. Additionally, the environmental impact of conventional delivery vehicles has raised concerns among eco-conscious consumers and businesses.

	In this context, FlyBox presents a significant opportunity to address these issues by utilizing autonomous drone technology. This innovative approach bypasses road-based challenges, reduces delivery times, and offers a sustainable alternative to traditional logistics. The growing adoption of drones, advancements in AI-driven route optimization, and increasing demand for green logistics solutions position FlyBox as a transformative force in the industry. By capitalizing on these opportunities, FlyBox can redefine delivery standards and establish itself as a leader in modern logistics services.
4.0 **Critical Assumptions and Constraints**	The FlyBox project operates under several critical assumptions and constraints that define its scope and feasibility. It assumes that there will be a strong market demand for drone-based delivery services, driven by the growing need for faster, more efficient, and eco-friendly logistics solutions. Additionally, it is assumed that regulatory bodies will provide the necessary approvals and clearances for drone operations, and that the project will comply with all local airspace and safety regulations. Technological advancements in AI and drone capabilities are also assumed to support reliable performance and operational efficiency. However, the project faces constraints, including strict regulatory compliance, the need for substantial initial investment, and the technological challenges of ensuring reliable drone operations in varied environments. Additionally, customer adoption and satisfaction are critical constraints, as the project\u2019s success hinges on its ability to meet user expectations for speed, reliability, and transparency. The FlyBox team must navigate these assumptions and constraints to achieve its goals effectively.
5.0	Analysis of Options

Analysis of Options and Recommendation	1. Expand Service Area ○ Pros: More customers. ○ Cons: Higher costs. 2. Increase Drone Fleet ○ Pros: Faster deliveries. ○ Cons: High cost. 3. Offer Subscriptions ○ Pros: Steady income. ○ Cons: Less flexibility. 4. Partner with E-commerce ○ Pros: More customers. ○ Cons: Shared profits. 5. Invest in Technology ○ Pros: Better service. ○ Cons: Expensive. Recommendations ● Expand service to key cities first. ● Increase fleet as demand grows. ● Introduce subscriptions for businesses. ● Partner with e-commerce for more exposure. ● Focus on technology to improve delivery speed and safety.
6.0 **Preliminary Project Requirements**	1. Business Needs ● Fast Delivery: Use drones to speed up delivery. ● Eco-friendly: Reduce environmental impact with drones. ● Real-time Tracking: Let customers track their packages. ● Delivery Proof: Provide confirmation once packages are delivered. 2. Technical Needs

	● Drones: Drones with GPS and sensors. ● App: Mobile app for orders, tracking, and notifications. ● AI: For scheduling and route optimization. ● Servers: To support real-time tracking and data. 3. Legal Needs ● Regulations: Follow laws for drone operations. ● Safety: Ensure drones meet safety standards. 4. User Needs ● Simple App: Easy for customers to use. ● Business Dashboard: To manage deliveries. ● Admin Panel: For monitoring system performance. 5. Operational Needs ● Support: Customer service for inquiries and issues. ● Drone Maintenance: Regular checks to keep drones safe. ● Marketing: Promote FlyBox to attract users. 6. Financial Needs ● Budget: Rp. 4,450,000,000 for the project. ● Revenue: Charge per delivery and offer subscriptions for businesses.
7.0 Budget Estimate and Financial Analysis	The budget estimate for FlyBox is Rp. 4,450,000,000, which covers various aspects of the project. The development costs include Rp. 1,500,000,000 for mobile app development, backend systems, and AI integration. Testing and QA will cost Rp. 450,000,000 to ensure the system functions properly. The procurement of drones, including their

	purchase and maintenance, is estimated at Rp. 500,000,000. Deployment and infrastructure setup, including servers and cloud storage, will require Rp. 300,000,000. Marketing and promotional activities are budgeted at Rp. 750,000,000 to ensure market awareness and user adoption. Regulatory compliance costs, including legal fees for obtaining the necessary approvals, are estimated at Rp. 200,000,000. Lastly, a contingency fund of Rp. 250,000,000 is allocated to cover unforeseen costs or project delays. The financial analysis of FlyBox includes projections for its revenue model and profitability. The project expects to generate revenue through per-delivery charges and subscription plans for businesses. For the first year, FlyBox aims to achieve a total of 500 active users (both customers and businesses), with an average of 200 deliveries per month. Assuming an average charge of Rp. 50,000 per delivery, FlyBox could generate approximately Rp. 1,200,000,000 in revenue in the first year. To calculate the Net Present Value (NPV) and Return on Investment (ROI), we consider the expected revenue and costs. Assuming a discount rate of 10% and a 5-year project horizon: ● Year 1 Revenue: Rp. 1,200,000,000 ● Initial Investment: Rp. 4,450,000,000
8.0 **Schedule Estimate**	The schedule estimate for the FlyBox project spans over a period of 7 months, starting from December 12, 2024, and finishing by June 30, 2025. The project is divided into four key phases: 1. Phase 1: Requirements Analysis (1 month) – During this phase, the team will conduct market research, gather user feedback, and finalize the technical and operational requirements for the app and drone systems. This phase is expected to be completed by January 12, 2025.

	2. Phase 2: Development (3 months) – The development phase will focus on the mobile app design, backend system creation, and drone system integration. This phase will also include building the essential features such as order placement, payment integration, and real-time tracking. This phase is expected to be completed by March 20, 2025. 3. Phase 3: Testing (1 month) – In this phase, the FlyBox team will conduct system testing, bug fixes, and user acceptance testing to ensure all components work together seamlessly. This phase will be completed by April 20, 2025. 4. Phase 4: Deployment and Launch (2 months) – The final phase will include setting up the necessary infrastructure, conducting a soft launch, and addressing any feedback from early users. Full deployment of the FlyBox app will occur by June 30, 2025. Each phase has specific milestones and deliverables, with a focus on maintaining a steady timeline to ensure the successful launch of FlyBox by the end of June 2025. The schedule is designed to ensure proper testing and smooth integration of the drone systems, mobile app, and operational processes.
9.0 **Potential Risks**	The potential risks for FlyBox include several factors that could impact the successful development and deployment of the project. One major risk is drone malfunctions, which could occur due to hardware failures or technical issues with the drones, leading to delays or disruptions in service. To mitigate this, FlyBox will need regular maintenance and routine diagnostics to ensure drones remain operational.

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Another risk is related to regulatory compliance, as the project is dependent on securing the necessary approvals and clearances for drone operations in various regions. Regulatory changes or delays in approval could significantly impact the project timeline. FlyBox must maintain close communication with local authorities to ensure compliance with all airspace regulations and safety standards.

Customer adoption is another potential risk. Despite the innovative nature of the service, convincing customers to adopt drone-based delivery over traditional methods may take time. Aggressive marketing campaigns and education efforts will be essential to overcome this barrier and attract a solid customer base.

Additionally, technological challenges related to AI-driven scheduling and drone route optimization may arise, potentially affecting delivery efficiency. Ensuring robust development and testing in these areas will be key to preventing such issues.

Lastly, financial risks due to unforeseen costs, such as increased development expenses or unanticipated regulatory hurdles, could impact the overall budget and financial viability of the project. A contingency fund has been set aside to manage these uncertainties, but careful budgeting and monitoring are crucial.
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<td>10.0
Exhibits</td>
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Budget Estimate and Financial Metrics for FlyBox Project
<table>
<tr><th>Category</th><th>Amount (IDR)</th><th>Details</th></tr>
<tr><td>Development Costs</td><td>1,500,000,000</td><td>Mobile app development, backend systems, AI algorithms</td></tr>
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Testing and QA	450,000,000	System testing, bug fixing, user acceptance
Drone Fleet Procurement	500,000,000	Purchase and maintenance of drones, spare parts
Deployment and Infrastructure	300,000,000	Server hosting, cloud storage, logistics
Marketing and Promotion	750,000,000	Digital marketing, promotions, PR campaigns
Regulatory Compliance	200,000,000	Legal fees, compliance with drone regulations
Contingency Fund	250,000,000	Unforeseen costs, project delays
Total Investment	4,450,000,000	Total of all project costs

Financial Metrics:

Metric	Value	Formula/Explanation
(NPV)	1,392,241,000	NPV Calculation: NPV = (2,000,000,000 / (1+0.1)^1) + (2,000,000,000 / (1+0.1)^2) + (2,000,000,000 / (1+0.1)^3) + (2,000,000,000 / (1+0.1)^4) + (2,000,000,000 / (1+0.1)^5) - 4,450,000,000 NPV = 1,392,241,000 IDR
(ROI)	31%	ROI Calculation: ROI=ExpectedProfit/TotalInvestment×100 ROI=1,392,241,000/4,450,000,000×100=31%

	Calculation Details: 1. NPV Calculation: The NPV is the sum of the present values of future cash inflows (estimated at 2,000,000,000 IDR annually for 5 years), discounted at a rate of 10% per year, minus the total investment. ○ Year 1: 2,000,000,000 / (1 + 0.1)^1 = 1,818,181,818 ○ Year 2: 2,000,000,000 / (1 + 0.1)^2 = 1,653,465,289 ○ Year 3: 2,000,000,000 / (1 + 0.1)^3 = 1,503,150,263 ○ Year 4: 2,000,000,000 / (1 + 0.1)^4 = 1,366,500,239 ○ Year 5: 2,000,000,000 / (1 + 0.1)^5 = 1,242,273,084 2. Total discounted cash flows: 7,583,570,693 IDR ○ Subtracting the initial investment: 7,583,570,693 - 4,450,000,000 = 1,392,241,000 IDR (NPV). 3. ROI Calculation: ○ ROI = (ExpectedProfit/TotalInvestment)∗100 ○ Expected Profit = 1,392,241,000 IDR (NPV) ○ ROI = (1,392,241,000 / 4,450,000,000) * 100 = 31% This gives you a positive NPV of 1,392,241,000 IDR, indicating the project is financially viable, and an ROI of 31%, which shows a solid return on the investment made.

C.PROJECT CHARTER

PROJECT CHARTER	
Project Title: FlyBox Project **Date of Authorization**: 12 December 2024 **Project Start Date**: 12 December 2024 **Projected Finish Date**: 30 June 2025	
Key Schedule Milestones	• Complete the first sprint by 20 January 2025 • Complete the second sprint by 20 March 2025 • Complete the third sprint by 10 May 2025 • Deploy the FlyBox app to the market by 30 June 2025
Budget Information	The estimated total cost of the project is Rp 4,450,000,000 which includes development, testing, deployment, and marketing costs for the first year.
Project Manager	Anthony Sutanto
Contact Information	+62858-8307-5995, anthony_sutanto@flybox.com
Project Objectives	- Develop an autonomous drone-based delivery service - Provide efficient, fast, and eco-friendly solutions for logistics - Offer real-time tracking and proof of delivery
Main Project Success Criteria	• Achieve 500 active users (customers and businesses) within the first 3 months. • Ensure at least 90% reliability in drone delivery times, with 95% of deliveries completed within the estimated timeframe. • Secure partnerships with 30+ service providers (businesses) within the first 4 months to ensure a wide coverage of delivery options. • Achieve a user retention rate of 60% or higher after the first 6 months of use. • Maintain a robust and transparent real-time tracking system with 99% uptime, providing customers and businesses with continuous delivery updates. • Ensure that 90% of all customer inquiries and issues are resolved within 24 hours.

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<tr><td>Approach</td><td>

Conduct market research to identify demand for drone delivery services and target areas.
Gather customer feedback to understand user needs for fast, reliable, and transparent delivery.
Design the app’s UI/UX for easy service booking, real-time tracking, and drone scheduling.
Develop essential features including user registration, order placement, payment integration, and drone tracking.
Ensure app security with data encryption and maintain fast response times across devices.
Test the app internally and with beta users to fine-tune features and performance.
Launch the app with a simple marketing campaign focused on speed, eco-friendliness, and innovation.
Monitor user feedback after launch and improve delivery processes and app functionality.
Regularly update the app to fix bugs, enhance performance, and expand delivery areas.

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<tr><td>Roles and Responsibilities</td><td>
<table>
<tr><th>Name</th><th>Role</th><th>Position</th><th>Contact Information</th></tr>
<tr><td>Ammar Said</td><td>Stakeholder</td><td>CEO</td><td>ammar_said@flybox.com</td></tr>
<tr><td>Anthony Sutanto</td><td>Project Manager</td><td>Manager</td><td>anthony_sutanto@flybox.com</td></tr>
<tr><td>Andra Sofari</td><td>Team Member</td><td>Testing Expert</td><td>andra_sofari@flybox.com</td></tr>
<tr><td>Andrean</td><td>Team Member</td><td>Programmer</td><td>andrean@flybox.com</td></tr>
<tr><td>Antonius Jose</td><td>Team Member</td><td>Programmer</td><td>antonius_jose@flybox.com</td></tr>
</table>
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<tr><td>Sign Off</td><td>Anthony Sutanto
Ammar Said
Andra Sofari
Andrean
Antonius Jose</td></tr>
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Comments	***"I believe FlyBox will make a significant impact on the logistics industry by offering fast, eco-friendly delivery solutions. With our team's diverse skills, I am confident that this project will meet and exceed customer expectations." - Anthony Sutanto***

D.WORK BREAKDOWN STRUCTURE

WORK BREAKFOWN STRUCTURE

FLYBOX PROJECT

1.1 Project Management

1.1.1 Planning

1.1.2 Meetings

1.1.3 Administration

1.2 Product Requirement

1.2.1 Drone Specifications

1.2.2 Application Features

1.2.3 AI and Route Optimization Requirements

1.3 Application Development

1.3.1 Mobile Application Design

1.3.2 Backend Development

1.3.3 Integration with Drone Systems

1.4 Integration and Testing

1.4.1 Drone System Testing

1.4.2 Application Testing

1.4.3 End-to-End System Testing

1.5 Deployment

1.5.1 Infrastructure Setup

1.5.2 Initial Service Launch

1.5.3 Customer Support Setup

1.6 Marketing

1.6.1 Pre-Launch Campaigns

1.6.2 Launch Event

1.6.3 Social Media Promotions

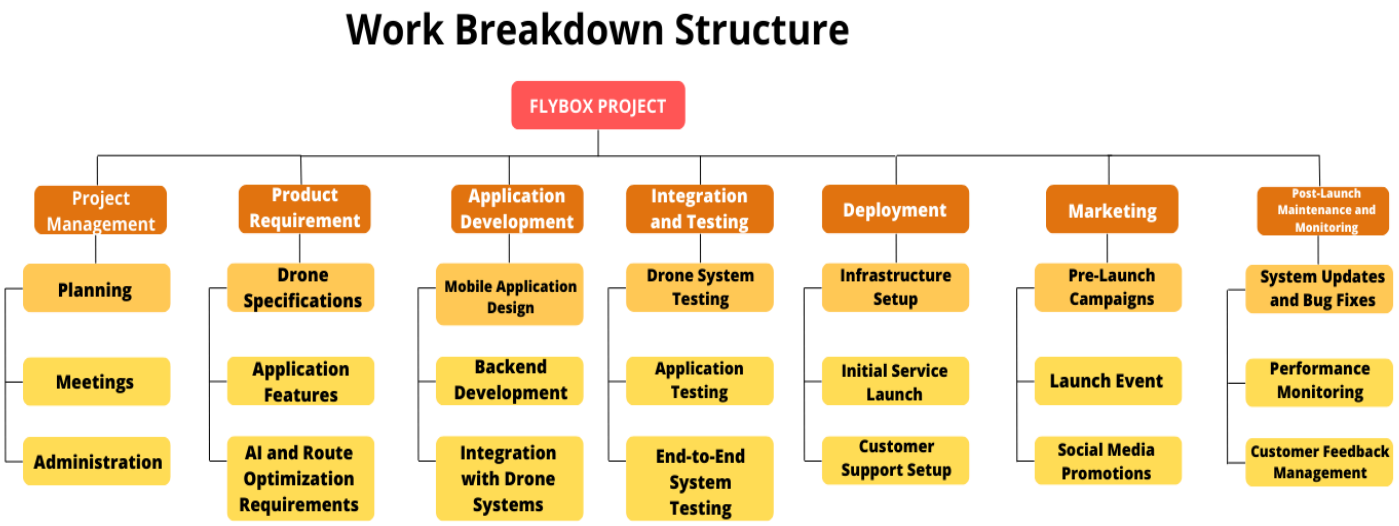
1.7 Post-Launch Maintenance and Monitoring

1.7.1 System Updates and Bug Fixes

1.7.2 Performance Monitoring

1.7.3 Customer Feedback Management

WORK BREAKDOWN STRUCTURE CHART



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E.PROJECT SCHEDULE

PROJECT SCHEDULE

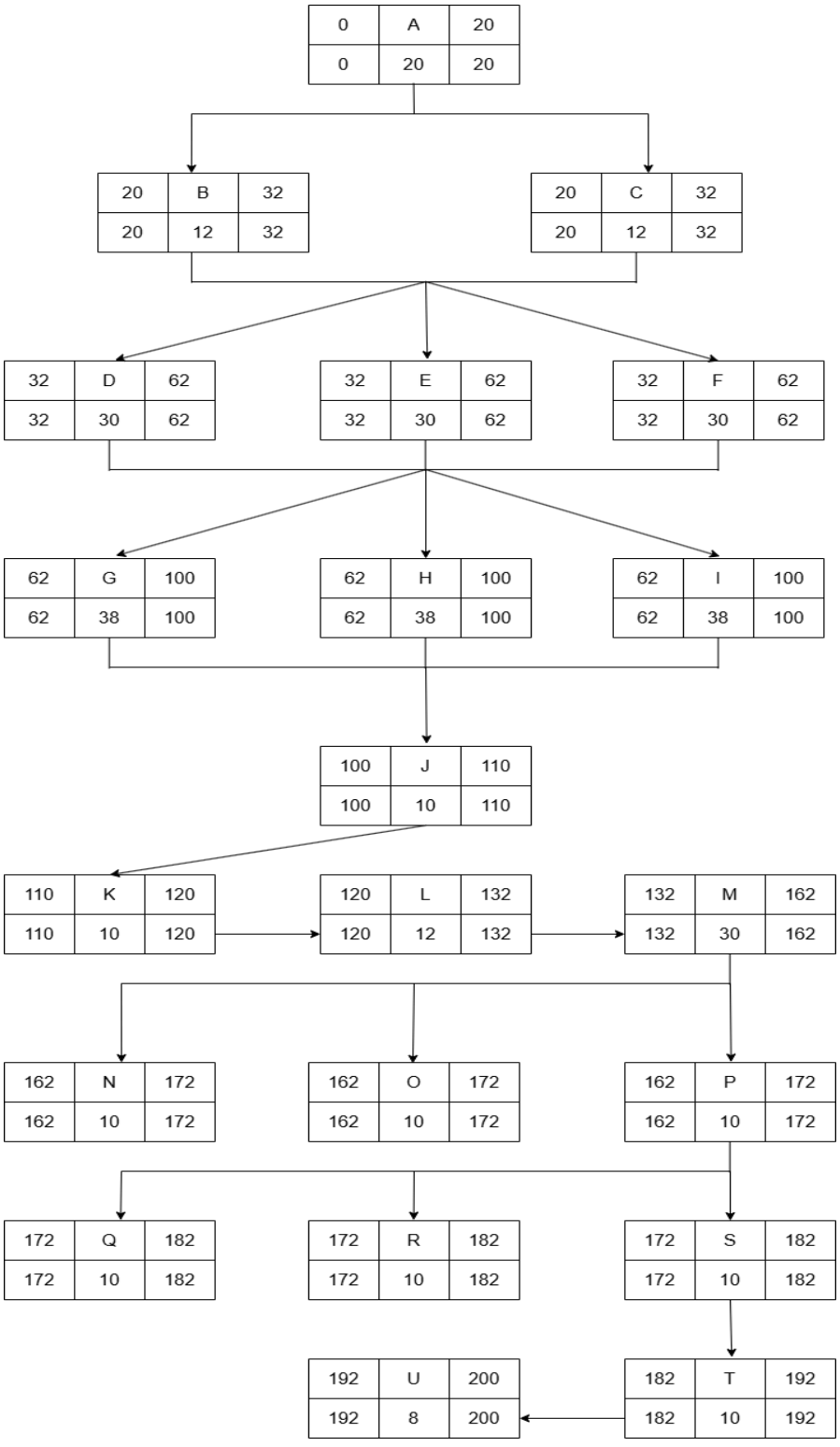
Activity list

The activity list for the FlyBox project is derived from its Work Breakdown Structure (WBS), encompassing all major project phases and tasks. It begins with project management activities like planning, meetings, and administration, followed by the requirements phase, where drone specifications, application features, and AI requirements are defined. The development phase focuses on designing the mobile application, building the backend, and integrating drone systems. Next is the testing phase, including drone system, application, and end-to-end testing to ensure functionality and reliability. The deployment phase involves setting up infrastructure, launching the service, and establishing customer support. Concurrently, marketing activities such as pre-launch campaigns, a launch event, and social media promotions are executed. Finally, the post-launch phase addresses system updates, performance monitoring, and customer feedback management, ensuring continuous improvement and user satisfaction. Each activity is sequenced with simple dependencies, enabling smooth progression across phases.This diagram also follows the project schedule following its 12 december 2024 start date and ending at 30 june 2025.

Activity ID	Activity Name	Duration (days)	Predecessors
A	Planning	20	-
B	Meetings	12	A
C	Administration	12	A
D	Drone Specifications	30	B, C
E	Application Features	30	B, C
F	AI and Route Optimization Requirements	30	B, C
G	Mobile Application Design	38	D,E,F
H	Backend Development	38	D,E,F
I	Integration with Drone Systems	38	D, E,F

J	Drone System Testing	10	G,H,I
K	Application Testing	10	J
L	End-to-End System Testing	12	K
M	Infrastructure Setup	30	L
N	Initial Service Launch	10	M
O	Customer Support Setup	10	M
P	Pre-Launch Campaigns	10	M
Q	Launch Event	10	P
R	Social Media Promotions	10	P
S	System Updates and Bug Fixes	10	P
T	Performance Monitoring	10	S
U	Customer Feedback Management	8	T

Critical Path Analysis Diagram



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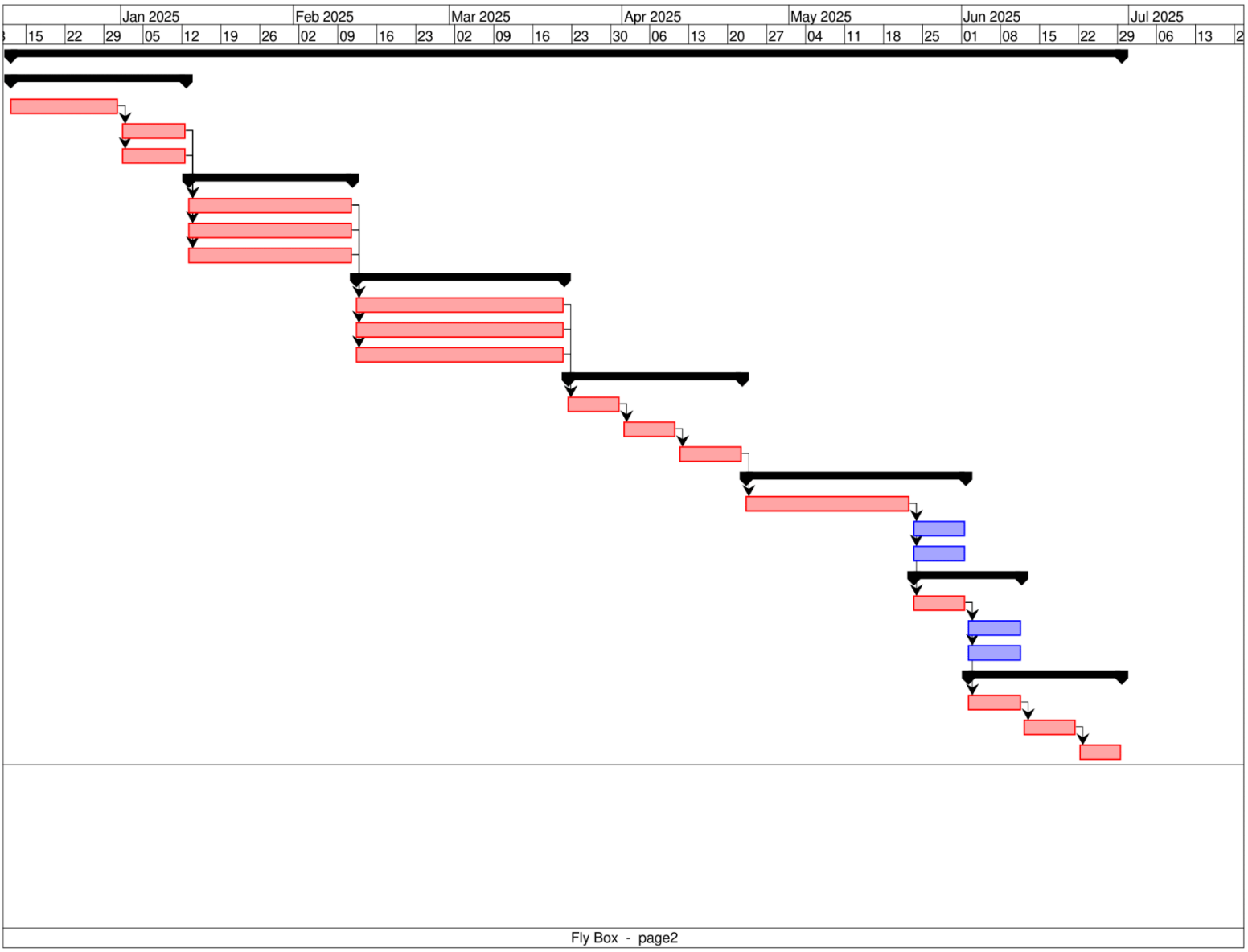
Gantt Chart Diagram

	Name	Start	Duration	Finish	Predecessors
1	**FlyBox Project**	**12/12/24 8:00 AM**	**200 days**	**6/29/25 5:00 PM**	
2	**Project Management**	**12/12/24 8:00 AM**	**32 days**	**1/12/25 5:00 PM**	
3	Planning	12/12/24 8:00 AM	20 days	12/31/24 5:00 PM	
4	Meetings	1/1/25 8:00 AM	12 days	1/12/25 5:00 PM	3
5	Administration	1/1/25 8:00 AM	12 days	1/12/25 5:00 PM	3
6	**Product Requirement**	**1/13/25 8:00 AM**	**30 days**	**2/11/25 5:00 PM**	
7	Drone Specifications	1/13/25 8:00 AM	30 days	2/11/25 5:00 PM	4;5
8	Application Features	1/13/25 8:00 AM	30 days	2/11/25 5:00 PM	4;5
9	AI and Route Optimiza...	1/13/25 8:00 AM	30 days	2/11/25 5:00 PM	4;5
10	**Application Develop...**	**2/12/25 8:00 AM**	**38 days**	**3/21/25 5:00 PM**	
11	Mobile Application Desigr	2/12/25 8:00 AM	38 days	3/21/25 5:00 PM	7;8;9
12	Backend Development	2/12/25 8:00 AM	38 days	3/21/25 5:00 PM	7;8;9
13	Integration with Drone...	2/12/25 8:00 AM	38 days	3/21/25 5:00 PM	7;8;9
14	**Integration and Testi...**	**3/22/25 8:00 AM**	**32 days**	**4/22/25 5:00 PM**	
15	Drone System Testing	3/22/25 8:00 AM	10 days	3/31/25 5:00 PM	11;12;13
16	Application Testing	4/1/25 8:00 AM	10 days	4/10/25 5:00 PM	15
17	End-to-End System Te...	4/11/25 8:00 AM	12 days	4/22/25 5:00 PM	16
18	**Deployment**	**4/23/25 8:00 AM**	**40 days**	**6/1/25 5:00 PM**	
19	Infrastructure Setup	4/23/25 8:00 AM	30 days	5/22/25 5:00 PM	17
20	Initial Service Launch	5/23/25 8:00 AM	10 days	6/1/25 5:00 PM	19
21	Customer Support Setup	5/23/25 8:00 AM	10 days	6/1/25 5:00 PM	19
22	**Marketing**	**5/23/25 8:00 AM**	**20 days**	**6/11/25 5:00 PM**	
23	Pre-Launch Campaigns	5/23/25 8:00 AM	10 days	6/1/25 5:00 PM	19
24	Launch Event	6/2/25 8:00 AM	10 days	6/11/25 5:00 PM	23
25	Social Media Promotions	6/2/25 8:00 AM	10 days	6/11/25 5:00 PM	23
26	**Post-Launch Mainten...**	**6/2/25 8:00 AM**	**28 days**	**6/29/25 5:00 PM**	
27	System Updates and B...	6/2/25 8:00 AM	10 days	6/11/25 5:00 PM	23
28	Performance Monitoring	6/12/25 8:00 AM	10 days	6/21/25 5:00 PM	27
29	Customer Feedback M...	6/22/25 8:00 AM	8 days	6/29/25 5:00 PM	28


Jan 2025
Feb 2025
Mar 2025
Apr 2025
May 2025
Jun 2025
Jul 2025
15 22 29 05 12 19 26 02 09 16 23 02 09 16 23 30 06 13 20 27 04 11 18 25 01 08 15 22 29 06 13
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F. RISK PLAN

RISK PLAN

Risk Plan

The FlyBox project aims to revolutionize the logistics industry by integrating autonomous drone technology for efficient, fast, and eco-friendly package deliveries. However, as an innovative initiative leveraging cutting-edge technology, the project is inherently exposed to a range of risks that could affect its success. Key challenges include potential drone malfunctions, regulatory compliance issues, data security threats, adverse weather conditions, and technological failures in AI-driven scheduling systems. Additionally, operational risks such as supply chain disruptions, public perception challenges, and budgetary constraints further emphasize the need for a comprehensive risk management strategy. By identifying, analyzing, and mitigating these risks, FlyBox seeks to ensure seamless operations, maintain stakeholder confidence, and achieve its objectives of redefining modern logistics with reliability and sustainability. This risk plan outlines proactive measures to address these challenges and align FlyBox's operations with industry best practices.

1.0 Planning Risk Management

The purpose of this risk management plan is to systematically identify, evaluate, and address potential risks associated with the FlyBox project. By proactively managing risks, the project aims to minimize disruptions, optimize resource utilization, and ensure the successful delivery of project objectives within scope, budget, and timeline.

Roles and Responsibilities

Role	Responsibility
Project Manager	Oversee risk management activities, ensure the plan is implemented effectively, and communicate risk updates to stakeholders.

Operations Team	Manage technical risks, including drone malfunctions, and maintain operational readiness.
IT Team	Address technology-related risks such as AI failures, app glitches, and cybersecurity threats.
Legal/Compliance Team	Monitor regulatory changes and ensure adherence to drone operation laws and safety standards.
Marketing and PR Team	Handle reputational risks, including public perception and customer adoption challenges.
Finance Team	Manage financial risks, including budget overruns and unforeseen costs.

2.0 Identifying Risks

The risk register outlines potential risks for the FlyBox project, categorized by type, and includes their probability, impact, and mitigation strategies. For example, high-priority risks like drone malfunctions and regulatory delays require proactive measures such as routine maintenance and compliance teams, while medium-priority risks like supply chain issues or low customer adoption involve diversifying resources and offering promotions. This structured approach ensures all risks are addressed efficiently to safeguard project success.

RISK REGISTER							
Risk	**Rank**	**Risk Description**	**Potential Responses**	**Risk Owner**	**Probability**	**Impact**	**Status**
1	1	Drone Malfunction	Regular maintenance, backup drones, IoT-based	Operations Team	High	High	Open

			real-time monitoring				
2	2	Regulatory Non-Compliance	Create compliance team, proactive engagement with regulators	Legal Team	High	High	Open
3	3	Data Breach	Implement encryption, penetration tests, and staff cybersecurity training	IT Department	Medium	High	Open
4	4	Adverse Weather Conditions	Integrate weather tracking, delay flights, inform customers	Operations Team	Medium	Medium	Open
5	5	AI Scheduling Failure	Regular testing and updates, manual overrides	IT Department	Medium	Medium	Open
6	6	Customer Adoption Challenges	Conduct awareness campaigns, offer promotions	Marketing Team	Medium	High	Open
7	7	Supply Chain Delays	Diversify suppliers, maintain inventory buffer	Procurement Team	Medium	Low	Open
8	8	Public Perception Issues	Transparent communication, emphasize safety, community engagement	PR Team	Medium	Low	Open

9	9	Budget Overruns	Allocate contingency fund, monitor expenses	Finance Team	Low	Low	Open

3.0 Performing Qualitative Risk Analysis

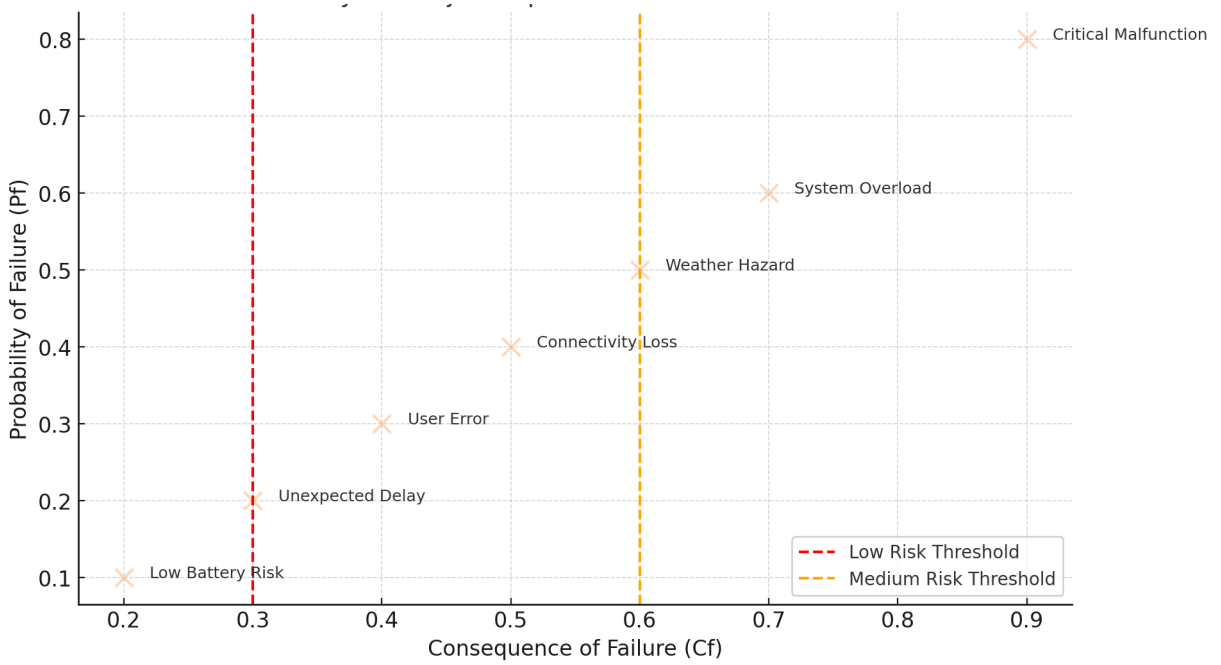
PROBABILITY / IMPACT METRIC			
Probability	**Low Impact**	**Medium Impact**	**High Impact**
High Probability			**Risk 1, Risk 2**
Medium Probability	**Risk 7, Risk 8**	**Risk 4, Risk 5**	**Risk 3, Risk 6**
Low Probability	**Risk 9**		

The Probability/Impact Matrix is a tool used to assess and prioritize project risks based on their likelihood of occurring (probability) and the potential consequences (impact) if they do occur. In this matrix:

- High Probability and High Impact: These risks, such as "Drone Malfunction" and "Regulatory Non-Compliance," are both likely to happen and have significant consequences, so they need immediate attention and strong mitigation strategies.
- Medium Probability and Medium Impact: Risks like "Adverse Weather Conditions" and "AI Scheduling Failure" fall into this category. These risks are somewhat likely but won't cause major disruptions if they occur, so they require monitoring and moderate mitigation efforts.
- Medium Probability and Low Impact: An example is "Public Perception Issues," which is unlikely but could still cause damage to the brand if it occurs. It's important to be aware of such risks but they don’t require as much focus as high-probability risks.

This matrix helps to prioritize which risks should be addressed first based on both their likelihood and the severity of their consequences.

Risk Probability vs Consequence



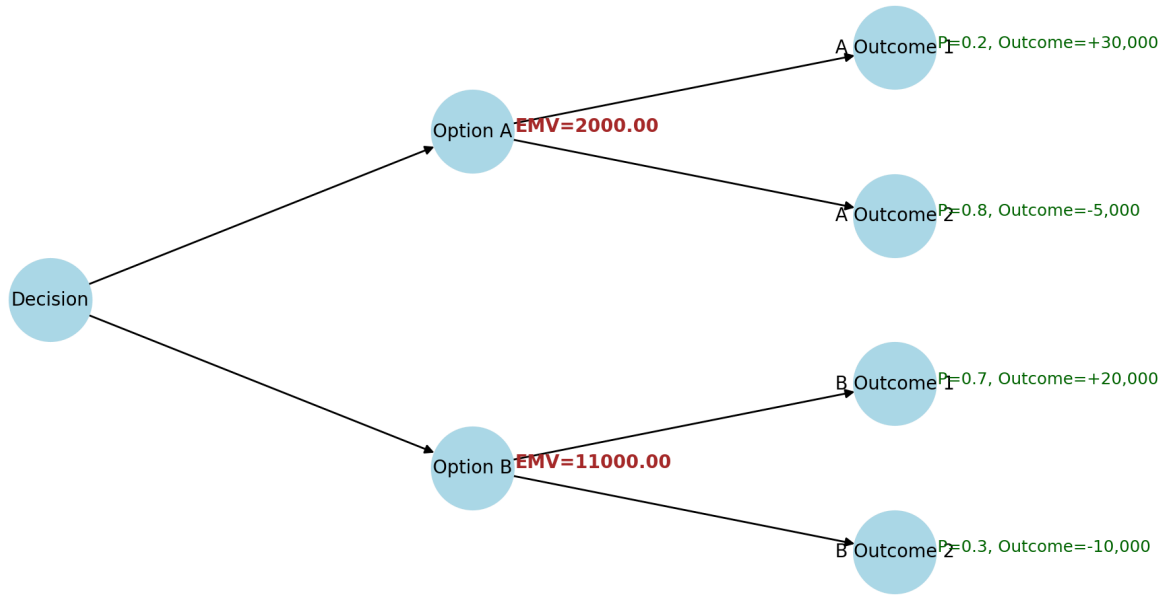
Risk Assessment Chart:

This scatter plot maps risks associated with the Flybox project, based on their Probability of Failure (Pf) and Consequence of Failure (Cf).

- Key Features:
  - Risks such as "Low Battery Risk," "System Overload," and "Critical Malfunction" are plotted.
  - The vertical dashed lines represent thresholds:
    - Red Line (Cf=0.3): Low-risk zone; risks with Cf below this value are less concerning.
    - Orange Line (Cf=0.6): Medium-risk zone; risks above this line are high-priority.
  - Examples:
    - "Low Battery Risk" has a low Pf (0.1) and Cf (0.2), indicating minimal threat.
    - "Critical Malfunction" has a high Pf (0.8) and Cf (0.9), making it a critical risk to address.

4.0 Performing Quantitative Risk Analysis

EMV CHART



This decision tree illustrates two possible choices for the Flybox project: Option A and Option B. Each option has multiple outcomes, each with an associated probability and financial impact. The Expected Monetary Value (EMV) for each option is calculated to aid in selecting the best course of action.

- Option A branches into two outcomes:
  - Outcome 1: Probability = 0.2, Profit = +$30,000.
  - Outcome 2: Probability = 0.8, Loss = -$5,000.
  - EMV for Option A:
    $EMV=(0.2\times30,000)+(0.8\times-5,000)=2,000$ USD.
- Option B branches into two outcomes:
  - Outcome 1: Probability = 0.7, Profit = +$20,000.
  - Outcome 2: Probability = 0.3, Loss = -$10,000.
  - EMV for Option B:
    $EMV=(0.7\times20,000)+(0.3\times-10,000)=11,000$ USD.

Conclusion:

Since Option B has a significantly higher EMV (11,000) compared to Option A (2,000), it is the more favorable choice. The decision tree demonstrates how considering probabilities and potential outcomes can lead to an informed decision, maximizing expected profits for the Flybox project.

5.0 Planning Risk Responses

The table summarizes Flybox's key risks, response strategies, and action plans to manage them effectively. Mitigation is used for most risks, such as drone malfunctions, AI scheduling failures, and supply chain delays, focusing on proactive measures to reduce their likelihood and impact. Avoidance is applied to regulatory non-compliance by ensuring early and ongoing engagement with authorities. Acceptance is reserved for risks like adverse weather and budget overruns, acknowledging their inevitability while minimizing their effects through contingency planning. These structured responses ensure operational stability, safety, and project success.

Risk	Response Strategy	Action Plan
Drone Malfunction	Mitigation	Implement maintenance schedules, IoT monitoring, and maintain backup drones for operational continuity.
Regulatory Non-Compliance	Avoidance	Form a legal team to ensure compliance and maintain regular communication with regulatory authorities.
Data Breach	Mitigation	Use encryption, conduct penetration testing, and train employees on cybersecurity best practices.
Adverse Weather Conditions	Acceptance	Develop a customer notification plan and accept delays as manageable with minimal safety impact.
AI Scheduling Failure	Mitigation	Regular testing, updates, manual override integration, and operator training.
Customer Adoption Challenges	Mitigation	Conduct awareness campaigns, offer incentives, and collect feedback for service improvements.
Supply Chain Delays	Mitigation	Diversify suppliers, maintain inventory buffers, and implement real-time supply chain tracking.

Public Perception Issues	Mitigation	Communicate transparently, emphasize safety, and build community relationships through outreach.
Budget Overruns	Acceptance	Allocate contingency funds, monitor expenses closely, and accept minor overruns as manageable risks.

6.0 Monitoring Risk

Risk monitoring is an ongoing process crucial to ensuring the effective management of risks throughout the Flybox project lifecycle. It involves regularly reviewing identified risks, tracking their status, and assessing the effectiveness of implemented response strategies. By maintaining a dynamic risk register, the team can document changes in probability and impact as the project progresses, ensuring timely updates to mitigation plans. Proactive monitoring also allows the identification of new risks and the re-prioritization of existing ones based on evolving project conditions. Regular risk reviews during team meetings, coupled with automated alerts for critical risks like drone malfunctions or supply chain delays, ensure swift action. This continuous oversight not only minimizes disruptions but also aligns project activities with Flybox's objectives of efficiency, reliability, and sustainability.

G.CAUSE AND EFFECT DIAGRAM

CAUSE AND EFFECT

Cause and Effect Diagram Explanation

The cause-and-effect diagram outlines the key reasons that could potentially lead to the failure of the FlyBox project. The central issue, "FlyBox Project Failure," is connected to six primary categories: Finance, Material, Machine, Environment, Staff, and Management. These categories collectively highlight the internal and external factors contributing to project challenges.

1. Finance and Material: Financial constraints are a significant cause, including lack of investments and poor budget management, which directly impact resource allocation. Insufficient funds could result in a weak foundation for the project, leading to low durability and performance issues. The material aspect emphasizes bad foundation choices or subpar materials that reduce the project's resilience and reliability over time.
2. Machine and Environment: The machine category identifies technical limitations such as low capability and poor maintenance of drones or equipment, which can severely hinder operations. Additionally, environmental factors like bad weather and high temperature present external challenges beyond control, potentially affecting the reliability of drone operations. For instance, adverse weather conditions could disrupt delivery schedules, making the service unreliable.
3. Staff and Management: Human resources and leadership are critical for project success. The staff category highlights issues like lack of expertise and low qualifications, which limit the ability to operate complex systems effectively. On the other hand, management problems, such as poor communication and lack of leadership, further exacerbate inefficiencies. Without strong leadership and proper communication, teams may struggle to meet project goals, leading to delays or failure.

In conclusion, the diagram visually organizes these interconnected causes, providing a clear roadmap for identifying areas requiring improvement. Addressing financial investments, enhancing material quality, maintaining machines, adapting to environmental challenges, upskilling staff, and improving management practices will significantly increase the likelihood of the FlyBox project's success.

Cause And Effect Diagram