



Northeastern  
University



**EMGT 5220**  
**Engineering Project Management**  
*Spring 2025 – Section 1*  
**Course Instructor: Prof. Himlona Palikhe**

Project Topic:

**NU Mart: Connecting  
Huskies through Buying  
and Selling**

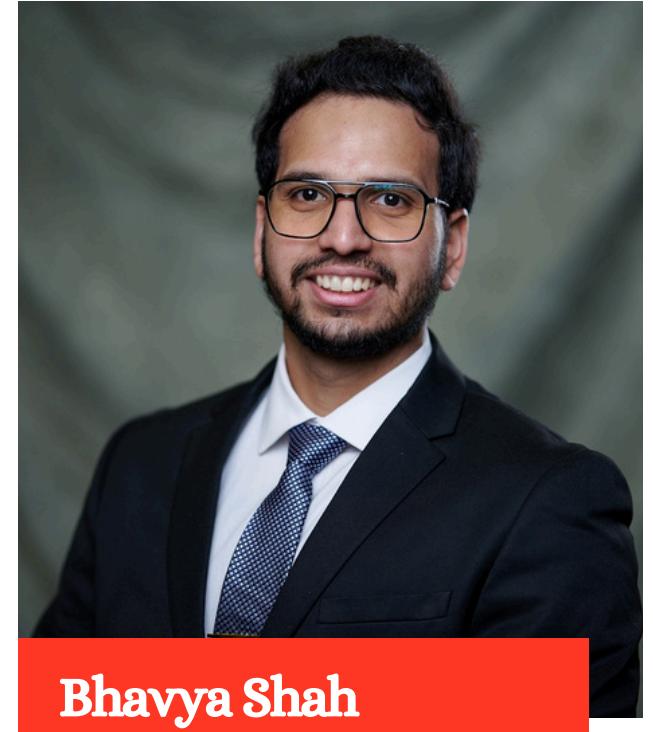
# MEET TEAM 4



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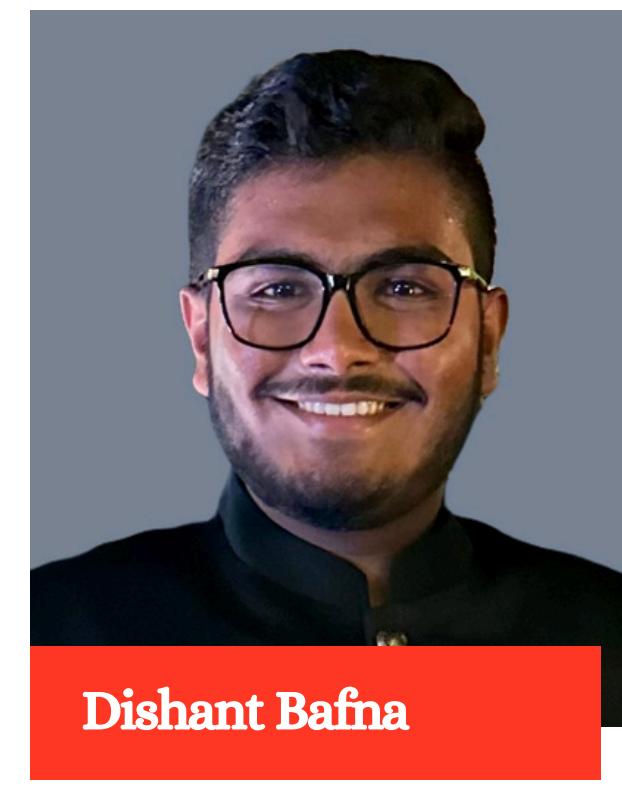


NUMART

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# INTRODUCTION:

- Students often look to buy and sell different products, especially during move-in and move-out periods.
- Students typically rely on platforms like Facebook Marketplace, WhatsApp, etc. to connect and trade. However, these options come with several issues:

- 1. Secured Platform**
- 2. Accessibility**
- 3. Inefficiency**

## FACTS:

- **Approx. 63%** of students feel uncomfortable meeting strangers, especially non-verified users from public platforms. ([Source: Campus Safety Magazine](#))
- **Over 50%** of students worry about the location and safety during in-person item exchanges. ([Source: Inside Higher Ed.](#))

# ABOUT NU MART:

- NU Mart is an exclusive digital marketplace crafted **specifically for Northeastern University** students at the **Boston campus**.
- It provides a **trusted, secure, and user-friendly environment** where students can **conveniently buy, sell, and exchange** essential items such as textbooks, electronics, furniture, academic materials, and daily essentials.



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# COMPETITOR COMPARISON:

Feature	Facebook Marketplace	WhatsApp Groups & Community	Rumi	Other Platforms (Craigslist, eBay)	<u>NU Mart (Proposed)</u>
Student-Exclusive Listings	✗	✓	✓	✗	✓
Ease of Use	✓	✗	✓	✗	✓
Safety & Trust	✗	✗	✓	✗	✓
Price Negotiation	✓	✓	✗	✓	✓
Search & Filtering	✓	✗	✓	✓	✓
Integrated Payment System	✗	✗	✗	✓	✓
Listing Approval & Moderation	✗	✗	✓	✗	✓
NU-Specific Deals & Discounts	✗	✗	✓	✗	✓
Delivery & Exchange Support	✗	✗	✗	✓	✓
Event-Based Selling	✗	✗	✗	✗	✓

Table 1: Competitor Comparison

# PROJECT

## PURPOSE:

- **Connect NEU students** to buy, sell, and trade essential items like textbooks, electronics, furniture, etc.
- **Solve issues faced on public platforms** such as scams, irrelevant listings, and lack of security.
- **Promote sustainability** through reuse and recycling of items within the student community.
- **Enhance campus life** by making essential resources more accessible, affordable, and student-friendly.

# **PROJECT GOALS:**

- 1. Build a safe and student-only platform** where NEU students can buy, sell, or trade items with each other quickly.
- 2. Keep it secure by allowing only NEU-verified users**, so everyone knows they're dealing with fellow students.
- 3. Promote sustainability** by encouraging reuse instead of waste – one student's extra is another's need.
- 4. Create a smooth user experience** that feels familiar, like popular marketplaces, but tailored for NEU.



# CLIENT BENEFIT:



Exclusive Marketplace



Cost-Saving Platform



Promotes Sustainability



Trusted & Verified Community

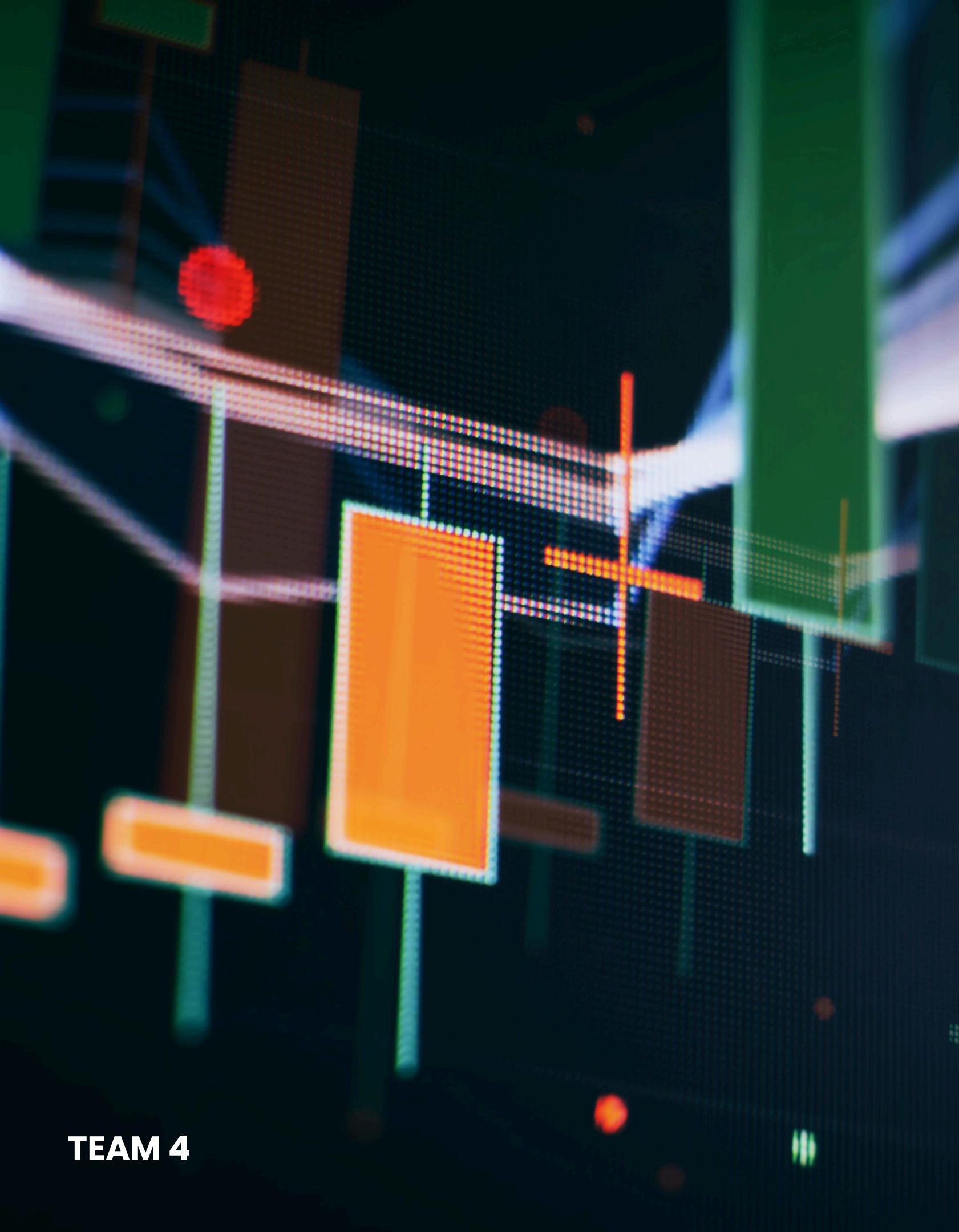


Easy Communication

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# TECHNICAL SUMMARY



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## **APPROACH TO THE PROBLEM:**

- A secure, student-only marketplace explicitly built for Northeastern students.
- Access controlled through NU credentials to prevent scams and unauthorized users.
- Easy product listings with images, categories, and descriptions for quick browsing.
- In-app messaging system for direct, safe communication—no third-party apps needed.
- Organized interface with smart filters to help users find what they need faster.
- Designated meet-up zones on campus to ensure safe and convenient exchanges.

# SOLUTION TO THE PROBLEM:

- Connect NEU students for buying, selling, and trading items like textbooks, electronics, furniture, and more.
- Solve issues faced on public platforms such as scams, irrelevant listings, and lack of security.
- Promote sustainability by encouraging the reuse and recycling of items within the student community.
- Enhance campus life by making essential resources more accessible, affordable, and student-friendly.
- NU Mart is built to simplify everyday student needs while creating a trusted community marketplace right here at Northeastern.

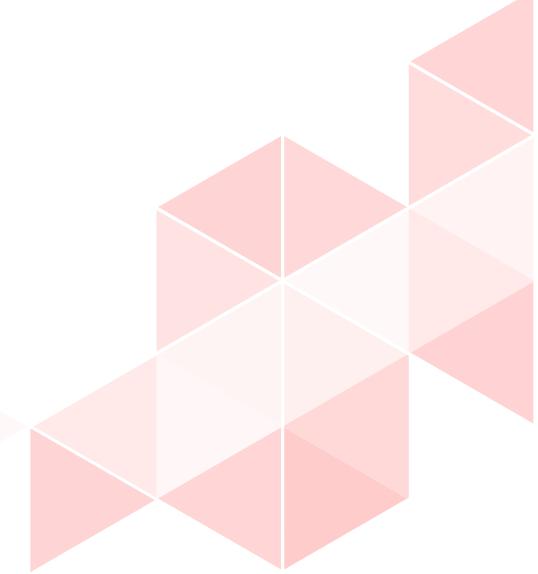
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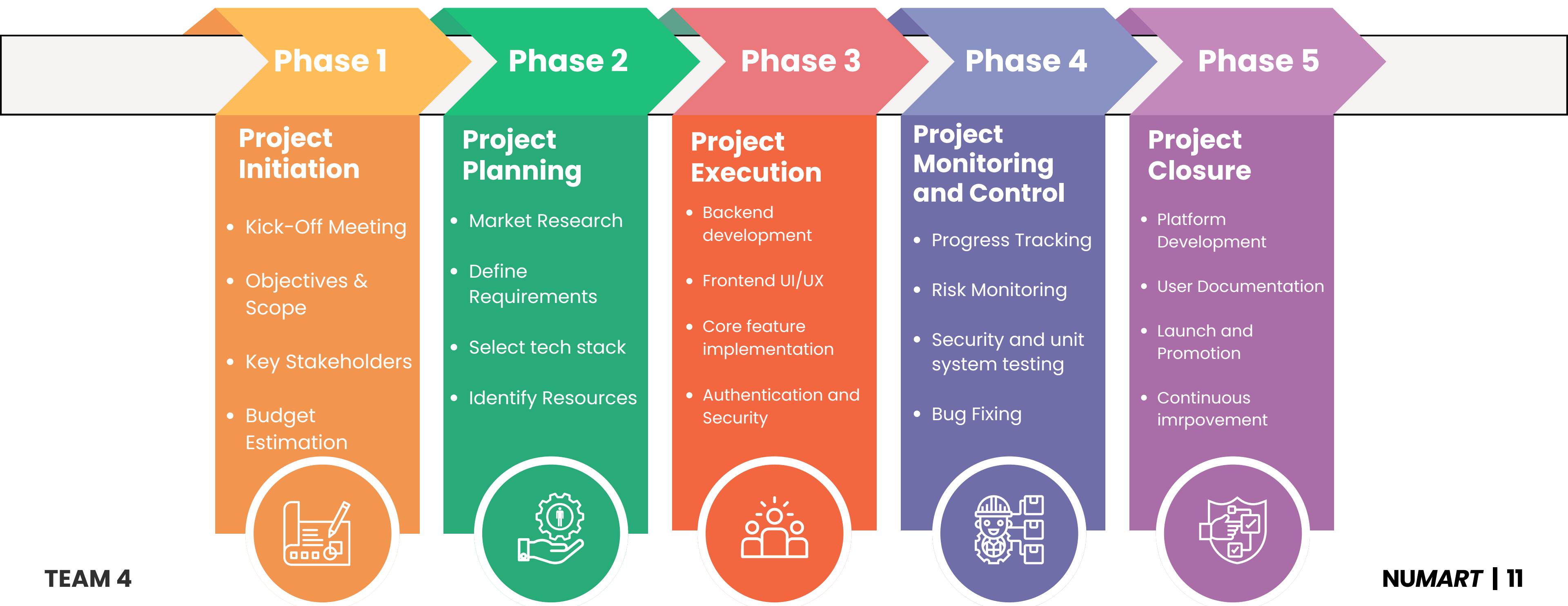


# IMPLEMENTATION PLAN

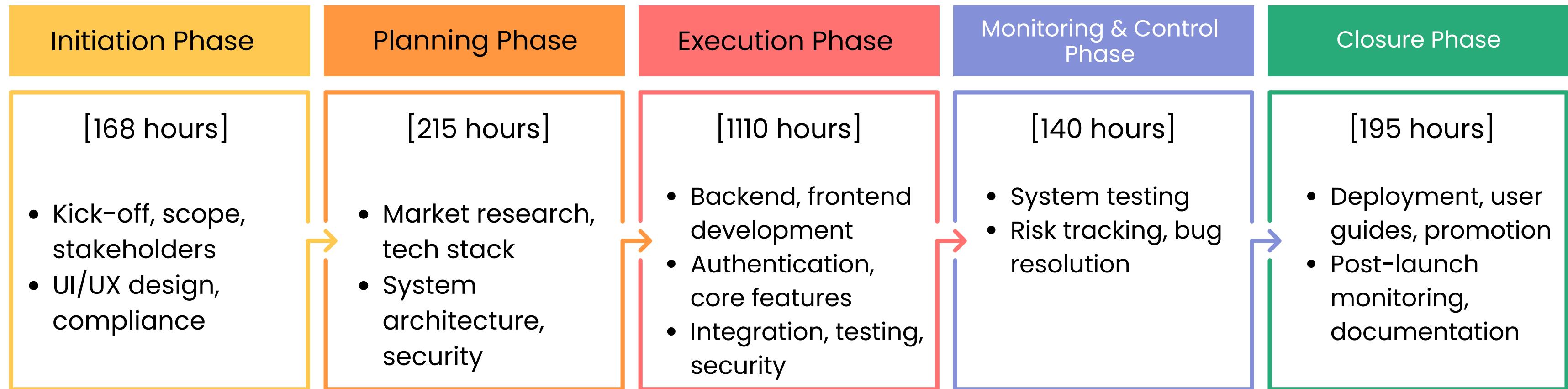
- Work Breakdown Structure
- Schedule
- RACI Matrix
- Resource Allocation
- Stakeholders



# WORK BREAKDOWN STRUCTURE



# SCHEDULE



# RACI Matrix Overview

Phase	Primary Responsible Role(s)	Comment
Project Initiation	Project Manager (PM) & Product Manager (A/R shared)	PM initiates; PM + BA define scope and stakeholders
Planning	Product Manager (R)	PM leads product architecture, requirement analysis and tech stack selection
Execution	Frontend & Backend Developers (R)	Split ownership for UI/backend/API – well-distributed
Monitoring & Control	Project Manager (R)	PM manage progress, and risk control, QA manages testing,
Closure	Project Manager & Product Manager (A/R)	PM finalizes delivery; PM oversees deployment & documentation

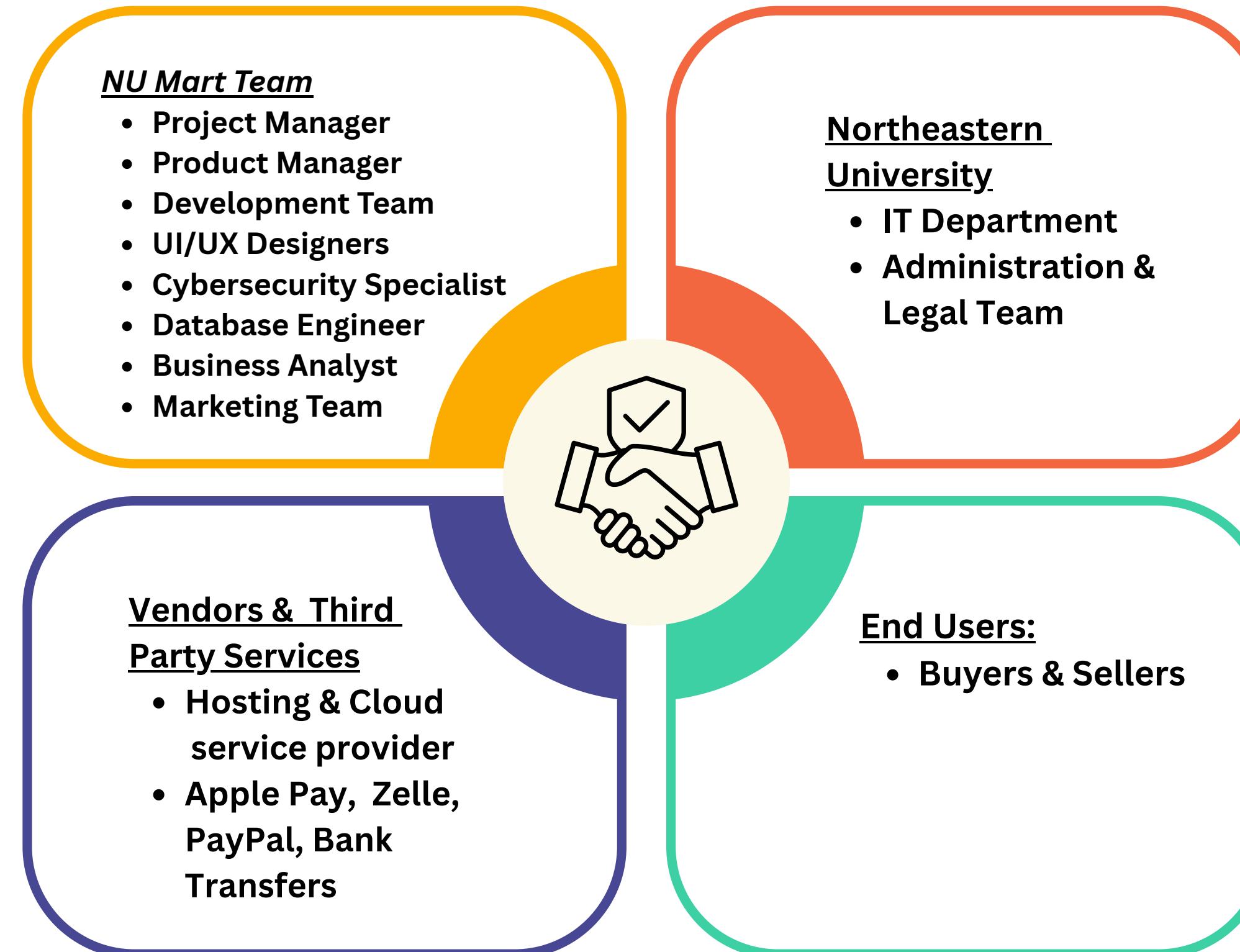
Table 2: RACI Matrix Overview

# RESOURCE ALLOCATION

SL no.	Role	Total Hours in Project per each Team member	Hourly Wage allocation as per Bureau of Labor Statistics (in \$)	Total Wage per each Team Member	% Allocation
1	Project Manager	271.75	57.1	16944.425	16.23
2	Product Manager (PM)	309.15	57.1	17652.465	16.91
3	Business Analyst	181.2	50.33	9119.796	9.91
4	UI/UX Designer	125.5	57.1	7166.05	6.87
5	Frontend Developer	385	57.1	21983.5	21.06
6	Backend Developer	562.5	57.1	32118.75	30.77
7	Database Engineer	374.5	57.1	21383.95	20.49
8	Cybersecurity Specialist	366	57.1	20898.6	20.02
9	QA Tester	358	57.1	20441.8	19.58
10	Marketing/Community Manager	87.95	50.33	4426.5235	4.81
<b>Total Labor Cost</b>				<b>172,135.86</b>	

Table 3: Resource Allocation

# STAKEHOLDERS



# FINANCIAL SUMMARY

**Total Estimated Cost:** \$202,800.69

## Breakdown:

1. Labor: \$172,136
2. Materials & Equipment: \$16,825.00
3. Miscellaneous: \$2,000.00
4. Contingency (7%): \$13,367.34

## Key Highlights:

1. The majority of the cost is allocated to skilled labor and development
2. Materials & Equipment costs cover the hardware tools, software, and cloud expenses.
3. Contingency funds ensure flexibility for unexpected expenses
4. The budget supports secure infrastructure, platform features, and testing.

## Engineering Economic Technique used: Cost-Benefit Ratio

Cost Benefit Ratio: 0.50 (with an assumed benefit of \$100000 over 2 years).

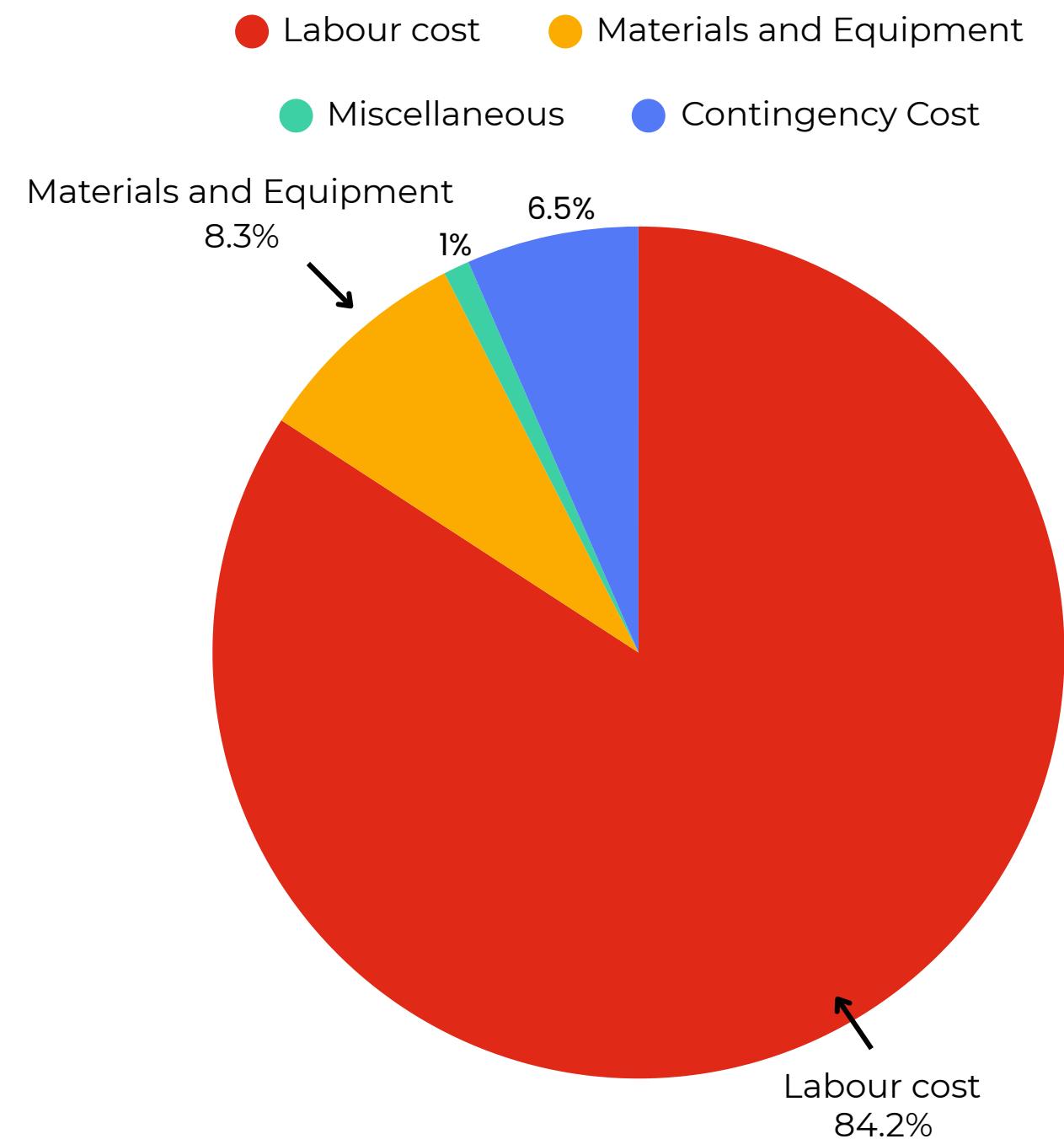


Fig. 1. Pie Chart of Financial Summary

# RISK ANALYSIS AND CONTROL

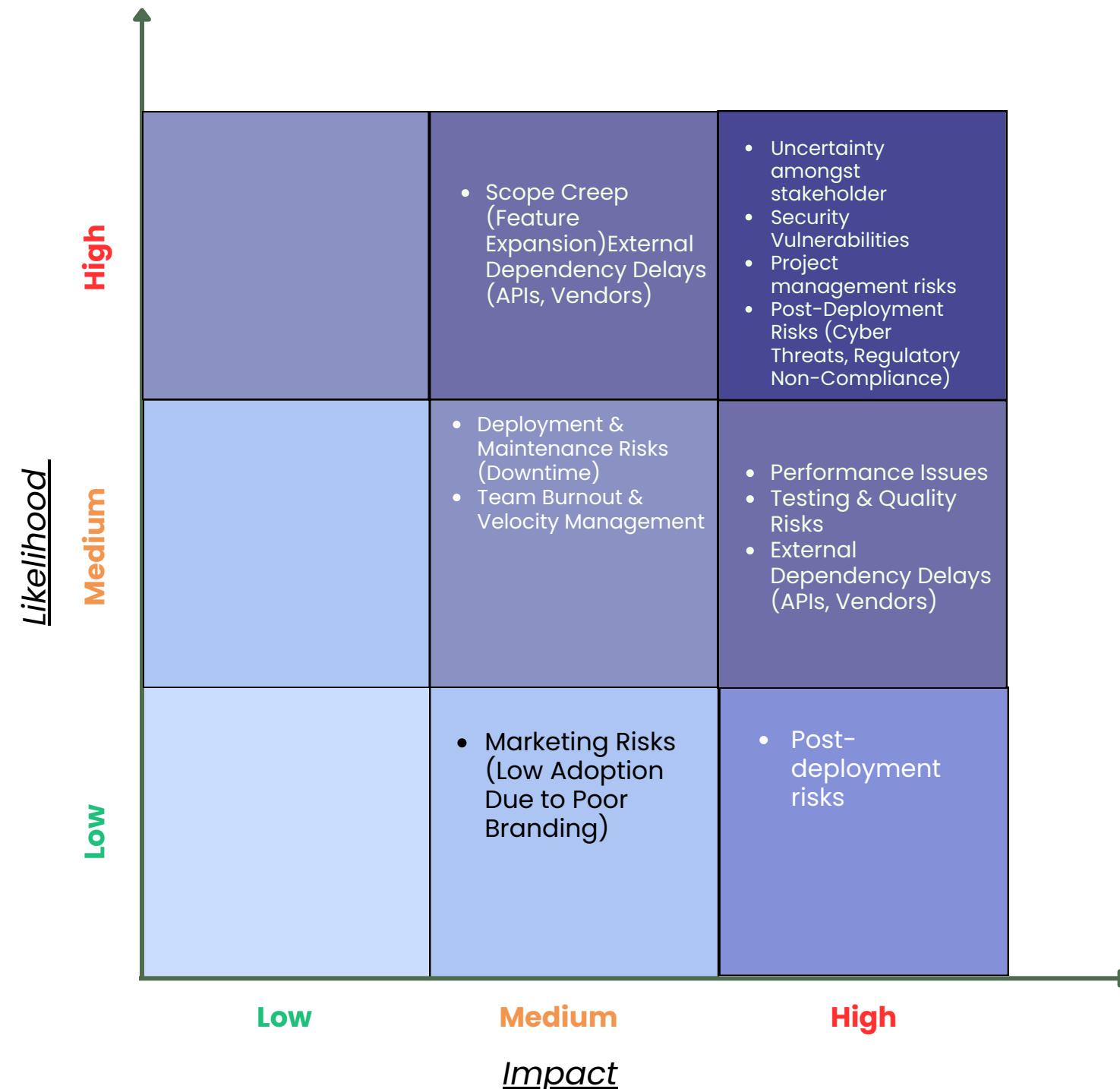


Fig. 2. Risk Matrix

Risk	Mitigation Plan
<b>Uncertainty among stakeholders</b>	Hold bi-weekly stakeholder meetings, distribute sprint demo updates, engage key stakeholders in backlog grooming, and provide data-backed rationale for decisions.
<b>Security Vulnerabilities</b>	Conduct automated security scans in CI/CD, perform penetration testing, enforce secure coding practices, and ensure timely patching.
<b>Project Management Risks</b>	Use Agile tracking tools (JIRA, ClickUp), conduct daily stand-ups, hold retrospectives, and monitor sprint burndown rates.
<b>Scope Creep (Feature Expansion)</b>	Define clear MVP scope, enforce change management process, evaluate feature requests based on impact & priority, and use MoSCoW prioritization.
<b>Post-Deployment Risks (Cyber Threats, Regulatory Non-Compliance)</b>	Implement real-time security monitoring, conduct periodic compliance audits, quickly address vulnerabilities, and ensure fast bug fixes.

Table 4: Control Plan Overview

# CLOSING:

## *NU Mart*: Connecting Huskies through Buying and Selling

### PURPOSE

- The purpose of the project is to provide a trusted, convenient, and affordable way to buy, sell, and trade essential items within the NU community.

### GOALS

- Build a secured web-based platform by creating a smooth user experience where users can trade items without hassle.

### CLIENT BENEFIT

- Centralized Marketplace only for NEU Students.
- Cost-Saving Platform for essential student needs.
- Safe & Verified Community
- Easy Communication and smooth experience

### IMPACT

- Enhance student experience
- Promote sustainability
- Strengthened campus community
- Improved cost accessibility

Thank You