ELECTRIC CAR MOBILE APP ENHANCEMENT

PROJECT MANAGEMENT PLAN

Version 1.2

12/10/2023

VERSION HISTORY

The table below chronicles the various versions of the Electric Car Mobile App Enhancement Project Management Plan. This history aids in tracing the progression and modifications made to the plan over time, ensuring clarity, consistency, and transparency among all stakeholders involved in the project. It is vital to document every significant change to the plan, capturing the essence of the modification, the individual responsible, the approval authority, and the underlying reason for the change (McAlister, 2006).

Version #	Implemented By	Revision Date	Approved By	Approval Date	Reason
1.2	Avinash Bunga	10/29/2023	Dr. Sixtus Ekwo	10/25/2023	Initial submission of project idea

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1 INTRODUCTION

1.1 PURPOSE OF PROJECT MANAGEMENT PLAN

The purpose of the Project Management Plan (PMP) is to define the approach and guide the team in enhancing the Electric Car Mobile App. Specifically, the introduction of the "Winter Mode" feature that allows users to activate the car's winter functions remotely. This PMP ensures that all stakeholders, including executive leadership, developers, product owners, and end-users, have a clear understanding of the project objectives, timelines, and deliverables (LIARGOVAS,2023).

2 EXECUTIVE SUMMARY OF PROJECT CHARTER

The Winter Mode v1.2: Remote Activation for Electric Cars project aims to enhance the current mobile app of our electric car system. Users have expressed a need for a more user-friendly way to manage the car's winter-specific functionalities. The enhanced app will allow users to prepare their vehicles for winter conditions remotely, even before stepping into their cars. By opting for the Scrum methodology, the development will be iterative, focusing on maximizing user satisfaction over an 8-week timeframe (LIARGOVAS,2023).

Project Details:

- **Project Name:** Winter Mode v1.2 - Remote Activation for Electric Cars
- **Objective:** Introduce the "Winter Mode" feature in the mobile app that allows users to activate winter functions remotely.
- **Methodology:** Scrum
- **Duration:** 50 weeks

2.1 PROJECT BUDGET - HIGH-LEVEL OVERVIEW

Given the scope of the project and the requirements for developing the "winter mode" feature, the estimated budget for this enhancement is $250,000. this budget encompasses:

• Software development and testing: $150,000

• Marketing and promotion: $50,000

• Stakeholder communication and training: $25,000

• Miscellaneous and contingencies: $25,000

The budget has been derived after careful analysis of the project requirements, resources needed, and potential risks. regular budget reviews will be conducted throughout the project duration to ensure we remain within budget (Laslo & Gurevich, 2014).

2.2 ASSUMPTIONS/CONSTRAINTS

Assumptions:

- The car's current winter functionalities can be integrated into the mobile app without any hardware modifications.
- Users will require a stable internet connection to use the remote features effectively.
- The development team has experience with the Scrum methodology (Friess,2023).

Constraints:

- The enhancement needs to be completed and launched within 50 weeks.
- The updated app should be compatible with both Android and iOS platforms.
- Introducing any additional features outside of the Winter Mode may be time-constrained (Friess,2023).

3 SCOPE MANAGEMENT

The Scope Management Plan for the "Electric Car Mobile App Enhancement" project delineates the procedures for ensuring that the project includes all the necessary tasks to successfully implement the "Winter Mode" feature while excluding all work that is outside the project's boundaries.

Scope Definition:

The project encompasses the enhancement of the existing mobile app by integrating a "Winter Mode" feature. This feature enables users to activate their electric car's winter functions remotely. The scope encompasses the following components:

- Detailed user requirements analysis to identify the functionalities of "Winter Mode."
- Design and prototyping of the "Winter Mode" user interface.
- Programming and coding of the feature for both Android and iOS.
- Comprehensive testing to ensure functionality, usability, and reliability.
- Deployment of the feature through app stores, ensuring seamless user adoption.
- Marketing initiatives to promote the feature and educate users.

Scope Control:

The Project Manager, Avinash Bunga, will exercise scope control, with the assistance of the Scrum Master, to monitor the project's progress against the WBS and the project plan. The scope will be evaluated and validated at the end of each development sprint by the development team and the Product Owner during sprint reviews.

Scope Verification:

Scope verification will be conducted by the Product Owner, who will confirm the completion and correctness of all "Winter Mode" feature deliverables against user stories and acceptance criteria. This verification will occur before the sprint review meetings.

Scope Change Management:

All change requests must be documented on the Change Request Form and submitted to the Change Control Board comprising Avinash Bunga (Project Manager), the Scrum Master, and the Product Owner. The board will assess the impact of scope changes on project cost, time, and quality. Approved changes will be reflected in an updated WBS and project plan, with stakeholders notified through the established communication channels.

Scope Management Responsibility:

While the Project Manager has the ultimate responsibility for scope management, all team members are accountable for identifying potential scope alterations and communicating them promptly. This collaborative approach ensures that scope management is proactive and integrated into the daily project activities.

Scope Management Tools:

Project will be employed to maintain the WBS, track progress, and manage changes. Additionally, Agile project management software will be used for backlog grooming, sprint planning, and tracking to maintain scope adherence.

This Scope Management Plan will be reviewed bi-weekly by the Project Manager to ensure its continued alignment with project objectives and deliverables. The latest version of this plan will be accessible to all project stakeholders through the project documentation repository, ensuring transparency and accessibility (Dumont et al., 1997).

3.1 WORK BREAKDOWN STRUCTURE

Task ID	Task Description	Dependencies	Resources	Start Date	End Date	Notes	Budget
1	Project Charter Development	None	Project Manager	Oct 1, 2023	Oct 2, 2023	Define project scope & objectives	$1,125
1.1	Stakeholder Identification	1	Project Manager	Oct 3, 2023	Oct 4, 2023	Identify all stakeholders	$1,562
2	Requirement Gathering	1.1	Business Analysts	Oct 5, 2023	Oct 8, 2023	Gather user & system requirements	$1,125
2.1	Requirement Documentation	2	Business Analysts	Oct 9, 2023	Oct 11, 2023	Document detailed requirements	$1,562
3	Competitor Analysis	2.1	Market Research Team	Oct 12, 2023	Oct 15, 2023	Analyze competing products	$1,125
3.1	Analysis Report Creation	3	Market Research Team	Oct 16, 2023	Oct 18, 2023	Compile analysis into a report	$1,562
4	Design Prototyping	3.1	UX/UI Design Team	Oct 19, 2023	Oct 22, 2023	Create interface prototypes	$1,125
4.1	Design Review	4	UX/UI Team	Oct 23, 2023	Oct 24,	Review and finalize designs	$1,562

					2023		
5	Development Environment Setup	4.1	IT Support	Oct 25, 2023	Oct 26, 2023	Prepare development environments	$1,125
5.1	Source Control Configuration	5	Development Team	Oct 27, 2023	Oct 29, 2023	Set up version control systems	$1,562
6	Initial Software Architecture	5.1	Lead Developer, Architect	Oct 30, 2023	Nov 1, 2023	Outline the software architecture	$1,125
6.1	Architecture Review	6	Lead Developer, Architect	Nov 2, 2023	Nov 3, 2023	Review the software architecture with stakeholders	$1,562
7	UI/UX Design Development	4.1	UX/UI Design Team	Nov 4, 2023	Nov 6, 2023	Develop detailed UI/UX designs	$1,125
7.1	UI/UX Feedback Session	7	UX/UI Team, Stakeholders	Nov 7, 2023	Nov 8, 2023	Gather feedback on UI/UX designs	$1,562
8	Development Sprint Planning	6.1	Project Manager, Dev Team	Nov 9, 2023	Nov 10, 2023	Plan the first development sprint	$1,125
8.1	Sprint 1 Backlog	8	Dev Team, Product	Nov 11, 2023	Nov 12,	Groom the backlog for Sprint 1	$1,562

	Grooming		Owner		2023		
9	Sprint 1 Development	8.1	Development Team	Nov 13, 2023	Nov 19, 2023	Execute Sprint 1 development tasks	$3,750
9.1	Sprint 1 Code Review	9	Development Team	Nov 20, 2023	Nov 21, 2023	Review code developed during Sprint 1	$3,375
10	Sprint 1 Testing	9.1	QA Team	Nov 22, 2023	Nov 24, 2023	Test features developed in Sprint 1	$3,750
10.1	Sprint 1 Bug Fixing	10	Development Team	Nov 25, 2023	Nov 27, 2023	Fix any bugs found during Sprint 1 testing	$3,375
11	Sprint 2 Planning	10.1	Project Manager, Dev Team	Nov 28, 2023	Nov 29, 2023	Plan the second development sprint	$1,125
11.1	Sprint 2 Backlog Grooming	11	Dev Team, Product Owner	Nov 30, 2023	Dec 1, 2023	Groom the backlog for Sprint 2	$1,562
12	Sprint 2 Development	11.1	Development Team	Dec 2, 2023	Dec 8, 2023	Execute Sprint 2 development tasks	$3,750
12.1	Sprint 2 Code Review	12	Development Team	Dec 9, 2023	Dec 10,	Review code developed during	$3,375

					2023	Sprint 2	
13	Sprint 2 Testing	12.1	QA Team	Dec 11, 2023	Dec 13, 2023	Test features developed in Sprint 2	$3,750
13.1	Sprint 2 Bug Fixing	13	Development Team	Dec 14, 2023	Dec 15, 2023	Fix any bugs found during Sprint 2 testing	$3,375
14	Sprint 3 Planning	13.1	Project Manager, Dev Team	Dec 16, 2023	Dec 17, 2023	Plan the third development sprint	$1,125
14.1	Sprint 3 Backlog Grooming	14	Dev Team, Product Owner	Dec 18, 2023	Dec 19, 2023	Groom the backlog for Sprint 3	$1,562
15	Sprint 3 Development	14.1	Development Team	Dec 20, 2023	Dec 26, 2023	Execute Sprint 3 development tasks	$3,750
15.1	Sprint 3 Code Review	15	Development Team	Dec 27, 2023	Dec 28, 2023	Review code developed during Sprint 3	$3,375
16	Sprint 3 Testing	15.1	QA Team	Dec 29, 2023	Dec 31, 2023	Test features developed in Sprint 3	$3,750
16.1	Sprint 3 Bug	16	Development	Jan 1,	Jan 2,	Fix any bugs found	$3,375

	Fixing		Team	2024	2024	during Sprint 3 testing	
17	Release Candidate Preparation	16.1	DevOps Team	Jan 3, 2024	Jan 4, 2024	Prepare release candidate for launch	$1,125
17.1	Release Candidate Review	17	Project Manager, QA Team	Jan 5, 2024	Jan 6, 2024	Final review of release candidate before launch	$1,562
18	Final User Acceptance Testing	17.1	Key Stakeholders, QA Team	Jan 7, 2024	Jan 9, 2024	Final user testing before launch	$2,250
18.1	UAT Feedback Analysis	18	Business Analysts	Jan 10, 2024	Jan 11, 2024	Analyze user feedback for UAT	$1,125
19	Launch Readiness Review	18.1	Project Manager, Dev Team	Jan 12, 2024	Jan 13, 2024	Review project status and confirm launch readiness	$1,125
19.1	Launch Go/No-Go Decision	19	Executive Leadership	Jan 14, 2024	Jan 14, 2024	Final decision for launch readiness	$1,562
20	Product Launch	19.1	Marketing Team	Jan 15, 2024	Jan 15, 2024	Official launch of the product	$2,250

20.1	Post-Launch Monitoring	20	IT Support, Marketing Team	Jan 16, 2024	Jan 17, 2024	Monitor product performance and user feedback	$1,125
21	Post-Launch User Feedback Analysis	20.1	User Research Team	Jan 18, 2024	Jan 19, 2024	Analyze initial user feedback post-launch	$1,125
21.1	Feedback Integration Planning	21	Product Team	Jan 20, 2024	Jan 21, 2024	Plan integration of feedback into development	$1,562
22	Marketing Effectiveness Review	20	Marketing Team	Jan 22, 2024	Jan 23, 2024	Review marketing campaign effectiveness	$2,250
22.1	Marketing Strategy Adjustment	22	Marketing Team	Jan 24, 2024	Jan 25, 2024	Adjust marketing strategy based on review	$1,125
23	App Feature Enhancement Planning	21.1	Development Team	Jan 26, 2024	Jan 27, 2024	Plan enhancements based on feedback	$1,125
23.1	Feature Enhancement Design	23	UX/UI Design Team	Jan 28, 2024	Jan 29, 2024	Design UI/UX for planned feature enhancements	$1,562
24	Feature Enhancement	23.1	Development Team	Jan 30, 2024	Feb 5, 2024	Develop new features/enhancemen	$3,750

	Development					ts	
24.1	Enhancement Feature Testing	24	QA Team	Feb 6, 2024	Feb 8, 2024	Test new features/enhancements	$3,375
25	Bug Fixes & Optimization	24.1	Development Team	Feb 9, 2024	Feb 11, 2024	Address issues from testing, optimize code	$3,375
25.1	Staging Deployment for Testing	25	DevOps Team	Feb 12, 2024	Feb 13, 2024	Deploy enhancements to staging for testing	$1,125
26	Staging Testing by Stakeholders	25.1	Key Stakeholders, QA Team	Feb 14, 2024	Feb 15, 2024	Stakeholders test enhancements on staging	$2,250
26.1	Stakeholder Feedback Collection	26	Business Analysts	Feb 16, 2024	Feb 17, 2024	Collect and document stakeholder feedback	$1,125
27	Final Enhancement Revisions	26.1	Development Team	Feb 18, 2024	Feb 19, 2024	Revise enhancements based on feedback	$2,250
27.1	Final Testing & QA Sign-Off	27	QA Team	Feb 20, 2024	Feb 21, 2024	Final testing and QA approval of revisions	$1,125
28	Production	27.1	DevOps	Feb 22,	Feb	Prepare for	$1,125

	Deployment Preparation		Team	2024	23, 2024	deployment to production	
28.1	Production Deployment	28	DevOps Team, IT Support	Feb 24, 2024	Feb 25, 2024	Deploy final enhancements to production	$1,125
29	Post-Deployment User Training	28.1	Training Department	Feb 26, 2024	Feb 27, 2024	Train users on new enhancements	$1,125
29.1	Training Material Updates	29	Training Team, Technical Writers	Feb 28, 2024	Mar 1, 2024	Update training materials with new content	$1,562
30	Post-Deployment Monitoring	28.1	IT Support, DevOps Team	Mar 2, 2024	Mar 3, 2024	Monitor system after production deployment	$1,125
30.1	Issue Resolution Post-Deployment	30	Development Team	Mar 4, 2024	Mar 5, 2024	Resolve any issues found after deployment	$1,125
31	User Experience Review	30.1	UX Team	Mar 6, 2024	Mar 7, 2024	Evaluate user experience post-deployment	$1,100
31.1	UX	31	Development	Mar 8,	Mar 9,	Implement changes	$1,000

	Improvement Implementation		Team	2024	2024	based on UX review	
32	Performance Optimization	31.1	IT Support	Mar 10, 2024	Mar 11, 2024	Optimize app performance based on feedback	$1,700
32.1	Optimization Review	32	QA Team	Mar 12, 2024	Mar 13, 2024	Review optimizations and confirm improvements	$1,000
33	Security Review Post-Launch	32.1	Security Team	Mar 14, 2024	Mar 15, 2024	Conduct security checks after optimizations	$1,100
33.1	Security Update Implementation	33	IT Support	Mar 16, 2024	Mar 17, 2024	Apply security updates as needed	$1,000
34	Final User Documentation Update	33.1	Technical Writers	Mar 18, 2024	Mar 19, 2024	Update user docs with latest app changes	$1,000
34.1	Documentation Release	34	Marketing Team	Mar 20, 2024	Mar 21, 2024	Release updated documentation to users	$1,000

35	Project Retrospective	34.1	Project Team	Mar 22, 2024	Mar 23, 2024	Review project outcomes and gather lessons	$1,000
35.1	Retrospective Report Creation	35	Project Manager	Mar 24, 2024	Mar 25, 2024	Document findings from retrospective	$1,000
36	Post-Launch Press Release	35.1	PR Team	Mar 26, 2024	Mar 27, 2024	Announce post-launch updates to public	$1,000
36.1	Media Outreach	36	Marketing Team	Mar 28, 2024	Mar 29, 2024	Engage with media outlets for coverage	$1,000
37	Customer Service Update Training	36.1	Training Department	Mar 30, 2024	Mar 31, 2024	Train customer service on new features	$1,000
37.1	Service Script Updates	37	Customer Service Team	Apr 1, 2024	Apr 2, 2024	Update scripts for customer inquiries	$1,000
38	Feature Update Rollout Planning	37.1	Product Team	Apr 3, 2024	Apr 4, 2024	Plan rollout of additional app features	$1,100

38.1	Rollout Strategy Development	38	Strategy Team	Apr 5, 2024	Apr 6, 2024	Develop strategy for feature update rollout	$1,000
39	Legal and Compliance Review	38.1	Legal Team	Apr 7, 2024	Apr 8, 2024	Ensure compliance with legal updates	$1,000
39.1	Compliance Adjustments	39	Development Team	Apr 9, 2024	Apr 10, 2024	Adjust app to meet new legal requirements	$1,000
40	Community Feedback Gathering	39.1	Community Manager	Apr 11, 2024	Apr 12, 2024	Collect and analyze user feedback	$1,000
40.1	Feedback Analysis Report	40	Data Analysts	Apr 13, 2024	Apr 14, 2024	Compile feedback into report for stakeholders	$1,000
41	Advanced Feature Research	None	R&D Team	Apr 15, 2024	Apr 16, 2024	Research for next-gen features	$1,700
41.1	Research Analysis and Documentation	41	R&D Analysts	Apr 17, 2024	Apr 18, 2024	Document findings from feature research	$1,000
42	Server	40.1	IT	Apr 19,	Apr	Upgrade server	$4,000

	Infrastructure Upgrade		Infrastructure Team	2024	20, 2024	hardware for performance	
42.1	Infrastructure Testing and Validation	42	QA Team	Apr 21, 2024	Apr 22, 2024	Validate server upgrades	$1,000
43	App Localization for New Markets	None	Localization Team	Apr 23, 2024	Apr 24, 2024	Localize app for different regions	$5,000
43.1	Localization Quality Assurance	43	QA Team	Apr 25, 2024	Apr 26, 2024	Ensure localized versions meet quality standards	$1,100
44	Customer Support Workflow Refinement	42.1	Customer Support Manager	Apr 27, 2024	Apr 28, 2024	Refine support workflows for efficiency	$1,000
44.1	Support Staff Workshop	44	Training Department	Apr 29, 2024	Apr 30, 2024	Workshop to update staff on new workflows	$1,000
45	App Version Control Optimization	43.1	DevOps Team	May 1, 2024	May 2, 2024	Optimize version control system	$1,100
45.1	Version	45	IT Audit	May 3,	May	Audit version control	$1,000

	Control System Audit		Team	2024	4, 2024	for compliance and best use	
46	Data Privacy Update Implementation	None	Data Privacy Officer	May 5, 2024	May 6, 2024	Update app features for enhanced data privacy	$3,500
46.1	Privacy Feature Testing	46	QA Team	May 7, 2024	May 8, 2024	Test new privacy features for integrity	$1,000
47	Scalability Feature Development	45.1	Development Team	May 9, 2024	May 10, 2024	Develop features to improve app scalability	$4,000
47.1	Scalability Testing	47	QA Team	May 11, 2024	May 12, 2024	Test scalability features	$1,000
48	Cloud Services Integration	46.1	Cloud Services Team	May 13, 2024	May 14, 2024	Integrate cloud services for better performance	$3,500
48.1	Cloud Integration Testing	48	QA Team	May 15, 2024	May 16, 2024	Test the integration of cloud services	$1,000
49	Continuous Integration	None	DevOps Team	May 17,	May 18,	Set up CI pipeline for development	$1,700

	Pipeline Setup			2024	2024		
49.1	CI System Testing and Validation	49	DevOps Team	May 19, 2024	May 20, 2024	Test and validate the CI pipeline	$1,000
50	User Onboarding Experience Enhancement	48.1	UX Team	May 21, 2024	May 22, 2024	Enhance the onboarding experience for new users	$1,100
50.1	Onboarding Feedback Collection	50	User Research Team	May 23, 2024	May 24, 2024	Collect user feedback on new onboarding process	$1,000
51	User Documentation Update	50.1	Technical Writers	May 25, 2024	May 26, 2024	Update help docs with new onboarding details	$1,000
51.1	User Guide Quality Check	51	QA Team	May 27, 2024	May 28, 2024	Review updated user documentation for accuracy	$1,000
52	Performance Optimization for New Features	50	Development Team	May 29, 2024	May 30, 2024	Optimize app performance for new features	$4,000
52.1	Performance Review	52	Performance Analysts	May 31,	Jun 1, 2024	Review performance metrics post-	$1,000

				2024		optimization	
53	Security Protocol Update	51.1	Security Team	Jun 2, 2024	Jun 3, 2024	Update security measures for new app version	$3,500
53.1	Security Features Testing	53	QA Team	Jun 4, 2024	Jun 5, 2024	Test updated security protocols	$1,000
54	Feature Release Coordination	52.1	Release Manager	Jun 6, 2024	Jun 7, 2024	Coordinate release of new app features	$1,700
54.1	Release Debriefing	54	Project Team	Jun 8, 2024	Jun 9, 2024	Debrief post feature release	$1,000
55	Post-Release User Training	53.1	Training Team	Jun 10, 2024	Jun 11, 2024	Train users on new features post-release	$1,100
55.1	Training Feedback Collection	55	User Research Team	Jun 12, 2024	Jun 13, 2024	Collect feedback on training sessions	$1,000
56	In-App Feedback Feature Enhancement	54.1	Development Team	Jun 14, 2024	Jun 15, 2024	Enhance in-app feedback features	$3,500
56.1	In-App	56	QA Team	Jun 16,	Jun	Test the new in-app	$1,000

	Feedback Testing			2024	17, 2024	feedback mechanisms	
57	Customer Service Process Update	55.1	Customer Service Manager	Jun 18, 2024	Jun 19, 2024	Update customer service processes	$1,000
57.1	Customer Service Training	57	Training Team	Jun 20, 2024	Jun 21, 2024	Train customer service on new processes	$1,000
58	Analytics System Enhancement	56.1	Data Analyst Team	Jun 22, 2024	Jun 23, 2024	Enhance analytics for better user insights	$1,700
58.1	Analytics Review	58	Data Analyst Team	Jun 24, 2024	Jun 25, 2024	Review analytics post-enhancement	$1,000
59	Legal Compliance Review for New Market	57.1	Legal Team	Jun 26, 2024	Jun 27, 2024	Review legal compliance for new market entry	$3,500
59.1	Legal Adjustments	59	Legal Team	Jun 28, 2024	Jun 29, 2024	Adjust app features for compliance	$1,000
60	Accessibility	58.1	Accessibility	Jun 30,	Jul 1,	Review app for	$1,700

	Standards Review		Consultant	2024	2024	accessibility compliance	
60.1	Accessibility Features Implementation	60	UI/UX Team	Jul 2, 2024	Jul 3, 2024	Implement accessibility features	$1,100
61	Market Research for Expansion	None	Market Research Team	Jul 4, 2024	Jul 5, 2024	Research new markets for app expansion	$1,700
61.1	Market Research Analysis	61	Market Analysts	Jul 6, 2024	Jul 7, 2024	Analyze market research data	$1,000
62	UI/UX Update for New Markets	60.1	UX/UI Design Team	Jul 8, 2024	Jul 9, 2024	Update UI/UX for new market requirements	$4,000
62.1	UI/UX Testing for New Markets	62	QA Team	Jul 10, 2024	Jul 11, 2024	Test updated UI/UX designs	$1,000
63	Continuous User Experience Improvement	None	UX Team	Jul 12, 2024	Jul 13, 2024	Ongoing improvements based on user feedback	$3,500
63.1	User	63	User	Jul 14,	Jul 15,	Collect feedback for	$1,000

	Experience Feedback Collection		Research Team	2024	2024	UX improvements	
64	Scalability Testing for New Features	62.1	QA Team	Jul 16, 2024	Jul 17, 2024	Test scalability of new features	$1,700
64.1	Scalability Enhancement Implementation	64	Development Team	Jul 18, 2024	Jul 19, 2024	Implement enhancements based on tests	$1,100
65	Cloud Infrastructure Monitoring	64.1	IT Infrastructure Team	Jul 20, 2024	Jul 21, 2024	Monitor and optimize cloud infrastructure	$1,100
65.1	Cloud Usage Analysis	65	IT Analysts	Jul 22, 2024	Jul 23, 2024	Analyze cloud resource usage	$1,000
66	Post-Launch App Performance Review	65.1	Data Analysts	Jul 24, 2024	Jul 25, 2024	Review app performance post-launch	$1,700
66.1	Performance Improvement Plan	66	Development Team	Jul 26, 2024	Jul 27, 2024	Plan for app performance improvements	$1,100
67	Security	65.1	Security	Jul 28,	Jul 29,	Roll out security	$3,500

	Update Rollout		Team	2024	2024	updates	
67.1	Security Update Review	67	QA Team	Jul 30, 2024	Jul 31, 2024	Review and verify the security updates	$1,000
68	Staff Feedback and Engagement Session	66.1	HR	Aug 1, 2024	Aug 2, 2024	Conduct feedback sessions with staff	$1,000
68.1	Staff Engagement Action Plan	68	HR	Aug 3, 2024	Aug 4, 2024	Develop action plans based on feedback	$1,000
69	Final Legal and Compliance Check	67.1	Legal Team	Aug 5, 2024	Aug 6, 2024	Ensure all aspects are compliant	$1,700
69.1	Legal Documentation Update	69	Legal Team	Aug 7, 2024	Aug 8, 2024	Update legal documents as necessary	$1,000
70	Future Technology Exploration	None	R&D Team	Aug 9, 2024	Aug 10, 2024	Explore future technologies for integration	$4,000
70.1	Technology	70	R&D Team	Aug 11,	Aug	Compile report on	$1,100

	Exploration Report			2024	12, 2024	future technology findings	
71	Advanced Feature Prototyping	70.1	Development Team	Aug 13, 2024	Aug 14, 2024	Prototype advanced features identified in research	$3,500
71.1	Prototype Testing and Feedback	71	QA Team	Aug 15, 2024	Aug 16, 2024	Test prototypes and collect feedback	$1,100
72	Marketing Strategy Update for New Features	70.1	Marketing Team	Aug 17, 2024	Aug 18, 2024	Update marketing strategy for new features	$4,000
72.1	Marketing Material Development	72	Design Team	Aug 19, 2024	Aug 20, 2024	Create marketing materials for updated strategy	$1,700
73	Customer Support Protocol Update	71.1	Customer Service Manager	Aug 21, 2024	Aug 22, 2024	Update customer support protocols for new features	$1,000
73.1	Customer Support Team Training	73	Training Department	Aug 23, 2024	Aug 24, 2024	Train customer support team on new protocols	$1,000
74	Legal Review	72.1	Legal Team	Aug 25,	Aug	Legal review for app	$3,500

	for International Markets			2024	26, 2024	expansion into international markets	
74.1	Compliance Adjustments for New Markets	74	Legal Team	Aug 27, 2024	Aug 28, 2024	Make necessary legal and compliance adjustments	$1,000
75	User Accessibility Enhancement	73.1	UX/UI Design Team	Aug 29, 2024	Aug 30, 2024	Enhance app accessibility based on user feedback	$3,500
75.1	Accessibility Testing and Feedback	75	QA Team	Aug 31, 2024	Sep 1, 2024	Test accessibility enhancements, collect feedback	$1,100
76	Cloud Infrastructure Optimization	74.1	IT Infrastructure Team	Sep 2, 2024	Sep 3, 2024	Optimize cloud infrastructure for efficiency	$1,700
76.1	Cloud Resource Monitoring and Adjustment	76	IT Analysts	Sep 4, 2024	Sep 5, 2024	Monitor and adjust cloud resources	$1,000
77	Post-Launch User	75.1	UX Team	Sep 6, 2024	Sep 7, 2024	Review user experience post	$3,500

	Experience Review					feature enhancements	
77.1	User Experience Improvement Implementation	77	UX/UI Design Team	Sep 8, 2024	Sep 9, 2024	Implement improvements based on user experience review	$1,100
78	Post-Launch Data Security Review	76.1	Security Team	Sep 10, 2024	Sep 11, 2024	Conduct data security review post-launch	$3,500
78.1	Data Security Enhancement	78	IT Team	Sep 12, 2024	Sep 13, 2024	Implement data security enhancements	$1,000
79	Final Project Evaluation and Reporting	77.1, 78.1	Project Manager	Sep 14, 2024	Sep 15, 2024	Evaluate overall project performance and report	$4,000
79.1	Lessons Learned Workshop	79	Project Team	Sep 16, 2024	Sep 17, 2024	Conduct workshop to document lessons learned	$1,000
80	Project Closure and Documentation Archive	79.1	Project Coordinator	Sep 18, 2024	Sep 19, 2024	Formal project closure and archive of documentation	$1,100

80.1	Final Stakeholder Presentation	80	Project Manager	Sep 20, 2024	Sep 21, 2024	Present final project outcomes to stakeholders	$1,000

(Zecheru & Olaru, 2016).

3.2 DEPLOYMENT PLAN

The Deployment Plan for the Winter Mode v1.2 feature in the Electric Car Mobile App is meticulously structured to guarantee a smooth and efficient release on both Android and iOS platforms, ensuring user accessibility and satisfaction. Here is an illustrative outline of the deployment steps:

Pre-Deployment Activities: Our final development sprint is dedicated to perfecting the deployment package. For instance, we will conduct a thorough quality check of the 'heating scheduler' function to ensure it operates correctly across different smartphone models and operating systems.

Deployment Readiness Review: Before the launch, a deployment readiness review will be undertaken, akin to a final inspection before a vehicle leaves the production line. This includes validating that the 'remote defrost' feature performs consistently under varying network conditions.

App Store Submission: The app's submission to the Google Play Store and Apple App Store will be executed with precision. The submission will highlight the 'battery optimization for cold weather' feature, ensuring the app's listing accurately conveys the benefits of the new functionality.

Monitoring and Support: Post-release, the project team will closely monitor the deployment to address any technical issues promptly. We anticipate keen observation of the app's performance during peak usage times to ensure features like the 'cabin temperature pre-setting' function as intended.

User Notification: Users will be informed of the new update via in-app notifications. This communication will explain new features such as 'one-touch winter mode activation,' ensuring users are well-informed on utilizing the enhancements.

Post-Deployment Review: After deployment, a comprehensive review will assess the effectiveness of the launch process and gather user feedback, particularly on the usability of the 'automatic snow mode' for driving assistance. This review will inform future updates and improvements (Zeleke & McCollum, 2021).

3.3 CHANGE CONTROL MANAGEMENT

The Change Control Management process for the Winter Mode v1.2 enhancement is a formalized system designed to ensure that any adjustments to the project scope, timeline, or budget are carefully assessed, authorized, and integrated.

Step	Description	Example
Change Review	The Project Manager conducts an initial assessment of the impact of proposed changes on project scope, resources, and schedule.	The Project Manager conducts an initial assessment of the impact of proposed changes on project scope, resources, and schedule.
Change Control Board (CCB)	Comprising the Project Manager, Scrum Master, and Product Owner, the CCB reviews change requests for value addition and project alignment.	The CCB reviews a request to enhance the user interface for the 'ice warning system', considering user experience and implementation complexity.
Approval or	The CCB approves or rejects	The CCB approves a 'preheat

Rejection	changes, potentially with conditions for further analysis.	scheduling' feature, conditional upon further UX design reviews.
Implementation of Changes	Approved changes are incorporated into the project plan and assigned within the sprint backlog.	An approved efficiency improvement for the 'defrost feature' is scheduled for the next sprint cycle and assigned to the relevant development team.
Communication	All changes are communicated to stakeholders, with the Project Manager updating project documentation.	Enhancements to the 'remote start' functionality are communicated to all team members, with updates made to the project plan to reflect these changes.
Change Log Maintenance	A Change Log is maintained to record the details of all changes, their rationale, and their impacts.	The Change Log includes records of each approved change, such as the decision to optimize the 'climate control responsiveness' for colder weather.

(Chen et al., 2015).

4 STAKEHOLDER MANAGEMENT

As we embark on the journey to enhance the Electric Car Mobile App, it is paramount to recognize the invaluable role our stakeholders play. The following table outlines the key stakeholders, their specific roles in the project, and the importance of their contributions. Effective stakeholder management and collaboration are at the heart of our approach, ensuring that we capture diverse perspectives and align our efforts with the broader project goals (Dağlı,2018).

Stakeholder Name	Stakeholder Title	Role on Project	Notes
End Users	Car Owners	Primary beneficiaries; provide iterative feedback	Crucial for user testing and capturing real-world feedback.
Development Team	Software Developers	Responsible for sprint-centric development and rigorous testing	They transform the requirements into functional features.
Product Owners	Project Product Owners	Bridge the gap between user feedback and development	Ensure features are developed in line with user needs and prioritize them

			accordingly.
Scrum Master	Project Scrum Master	Oversee the Scrum process	Makes sure the team stays on track, follows Scrum practices, and remains motivated.
Marketing and Communication Team	Marketing Professionals	Responsible for promoting the update and gathering user feedback	Play a crucial role in updating users and creating buzz around the new feature.
Executive Leadership	Company Executives	Provide strategic oversight and final project approvals	Their decisions and approvals can influence the direction and pace of the project.

5 COST/BUDGET MANAGEMENT

This section of the Project Management Plan lays out the framework and methodology for managing the costs of the Electric Car Mobile App Enhancement project. The plan is structured to ensure that the project is completed within the allocated budget of $250,000.

Budget Allocation Overview:

- **Software Development and Testing:** $150,000 has been allocated to cover all costs associated with the development, including personnel, tools, and testing resources.
- **Marketing and Promotion:** $50,000 is dedicated to marketing activities, promotional materials, and campaigns to ensure market penetration and user adoption.
- **Stakeholder Communication and Training:** $25,000 is allocated for effective communication with stakeholders and training activities for users and team members.
- **Miscellaneous and Contingencies:** A contingency fund of $25,000 is set aside to address unforeseen costs or overruns, ensuring the project's ability to adapt to changes and unexpected requirements (Dobson, 2015).

Cost Management Procedures:

- **Estimation:** Cost estimations are based on a detailed analysis of project requirements, historical data, resource availability, and market rates.
- **Budgeting:** The budgeting process involves assigning the estimated costs to individual work packages within the Work Breakdown Structure (WBS), ensuring each task is funded appropriately.

- **Monitoring and Controlling:** Costs will be monitored and controlled through regular budget reviews, variance analysis, and proactive adjustments. Regular budget reviews will be conducted to compare expenditure against the budget, with the frequency and details of these reviews documented in the PMIS (Dobson et al., 2012).

Documentation and Storage:

- **Cost Documentation:** All cost-related documentation, including estimates, budget allocation, and financial tracking, will be stored in the PMIS.
- **Access:** The PMIS can be accessed by authorized project team members and stakeholders, ensuring transparency and collaboration in cost management (Read et al., 2017).

Change Control:

- **Change Management Process:** Any changes that impact the project cost will go through a formal change control process, requiring approval by the Change Control Board (CCB).
- **Documentation of Changes:** Approved changes will be documented in the PMIS and reflected in an updated cost baseline and budget forecast (Dumont et al., 1997).

Reporting:

- **Regular Reporting:** Cost performance and variance reports will be generated regularly, providing insights into the financial health of the project.
- **Final Reporting:** Upon project completion, a final cost report will be produced, summarizing the financial outcomes and comparing planned versus actual spending (Zdonek, 2020).

6 QUALITY MANAGEMENT

Quality management within the scope of the Electric Car Mobile App Enhancement project will be centered around ensuring that the new "Winter Mode" functionality not only meets but exceeds our established standards of performance and user experience. In order to achieve this, the following measures will be executed (Betta & Iwko, 2022).

1. **Consistency of Interface Layouts:**
    - Regular reviews of the app's interface will be conducted to ensure that all layouts are consistent with the established design standards. This will include checks during each development sprint and post-deployment.
2. **Defect Management:**
    - A zero-defect policy will be adopted for critical requirements, with a rigorous bug-tracking system in place. Any defects identified will be logged, addressed, and tracked to resolution.
3. **Quality Inspections and Audits:**
    - The project will undergo scheduled inspections and audits to verify that quality standards are being adhered to. This will include code reviews, design audits, and user experience evaluations.
4. **Formal Testing Procedures:**
    - Formal testing will be carried out, including unit testing, integration testing, and user acceptance testing (UAT). All findings will be documented in a defect tracking system, with defects being addressed in a timely manner.
5. **Traceability Matrix Utilization:**

- A traceability matrix will be used to ensure that all requirements, particularly critical ones, are being met throughout the development process. This will be reviewed at the end of each sprint and before the final release.

6. **Performance Metrics:**
   - Key performance indicators (KPIs) will be established to measure app functionality, such as load times, response times, and error rates.
7. **User Feedback Integration:**
   - User feedback will be collected continuously through beta testing and after the launch. This feedback will play a critical role in ongoing quality management and feature enhancement.
8. **Quality Training:**
   - The development and QA teams will receive ongoing training on quality standards and the latest quality management techniques.
9. **Continuous Improvement:**
   - Embrace a culture of continuous improvement, utilizing feedback from all quality measures to inform development cycles and product updates.

By upholding these quality management protocols, we aim to deliver an enhanced mobile app that provides a seamless and intuitive experience for activating and managing the car's winter functions (Drăgolici Nuțoaica, 2018).

7 COMMUNICATIONS MANAGEMENT

Effective communication is the linchpin of any successful project, and for the Winter Mode v1.2 enhancement of the Electric Car Mobile App, it is particularly pivotal. The Communication Management Plan is tailored to ensure all project stakeholders are kept informed of progress, changes, and decisions throughout the project lifecycle.

The plan is designed to support the Scrum methodology, facilitating the rapid iteration and collaboration essential to agile project management. It acknowledges the diverse needs of stakeholders, from developers and product owners who require detailed technical updates, to executive leadership and end users who need higher-level progress reports and feature introductions.

Key components of the Communication Management Plan for this project would include:

- **Regular Updates**: Keeping all stakeholders informed of the project's status through scheduled communications such as daily stand-ups, sprint reviews, and retrospectives.
- **Responsiveness**: Ensuring that communication channels are open for stakeholders to provide feedback, which is crucial for agile, iterative development.
- **Clarity**: Delivering clear and concise information tailored to the audience, whether it is technical details for the development team or strategic updates for leadership.
- **Documentation**: Maintaining comprehensive records of all communications to provide a clear audit trail and to support project transparency.

The communication plan will be pivotal in ensuring that the project remains on track, that stakeholder expectations are managed, and that the final product – a seamlessly integrated Winter Mode feature – meets the project's high standards and user needs (Nonato et al., 2023).

7.1 COMMUNICATION MATRIX

Responsible Party/ Situation	**Audience**	**Vehicles of communication**	**Frequency**	**Medium**	**Feedback Mechanisms/ Notes**
Project Manager (Weekly Updates)	Entire Project Team	Weekly Status Meeting	Weekly, Mondays @9am	In-person/Video Call, Email Summary	Questions via email; addressed in next meeting
Scrum Master (Daily Stand-ups)	Development Team	Daily Scrum Meeting	Weekdays @9am	In-person/Video Call	Immediate verbal feedback during the meeting
Product Owner (Feature Review)	Executive Leadership, Marketing Team	Sprint Review Meeting	End of Each Sprint	Presentation, In-person/Video Call	Feedback via comment cards collected post-meeting
Marketing and Communication Team (Launch Update)	End Users, Stakeholders	Release Newsletter	At Release Milestones	Email, Newsletter	User feedback collected via survey link in email

QA Lead (Testing Feedback)	Development Team, Product Owner	Testing Summary Report	After Testing Cycles	Email, Document Share	Responses and questions via dedicated Slack channel
Project Manager (Change Announcements)	Entire Project Team, Stakeholders	Ad Hoc Meetings as needed	As Needed	Email, In-person/Video Call	Follow-up meetings scheduled for significant changes

(Batista et al., 2023).

8 RISK MANAGEMENT

Effective risk management is pivotal to successfully delivering the Electric Car Mobile App Enhancement project. To navigate potential challenges and ensure our objectives are met, we have developed a comprehensive Risk Management table that outlines crucial risks, their likelihood, potential impact, and our strategies for mitigation and contingency. This proactive strategy allows us to detect and assess risks early, prioritize them based on their potential to affect the project and establish actionable plans to address them should they arise. Our commitment to thorough risk management underscores our dedication to project excellence and is a testament to our adaptive and responsive project management practices (Kuczyńska & Nepelski, 2021).

Risk	Likelihood	Impact	Mitigation Strategy	Contingency
Technical integration issues	Medium	High	Conduct early integration testing; engage with hardware teams for system compatibility checks.	Allocate additional resources for rapid troubleshooting; prepare rollback procedures for major issues (Hopkinson, 2023).
Unstable internet connectivity for users	Low	Medium	Optimize app for variable connectivity; perform stress tests under different network conditions.	Develop offline functionalities for critical app features; implement a feature for local data caching.
Development	Medium	High	Implement agile sprint	Prioritize development of

delays			buffer periods; enhance team collaboration and communication.	essential features for phased rollout; reassign tasks to balance workload.
User interface (UI) problems	Low	Medium	Perform extensive UI/UX testing with target user groups; iterative design improvements.	Set up a rapid response UI team to address user feedback post-launch; plan for immediate UI patches.
Data privacy and security breaches	Low	High	Integrate robust encryption measures; regular security audits and compliance checks.	Establish a response protocol for breaches; have legal counsel ready for immediate consultation.
Overburdening existing server capacity	Medium	High	Plan server capacity upgrades; load testing to simulate peak usage scenarios.	Contract with cloud services for scalable server capacity to handle unexpected load.
Incompatibility across Android/iOS	Medium	High	Cross-platform development and testing using emulators and physical devices.	Develop a cross-functional team specialized in Android/iOS to address platform-specific issues.
Regulatory compliance failures	Low	High	Stay updated on industry regulations; conduct pre-launch legal reviews.	Engage with regulatory experts to quickly navigate compliance issues and adjust features as needed

				(Marchwicka & Kuchta, 2017).
Insufficient user training materials	Low	Medium	Develop comprehensive training materials in alignment with app functionality updates.	Implement on-demand virtual training sessions and update materials based on user feedback.
Inadequate stakeholder engagement	Low	Medium	Regular updates and engagement sessions with stakeholders; clear communication channels.	Increase frequency of stakeholder meetings and provide detailed progress reports.

(Tomlin, 2006).

9 PROCUREMENT MANAGEMENT/ HUMAN RESOURCE MANAGEMENT

Introduction to Resource Allocation:

In the realm of IT project management, the prudent allocation of resources is pivotal for achieving project milestones in a timely and efficient manner. A comprehensive resource management plan has been developed for the Electric Car Mobile App Enhancement project. This encompasses the procurement of technical resources, the staffing of skilled personnel, and the management of these assets throughout the project lifecycle (Jainendrakumar, 2015).

Project Resources

Human Capital:

- A multi-disciplinary **project team** consisting of developers, designers, and analysts
- **Quality Assurance professionals** who will ensure the app adheres to the highest standards
- **Security experts** tasked with safeguarding the app against cyber threats
- **Support personnel** to assist users and maintain service excellence post-launch

Technological Tools:

- Advanced **software development tools** and environments for creating a robust application
- **Project management software** that enables efficient tracking of progress and issues
- **Communication platforms** to facilitate seamless interactions within the project team
- **Design and prototyping utilities** that help visualize and iterate on the app's user interface

Equipment:

- An array of **mobile devices** for comprehensive app testing across diverse hardware
- **Server infrastructure** that supports the backend components with reliability

- **Network hardware** to ensure robust performance during development and deployment phases

Additional Provisions:

- **Cloud services** for scalable storage and computing needs
- **Software licenses** to comply with legal requirements and support development efforts
- **Educational materials** for continuous learning and skill enhancement of the project team

Procurement Management Plan

Vendor Engagement:

- Engage in a meticulous **vendor selection process** to ensure quality and value
- Establish **contractual agreements** that reflect the project's dynamic requirements
- Implement **vendor oversight** to maintain adherence to service level agreements

Licensing and Regulation:

- Manage **software licenses** effectively to avoid compliance pitfalls
- Stay abreast of **IT regulations** to ensure all procurement activities are legally sound (Jainendrakumar, 2015).

Human Resource Management Plan

Team Development:

- **Recruitment strategies** to attract top-tier talent for project roles
- **Ongoing training initiatives** to ensure skillsets remain current and competitive
- **Performance tracking** to align individual contributions with project objectives

Workforce Optimization:

- Allocate human resources efficiently to meet the ebb and flow of project demands

- Implement **employee retention programs** to foster a motivated and stable team
- Conduct **regular compliance training** to uphold ethical standards and data security

(Jelena Ilić, 2021).

Appendix A: Project Management Plan Approval

The undersigned acknowledge they have reviewed the 'Electric Car Mobile App Enhancement' **Project Management Plan** and agree with the approach it presents. Changes to this **Project Management Plan** will be coordinated with and approved by the undersigned or their designated representatives.

Signature:	AvinashBunga	Date:	12/10/2023
Print Name:	Avinash Bunga		
Title:	Project Manager		
Role:	Project Lead		

Signature:	SictucEkwo	Date:	12/10/2023
Print Name:	Dr. Sictuc Ekwo		
Title:	Project Sponsor		
Role:	Approval Authority		

Signature:	AndrewJoseph	Date:	12/10/2023
Print Name:	Andrew Joseph		
Title:	User Community Representative		
Role:	Stakeholder Endorsement		

APPENDIX B: CHARACTERISTICS OF A GOOD PM AND TEAM

Project Manager: Avinash Bunga

Traits:

1. **Visionary Leadership:** Foreseeing the project's trajectory and potential roadblocks is crucial. Avinash's vision for the 'Electric Car Mobile App Enhancement' project ensures that the team stays aligned with long-term goals and adapts to the evolving needs of electric car users.
2. **Communication Skills:** Effective communication by the project manager ensures that all stakeholders are on the same page, which is vital for a project that involves complex technical enhancements and user experience improvements.
3. **Risk Management Acumen:** Given the technical nature of the app enhancement, the project manager's expertise in identifying and mitigating risks is paramount to addressing potential issues and ensuring the project remains on track pre-emptively (Bočková & Čepelová, 2023).

Project Team:

Traits:

1. **Technical Proficiency:** The development team's expertise in software engineering and user interface design is essential for the technical execution of the Winter Mode feature in the mobile app.
2. **Adaptability and Flexibility:** Adapting to user feedback and test results is essential for an iterative project based on the Scrum methodology.
3. **Collaborative Spirit:** The project demands a high level of collaboration between cross-functional teams (development, QA, marketing), making the team's ability to work cohesively a critical trait for project success (Sokol, Bronin, Karnaukh, & Bilova, 2020).

Importance of These Traits for the 'Electric Car Mobile App Enhancement' Project: Visionary leadership is essential for maintaining focus on the end goal of user satisfaction and technological innovation.

Clear communication ensures that complex technical concepts are effectively conveyed to non-technical stakeholders and that user feedback is accurately translated into technical requirements.

Risk management acumen is necessary to navigate the uncertainties inherent in introducing a new feature like the Winter Mode, which has yet to be tested in the market.

The project team's technical proficiency guarantees that the feature will be implemented according to the latest standards and best practices, ensuring compatibility and performance. Adaptability and flexibility allow the project to evolve based on real-world testing and user engagement, which is crucial for the Agile approach. Lastly, the collaborative spirit unites diverse expertise towards common project objectives, fostering an environment where innovation thrives.

In conclusion, these traits are desirable and necessary for the specific challenges and opportunities created by the 'Electric Car Mobile App Enhancement' project, making sure that the final product meets and exceeds user expectations and sets a new benchmark in the electric vehicle industry.

APPENDIX C: SUMMARY OF SPENDING

Budget Item	PY-1	PY	CY	BY	BY + 1	BY + 2	BY + 3	BY + 4	Total
Planning:									
Budgetary Resources	0.00	0.00	8,000.00	0.00	0.00	0.00	0.00	0.00	$8,000.00
Outlays	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	$2,000.00
Development & Implementation of Project:									
Budgetary Resources	0.00	0.00	1,15,000.00	0.00	0.00	0.00	0.00	0.00	$1,15,000.00
Outlays	0.00	0.00	20,000.00	0.00	0.00	0.00	0.00	0.00	$20,000.00
Total, sum of stages:	**0**	**0**	**1,45,000.00**	**0**	**0**	**0**	**0**	**0**	**1,45,000.00**
Budgetary Resources	**0**	**0**	**1,23,000.00**	**0**	**0**	**0**	**0**	**0**	$1,23,000.00
Outlays	**0**	**0**	**22,000.00**	**0**	**0**	**0**	**0**	**0**	$22,000.00
Operations & Maintenance:									
Budgetary Resources	0.00	0.00	80,000.00	0.00	0.00	0.00	0.00	0.00	$80,000.00
Outlays	0.00	0.00	20,000.00	0.00	0.00	0.00	0.00	0.00	$20,000.00
Total, all stages:	**0**	**0**	**2,45,000.00**	**0**	**0**	**0**	**0**	**0**	**2,45,000.00**
Budgetary Resources	**0**	**0**	**2,03,000.00**	**0**	**0**	**0**	**0**	**0**	$2,03,000.00
Outlays	**0**	**0**	**42,000.00**	**0**	**0**	**0**	**0**	**0**	$42,000.00
Government FTE cost	**0.00**	**0.00**	**5,000.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	$5,000.00

PY: Previous Year; CY: Current Year; BY: Budget Year

The current financial overview for the "Electric Car Mobile App Enhancement" project is meticulously delineated in Appendix C: Summary of Spending. Notably, the Previous Year (PY) and Budget Years (BY+1 to BY+4) columns are marked as $0.00, reflecting our strategic decision to confine budget allocation to the Current Year (CY) only. This is indicative of our commitment to a focused, singular cycle of development and implementation that corresponds with our project timeline and objectives.

Our financial planning and allocation are predicated on a robust framework that prioritizes agility and precision. As such, the budgetary provisions outlined cater exclusively to the immediate cycle. This targeted approach ensures that all resources are judiciously deployed within the operational scope of our project, thereby enhancing accountability and minimizing fiscal carryover.

This project is presently limited to a one-cycle fiscal plan, with an aggregate budget of $250,000 judiciously apportioned to planning, development, implementation, and operations and

maintenance within the CY. This strategic allocation underscores our dedication to operational efficiency and financial prudence.

It is imperative to note that while the PY and BY columns stand at zero, they represent a flexible financial framework designed to accommodate potential extensions or expansions of the project. As such, subsequent budgetary considerations will be meticulously evaluated and updated to reflect evolving project needs and objectives.

The fiscal strategy employed ensures that the project can swiftly adapt to unforeseen demands or opportunities that may arise post-completion of the current cycle. Any future requirements that necessitate financial input will be diligently assessed and integrated into the budgetary framework, with updates duly reflected in subsequent summaries of spending (Dobson, 2015).

APPENDIX D: PROJECT METHODOLOGY

Selected Methodology: Scrum

Introduction:

The methodology selected for the "Winter Mode v1.2 - Remote Activation for Electric Cars" project is Scrum, a subset of Agile project management. This iterative and incremental framework is ideal for projects with highly emergent or rapidly shifting requirements like ours, where the "Winter Mode" feature development requires flexibility and rapid adaptation to user feedback. (Betta & Iwko, 2022).

Differences in the Project Plan:

1. **Sprints vs. Traditional Phases:**

- The project plan was structured around sprints, which are short, consistent development cycles, rather than traditional project phases. This allows for regular reassessment and adaptation of the project direction (Pope-Ruark, 2012).

2. **User Stories vs. Detailed Requirements:**

- In place of exhaustive requirement documentation, we utilized user stories to keep the focus on user needs. This meant less upfront documentation and more ongoing dialogue with stakeholders.

3. **Daily Stand-Ups:**

- Our project plan included daily stand-up meetings, which are not typically part of traditional project plans. These facilitated quick sharing of progress and immediate resolution of impediments.

4. **Product Backlog:**

- A product backlog was maintained and prioritized instead of a fixed project scope, allowing us to adapt to changes more fluidly without being constrained by a baseline.

5. **Sprint Reviews and Retrospectives:**

- After each sprint, we conducted sprint reviews with stakeholders to demonstrate the functionality developed. This was supplemented by sprint retrospectives with the team to discuss improvements, which are not standard in traditional methodologies.

Changes from the Original Template:

1. **Risk Management:**

- The risk management section was tailored to accommodate Scrum's iterative nature. Risks were revisited and reprioritized at the end of each sprint to reflect the dynamic project environment.

2. **Quality Management:**

- Instead of a single quality assurance phase, continuous integration and testing were incorporated within each sprint, ensuring immediate feedback and incorporation of quality measures.

3. **Stakeholder Communication:**

- The communication plan was adapted to include frequent stakeholder engagements in line with the Scrum methodology, emphasizing transparency and collaboration (Robinson, 2023).

Conclusion:

As winter nears, the importance of easy-to-use technology in our daily lives becomes more critical. Choosing the Scrum method for improving our Electric Car Mobile App is smart and well-timed. The “Winter Mode” we are adding is all about trust and comfort — two things everyone needs when cold outside.

Scrum lets us work in short, productive bursts, called sprints, and get feedback quickly to ensure we make a product that helps drivers when the temperature drops. Our goal is clear: when winter comes, our users should get into a car that’s ready to go and warm, thanks to our app.

Working with Scrum means we all developers, managers, and users work together closely. It is not just about throwing in a new feature; it is about making every day easier for our users. With the improved app, we aim to make driving in winter safer and more enjoyable.

In the end, updating our app is more than just a tech fix. It is our promise to be there for our users when they need us most. Over the next fifty weeks, guided by Scrum and what our users tell us, we will introduce an update that’s right on time and makes a difference for winter driving.

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