



Northeastern University, College of Professional Studies, Boston

PJM6015 20055 PROJECT RISK MANAGEMENT, WINTER 2023

Prof. Kristen Drobnis

GROUP ASSIGNMENT 2 – PROJECT SCOPE STATEMENT

MAZDA AUTODRIVE

Team 5:

Himanshu Mandloi

Urvi Tank

Kuldeep Owalekar

Yasaswi Madala,

Sowmiya Mankala

Urvashi Burman

1. Project Background

Autopilot technology has advanced significantly in recent years, with several major automakers investing in the development of **ADAS** and autonomous driving technology. Some vehicles now offer advanced features such as lane departure warnings and adaptive cruise control, but fully self-driving cars are not yet on the market.

Mazda has yet to release an autonomous or self-driving car – “MAZDA AUTODRIVE”, but the company may be exploring the potential of its ADAS and self-driving technology in vehicles. However, these technologies can be complex and time-consuming to develop and require extensive testing and validation to ensure their safety and reliability.

Successful development of an autopilot system for Mazda vehicles requires investing in the necessary research and development and working with experts in areas such as software development, artificial intelligence and vehicle design. In addition, Mazda must ensure that its autopilot systems comply with local traffic laws and operate safely and effectively in a variety of driving conditions and environments.

Overall, developing an autopilot system for Mazda vehicles is possible, but requires significant investment and expertise, and must be carefully designed and tested to ensure safety and performance.

Mazda Motor Corporation is a Japanese multinational automotive industry holding the thirty-eighth position of the largest automaker. They were founded in the 1920s and started their vehicle sales in the 1970s globally formally entering the American market successfully. Mazda showrooms are currently located throughout the globe, including the US.

2. Project objectives

The goals of AutoDrive will depend on the specific needs and goals of the stakeholders involved.

SMART Objectives	
Specific	<ul style="list-style-type: none"> • Development and implementation of autopilot systems for Mazda vehicles that meet or exceed industry safety standards and regulatory requirements. • Provide drivers with a differentiated and easy-to-use experience.
Measurable	<ul style="list-style-type: none"> • Reduce human error incidents by 90% within one year of Autopilot deployment.
Achievable	<ul style="list-style-type: none"> • We conduct extensive research and development, including testing and validation, to ensure that our autopilot systems are safe, reliable and effective under a variety of driving conditions.
Relevant	<ul style="list-style-type: none"> • We will develop an autopilot system in line with Mazda's brand value and long-term strategy to appeal to customers who value safety, comfort and innovation.
Time-bound	<ul style="list-style-type: none"> • We aim to deploy the Autopilot system in at least one market within the next two years and expand to other markets once regulatory and technical hurdles are overcome.

3. Assigned Risk Manager

As determined in the team charter and the order number, the members of team 5 will take turns and participate in the tasks of a Project Risk Manager.

WEEK 1	Urvi Tank
WEEK 2	Urvashi Burman
WEEK 3	Sowmiya Mankala
WEEK 4	Himanshu Mandaloi
WEEK 5	Kuldeep Kishor Owalekar
WEEK 6	Yasawi Madala

4. Sponsor: Mazda Motor Corporation

5. Project Deliverables

DELIVERABLES	DESCRIPTION
Initiation	This phase involves investigating and developing the project's concept outlining the standards for the project's quality as well as the procedures for monitoring and evaluating them. The project started after conducting a stakeholder analysis.
Project Documentation	Project documentation is a collection of documents that the project manager creates as the project develops. Many documentation processes will be used for Autopilot, including risk detection, algorithm development, and occupancy analysis.

	The documentation, both for each individual document and for the entire project documentation, must lay the groundwork for quality, traceability, and history.
Research	This phase involves conducting market research, user research, competitor research, and a review of relevant business processes and prior work
Design	One or more designs are developed during the design process to achieve the intended project outcome. There are several designs for the model, including hardware, software, user interface, and installation design. The project managers use these drawings to decide which design will be utilized as the project's final option.
Development	All the project's implementation requirements are set up during the development phase. After the requirements have been completed and the product complies with the design, this step entails building the actual model, which is deemed complete.
Testing	Checking whether the product created during the development phase is ready for use is the main goal of this phase. To make sure the product is ready for launch, numerous test cases are executed. The Autopilot is put to the test to make sure it is dependable, secure, and easy to use while also satisfying the requirements and expectations of all parties involved.
Closure	The fulfilment of project deliverables to the project sponsor's satisfaction is confirmed during this stage of the project management lifecycle. The accounts are finally closed after all

	requirements have been met and lessons learned have been recorded.
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6. List of Project Tasks

Work Breakdown Structure (WBS) is attached as a Microsoft project file in the final submission.

7. Out of Scope

This project will not include any of the following.	Autopilot system implemented in all Mazda models: Depending on the cost and complexity of the Autopilot system, it may not be available on all Mazda vehicle models, at least initially.
	Developing autopilot systems that are significantly cheaper than existing systems: Cost is an important consideration, but it may not be possible to significantly reduce the price of existing autopilot systems and provide the same level of safety and performance.
	Developing a fully customizable autopilot system for the user: While it may be desirable to provide some customization options, allowing the user to fully customize the autopilot system may increase the risk of user error and abuse.
	Developing autopilot systems that are resistant to all kinds of cyberattacks: Cybersecurity is an important consideration for autopilot systems, but it may not be possible to design a system that is completely resistant to all types of attacks.

8. Major Milestones

- A. Approval for all documentation
- B. Approval for project research signoff
- C. Product design approval signoff
- D. Approval of Final Design
- E. Approval for Quality Check of the product
- F. Approval from board members
- G. Deployment Completed
- H. Project Complete

9 Acceptance Criteria

- Autopilot systems must meet or exceed industry safety standards and must be able to prevent or mitigate the majority of accidents caused by human error.
- Autopilot systems must be reliable and effective in a variety of driving conditions, including varying weather and road conditions.
- The autopilot system should be easy and intuitive for the driver and should not significantly interfere with the driving experience.
- Based on customer satisfaction surveys, Mazda was able to measure the user experience and compare the numbers to those of other Autopilot systems.
- AutoDrive must comply with all relevant regulations and standards, including those related to safety, privacy, cybersecurity, and emissions.
- The AutoDrive must be cost-effective for Mazda's manufacturing and customers, and must not add significantly to the overall cost of the vehicle.

- Mazda can measure cost-effectiveness based on the cost of the AutoDrive compared to other autopilot systems and the customer's willingness to pay.

9. Project Assumptions

S.No	Assumptions
1	The project will take 16 months to complete the project life cycle process.
2	The budget to satisfy the requirement of the project approval is \$5 million
3	There may be delays, increases in budget or changes in the supplier caused if the material is not delivered on time,
4	External factors like the economy, people and technology can impact the project's further affecting the triple constraint – budget, scope, and timeline.
5	The AutoDrive software will be thoroughly tested before launching without any software malware or hardware defects.
6	The AutoDrive system will have good security to avoid any virus while installing it in the car, keeping the data safe and secure to use.
7	The communication between teams and sponsors will be monitored and controlled causing no organizational issues.
8	The sponsors and stakeholders will financially help throughout the duration of the project.

10. Project Constraints

PROJECT START DATE	23 February 2023
PROJECT END DATE	28 June 2024
MILESTONE DEADLINES	<p>Approval for all documentation</p> <p>Approval for project research signoff</p> <p>Product design approval signoff</p> <p>Approval of Final Design</p> <p>Approval for Quality Check of the product</p> <p>Approval from board members</p> <p>Deployment Completed</p> <p>Project Complete</p>
BUDGET CONSTRAINTS	The Total Budget of our project is 5M
	<p>Our Estimated cost for the project is \$4,996,160.00.</p> <p>With a Contingency Reserve of \$500,000.00</p>
QUALITY OR PERFORMANCE CONSTRAINTS	<p>Safety: Safety is a primary concern for the AutoDrive and Mazda needs to ensure that the system can be used safely under a variety of driving conditions. This may require the use of high-quality sensors and algorithms that can quickly and accurately detect and respond to potential threats.</p> <p>Reliability: AutoDrive must be reliable and effective over the long term and must not fail or fail in ways that could endanger drivers and other road users.</p> <p>This may require the use of high-quality hardware and software components and thorough testing of the system in various scenarios.</p> <p>Customer expectations: Mazda customers have certain expectations regarding the performance and</p>

	quality of their autopilot systems, and Mazda needs to ensure that the system meets or exceeds those expectations.
	Cost-effective: AutoDrive must be cost-effective for Mazda's manufacturing and customers and must not add significantly to the overall cost of the vehicle.
EQUIPMENT / PERSONNEL CONSTRAINTS	Developing autopilot systems requires significant investments in hardware and software, such as sensors, processors and communication systems. Mazda may need to consider the cost and availability of these components and the compatibility of various components and systems.
	AutoDrive requires certification from regulatory bodies and industry associations and may require specific equipment and personnel qualifications. Mazda may need to invest not only in obtaining the required certifications but also in maintaining compliance with evolving regulations and standards.
REGULATORY CONSTRAINTS	Privacy policy: Autopilot systems collect and store large amounts of data about the vehicle, driver and driving environment. Mazda must comply with data protection regulations such as the European Union's General Data Protection Regulation (GDPR) to protect customer privacy.
	Safety Regulations: Vehicle systems must meet auto industry safety standards.
	Driver's License Regulations: Autopilot systems may require special training or licensing for driver use.

11. Updated Estimate:

Estimated days to complete the project – **352 days**

Total Hours per day: **8 hours**

Estimated Hours for completion of the project- **2816 Hours**

12. Approval

Stakeholder Names	Signature	Date
Urvi Tank	<i>Urvi.t</i>	03.06.2023
Urvashi Burman	<i>Urvashi.b</i>	03.06.2023
Sowmiya Mankala	<i>Sowmiya.m</i>	03.06.2023
Himanshu Mandaloi	<i>Himanshu.m</i>	03.06.2023
Kuldeep Owalekar	<i>Kuldeep.o</i>	03.06.2023
Yasaswi Madala	<i>madalayasaswi</i>	03.06.2023