<Report Title>

<Student Name & Uid>

Assessment Task 2 Professional Project

Due Week 12 Friday 25 October 2019

Version <1.0>

Revision History

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| **Date** | **Version** | **Description** | **Author** |
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Executive Summary

Include a brief summary overview (~250 words) of the project report here.

In this report, our team applies the Design Thinking (DT) approach to conduct a research on how the ACT Government ought to modify relevant road laws to allow e-scooters and related electric devices to travel legally on the road. Specifically, we focus our attention on ensuring both riders’ and pedestrians’ safety on travelling by targeting our research on three main aspects: maximum speed allowed, appropriate road areas and safety limitations on users. Centered around the three key questions, the results from our online surveys show that most people think 20km/h is the safe maximum speed, and roads such as footpaths, crossings and dedicated bike lanes are suitable for e-scooters to ride on except for the high pedestrian areas. Besides, users provide feedbacks on various limitation ways to ensure road safety including wearing a helmet, keeping a minimum distance, and setting age limitation for children under 18. Based on the data we gather from online surveys and our background research, we propose our suggestions as follows: 1. the minimum speed should be set at 20km/h; 2. riders should not ride on high pedestrian areas but can ride on areas such as footpaths, crossing and roads under 50km/h; 3. children under 16 must be supervised; 4. riders must wear safety gears at all times; 5. riders need to keep a minimum distance of 1.5m from each other; 6. e-scooters can be carried on public transport and parked in bike parking areas.

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Assessment Task 2 Professional Project

# Introduction

## Purpose

The purpose of this report is to …. *Briefly state the aim of the project and include a report outline (signposting)*

## POV

*State your POV here.*

## Scope

*Include 1-2 sentences about what was insider and outside the scope of you report and study.*

Team Number: < >

## Definitions, Acronyms, and Abbreviations

*Add any definitions, acronyms, or abbreviations commonly used in your report here.*

# Literature Review

*Briefly introduce the project task and review the relevant literature. This could include similar projects in other Australian states or countries in the world. You are encouraged to use academic sources and relevant government reports to support your ideas.*

# Project Management

## Team Name

Group 2A

## Team Member Skill Inventory

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Team Member | Skills | Knowledge | Complexity | Influence | Autonomy |
| Lili Chen | Demonstrates systematic and analytical methods to solve problems with appropriate methods | Familiarization in industry design thinking and broad insight in business analysis | Performs various of complicated analytical tasks to an extensive extent | Interacts effectively and has impacts on team members positively | Pro-active self-learner |
| Sen Ma | Facilitates collaboration between team members | Mastering in domain knowledge in engineering and analytical thinking | Investigates thoroughly into issues behind tasks and provides concrete suggestions | Builds strong connection between team members and motivates the team | Hardworking member under general directions |
| Tian Wu | Schedules, plans and monitors tasks to meet standards and requirements | Rapid absorption of new information and application of programming tools | Quickly understands the fundamental rules behind tasks and prioritize accordingly | Participates extensively in task related activities | Self-initiated organizer |
| Yen Kuo | Communicates fluently in writing and orally | Special knowledge in programming to perform effectively in analyzing data | Applies methodical approaches to define and categorize issues behind tasks | Bears responsibility for the team and engage actively in tasks | Responsible executor of tasks |

Table 1. Team member skill inventory

## Role Identification

In our group, the roles are varied depending on the phase of the task. Usually, we complete group tasks with rotated roles assigned to each member.

|  |  |
| --- | --- |
| Team Member | Roles |
| Lili Chen | Leader, Chairperson, Reviewer, Minute Taker |
| Sen Ma | Facilitator, Technical support, Communication coordinator |
| Tian Wu | Editor, Leader, Recorder |
| Yen Kuo | Reviewer, Minute Taker, Editor |

Table 2. Team member role identification

## Contribution

Our team members contributed equally this semester, with clear roles and responsibilities assignment and completed within the set timeframes (see also Appendix A).

## Team Process

Our team uses a Scrum process[ref1,2 on scrum] which is a subset of the Agile process[ref3 on agile]. In the Scrum process, our team break specific concepts and practices into three essential parts: roles, artifacts and time boxes. By applying Scrum in our tasks, our team adjust quickly to different requirements in different phases of the group tasks.

## Project Timeline

# A picture containing building Description automatically generated

Figure 1. Project timeline

# Research Methodology

## Design Thinking

Design Thinking (DT) is essentially an iterative and non-linear process aimed at understanding users, challenging assumptions, redefining problems and creating innovative solutions to prototype and testing. DT is a way of thinking about problems and also a method for working by utilizing a collection of different approaches. Typically, DT consists of five stages including empathize, define, ideate, prototype and test. When tackling ill-defined or unknown problems, we can explore our options more efficiently by applying DT in our workflow.

## Empathising with the user

*.*

Empathize is the first step in our DT process which allows us to attain empathetic understandings of the challenges we are facing. Gaining empathy prepares us by setting aside our previous assumptions and obtaining insights to the problems we are trying to solve. Usually, we proceed the empathy step by conducting user research.

### Research Method

In this project, our main goal is to get the user opinions about how to amend ACT laws to allow e-scooters to travel on road.

The primary research is based on the data collection process which provides us the first-hand user data. Our group takes advantage of Google online survey by incorporating both quantitative and qualitative questions in the questionnaire. We send the link to our targeted users and the data is updated on our end in real time.

We concentrate our secondary research on analyzing the data and combining it with background research and literature review on similar cases both nationwide and worldwide.

### Data collection

We gather our data on three main aspects:

1. How are we going to ensure e-scooters safety on road (maximum speed, safety equipment, safety distance, etc.,)?

2. Where can we use e-scooters (proper road areas and parking spot, public transport, etc.,)?

3. Who can have access to e-scooters (age limit for children, license requirement, etc.,)?

We collect our data by sending our users survey links and gathering our data via Google online survey system. Our survey was mainly collected on 05/05/2020 during the tutorial session of Professional Practice 1.

A copy of the survey is provided in the Appendix C with the link.

## Recommended Improvements

In our research, our group make efforts to apply the DT methods in our workflow to work out the solutions to this project. We empathize with users on acquiring their real needs to amend the ACT laws for e-scooters to ride safely on road. Then we move on to define our tasks based on our observations in a human-centered manner. Next, our group begin to challenge assumptions and generate ideas in the stage of ideating by thinking out of the box. Afterwards, we start to identify the most reasonable solutions for our tasks and come up with scaled-down plans as prototypes. Finally, we test our solutions out in the real situations together with solid background research. After testing, we spot several factors that need improvement in our project. Therefore, we go back to the stage of defining and expressing our tasks more clearly and concretely. Meanwhile, we ideate more relevant ideas as well as modify our prototype plans to adapt to the newly emerged situations. The whole process is an iterative learning process that is extremely efficient in tackling challenging complicated tasks.

However, we do have encountered several obstacles during the whole procedure. First, our targeted users are limited to university students. We need to reach out to a broader range of users in ACT to get a more comprehensive and objective views on amending related road laws. Second, our valid survey quantity is insufficient to conclude a statistically authentic suggestion. Due to limited number of valid surveys, our research may have biased results and this could lead to the decrease in reliability. We ought to address this issue by extending our surveys to more users in the follow up research. Last but not least, we lack the first hand research on the e-scooter market in ACT. This is partly due to the side effect of the Coronavirus lockdown in ACT that limits relevant e-scooter retailors to open up their stores for customers. The real user market can provide us with valuable background information about the real situations about e-scooters on road. In the future, we should conduct more ground work to get more insights if we have the chance.

# Results

## Presentation of Results

*Present your data visually using charts, tables or graphs. Include appropriate labelling, figure/table captions and links in the main text. Consider organising your results in relation to the POV and the project focus.*

* *The maximum speed at which the deveice should be able to travel*
* *What road and road related areas it is appropriate for these devices to travel on*
* *Whether there should be a limitation on who may use these devices.*
* *Other aspects?*

# Making sense of the data

## Discussion

*Discuss your qualitative and quantitative results from Section 5 above. Draw inferences in relation to the POV, and project challenge. Make links and references to the literature to show how your results are similar or different to other cases or studies. Consider discussing your results in relation to the POV and the project focus.*

*− The maximum speed at which the device should be able to travel*

*− What road and road related areas it is appropriate for these devices to travel on*

*− Whether there should be a limitation on who may use these devices.*

*− Other aspects?*

Age limit for children

According to our survey, the majority of responses (75%) think that it's safe enough for children over 12 years old to ride e-scooters unsupervised on the road. This is a quite understandable response considering the facts that e-scooters and normal scooters share a lot in common in terms of riding experience and steering techniques. Only 12.5% of responses maintain that children must be over 16 to ride independently on the road, while the remaining 12.8% think children should be 18 or older.

However, in other states in Australia where e-scooters have already been legalized on the road, regulations have different rules on the age limit for children. Take Queensland for example, road transportation authority limits the children aging from 12 to 16 under adult supervision when they use electric transportation devices such as e-scooters on the road. In South Australia’s trial run of e-scooters, users must be 18 or older to use relevant devices on the road.

Driver licence requirement

In our survey, responses divide into two opposite points of view. 56% of responses insist that people do not have to acquire a licence to ride e-scooters on the road, while the other 44% think otherwise. This is a grey area in many of other states as it is yet to be regulated by the law enforcement. Only Victoria has adjusted laws to cover cases for licence requirement on motorised scooters. According to related laws, motorised scooter classified as motor vehicles must be registered, and riders have to get a valid motorcycle licence to ride in public places.

# Conclusions

*Draw general conclusions about the use of Design Thinking process and the results of your data.*

Age limit for children

At the moment, the ACT government has not regulated laws on who can have access to personal mobility devices including e-scooters. Instead, the ACT listens for the suggestions of manufacturers on who can use the electric devices on the road. Combining the current situation with our survey, we suggest that the government can start a trial run for children above 16 to ride unsupervised on the road to get the preliminary feedback. Depending on the results, the ACT government can adjust the laws accordingly in the future.

As far as licence is concerned, the only data from our survey is not a strong enough evidence on which to base our suggestions. On the other hand, the ACT government should conduct more research on this subject as licence on e-scooters is a controversial issue nationwide in terms of limiting users on the road.

# Recommendations

## Ideating Solutions to the Project Challenge

*Based on your results and the literature, provide appropriate recommendations/ideas in relation to:*

* *The maximum speed at which the device should be able to travel*
* *What road and road related areas it is appropriate for these devices to travel on*
* *Whether there should be a limitation on who may use these devices.*
* *Other aspects?*

## Responsible Research and Innovation

*Summarise how your recommendations are ethically sound and in line with the principles of RRI.*

# References

*Insert reference list here following APA, Harvard or IEEE style guide.*

# Appendix A Team Effectiveness Survey

*Discuss and complete this section as a team.*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Team Name: Group 2A |  |  |  |  |  |
| Tutorial <#> / Team <#> |  |  |  |  |  |
| Group T02 / Group 2A | **SD** | **D** | **U** | **A** | **SA** |
| **Sense of Purpose and Commitment** |  |  |  |  |  |
| 1. We have a clear understanding of our goals |  |  |  |  | x |
| 2. We know our priorities |  |  |  |  | x |
| 3. All team members are committed to our goals |  |  |  |  | x |
|  |  |  |  |  |  |
| **Team Processes** |  |  |  |  |  |
| 4. We have effective communication processes |  |  |  |  | x |
| 5. We have effective problem solving processes |  |  |  | x |  |
| 6. We have effective decision making processes |  |  |  |  | x |
| 7. We have efficient individual accountability processes |  |  |  | x |  |
|  |  |  |  |  |  |
| **Performance Processes** |  |  |  |  |  |
| 8. We have effective processes for tracking individual performance |  |  |  | x |  |
| 9. We have effective processes for rewarding good work |  |  | x |  |  |
|  |  |  |  |  |  |
| **Team Members** |  |  |  |  |  |
| 10. Team members respect and listen to each other |  |  |  |  | x |
| 11. Team members deal with conflict constructively |  |  |  |  | x |
| 12. Team members actively participate in managing our project |  |  |  |  | x |
|  |  |  |  |  |  |
| **Creativity** |  |  |  |  |  |
| 13. We encourage divergent ideas |  |  |  | x |  |
| 14. We utilise the creative talents of individual members |  |  |  |  | x |
| 15. We brainstorm ideas together |  |  |  |  | x |
|  |  |  |  |  |  |
| **Interpersonal Relationships** |  |  |  |  |  |
| 16. I trust the members of my team |  |  |  |  | x |
| 17. We are supportive of each other |  |  |  |  | x |
| 18. Team members contribute equally |  |  |  |  | x |
| 19. We are a cohesive team |  |  |  |  | x |
|  |  |  |  |  |  |
| **Overall Effectiveness** |  |  |  |  |  |
| 20. Team grades have not suffered due to poor teamwork |  |  |  |  | x |

|  |  |  |
| --- | --- | --- |
| **Key** | | |
| **SD** |  | Strongly Disagree |
| **D** |  | Disagree |
| **U** |  | Uncertain |
| **A** |  | Agree |
| **SA** |  | Strongly Agree |

Team Effectiveness Evaluation

*Assess yourself and your team members’ contribution to the achievement and completion of the professional project. Complete only the fields needed to represent the number of people in your team.*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Name and ANU Id of Team Member:** | **HD** | **D** | **CR** | **P** | **F** |
| 1. Lili Chen | x |  |  |  |  |
| 2. Sen Ma | x |  |  |  |  |
| 3. Tian Wu | x |  |  |  |  |
| 4. Yen Kuo | x |  |  |  |  |
| 5. |  |  |  |  |  |
| **Member** | **Self** | **2** | **3** | **4** | **5** |
| **Contribution to professional project team outcomes** | **Percentage ( % ) of contribution (total 100%)** | | | | |
| Group Pitch | 25 | 25 | 25 | 25 |  |
| Project Report | 25 | 25 | 25 | 25 |  |
| Meeting Minutes | 50 |  |  | 50 |  |

# Appendix B Meeting Minutes

*Include one copy of your meeting minutes here (max 2 pages) Follow the structure outlined on Wattle the presentation of the minutes.*

# Appendix C

*Add additional appendices here. Appendices are not included in the word count. One appendix per page or section. Appendices are labelled alphabetically.*

1. A screenshot of our online survey about e-scooter survey. The survey link is <https://docs.google.com/forms/d/1Dao2ZmU3ri0YS397nT9r3SfldfXDKz8lqZkIjw1WrLs>

A screenshot of a cell phone

Description automatically generated