



Summarise your idea using our 'fill in the blanks' template below and a visual which reflects your project.



MY INNOVATION IS CALLED E-lipt

MY NAME / TEAM NAME IS Curly Fries With Aioli

I / WE GO TO SCHOOL AT Otumoetai College

MY / OUR BIG IDEA IS An electric bike battery renting app.

AND IT HELPS E-bike users who travel around New Zealand and need lithium-ion batteries.

BY SOLVING THE PROBLEM OF Not being allowed to take electric bike (lithium-ion) batteries onto planes. As a result this stops e-bike users from travelling with their bikes.

Team Members:
Kenta Beech
Georgia Murray
Logan Roelofs
Joel Kennerley

 INNOVATION NAME
E-lipt





THE PROBLEM

Communicate the problem you are trying to solve, how big it is, who it affects and why it matters.

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Our friend Moss Benton had been thinking about purchasing an eco-friendly electric bike in January 2018 because he wanted to be able to fly around New Zealand to ride renown biking trails, and to have an eco-friendly alternative to driving a car. Researching batteries for electric bikes resulted in two options, both with issues:

- Lead acid batteries, but these are filled with toxins extremely harmful to the environment and would therefore defeat the purpose and benefits of an electric bike, or lithium-ion batteries.
- The problem with the lithium-ion batteries is - as of 1st of April 2016 - the UN aviation agency banned lithium-ion batteries from traveling as cargo on planes.

This problem made Moss decide not to buy an electric bike. It wasn't just Moss who was having this issue, on Friday the 2nd of June a friend of Moss's parents, Denise from Tauranga, told us that she recently flew to Queenstown but had to leave her electric bike battery at the airport because it was prohibited on the plane. When she arrived in Queenstown she searched for battery hire services but there were none available.

We interviewed The Electric Bike Team on the 7th of June 2018 and asked if their customers were complaining about this issue, and if it stopped many people from buying electric bikes. They told us that; "whether it outright stops them from buying an electric bike or just stops them from using the bike often or taking it with them when they move, this affects almost every customer." The Electric Bike team, as well as Evolution Cycles confirmed that the electric market is a rapidly growing market. In New Zealand, the annual electric bike sales for 2017 increased to 20,000 units from 2016 annual sales of 14,000 units. So how can we find a way for all these people to fly around New Zealand and be able to use their electric bikes?

www.stuff.co.nz/life-style/well-good/motivate-me/100845075/ebike-popularity-gathers-speed-as-imports-hit-up-to-20000

www.ecomena.org/managing-lead-acid-batteries/

www.theguardian.com/world/2016/feb/23/lithium-ion-batteries-banned-as-cargo-on-passenger-flights

www.airnewzealand.co.nz/travelling-with-lithium-batteries



YOUR RESEARCH

Communicate who your innovation is for, what they need, who you spoke to when carrying out your research and what technology or science you might use to make your innovation work.

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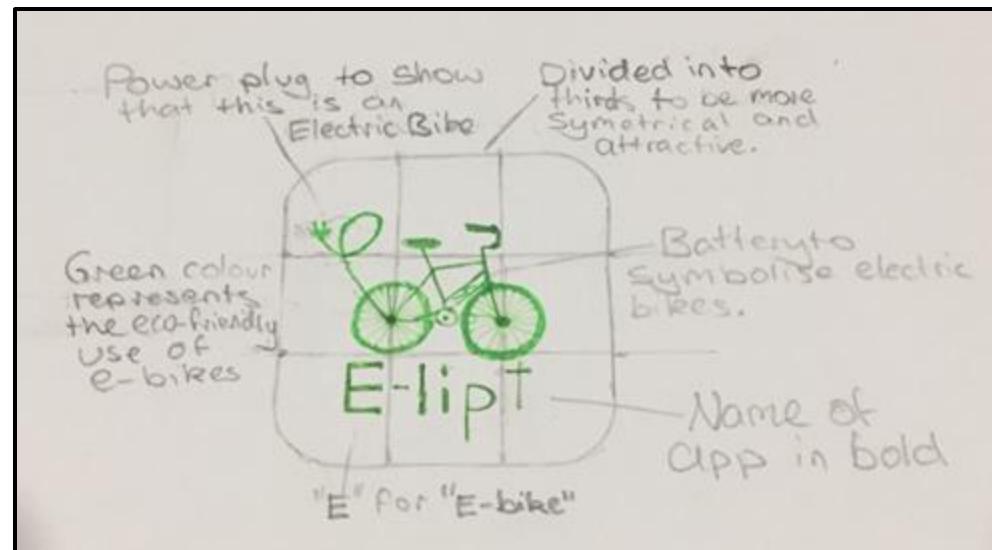
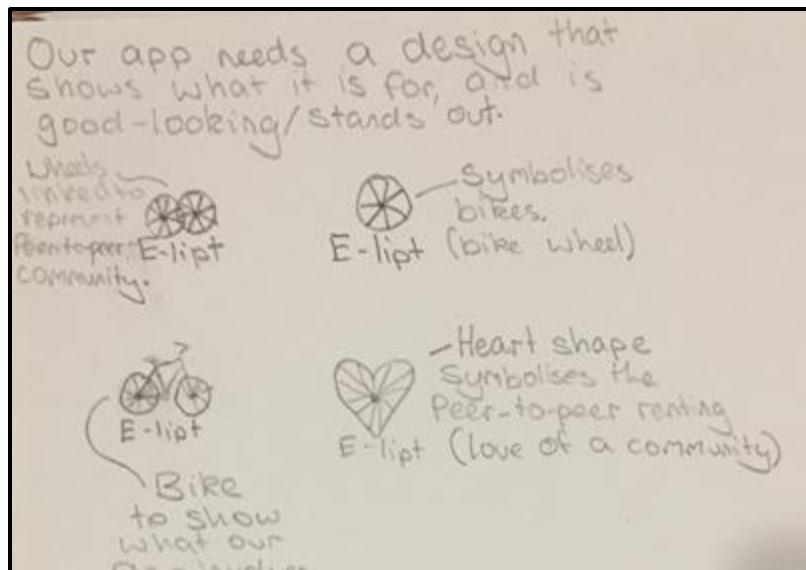
After the whole group had researched and found out that there was no current solution to this problem, we brainstormed possible ways we could solve it. One possible solution was an app for peer to peer electric bike sharing, but this would ultimately defeat the purpose of buying an electric bike if you were just going to rent one. Another idea was couriering the bike batteries to the location where you were flying, but this would be inconvenient because you would need someone at the other end and the delivery time is never certain. After brainstorming possible solutions, the best idea we thought of was an app for peer to peer electric bike battery renting, as that is the ultimate reason you cannot fly around the country with an e-bike. To get an expert opinion on whether this app would work, we needed to have an interview with someone in the industry. We called Evolution Cycles (an e-bike shop) and explained our idea **to them. We asked if our app would solve the problem and they said “For a lot of people, yes.” We checked to see if anyone had any made a similar app to the one we were planning, but no one had.**

On the 25th June, 2019 we got a response from e-bikeshop.co.nz replying to our email asking for advice on how we should run the app. After we had developed our final idea they said “Congratulations on your idea I think it has potential.”



Explain your final idea, how it works and how it solves a problem.

Our innovation is a peer to peer renting app where people around New Zealand can rent other people's lithium-ion bike batteries. Our app works by users signing up, registering their electric bike battery model, and selecting their closest airports. When someone wants to rent a battery they enter their battery model, arrival airport and the dates when you want the battery. The user can select the brand, voltage, and amps per hour of the battery their bike is compatible with through a search filter. Once the user selects a battery the app will display on a map where it is available near the destination. This innovation allows customers to fly to where they want to with their electric bike, and pick up the battery they rented when they arrive. Our way of tackling this problem is highly sustainable because the bike owner doesn't have to buy a new battery every time they travel on a plane. This app will also allow the user to make a passive income while they are away by renting their own battery to others. The app fixes the issue of lithium-ion electric bike batteries being prohibited on planes. The app encourages the use of E-bikes by making the lithium batteries available all across country. This mean that vehicles that consume fossil fuels will be used less, and this will inevitably have a positive impact on the environment.





**YOUR
CUSTOMER**

This is the development of our customer.

Our app is designed for electric bike owners with a need or desire to travel around New Zealand. It is designed to offer an efficient and reliable way for someone to get an electric bike battery where and when they want it. Because of our app our customer would be able to have a dependable way to make sure they can use their e-bike to its full potential. We talked to the people at Evolution Cycles about what type of people usually buy e-bikes and they told us that over 50% of their customers are “retirees” who want to start biking again, or those who want to bike to work. With this information we made it our goal to make our app so that every user could navigate through the apps interface with no trouble. The app now has a simple, user friendly interface that anyone can comfortably use.

