Project Sensibel

Getting to the heart of the biking experience

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What we're capturing:
Journeys, experiences and stories that track where, how and why bikers move.

To provide live data for:
Businesses and council staff who benefit from knowing how people move and spend in the city.

The Problem

Cycling is our least-understood and potentially most transformational mode of movement in cities.

Planning decisions are currently based on research undertaken at a specific time of year, or in review of a new piece of infrastructure.

There's currently no in depth understanding of the human experience of cycling or access to an ever evolving pool of user stories.

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The Challenge

To create a participatory platform that enables citizens to share their biking stories to positively promote cycling and help shape our cycling infrastructure

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The Concept
A Smart Bike Bell

To create a bike friendly device in the form of a bell.
Riders sound one ring for a negative experience and two for a positive
experience. Experiences, captured on the journey via a mobile phone,
are sent to the cloud in real time and displayed on an interactive map.
Vibrant stories shared by participants would help encourage friends to
get out on their bikes, and over time, rider contributions to the
experience map would provide useful insights for cycleway planners.

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The Concept

An Open Heat Map

At the core of the challenge is to create a device and interface that encourages citizen participation. To achieve this, the process must be citizen led. Participants can contribute anonomously to an open heat map, adding to a community of experiences and stories that have the power to influence the way we move around our cities.

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Spreading Stories

Biking is a sensory experience. On a bike, you are closer to nature, you physically feel the elements. Every bump on the road. The sound of nature and traffic. Wind and gravity working for and against you. It's a heightened experience that feeds personal stories, both positive and negative. By focusing on capturing and sharing stories about riding, the App has the potential to increase awareness of the biker's journey. In turn, these stories have the potential to influence other people to ride and shape the way our city is built.
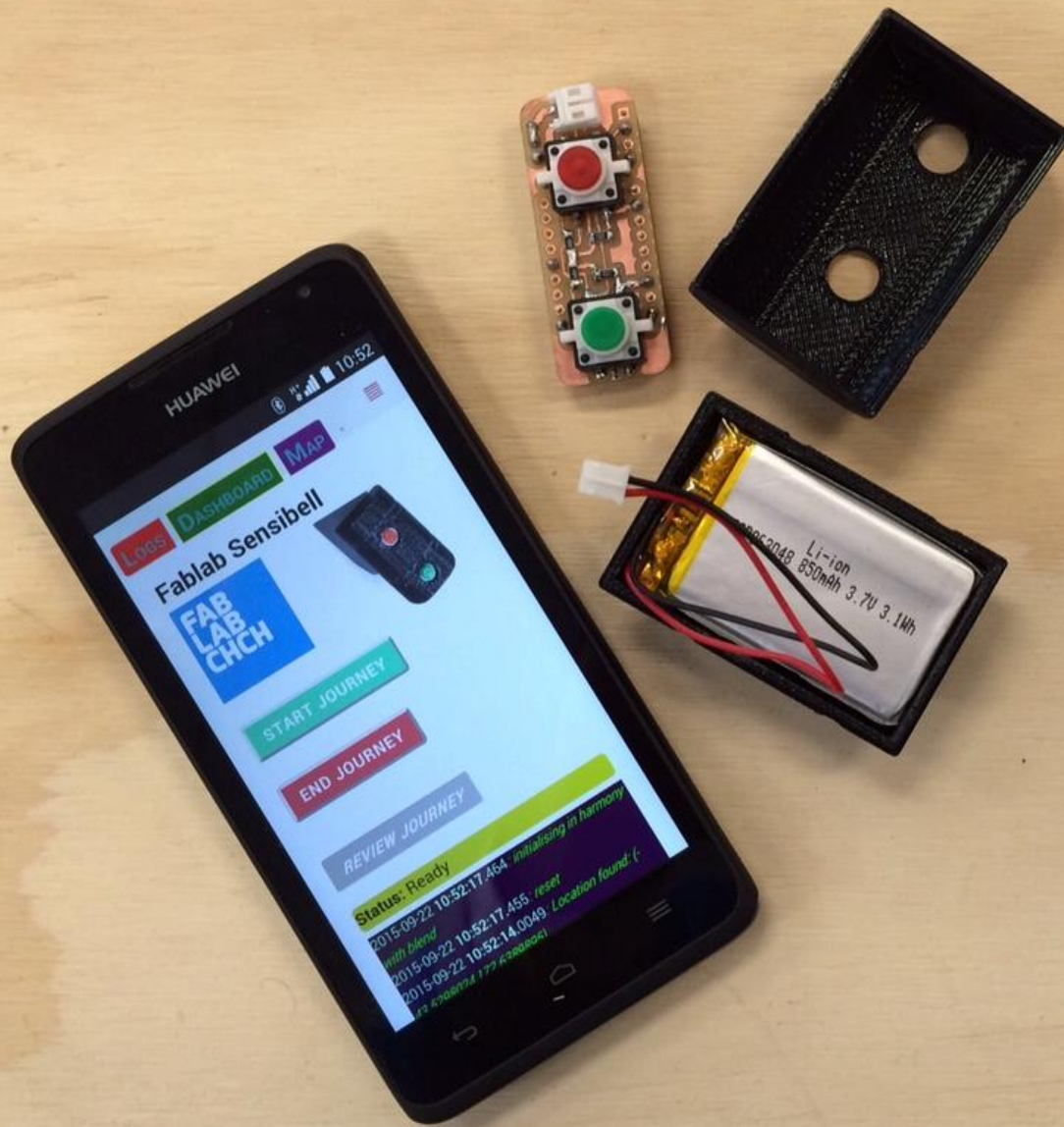
The Prototype

Proof of Concept

With an investment of $15,000 from Internet NZ, Fab Lab Chch developed a minimum viable product – a thumb activated device that sends rider feedback to a mobile phone, then to the cloud.
The device and App, rapidly prototyped over eight weeks, have all the fundamental technology proposed in the original the bell concept.

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The Prototype
Features

App:
- GPS Tracking
- Bluetooth device syncing
- Journey mapping
- Experience location plotting

Device:
- Bluetooth enabled
- 2x Buttons (good/bad)

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Field Testing

Trial 1: 6th September 2015

Objectives

The objective of trial one was to:
- Test the connectivity of the App and the device.
- Gather user feedback on the concept of a community aggregated platform for cycling.
- Collect user-defined definitions for "good" and "bad".
- Understand what would motivate and incentivise people to engage with the platform and cycle in general.

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Trial 1: 6th September 2015

Participants
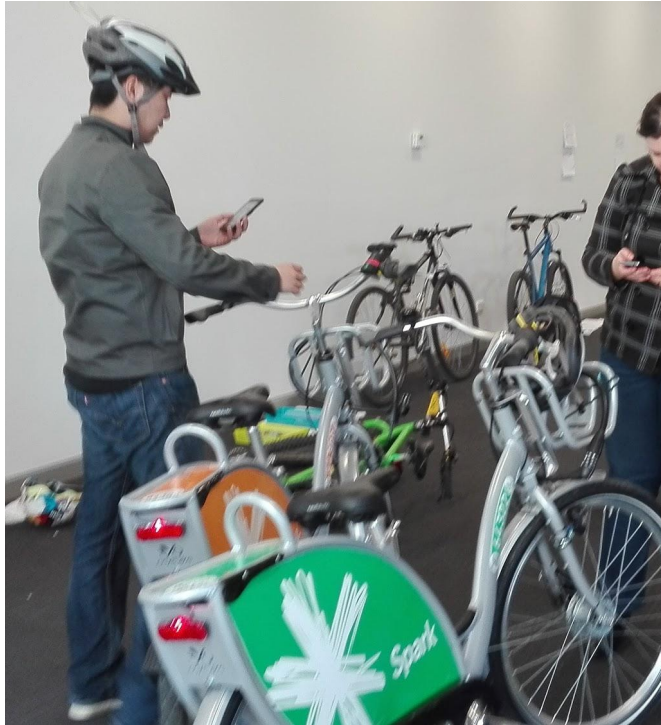
A diverse group of riders from different background and experience were invited to the trial.

8 Males, **8** Females
Ages: **20-45**
non-riders to very experienced riders

With thanks to:
Spark Bikes

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Routes Travelled & Approach
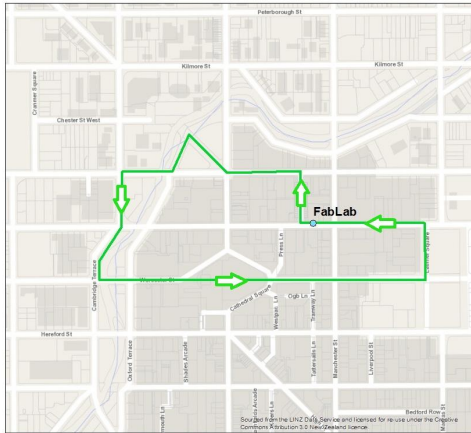
Short Ride
10 mins around the CBD with varying terrain
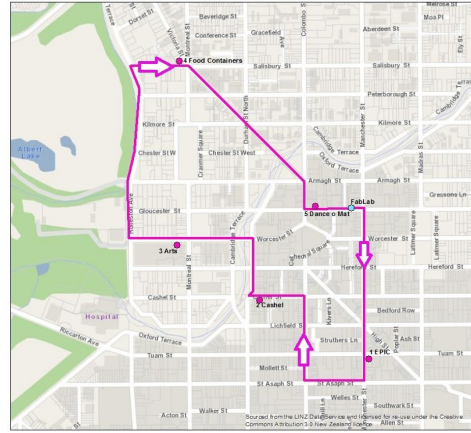
Spark Route
Connecting all the Spark Bike stations around the city
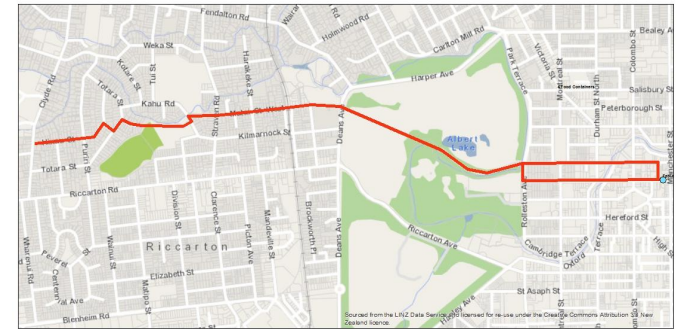
Uni Cycle
New route that connects UC with the CBD

Approach: Riders we asked take a ride and log a positive (green) or negative (red) experience with the device with no prior input. After the ride an open discussion was facilitated to draw out experiences and feedback.

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General Discussion: The Concept

"In the general sense, wearable technology **makes you stop and think about what is going on.** You notice all the things. Interesting experience but when does the novelty wear off."

"Conversation starter when riding with others. **Turns subconscious thought into hard reality.** "

"Often don't remember the good or bad points at the end of a journey. Often think at the time **"I wish I could let the council know about this".** It would be nice to able to do this. Integrate with social media or council app. "

"**Use it to map out cycle routes in the future.** A collective experience."

"When biking you have a sense of powerlessness. You are always against something. **It is a good way to feel like you have control** of some aspect of the environment. It creates a link between feeling annoyed but I am here and I can do something about this."

"**Network of subjective experiments**. See what trips look like. Car vs bike comparison. More likely to log negative experiences which results in a bad image for cycling."

The whole trip is a positive feature, so **it is easier to mark the negatives.** Negatives were generally infrastructure related. Some were bike related.

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General Discussion: Device & Platform

Device:

- Can it be built into the handle bars?
- Lever for the thumb.
- Left and right button.
- Slider, like the classic bell eg a big ring if it is bad.
- Duration of bell press to register intensity
- Think of a horn or wave as you would when driving.

- Have a button for infrastructure and one for other people's behaviours and other elements, eg I pressed the button when I smelt flowers.

How to keep this alive

- Social media
- Theme rides
- Attractions
- Geocaching
- Collection points
- Cafe owners - tag it
- Support other cycling events
- Selfie orienteering

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General Discussion: Positive Experiences

Parking for bikes
Left hand turn protection
Hook turn options
Pavers - Old European
Intersections with advance box for cyclists
Good cycling specific signage
Nice architecture
Patient drivers
Cars that give you space
Separated cycleway
Smell
Moving
Nice Weather
Smooth under wheels
Not crossing tram tracks

Vitamin D
Breaking the law
Speed was safer
Smiles give/recieved
Visible bike parking
Families out with kids
Park greenery
Other cyclists
Tailwind
Sunshine
Catching the green bike light and not stopping
Smell of flowers
Car free street (New Regent)
Riding in a park
Being off road
Nice views

Riding next to someone else and talking
New un-damaged path
When pedestrians notice, they get out of your way
Minimal traffic
Drivers waited
Taking the lane doesn't get you honked at
Riding through the square (no traffic)
Open flat road
Smooth pavement
Dedicated bike lane on most roads
Easy riding off the street eg park
Quick convenient travel
Green lights
People on spark bikes

Wide clear path for cycles only
Small hill to go down
Nice view
Quick light changes on unicycle way
Shoulder on Colombo
Ramps on Victoria Square
Some drivers respect your space
Guided tour
Cycling specific infrastructure
Smooth tarmac
Traffic lights with bike priority
No body else
No cars
Awesome photo opportunities

General Discussion: Negative Experiences

Turning right
Intersections too narrow to share with cars when stopped
Lack of bike parking
Bike parking not suited to most bikes
Crappy road surface
Bike parking at a big distance to key destinations compared to car parking
Turn lanes hard to access by bike lane
Puncture
Low hanging signs near miss with headroom
Headwind
Narrow shared paths
Intersections without advance boxes

Crossing tram tracks
Cycling alongside tramlines and pedestrians without having designated cycle space
Too many people on the shared paths
Stopping to push bike bottom
Non-working sensors on path
Traffic lights that don't give bikes priority
Rubbish on the road, glass
Narrow roads with cars
Poor visibility on corners when turning
Road works

Slippery brick on path
Cars on my road
Bumpy roads
Tam tracks
Inattentive drivers
Street furniture
Poorly designed intersections
Gravel
Cycle lane to nowhere
Road cones
Shared space with cars
Obstacles in bike lane
Potholes
Glass on the road
Red lights
Bad smells
Tram tracks
Head wind
Confusion on shared paths

Trams
Bad parking in cycle ways
Tram tracks
Turning right
Transition to cycles ways
Transition from road to cycleway (Latimer square)
Back pedal bikes
Car doors
One way streets
Pedestrians not aware of shared path etiquette
Cars
Hazards that force you onto the road eg road cones
No cycling specific signage
People walking backwards into us

General Discussion: Incentivising Use

Gamify idea
Backing current events eg Parking day
Benchmarking KPI (CCC) of improvements based on data
Due determines allocation of cycle infrastructure funding (from councils)
Instant gratification
Followers based on your cool journeys
Tracked and public visible data
Survey and prizes
Discuss bigger picture
Non-monetary
Positive feedback
Benefits to future generations

Show the difference it makes
Community
Data on cycling uptake numbers
Highlight individual contributions
Instant data and photo feedback
Direct council link
Reduction of "red" spots
"Heat map"
Free access to spark bikes via points
Free bike services
Positive badges
Evidence that people are using it (app)

Data in exchange for bike related services
Free coffee
Geocaching - pokemon catch em all
Data use and positive outcomes
Online strava community
Qualitative over quantitative ------
Feeling good about enacting positive social change
Knowing where the good routes are
Free
Warm and fuzzies
Collective impact
Social movement
Sense of freedom

Resulting data, own and others, easily accessible
Live tracking
Goals to work toward
Logging own personal data for own use (maps, distance etc)
Non-FOMO
Knowing the transport planners are listening
Integration with other apps
Reliability
Ease of use
Seeing actual positive change as a result of the data
Assurance it won't be used for nefarious purposes (GSCB etc)
Knowing that a broad demographic is using the apps

Outtakes

The Device and Platform
On the whole, most people felt the device gave them a voice and a way to communicate their experiences, whether it be socially or to the council. In many respects it gave the rider a sense of control.

The Form and Interaction
The more ergonomic the form the better. As well as being desirable, it must be able to communicate the range of emotion across the positive and negative spectrum.

Experiences
The range of experiences captured can be distilled down into categories for easier cataloguing and analysis.
For example:
- Physical Infrastructure
- Bike mechanics
- Environmental
- Spatial
- Empathy

These need further defining and refining so they're clear and quick to understand.

Incentivising participation
Intrinsic motivation came through as the main point. Riders participating get a sense that they're contributing to improving the biking experience. They want to be connected to the community, and to see some positive change happening as part of the contributed data.

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Trial 2: Objectives

Test some different ergonomic forms of the device.

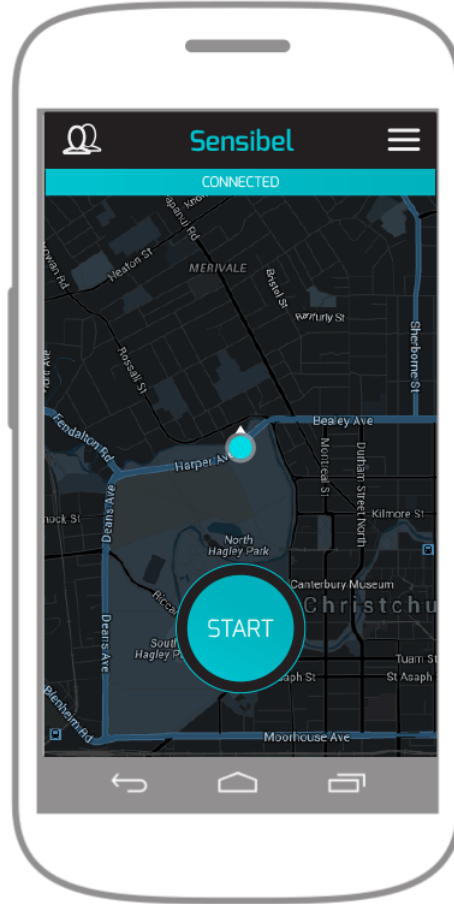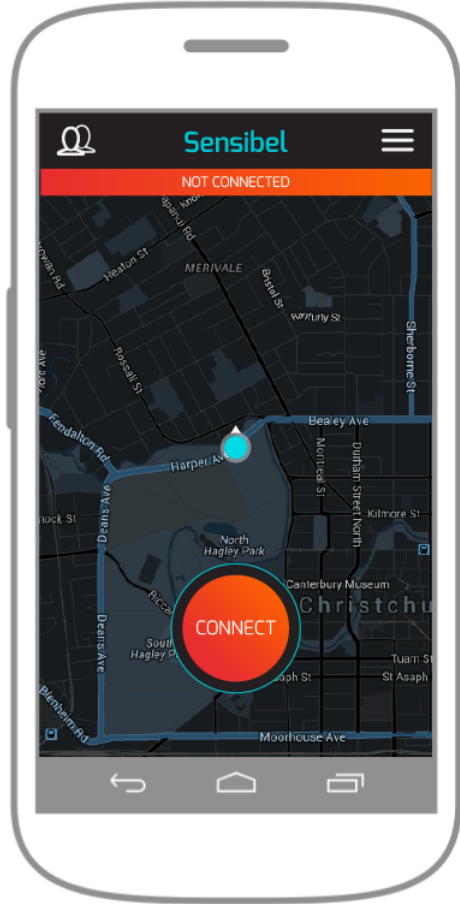Test improved beta App and allow for direct user interaction

Trial devices with a group of cyclists over a weekend, to allow for longer and more diverse journeys.

Feedback on the user interface design

Discuss community orientated roll-out plan.

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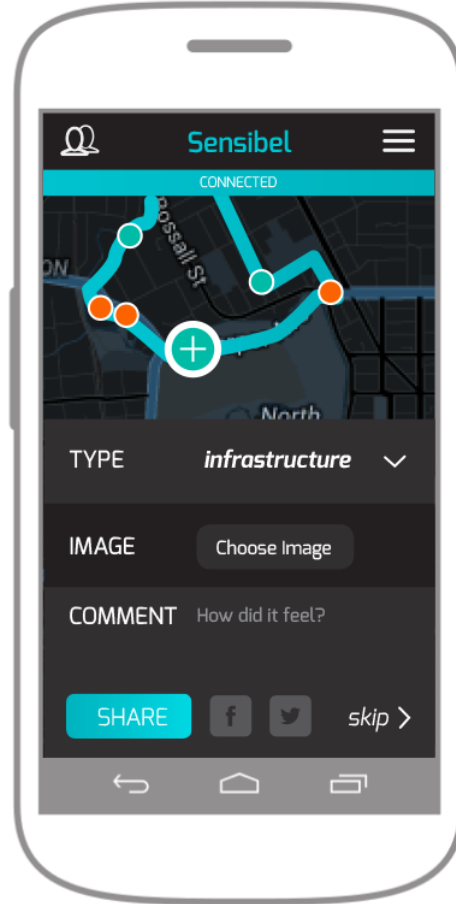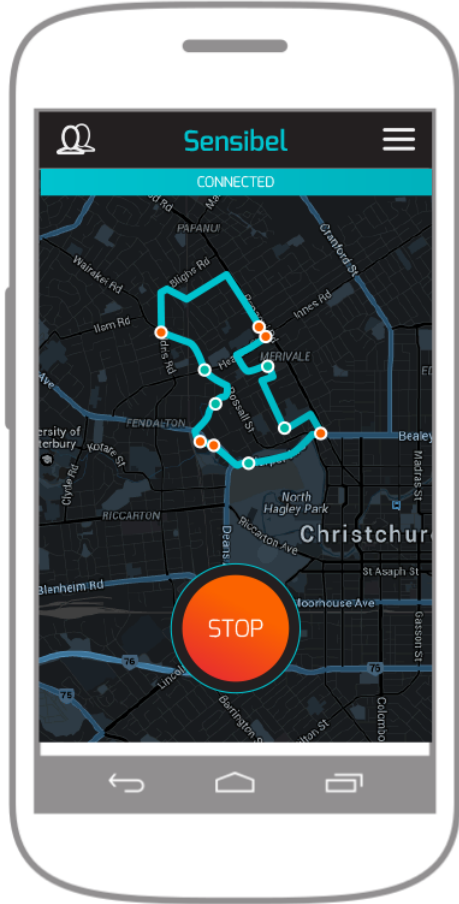CHCH

The App: User Interface

The App is only engaged at the beginning and end of the journey, or at points of interest during the journey where the biker has disembarked.

All interaction during the journey is done via the Sensibel device attached to the handlebars of the bike.
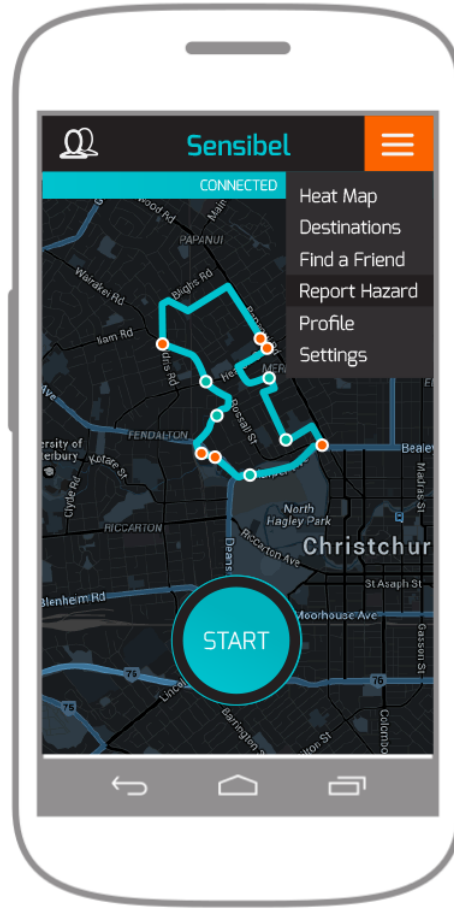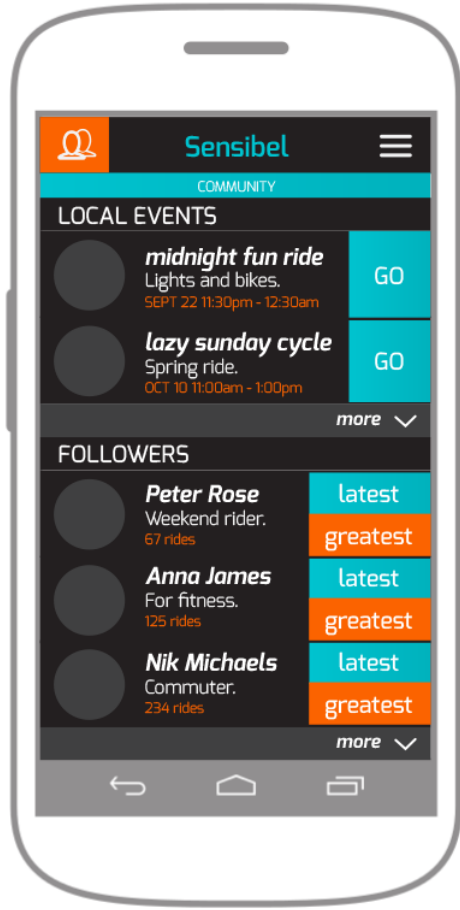
The App: Mapping & Annotation

Positive and negative experiences are plotted along the biker's journey.

Once completed the biker can add an extra layer of context through imagery or story.

These stories, or the entire journey can be shared socially.

Next Step

The App: Socialising & Data

Users can initiate or participate in local biking related events and invite friends.

Users of the App can also follow fellow bikers and see their favourite rides or places.

The platform can be used to show most popular cycling routes, trouble areas or even report a hazard directly to the council.

Data captured can be analysed by urban planners to improve the hard infrastructure of a city and improve the biking experience.

Prototyping Team

Carl Pavletich

Project Co-ordinator

Fabriko Creative

Hugh Barnes

Software Developer

Freelance developer

Craig Hobern

Hardware Developer

Fab Lab Wtgn

Advisory Group

Jack Jiang

Bike 2050

AECOM

Isabella Cawthorn

Urban cycling specialist

Kirsten Curry

Researcher

With support from

Principal Funders

Bike 2050 strategy

Cheers!

For more information please visit
www.fabriko.org.nz

Contact:
carl@fabriko.org.nz

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