

Telecom 5up Public School Bus System

The Problem

New Zealand cities are known to be failing to utilise and maximise the potential of public transport, in particular, bus services. City traffic peaks at times of the day when workers commute and children are being dropped at school or picked up by parents. Lack of security and trust for parents of young school children in urban areas is causing congestion and the need for cars. Getting parents to utilise a safe and sustainable system of transport for their children while also engaging the child in the use of the system would form the beginning of a long term solution that will incorporate the children into the use of public transport in later life and familiarise them with the concept of social interaction at a young age.

The Solution

The Telecom 5 Up school bus programme is aimed at reducing traffic congestion in cities by minimising the amount of cars being used to take children to and from school each day. This system maximises the potential of the school bus and provides a safe transport alternative for the parents of inner city children of primary school age, between 5 and 10 years.

The Telecom 5up system has been designed as an educational tool to encourage the cognitive understanding of a localised transport system in young children which will continue to develop into a greater understanding of the public transport system as they grow, generating a higher percentage of bus users than individual car owners in years to come.

The Outcome

Telecom 5up provides a safe and comprehensive transport system that is comprised of five main parts; an exclusive website, interactive bus stops, onboard bus monitors, identifying wristbands, and handheld proximity devices for the children's education and enjoyment. Buses in the system will function similarly to those in a municipal system but the overall service will be greatly improved, potentially being more personalised or tailored to the specific needs of an area or neighbourhood.

Telecom 5up System Components

Wristband: The silicon wristbands are a visible identity for the child and contain integrated RFID tags that only activate in close contact with the other system components. This tag enables the child to check-in at the bus stop and pay their fare electronically, and is conveniently located on the wrist to reinforce the 'high five' action required by the other components.

Bus Stop: A prominent system feature situated throughout the bus route, the bus stop invites the children to interact with it. Planting a 'high five' on the bus stop's face logs the child's arrival at the stop onto the network, updating the bus driver as to which location each child is to be collected from. This action also activates LED's placed up the bus stop's stem which are powered through Telecom phone cables. These light up sequentially, indicating a simple countdown to the bus' arrival to teach the child a basic schedule.

Bus Monitor: The children are again encouraged to 'high five' as they board the bus; this time to deduct the fare from their electronically loaded account total and to verify their presence in the bus. The bus driver's touchscreen interface displays the names of the children logged into the network each morning and reconciles system records to ensure all the children have been collected from each location. Arrival times at the school are also noted by the driver as a parent checkpoint. Bus drivers are to be consistent for each route and would eventually begin to learn the names and faces of those children they interact with each day, reinforcing safety within the system.

Proximity Device: A small handheld device, with clipping 'antenna' for use on bags, clothing and lanyards, encompassing an interface that is easy for a 5 year old to use while being complicated enough for a 10 year old. Essentially an electronic game of 'hide and seek' at the time of introduction, further interaction over time with other users and the system's website increases the device's potential use, growing in complexity with the development of the child. Interaction with this device is only possible in combination with the wristband to minimise intruder issues.

Telecom5up Website: The system's central link - allowing services to be upgraded at low cost to the service provider and forming a tight knit network of users, which includes the parents, who are able to pay their child's bus fees online and track their progress along the check-in points of the system as an added security measure. The website is set up for the children to interact with friends and play games; gaining 5up points to further their ability to interact with the potentials of the network.