

Dublin City University - School of Computing

BSc in Enterprise Computing
4th year project proposal (CA472)
Idea Proposal
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Project Title:

TourGo

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Project Summary:

TourGo is a long term car leasing service. Its main goal is to reduce the cost of motoring by making its users safer drivers. We provide our customers with a fully insured, taxed, and maintained vehicle for a monthly instalment over a set contract period. Each vehicle will have a telematic device installed that monitors their driving behaviours. The information gathered will be locally used to provide continuous passive learning through trip reports and personal performance analytics. Telematics data is then anonymised and batch processed. This data is then used to improve the insurance policy to our customer pool, both in terms of price and scope of customer acceptance criteria.

The main concept of our project is to change car ownership to a service model (Car as a Service). We identified driving in Ireland to possess entry barriers for newcomers. This is mainly caused by the high upfront cost to new drivers. This is a result of government disincentive schemes to owning older and less efficient cars, and high insurance costs. On top of the high cost, finding the right car for a new driver is a time consuming process with little transparency, due to how individually determined each cost is to the driver and their vehicle.

We both felt in the current climate and the technological capabilities currently available, TourGo can solve many of the issues faced by potential drivers when getting on the road, by not only simplifying the process of acquiring a car, insurance and maintenance but also simplifying the learning curve for new drivers on the platform by showing them key areas in their driving habits they should improve on.

Expected Technical Delivery:

The technical delivery we anticipate for the end of second semester will be a prototype of a Web Application. This application will include 2 primary views for users; current customers, and new customers. The current customers will have access to an account dashboard where they will be able to view information related to their policy and contract, as well as being able to amend their policy. New customer will be able to 'Get a Quote' by filling a form, as well as creating an account and purchasing a policy. This web application will provide a visualisation and simulation of the user experience with TourGo and be supported by the concept and technology definitions of the project report.

The web application will be developed primarily in JavaScript, utilising JavaScript design tools and frameworks. We anticipate ES6 MEAN Stack (MongoDB, ExpressJS, AngularJS, and NodeJS) being our technology stack for the project due to its utility for single page dynamic applications. We are also currently investigating ReactJS as a tool for improved elements for the site's design. Initially we investigated using a MySQL database for the service, or a hybrid database solution using MySQL and MongoDB.

Within the supporting documentation of the project report we will detail the operations of the service through a technology view. Each customer's car will include telematics devices which are gathering data on their driving behaviours. We will document these devices and their function. The data gathered is processed locally to provide regular, personalised feedback to the user on improving their driving through learning tools. The report will explain the approach to this processing and how the local algorithm will be updated for continuous improvement. We will also explain how the data will be anonymised and uploaded for processing as a customer pool.

Market Rationale:

To rationalise the market potential. Research and analysis of the market was conducted in the form of surveys and meetings with industry experts (primary research) and statistical assessment from online reports and sources (secondary).

We suggest TourGo fits into the current motor sales market, while also including segments of the current leasing and car sharing markets. Currently there are 2.68 million vehicles in Ireland, with 2.1 million of them being private cars. Due to the long term and inclusive nature of TourGo's model, we identify this group as the full size of our market, with TourGo's potential users being all drivers and prospective drivers.

We've determined our priority segment to be licenced drivers aged 22-25. These individuals tend to have the disposable income required for a subscription, they also tend to be high risk for insurance which contributes to the ownership challenges that TourGo's model can improve. The other two segments for our model are the 25-35 year group, and the 35+ group. Although we would like to work with the 18-22 segment, the initial model isn't suitable.

Our discussions with industry professionals concluded that the Car as a Service model is the future and that heavy involvement of telematics allows this to happen.

Macroeconomic factors would suggest that the TourGo model has an opportunity within the Irish car market in the near future. The uncertainty Brexit has caused around the used car import market from the UK might mean our biggest source of used vehicles will be hindered in terms of current trade agreements. The housing crisis in Ireland is also resulting in younger people being forced to remain living with their parents or living further away from their places of work or study. This, combined with Ireland's lack of reliable public transit infrastructure means the need for private cars for young people has never been higher.

Proposed Timeline (1 page max):

Since August we have been regularly contributing to the development of this project.

We've kept documentation of our progress through the blogs.

<https://blogs.computing.dcu.ie/wordpress/moored39/>

<https://blogs.computing.dcu.ie/wordpress/gamboi2>

Our proposed timeline for the remainder of the academic year is as follows:

Finalising technology stack. We hope that by the end of November we will be in a position to confirm what technology we will be using for the technical delivery. Our current strategy for selecting the technology is a combination of consulting with lecturers, professionals in industry, students both within our own course and in other courses, and self learning the shortlisted technologies for feasibility of our own skills to develop using them.

Conducting Focus Groups. After determining our target segments through our market research we have been advised by Niall Connolly, guest lecturer for CA4102 that we validate our findings through a series of focus groups. Essentially we want to confirm our prioritised segment of young professionals, aged 22-25 would be willing to use and pay for our service. We will conduct these focus groups before the end of Semester 1.

Propose Finances. During the Christmas break we want to finalise our projections for the financials of the project. These will include the customer pricing plans, costs of each element of the service, operating costs, and funding requirements for TourGo.

Industry Relations. Throughout the year we are actively speaking to industry leaders about our project. Thus far these have included insurance professionals, car leasing management, and telematics application developers. We have been asked to development an extended product proposal to an insurance broker who intends to

bring it to some of Ireland's largest insurance providers to help us further validate the project. This is to take place early into semester 2.

Develop Prototype. Following our Christmas exams we will begin active development of the technical delivery for TourGo. We want to implement Agile Methodologies to ensure compliance to delivery deadlines. We intend to operate in 1-2 week long sprints with Planning, Review and Retrospective meetings. We will develop a framework for our agile development after the exams, before the semester begins.

Workload Distribution:

The workload distribution for the development of our project primarily considers both members to have equal responsibility in decision making. However in order to work to our personal strengths, elements are divided to be managed individually as follows:

Finalise Technology Stack. Jemil will lead this element. Once all potential options have been identified and researched we will discuss the pros and cons of each with various people and decide together on the most suitable.

Focus Groups. Declan will write the guidance documents for the focus groups. It will develop on information gathered through market analysis. Finalisation of the focus groups will be discussed between both members. Conducting the group events will be a joint effort.

Prospected Fiancials. Jemil will combine existing information around costs and pricing to develop information for operating costs, customer prices and funding requirements. We will discuss the outcomes of this before creating a presentable document on TourGo's finances.

Industry Relations. Declan is leading communications with industry professionals around meeting schedules and purposes. Both of us attend meetings and then work together after the meetings to reflect on outcomes.

Prototype development. Both of us will work to our strengths within development of the prototype. Declan will work primarily on the front end development, while Jemil will lead on the backend and database concerns.

Staff Consulted:

We consulted with Cathal Gurrin on this document. Cathal has agreed to act as project advisor for TourGo.