Lessons Learnt Report

Consumer EV product (now named EVExperience application)

Lead organisation: Evenergi	
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Overview

This report outlines the key learns around developing the consumer EV product (now named EVExperience application), an online platform targeting consumers to provide them with a tool to prepare for a life with EVs.

Accelerating the adoption of electric vehicles in Australia requires helping consumers overcome common barriers such as high upfront costs, low product availability and limited access to public charging infrastructure. Household surveys illustrate real interest from Australian consumers on electric vehicles, with 11% of motorists stating that their next vehicle would be electric, due to the anticipated increase of new EV products into the local market, international EV uptake, and key industry stakeholders such as NRMA investing in public charging infrastructure across the country.

EvExperience is about managing people through a process of capturing their vehicle needs and arming consumers with the information they needed to get an EV either now or in the near future, so that even if an EV is not appropriate now, they feel invested in the process of getting one.

When building the business case for this tool, it was clear that given the low vehicle availability and relatively high price points of electric vehicles, a goal of the grant was to create a "concierge" process, where those who could not find a vehicle today would be managed through an ongoing process of engagement to get them into an electric vehicle as soon as an appropriate vehicle become available.

For the platform to be successful an appropriate partner was crucial. The evaluation of partners had specific criteria - it needed to be a trusted and impartial voice, it needed to have significant reach to consumers and it needed to be a relevant voice in the vehicle supply chain. After careful evaluation NRMA was a perfect choice as a partner.

The NRMA app was launched as a mostly articulated version of the functionality - providing an EV Availability planner, EV suitability test, home charging equipment selector. As at this time a number of features are built and in the pipeline to be released including an EV referrals engine and test drive booking application.

At the same time, the EVExperience platform has been built as a highly modular set of APIs so that particular aspects of the functionality can be used by other 3rd parties. The NSW Government, the electric vehicle council are currently using this functionality and a number of other interested parties are currently evaluating the various components.

![EVENERGI logo]

Commercial

The first critical process is about finding and working with the right partner to host the EV consumer product. Some of the key lessons in this process:

1. Finding and working with the right partner to host the consumer EV product

An early lesson of the project was to really focus on one channel for the product to build a collaborative development process, rather than looking at multiple channels.

NRMA was chosen as the right partner to host the product since as the Australian motoring body we are able to get the product out to all NRMA members across Australia - motorists who potentially can convert to EVs, and subsequently by capturing their feedback we can understand the nature of EV demand in Australia.

The NRMA has made a huge commitment to deliver electric vehicles in Australia with strong statements from their CEO and actions in the investment in charging infrastructure across NSW and broadly across Australia.

2. Establishing a process with the selected partner to agree on the scope of the deliverables i.e. just information or a full brokerage model

Another key lesson is around the importance of having a clearly articulated concept then establishing a collaborative design process with the selected partner to agree on the deliverables appropriate for a Phase 1 delivery.

Given the slow uptake of EVs in Australia, it is important for Phase 1 to be focused on building something that is at the right level of consumer engagement given the potential return. As in the project proposal the majority of potential purchasers in Australia are still at the level of thinking "my next car will be an EV" without knowing if there is an appropriate vehicle available, or how to get one.

The absolute focus at this stage is to ensure that they are comfortable to purchase an EV and that they can continue to contact them as the process becomes realistic.

3. Understanding how to best build interfaces to maximise impact on reducing barriers

As per the report for stage one of the ARENA grant there are significant barriers as outlined in the following diagram.

To manage these barriers the following key features were implemented:

- Capture consumer driving requirements including
  - Car features
  - Budget
  - Driving distance
  - Parking and charging

- One of the key lessons learnt during the process was that there are far too few options for people to purchase an electric vehicle today so we had to develop a matching list. This matchlist prioritised by a match score and ability for users to compare the cars in a snapshot view based on match rate, purchase price, running cost, engine, range, and CO_2 emissions.

- Review each individual EV car details based on car spec, purchase price, running cost (compared to standard ICE vehicles), range (personalised based on the user's driving distances on a regular and occasional basis), emissions, performance, safety, personalised time to charge (personalised based on the user's driving distances on a regular and occasional basis, and the types of charger used).

- Ability for the user to add suitable EVs into a wish-list.
- Send the wish-list to a nominated email address with the user's shortlist of EVs and key info on each including match rate, purchase price, running cost, engine, range, and CO_2 emissions.
- Capture user feedback on EVs and the app.

This would enable consumers to do their research and be armed with the information that they need for now or in the near future, so that even if an EV is not quite the right fit now, the consumer has already invested in the process of getting one, and they have been educated about EVs in the market and what to look out for easier for them to progress once it becomes appropriate.

4. Product commercialisation

Commercialisation for the EV consumer product is based on a brokerage model with product monetisation from referrals to car manufacturers and charging infrastructure suppliers, alongside affiliate products such as car insurance and roadside assistance from NRMA and other partners once established.

A key lesson around product commercialisation is that it is also about simplifying the customer journey for the end user - the electric life can initially be more complicated in terms of set up - since the consumer needs to not just buy the car but also get access to a charger, and potentially switch to renewable energy for charging if their purchasing motivation is to emissions reduction. So while the brokerage model is about product commercialisation, the consumer EV product is intended to be a one stop shop to make the consumer's life easier when it comes to transitioning to a life with EVs.

Product development - how the product was conceptualised and developed

1. Initial product conceptualisation and design

The initial product conceptualisation and design is based on solving the problem with the Australian, with the pipeline of positive buyers slowly eroding as they confront the current realities of cost, lack of information, lack of model availability and lack of infrastructure.

To help consumers overcome these common barriers for transition, we came up with an EV match tool - the primary objective is to provide a one stop shop that has everything a consumer needs to make the transition as easy as possible. Key learnings to get consumer buy-in are that we need to address vehicle suitability as the first port of call, and to make the process as simple as possible.

- Consumers need to understand early on in the process that transition to EVs does not have to be difficult or complicated.
- Vehicle purchasing options need to fit with the consumer's lifestyle habits. It was crucial to show that we are not trying to sell the consumer something that does not fit with their lifestyle

The concept that we arrived on is a personalised experience by capturing the consumer's lifestyle choices upfront, then matching them to vehicles that best suit their needs. "Tinder for EVs" - consumers are matched with the vehicles that best suit their needs based on a scoring mechanism.

Another key learning was that the output needs to be relevant to the Australian market - the vehicle availability tracker is important to provide information on which EVs are available and upcoming and be informed when the EV becomes available in the market.

2. Getting user feedback to arrive at the final product deliverables

We created conceptual designs that stepped through the flow of the application screen by screen and we used this to conduct user research to get feedback from multiple channels, with key learnings from each channel outlined below:

- Renault-Nissan Innovation Lab - user testing of the concept designs - key learnings
- Testing the brokerage concept in the UK from BSM/Ovo Energy - feedback was useful in reinventing the customer journey in the consumer app
- Workshop with key stakeholders in NRMA who deal with motorists on a regular basis - brainstorming and feedback session
- The built prototype was sent across NRMA to get further feedback and agree on mandatory requirements for the final product to be hosted by NRMA

Technical considerations

1. Technical architecture

The platform was implemented using a highly flexible architecture with significant data acquisition and maintenance of a range of complex algorithms (in Python) and the output using a React Native platform.

The EVExperience platform has been built as a highly modular set of APIs so that particular aspects of the functionality can be used by other 3rd parties. The NSW Government and the EVC are currently using various functional components of this application and a number of other interested parties are currently evaluating the various components, A key learning from the process is that while we thought companies wanted to integrate with our APIs directly so that they can build their own frontend, so far all of them wanted us to build a widget that can be embedded onto a content page on their website.

2. Delivery methodology

Evenergi uses an agile and highly iterative development approach, and we continue to test and learn from our users and based on quantitative and qualitative insights from our users we continue to enhance the platform usability and features.

We had to overcome many challenges trying to do fixed price contracting with an agile scope. Especially as there were many 3rd party stakeholders involved this process became quite difficult and led to wasted work. We learnt that scope should be fixed only a week ahead - however this led to resourcing challenges for the contractor. Testing and fixing against this scope is also challenging and changing the scope mid sprint is a wasteful process leading to more wasted work and contractual relationship breakdown. The key learning from this experience is that the agile arrangement with scope fixed a week ahead should be an end to end process throughout delivery.

3. Data capture and retention

Initially we thought it was important for us to create an account for the user and we put a lot of effort into analysing and solutioning on how we could capture and retain user data in a secure way. However, as we worked through the scope for Phase 1, we realised that account creation was not necessary as an early deliverable - as the main purpose of the EvExperience application as this stage is to provide information and allow us to capture minimal contact data for follow up engagement. We learnt that very simple solutions such as sending the wish-list to

the user was sufficient and it was more important to capture email address for further engagement, get their feedback on both the application and their demand for EVs before a more complex user account solution needed to be considered.

4. Matching algorithm

An algorithm was developed based on a weighted scoring mechanism based on the user's response to the lifestyle questions. Initially we had designed the application so that it only showed the EVs that fit with the user's criteria - however due to the limited availability of EVs in the Australian market and the barriers aforementioned, this limited the results with potentially most users getting no suitable vehicles being available. Going back to the objective of this initial phase to arm users with the information they need to transition to EVs even if it wasn't suitable now - we readjusted the matching algorithm so we displayed all vehicles available but ranked based on the weighted score. This achieved our goals of educating consumers, providing a channel for further engagement and get their feedback to assess demand.