New Era Software

Business Plan

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Administrative Summary

The business is named New Era Software (NES), and is comprised of three core members. These are Kiaan Moodley, Ashley Jurisich and Dinolan Naidoo. They are all students at the University of the Witwatersrand and are all currently pursuing an engineering degree in Digital Arts. NES is a start-up company in the University of the Witwatersrand, that is planning to launch an online website that assists users in understanding and calculating how much energy is consumed by their transport vehicles, as well as comparing it to a vehicle that uses electric energy. This will be done by having the user insert the required information, such as the type of energy source, fuel economy (L/100 km) and the distance travelled. All this information is used to calculate the amount of energy consumed; liters of energy consumed, as well as the total amount of money spent on this energy. It will then also show how much energy will be consumed travelling the same distance using a transport vehicle that uses electric energy and the price of that energy. The comparison is made using bar graphs. This sort of website is primarily targeted at businesses who largely depend on the use of transport vehicles. The secondary phase of the project will target people who are looking for another, environmentally friendlier, energy source, other than petrol and diesel. This website pushes them towards the idea of using transport vehicles that make use of electrical energy. The online site project is intended to make profit through subscriptions. This will increase income revenue. Users may use the demo version for a once-off comparison, whilst the subscription service will store their previous data comparisons. With a mixture of a strong work force, and professional practice in development, this site will be beneficial to everybody who makes use of it, building a strong reputation for the company.

Mission
- Provide businesses and individuals with information about vehicle energy alternatives that benefit both the environment and economy.
- Provide a web-service that allows comparisons to be made between the user's current transport energy usage and that of the energy usage of an electrical vehicle.

Long –Term Goals
NES owners have identified several goals which the company as a whole should aim to achieve.
- The solutions provided become standard practice in businesses
- Decrease in the demand for petrol and diesel
- Long time subscription periods from users

Company Summary
This business is a start-up company based in the University of the Witwatersrand. This business intends to create a website that anybody can use, however is primarily focused towards large businesses. It allows users to compare their own transport energy usage, to what it would be like if electric energy was being consumed instead.

Company Ownership
NES is a company whose ownership is shared between three people, Kiaan Moodley, Dinolan Naidoo and Ashley Jurisich.

Management Summary
NES is led by the development team. All three members of the team are students at the University of the Witwatersrand. The group dynamics is democratic, there is no single person in charge. This is the first project that the development team will be taking on. The project management methodology the development team chose is agile, which means the project growth and development will be down to repeated and continuous testing, until the project produces the desired result. The team does not have any history of creating and managing websites. The team meet up regularly at the University of the Witwatersrand, and make use of Microsoft Teams to give each other updates on the progression of the project. The workload is split up between the team members, each individual is responsible for their own parts of the project. They do collaborate when it is required, and also help each other to meet deadlines.

Technologies to be used
The most crucial element required for the project is client-side technologies, such as HTML, CSS and JavaScript. HTML is a language that makes up the content of the website and tells the browser what to show on the website. CSS is a language used to describe the presentation of the website. JavaScript is a programming language commonly used to create interactive effects within web browsers. The remaining technology elements that make up a website are server-side, meaning that they reside and operate on the server. In order to program business logic or custom functionality on the website, web developers use programming languages. The development team will make use of the IDE Visual Studio. Node.js is also being used, this is the back-end JavaScript runtime environment that executes the code outside a web browser. A database engine or database server is the underlying component of the website where the entire website's data is stored. MSSQL was chosen by the development team to be the database engine as it is one of the easier ones for beginners to get a grasp on, with the aid of SQL Management studio which is a software application that is used for managing and configuring all components within MSSQL server. The website will be deployed using Cloudflare.

Services
New Era Software offers an alternate solution to the energy consumed by transport vehicles. The website intends to compare the energy consumed by vehicles that are powered by either petrol or diesel, with electric powered vehicles, in an attempt to try and convince the users to switch over to the more environmentally friendly electric energy. Users enter the required details into the website, and the website will then calculate the energy consumed by the vehicle. The calculated answer is then compared to an electric vehicle with the same distance and fuel economy that the user previously entered as the variables of the calculation. The user will then be able to see how little energy an electric vehicle consumes compared to vehicle they are currently using. Users will also be allowed to sign up to the site, which also allows for a

backlog of information to be stored, this enables users to check their history to view previous comparisons. Users will only be allowed access to the database if they are paying subscriptions. User may still be able to use a free version of the calculator for a once-off calculation and comparison for up to 4 different inputs.

Testing
NES has identified several ways to test the operations of the website. These are:
- Functionality Testing
  + Functionality testing is done to ensure the system works as required, including the user interface.
- Database Query Testing
- Unit Testing
  + Verifies the calculations made by the webpage are accurate.
- Performance Testing
  + Determines how a system performs in terms of responsiveness.

Market Research Summary
The primary target audience is businesses that make use of transport vehicles which consume either petrol or diesel. NES aims to convince the users to switch to an environmentally cleaner source of energy for transport vehicles. The secondary target group is everyday individuals that use either private or public transport to get from one place to another. There are no other businesses that provide a similar web service. The company aims to promote the use of alternative sources of energy for transport vehicles through the use of a website. NES decided to make this a web service because it can be accessed on any device with internet connection, which widens the market of potential users.

Market Target Groups
The primary target group are large businesses that require transport vehicles. If they were to be made aware of the consequences of using either petrol or diesel for their transportation requirements, and also the benefits of electrical energy, they may decide to change. This will make up a large portion of the electrical vehicle market. The secondary target group is made up of individuals and small businesses who regularly make use of either public, private or parastatal transport. The individuals would definitely be interested in the service provided by the business as it is beneficial to them. The individuals age would not necessarily be a factor for the target audience; however, we expect citizens who are for familiar with technology to be more accustomed with how the website operates. More attention will be paid to the secondary target group once the infrastructure to support electric vehicles become common across South Africa.
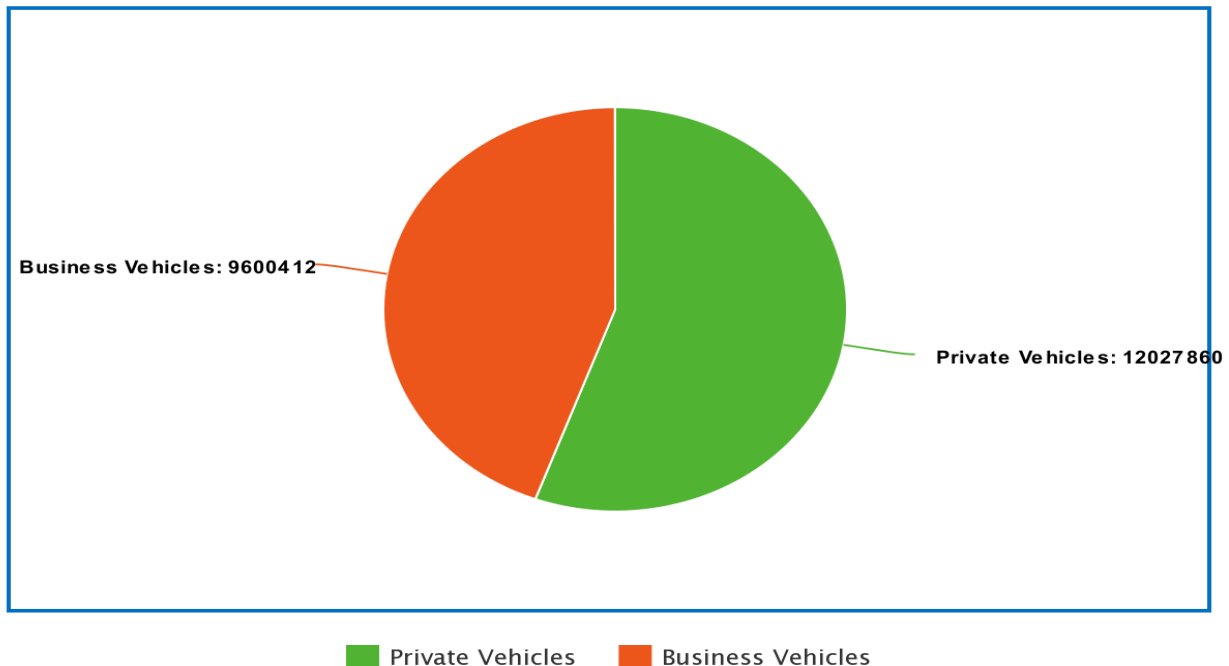
Market Analysis showing number of privately owned vehicles vs business owned vehicles on South African roads as of 2018

Target Market Implementation

NES has chosen these two market segments for the following reasons. The market in South Africa is not large enough for electric powered vehicles; however, the market for petrol and diesel is becoming more unstable. With the prices of these energy sources rising, businesses and individuals will certainly be looking for alternatives. This is why the business sector is targeted primarily, and why it is more crucial to introduce them to an alternative energy source. By not only marketing electrical energy as cheaper, but also as greener energy source, businesses will feel encouraged into incorporating electric powered vehicles for transportation. By businesses also increasing the number of electric vehicles in South Africa, it will also broaden the market for individual private vehicle owners. This will result in the vehicle market being flooded with an import of electric vehicles, and eventually encourage the manufacture of charging ports in all garages across South Africa. The individual users will make use of the website so that they may compare the energy that they consume for transportation purposes, with what energy will be consumed if they used a vehicle that is powered by electric energy.

Industry Summary

There is no direct competition as no other service of this sort is currently being provided, instead the competition comes in another form. That being the energy sources that currently make up the largest part of the industry, diesel and petrol. Consumers may be unaware of the benefits that are brought about by using electrical energy to power transportation vehicles and decide to stick with petrol and diesel. It may also be an issue for large transport vehicles, such as trucks and trains, to suddenly be switched out for newer models, that consume much less energy. This will require large investments and a bit of time to fully introduce South African transport roads and rails to electric vehicles. Garages will also have to renovate their current

stations to include charging ports for electrically powered vehicles. It can be seen that it would require a large-scale initiative, with co-operation from all involved parties for these vehicles to be fully embraced in the transport industry. With such an empty market available, the sooner businesses and individuals decide to make the change, they would reap the benefits almost immediately.

Project Resolution Summary

New Era Software's business strategy will involve educating businesses and individuals about the benefits of electric powered vehicles. Once businesses learn of how efficient it is to use electric vehicles, they may inflate the market with these vehicles to increase their own company profits. Businesses will be relied upon as the voice of public appeal for government to get involved and build infrastructure and stations that can support electric transport vehicles. Electric powered vehicles will massively improve the economic and environmental state of the country in the long run, even if the electricity has to be bought from another country that produces electricity from a renewable source.

Industry Edge

NES will use this website service as the main power tool in attempting to convince its users that electric energy is the future of transport vehicles. This industry will grow hand in hand with renewable energy. As the likes of solar, nuclear and hydroelectric energy become more prevalent globally, the use of electric powered vehicles will soon begin taking over. The vehicle revolution has already begun in large, first world countries, it is only a matter of time before it gains traction in South Africa.

Forecast

The sales strategy takes into account the philosophy and reasons why many of the people are attracted to electric powered vehicles is because of their environmental ethics. The sales strategy will make use of this desire, alongside the fact that environmental decisions can have positive economic impacts in the long term. Therefore, the sales strategy will pressure the competitive edge of economic justification as the method for turning sales leads into users of the website. For this strategy to be effective, the population of electric vehicles on South African roads will have to increase. NES has adopted a conservative sales forecast for the business plan. By adopting a conservative prediction, it is easier to hit sales goals and increase the likelihood that the business plan is relevant to the business. The business aims to use the website to create steady streams of revenue, and also to create awareness for a situation, as well as provide a solution.
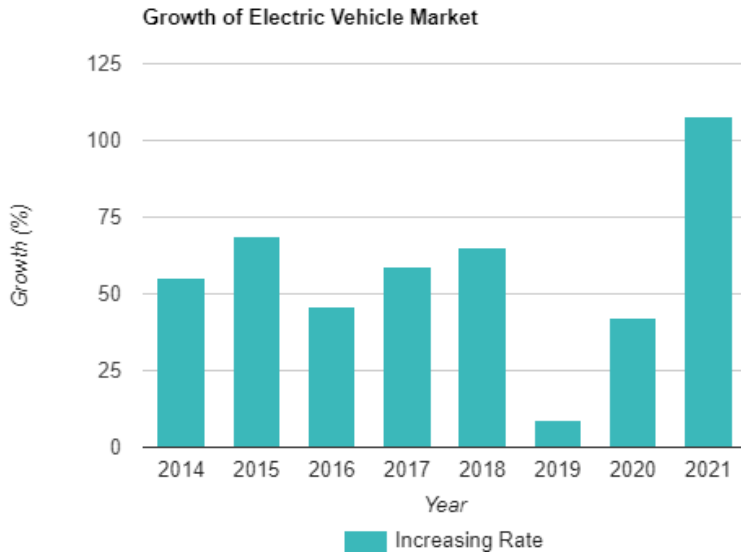
Graph depicting the global increase in the growth rate of electric vehicles as of 2021

As can be seen from the above graph, there will most definitely come a time when electric vehicles take over global roads, including South African. This project serves as a catalyst, and can help people and businesses prepare for such a future. As the electric vehicle market increases exponentially, it will result in no shortage of website users.

Marketing Strategy
Very little marketing will be needed. NES believes that with the recent growth of renewable energy as a source for electricity, people will start looking at how else this energy can be implemented. NES plans to directly contact large businesses and offer this service to them exclusively. Once the business grows to a comfortable point where it is able to support millions of individuals and small businesses, social media will be used as a method to introduce the NES name to households. Advertisements will primarily focus on social media as this is the most used and talked about media medium.

Milestones
NES has identified several milestones that identify the route to success. Performance will certainly increase through the quest of achieving each goal. These milestones are:

Milestone	Date Completed By
Proposal	09 – 05 - 2022
Status report	24 – 05 - 2022
Status report	31 – 05 - 2022
Final Submission	10 – 06 - 2022
Presentation	13 – 06 - 2022
Full Deployment	01 – 05 - 2023

Web Plan

The website is the primary service this business provides. It will take in the user's input data- and show how much energy their non-electrical vehicle consumes- and compare it to how much energy an electric vehicle will consume- using the user's same input data. This project will use local website developers to build the site.

Website Marketing

The plan for marketing the site is fairly simple; submission to search engines such as Google and listing the website on all of the company's social media.

Personal Plan

A prototype will be launched eleven months before full deployment of the actual site. The date of the site launch is scheduled for May 1, 2023, therefore leaving the prototype date to be June 10, 2022. The development team will work together, sharing responsibilities, in order to meet these deadlines.

Budgetary Considerations

Name	Starting Salary (R/month)	Potential Salary after 1 year (R/month)
Kiaan Moodley	20 000	24 000
Dinolan Naidoo	20 000	24 000
Ashley Jurisich	20 000	24 000
Total	60 000	72 000

As inexperienced software developers, a typical salary starts between R14 000 and R24 000 per month. We have included quarterly raises usually received during the first year of work to determine an average monthly salary. After a year of work, the monthly salary increases due to the amount of experience employees have gained. The salary received by employees will continue to increase further in the future to account for experience levels and inflation.

Since NES will be launching their website with Cloudflare, the business will have to pay for hosting service fees. That amount comes out to a total of R37 389.12 a year.

Start-Up Capital

These are what is needed for the business to begin operation:
- Computer system including three workstations
- Internet access (12 months minimum)
- Assorted software that can support multiple coding languages, such as Java, CSS and HTML.
- Microsoft Office
- Miscellaneous Office Supplies (desks, chairs, etc.)

Assets	Costs (R)
Computer Systems and Workstations	9399 x 3 = 28197.00
Internet Access	516 x 12= 7224.00
Microsoft Office	999 x 3 = 2997.00
Miscellaneous	8650.00
Total	**46036.00**

Liabilities	Costs (R)
Currently Borrowing	0.00
Long-term Liabilities	0.00
Outstanding Bills	0.00
Total	**0.00**