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## E-Commerce Video Based Automobile Website

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**Abstract:** With the development of new technologies people tend to take maximum advantage from the new technologies available. This new improvements have a huge impact on buying and selling also. The ultimate target of this project is to provide a better solution for buying and selling which specifically address buying and selling of vehicles. The final outcome of this project is going to be a website which facilitates online video advertising for vehicles available for sale.

The basic of the project is going to be data collection in order to identify criteria's that customers are expecting from this kind of website. An online survey will provide to record responses.

When the website is developed vehicle owners can prepare a small video about the vehicle which is on sale which provides a clear understanding about the vehicle. This enable buyers to get more details of the vehicle by staying at home if they are happy about the vehicle they can meet the dealer directly and go for negotiation. Also this website will facilitate them with leasing facilities, location facilities and many more.

The basic technology using website is going to be is cloud technology. This enables more advantages from the technological side.

The final outcome of this project will provide an advanced platform for customers and seller related to vehicle buying and selling. It will facilitate and, reduce cost and time each individual has to spend on buying a vehicle.

**Keywords:** Buying and Selling, Automobile, Cloud Technology

### INTRODUCTION

Due to the advancements of transportation and necessities of people most are trying to buy their own vehicle. When a person wants to buy a vehicle in a developing country like Sri Lanka most are trying to go for a second hand vehicle rather than choosing a brand new vehicle. Because of this

reason there are so many new online and offline platforms for automobile advertising. Though there are plenty of platforms for automobile advertising the availability of information is less in those. All of those platforms include a small description alone with few images of the automobile. But looking at those is not sufficient for the buying decision.

When designing and assessing online advertisements agencies and others should consider about factors like informativeness and should not offend customers (Wang, Sun, Ler, & M, 2009)

So as a result of it the study suggests and implements video advertising method for automobile buying and selling website. Along with the video provided in the site there are some more. So uploading video of the product available for sale is a practical aspect that websites can implement. There are some more features than uploading a video. This provides facility to buyers and sellers to clarify their own doubts and it facilitates automobile buying and selling in a proper manner. Some Sri Lankan buying and selling websites have this chatting option but most of the time they have to be a registered member of the website in order to have this facility.

When it comes to Sri Lankan buying and selling apps they indicate the city where this product is available but this website and mobile app is going to differentiate from these options. Through location tracking system this app will provide buyers details about where this automobile is exactly available. Since this is a free downloadable application with less amount of size any user can have access to the application. Once user tries to get used to this application most of the people will have the habit in proper buying and selling habits.

As new technology is improved more people tend to focus on online website and mobile apps when they are searching this kind of stuff. Spending on online search advertising has a significant positive impact on vehicle sales (Peng, Zhang, Zhang, Dai, & Li, 2013). When it comes to Sri Lankan online buying and selling apps and web sites there are plenty of options available for sellers to publish and buyers to view the product. But all of them are based on images. When it comes to buying vehicles a buyer can't get a clear idea about the vehicles by just looking at the image. So in order to fill that gap this project is going to provide a new platform for online buying and selling for automobile industry in Sri Lanka. When it comes to online video advertising entertainment, informativeness, irritation and credibility have an impact on customer attitude (Brettel & Spilker, 2010). So providing a website is going to fill this gap.

### **OBJECTIVES OF THE STUDY**

The main objective of the study is to make a better and effective platform for automobile buying and selling in Sri Lanka. This new platform increased the speed and efficiency of automobile advertising. Other than this main objective specific sub objectives were addressed.

- Provide buyers clear information about the items available.
- Facilitate users to identify available nearest sellers to fulfill their requirement.
- Reduce the bargaining time between buyers and sellers through telephone conversations.

## Research Questions

- To which level online buyers are satisfied about the automobile advertisements available online?
- What are the features buyers and sellers are expecting from an online automobile buying and selling app?
- How to facilitate online automobile buying and selling through a website?

## SCOPE OF THE STUDY

The scope of this study covered the issues which are related to buying and selling of automobiles. The project developed a better platform for those who are involved in online automobile buying and selling. Software development organizations have become more interested in agile methodologies. Agile methodologies have caught the eye of software companies now a day. The researcher went through a series of iterations, analyzing designing developing and testing each feature that defined within the iterations. First iteration went through high-level planning along with high-level analysis. Next defined what the exact requirements and identified drawbacks in existing systems and defined research gap.

Second iteration outlined the scope as OCR technology for mobile phones cameras and data analyzing in defined data set. Found suitable algorithms for each function. Then designed a sketch for android application user interfaces and as well as sub interfaces. Extracted what kind of data should be in the database and database tools as well. In developing section as next step team members decided how to implement each and every research component for a demo and get the feedback. In testing part each and every single function will be test in isolatable. Then integration test and unit test also will be done. At the end perform acceptance testing with including two parts of alpha and beta testing. Each feature is taken for start to finish. This system facilitates people who are interested in automobile industry in Sri Lanka. Through this system they can see vehicles online through a video and negotiate which the dealer using online data communication platforms.

## LITERATURE REVIEW

This research mainly focused on developing a website and mobile app in order to facilitate online automobile buying and selling. A video of the automobile which is on sale will be uploading to the web site and the site and app is providing the facility to negotiate with customers and buyers through chat option and also it provide leasing facilities options according to customer requirements. Basically this is using cloud technology, GPS and GIS.

With this literature review it provides readers overview of the ideas, theories, and significant literature currently published on our topic. Users can get complete idea about our research topic by referring literature reviews below.

### *a) Effect of Online advertising*

Due to new technological improvements people tend to refer online advertisements rather than new paper and television advertisements. They are closer to internet and other web browsers which resulted people to focus more on those online advertisements.

The advertising channel affiliate price comparison and affiliate coupon loyalty have a stronger impact on US customers. In contrast the online advertising channel search corporate has a stronger impact on French customers (Brettel & Spilker, 2010). When considering about web advertisements attitudes of customers is significantly and positively influenced by product information, hedonic, and social role. Research results indicates that attitude toward Web advertising is a statistically significant and positive predictor of both Web user's purchase intention and Web advertising behavior. These findings suggest that marketers should invest time and money into providing consumers with the afore-mentioned beliefs that will likely lead to forming positive attitudes. These positive attitudes, in turn, will likely result in favorable consumer behavior (Saadeghvaziri, Dehdashti, & Reza, 2013). Entertainment, information seeking, credibility, economy, and value corruption are some basic criteria's that customers are considering when it comes to online advertising. One of the most important functions of advertising is to provide information. It is logically sound that those who perceive online advertising to be informative are more likely to favor it (Wang & Sun, Examining the role of beliefs and attitude in online advertising , 2010). Preference, familiarity, and fit of background music have significant influence on the emotional and behavioral responses of consumers to advertisements, Also the same study reveals personalization of background music can result in significantly higher results for advertisement recall, attitudes towards the advertisement and emotional effects and also purchase intention. At the same time, the results also suggest there is no impact on perceived fit or music congruence where the background music is selected using music classification technologies (A study of Potential Role of Music Classification Technologies in Video Advertising , 2015)

So these past researches shows about the criteria that customers are considering when they referring online advertisements.

#### ***b) Using Videos in online advertising***

Due to busy life schedule of people they are more considering about details of the products as they don't have much time to spend on collecting necessary details. This resulted some online advertisements to come with a video so customers can see more details of the product which is available. This resulted some researches to pay their attention towards online advertisement with video.

This result resulted that in formativeness, irritation and credibility of advertisements displayed while viewers are watching online videos affect viewer attitudes toward these advertisements, were supported. The constructs have a strong explanatory effect on attitude, especially entertainment. Irritation was found to have a negative impact on attitudes. These findings are consistent with previous research.

#### ***c) Technological Aspects***

Srinivasan (Sirinivasan, et al., 2014) in year unknown has been intended to develop novel middleware and algorithm to determine frequent user behavior patterns on their phones. For that they have developed Mobile Miner which is runs on mobiles in order to fine which context events that happen together. To prove that Mobile Miner is efficiently generate pattern on mobile phones they have

tested it over 1-3 month with 106. Infer diverse patterns capture different aspects of the users' behavior by analyzing the data and also explore the utility of each type of pattern.

Using Mobile Miner they have discovered co-occurrence patterns which context events frequently happen together. For an example user frequently reads news apps on the phone whenever having the breakfast at home in the morning And also they had run the pattern mining algorithms on 6 users phone over 2 months smart phone usage and found an idle time on the phone. So users typically unused phone in majority of time such as night when sleeping and phone is charging. And they have graphed it average idle time per day on weekends and weekdays. They even have done suggested smart reminder to charge the phone before user goes to the sleep with half empty battery according to the patterns that they have found. For those finding patterns they have used association rule which can easily understandable by both users and developers. And they even provided smart UI shortcuts for the users that frequently used apps. They have showed Mobile Miner efficiently generate patterns using limited resources overall frequent patterns in 16 minutes and detailed app usage patterns in 21 seconds from Apriority mining algorithm. Later on using co-occurrence patterns they have improved phone UI by launching apps and predict the next app as well.

In the future they are expecting to extend Mobile Miner exploring patterns of events in longer time durations of the order of hours or days using incremental rule mining algorithms. And systematically determine the correct frequency of running the mining algorithms based on change of user patterns. And also work on other sequential or correlation patterns.

Science this website and mobile app allows customers to bid according to their requirements a technical strategy should be implemented in order to facilitate bidding. A fuzzy inference system would be part of the solution to control the bid amount of each ad unit, and help in the process of determining which ad units should be removed or kept longer in the advertisement campaign, and thus helping indirectly improve the evolutionary process. In addition, using a fuzzy system to regulate prices of the Google AdWords campaign seems to have a promising future, but we still need to perform more experiments. We also plan to improve the design of the fuzzy system as in other recent works, for example we will try optimizing its design with bio-inspired algorithms bid (Madera, et al., 2017)

One main technological aspect which is going to use in this project is cloud as a storage to store videos which are uploaded to the site. Cloud computing enables process and business models according to the new technological aspects. Cloud computing provides a way for businesses to exploit the opportunities borne of these digital trends to better meet customers' needs and drive future growth. In fact, this research illuminates six key cloud attributes or business enablers being used to power business model innovation. They are cost flexibility, business scalability, market adaptability, masked complexity, context-driven variability and ecosystem connectivity (Berman, Kesterson, Townes, Marshall, & Srivathsa, 2012)]. Half of the Irish companies have adopted to cloud computing for their business. Low cost is one reason for business organizations to adopt for cloud technology and other than this reasons they tend to use cloud technology because of increased flexibility, productivity, increased resource utilization and portability for the firm – making them more adaptive in an ever changing and challenging business environment (Udoh, Khan, Grosses, & Arnette, 2016 )

## RESEARCH METHODOLOGY

In project Management, it's mandatory to use a proper a proper methodology for the project. System Development Life Cycle (SDLC) is a framework defining tasks performed at each step in the software development process. SDLC is a structure followed by a development team within the software organization. This process includes project identification and selection, project initiation and planning, analysis, design, implementation and maintenance.

### General structure of Life Cycle Model

**Planning** -: Divide the project into several tasks and identified the things of every task. In project task identification, used the WBS and Gantt chart to schedule the project. This gives a clearer picture of what actually the existing system is.

**Analyze** -: In this stage, collect the data through the Internet from existing projects and research papers. Follow the all of collected data to decide for what are the technologies that can use to develop the application. It is an in-depth study of end user information needs that produces functional requirements that are used as the basis for the design

**Design** -: Design the application structure and database of the android application and mainly focus on the interface of the online E-commerce application and website. Viewed as the design of user interface, data, and process and system specification.

**Implementation** -: Implement the front end and back-end of the application with relevant technologies which are location tracking, filtering technologies and data mining algorithm.

**Testing** -: Conduct testing methods like unit testing and system testing to check the errors of the application. Then solve the errors of the application by debugging

## RESEARCH FINDINGS

The dependant variable of the study is buyer's attention towards online automobile advertisements. The independent variables are categorized according to a preliminary questionnaire done in order to gather ideas about online automobile advertisement this data was collected form 50 people those who are referring social media advertisements when it comes to buying automobiles. According to that study 6 main attributes of online automobile advertisements was identified they are Image of the automobile, video of the automobile, Sellers contact details, Sellers location through Google map, chat function and details of the automobile. So these 6 attributes can consider as the independent variables of the study.

### *Data gathering*

When it comes researches it's mandatory to collect data and do an analysis in order to identify requirements. So in order to identify requirements of this study also a data gathering was done. When it comes to research there are two types of data collection methods they are primary data collection methods and secondary data collection methods. Primary data was collected through books, research articles and paper articles.

Secondary data was collected through an online questionnaire which was distributed among 75 respondents who are frequently using these buying and selling web sites. But collected only 50 respondents only from people all around the country and few Sri Lankans who are working in other countries as well.

This online questionnaire contained 12 questions. And it had 3 sessions. First session was created in order to gather demographic data like age, gender and location. Second session is created in order to gather respondents' idea about online advertisements sites and there were three questions on this area. Third session was created in order to identify buyers and sellers requirements about the attributes which should be included in these online sites. The population of the study is automobile buyers and sellers who recently involved in buying or selling an automobile. Since there is less people in the sample simple random sampling method was used.

### Data Analysis

According to the regression analysis conducted Beta value was analyzed in order to find which independent variable is mostly affecting for the dependent variable. Among all the five independent variables which are affecting to get buyers attention towards online automobile advertisements providing a video of the automobile is mostly affecting factor for buyers to pay attention to online automobile advertisements. Which indicates the beta value of 0.268. Also among all these factors availability of the chat function is the factor which is lastly affecting to get buyers attention towards online automobile advertisements this indicates beta value of -0.509.

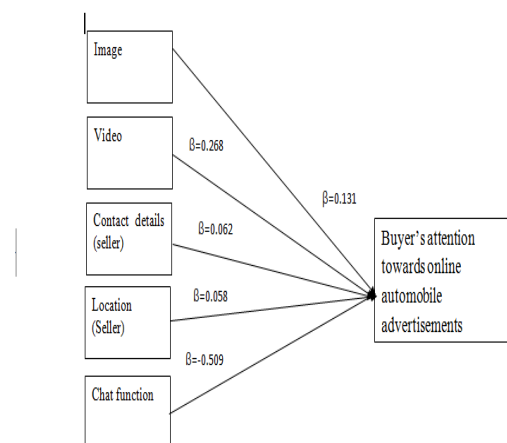
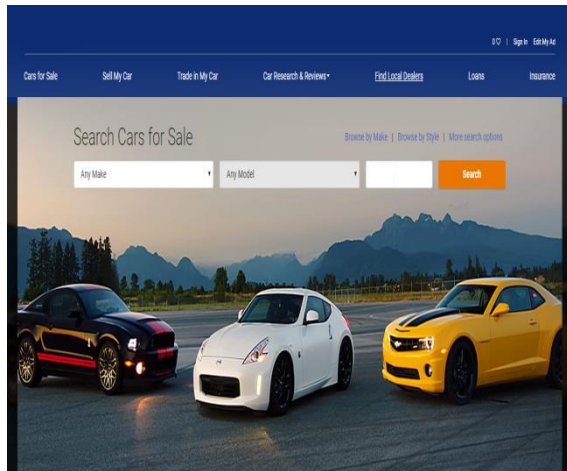


Figure 1-Conceptual Framework with Beta Values

### Results and Discussion

After conducting the analyzed it was identified the most important factor which is affecting for buyers to pay attention for online automobile advertisements the main component is availability of a video of the automobile. So the main target of this research is to create a video based new e commerce platform for online automobile buying and selling in Sri Lanka. Also the other independent variables like chat option, location service is going to include in this system.

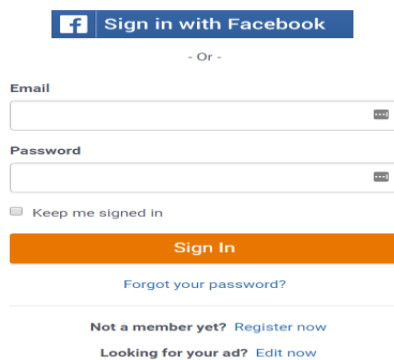




**Figure 2-Home Page**

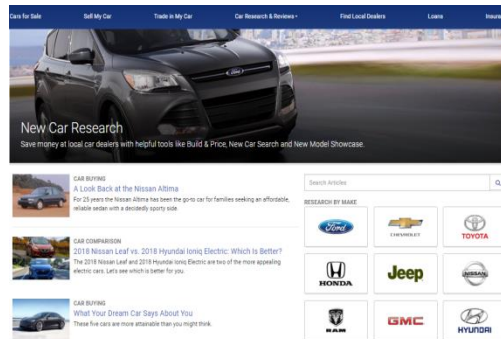
Home page is the main interface of the website. Through this people can choose the option they want either buying a automobile or selling a automobile.

Once they enter into the home page they can login to the site with their user name and password. Through login option they can see what they have sold and buy so far and they can access to their own information through login.



**Figure 3-Login Page**

One of the main features of the website is having the ability to upload a video of the automobile they are trying to sell or buy. Through V log page people can upload videos of the automobile they are trying to sell. So all the videos are uploaded into a same quality.



**Figure 4-Vehicle Comparison and research page**

Through vehicle comparison and research page customers can see whether their desired vehicle is capable of fulfilling their necessities. If its not vehicle comparison page is automatically suggesting the customers other available options which are matching with their necessities and financial situation.



**Figure 5-Vehicle Loan Page**

Through vehicle loan page customers can choose most suitable loan package they can choose according to their income level.

**CONCLUSION**

The paper discuss about implementing a better platform for online automobile advertising and facilitating automobile buying and selling online. In order to do that a questionnaire was distributed among recent automobile buyers and identified what they are really expecting from online automobile advertisement. According to the opinions of respondents the main features expected in automobile advertisements are identified and the website was designed in a way customers can easily communicate with dealers, see all the features of the vehicle, find the location and even it facilitate the most suitable buying plan for the customers. Through this customers and dealers can easily negotiate with each other through online and then they could reduce time and money spends in automobile buying and selling. Also this facilitate vehicle buying ability for Sri Lankans those who are living in other countries as well. In order to facilitate this some technological aspects was used. Cloud technology was used as storage.

The main objective of the study is to provide a better and effective platform for automobile buying and selling in Sri Lanka. According to the main objective the research team developed a website which include all facilities related to automobile buying and selling. Through the website buyers as well as

sellers can provide more details about the automobile. This website facilitate uploading a video of the automobile which provides more details. And there are three sub objective. First sub objective is to provide buyers clear information about the items available. The website developed contains all the details which are relevant to the automobile on sale. It contains details like year of the vehicle, Milage and Ownership details. So this aspects provides clear information about the vehicle to buyers. Second sub objective is to facilitate users to identify available nearest sellers to fulfill the vehicle buying requirement. Science it's more costly to have the GPS facility so though location tracking is an important aspect that objective was not addressed due to high cost. Third objective is to reduce bargaining time between buyers and sellers. Through this website buyers and sellers can directly contact with each other and also this website automatically calculate loan and finance amount according to the customer requirements like income level. So this study reached main objective and other two sub objectives form identified three sub objectives.

When implementing the research researchers had to face few limitations like not having ability to collect data from a large pool of people. The research team suggests future researchers to develop this kind of platform for categories other than automobile and to develop a mobile application to fulfill the same requirement.

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