

## „Automanager” – Web based software, helping in managing the information for the vehicles in a showroom

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### Abstract:

*The technologies nowadays are developing more and more dynamically, but yet there is a scope, in which the management of information keeps happening by writing it down on a sheet of paper or just by remembering it. “Automanager” is a web based software helping in managing the information for the vehicles in a showroom. Using this system, the information for the cars in all showrooms of a client can be successfully managed no matter where you are, with the only condition – connection to internet.*

*Key words: showroom, car, vehicle.*

### 1 INTRODUCTION

A few months ago, a colleague of mine asked me to help him with the choice in buying a car, because he is not as good as me with the technical part of the vehicles. We visited a few showrooms and asked for some more information about certain automobile and we encountered different problems like: impossibility to get information due to lack of the manager, lack of documentation about the renovations on the car, difficulties to find the full documentation among piles of documents, impossibility to negotiate a price, because the agent does not know the minimum price, which the manager would want for the vehicle, etc. The truth is that these are real everyday problems, which the people working in this area have to cope with. After a small research, it became clear that on the BG market there is no system to automate or at least to ease the management of data for the cars in showrooms. This still happens using outdated methods like remembering information, keeping piles of documents and notes for every automobile, which can easily be lost or destroyed.

If we have a look at a small showroom with 4 to 6 vehicles, we can make a conclusion that the amount of data is not that big and there is no need to use a system to manage the information. Every manger knows that with the expansion of the business comes and more data, more obligations. In this case, with the car sales business, the number of automobiles will increase and this would make it quite difficult for the agents to remember all details for every car like: price which was paid for it, paid taxes and commissions, repairs and its price, problems, real mileage. These are just a few of the details, which are individual for every car. Here comes the need of a flexible software, which will save the information and this is one of the

purposes of this master thesis – to offer a solution of this problem. The usage of such a system will lead to: improvement and facilitation of the activities in the company, more reliable storage of the information, which will be accurate and easy to access, with the purpose to improve the service of clients when they buy a car. Once the data has been written, it can easily be accessed and corrected if it needs correction.

## 2 EXISTING SOLUTIONS

In order to get a bigger share from the market, our platform should offer better services than the ones that are already for sale. Therefore we made a research about our competitors. The biggest and best one is <http://www.automanager.com/>. It comes up on the first place in the online tools for searching, when trying to find such services. The platform is multifunctional, but at the same time it is very expensive and difficult to use.

**AutoDealerPlus** <http://www.autosoftnet.com/home/AutoDealerPlus.aspx> offers a desktop solution, which can be used only on the device, where it is installed, and moreover, it has a small variety of services to help its clients. **Vauto** <http://www.vauto.com/used-car-software/provision/> is specialized mostly to help with the sale of the vehicle, rather to help with the management of information, so it is not our competitor, it is a possible partner we can cooperate with in future. **Frazer** <http://www.frazer.biz/> is another rival having solutions to this problem. According to the officially declared information, it is being used by more than 14100 dealers selling used vehicles. The company offers a demo version of the software, which clients can try and see what services the platform offers. Frazer has a very long list with partners, they work with and cooperate. The only setback is that this software is functioning only on the device where it is installed. **Autostarsolutions** <http://www.autostarsolutions.com/wholesale-retail/> offers effectivity and automation to most of the processes, which is our idea either. It is interesting that the platform sells its solution on modules. „Autostarsolutions“ is a web based and can be accessed 24/7. The main problem, which I see here is the high price of the packages and the need to pay additional taxes for configuration, which will repel clients.

## 3 CHOOSING TECHNOLOGIES FOR REALIZATION

The choice of technologies to use for the creation of the site first came out to be a difficult task because of the large number of programming languages and technologies, which are developing with every other day. Therefore we had to put some requirements to make choice easier. The programming language I chose as the most appropriate is PHP5. It is with 40% to 90% faster than ASP, open source and this makes it the best one to be used for creating a web server.

For the structure of the code was used MVC model. It is used to divide the source code on logical objects, which do certain things. Models serve as an access layer and provide extraction of data. Controllers process the data and the requests received from the model and load the views to send it as a response. The views format the output

data in an appropriate way for visualization. The only drawback of this structure is the higher level of complexity, which makes it more difficult to be understood.

The framework which was used is Yii 2. Its functionality can be extended with components from other programming frameworks. It is proper tool to build this project because it is open source, object-oriented, free, based on MVC architecture and is written on PHP5. Yii 2 generates samples , which ease the work of the programmer as they save copying of hundreds of lines of code and renaming functions, objects and other data.

As a system to manage the database was chosen MySQL. It is not only the most famous one, but powerful and free tool, offering highest level of protection of the data for transactions. It is good for websites with high volume of data and requests, being reliable, easy to control and with 24/7 maintenance.

One of the most often used combinations for web server in the Internet is Apache Web Server + PHP + MySQL. I will use the same set of tools. Apache Web Server is the most famous web server these days. According to research made by NetCraft almost 60% from all web servers are Apache. Some of its benefits are: stability, high speed, easy to add additional possibilities, an option for reconfiguration and last but not at least – it is free.

#### 4 ANALYSIS

One of the most important analyses is the one of the market. It helps to define the users that might show interest to the offered services. According to Traffic Police's data 36% of the cars in Bulgaria are older than 20 years, 32% are between 15 and 20 years old. This shows the big potential for growth of the sales, which will lead to growth in the need for software like "Automanager". The lack of similar software on the Bulgarian market gives higher chances for success of the platform.

I created a plan for popularizing the platform and attract new users to it. In this order we will use links in websites for vehicles and other sites, Facebook page, Twitter page, Google+ page, registrations in forums and auto dealer associations, Google marketing, personal meetings with showroom owners and managers and email marketing. Each of these channels will help for the promotion of „Automanager". A customer's needs analysis is also prepared. It contains the requirements of the owners and agents from the showrooms and the functionalities which they would like to use with „Automanager“. This analysis is the warranty that the user interface will respond partially or fully to the customer's needs and will make their work easier.

The analysis of the competition is also prepared in details. It gives us the information we need, showing which are our weak features and why we are better than the competitors. It also helped us to define our target group and what size of the market share we can take.

There is also a plan for distribution and sales. In a few words, "Automanager" will be free at first, but after it gets famous, we will offer a subscription plan: clients will pay a tax monthly to use the services of the platform. If this is successful, the next step

will be installation of a variety of subscription packages and its price will depend on the functionalities.

## 5 PLANNING AND REALIZATION

In the initial version of my software, I decided to include services, which will not attract a small group of people, but will let all users to manage the information for their vehicles in the showrooms, to move a car from one showroom to another, to edit data, add agents, add new cars, etc.

The design is responsive which means it will be able to be viewed appropriately on different devices like mobile phones, tablets, PCs and others. A big part of the information which is used to build the website was taken from the most famous website for car sales "www.mobile.bg". The rest data was gathered after a research for the needs of the clients and was filled up from the sites : "www.auto-data.net" и "www.cars.bg". The platform is already working and it can be reached on the following domain: [www.automanager.info](http://www.automanager.info) . The hosting which was used is the one of Amazon, due to the version 5.4 of PHP which they have implemented and I have used for the code of the site. The application is connected with Google Analytics so very soon we will be able to export accurate statistics and make analysis for the future development of the platform.

## 6 CONCLUSION

In this master thesis was developed a solution to a main problem which managers in showrooms used to meet and this problem hasn't been solved until now in Bulgaria. This software satisfies the requirements of the end users by offering a variety of functionalities which ease the process of management of the information in this business. By virtue of the good practices and contemporary technologies which were used, this product is easy to maintain and expand.

Every task, that was taken in the initial purposes is finished and described in the documentation. Detailed description is given for the benefits from the usage of the platform, the technologies which are used are also mentioned. Sequence diagrams can be seen for the most used services together with a model of the database with explanation for the task of each table. The user interface is also explained in details, together with some of the modules. At the end is placed a plan for the future development of the platform and the business named „Automanager“.

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