

Design and Implementation of a Media Entertainment System Running on a Carputer



**By
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Abstract

For the automobile Industry, due to the demand of the comfort customers requirements the industry started introducing the entertainment systems like DVD Player, GPS Navigation systems, etc., apart from Radio and Music systems which are very traditional from the past.

Now a days the customers are using the GPS Navigation along with all type of media entertainment in comfort cars. However the price of the whole system is bit expensive such that all kinds of the customers can't afford.

The customers who are using expensive cars can only use these kinds of systems which are coming along with luxurious cars as an accessory.

This Master Thesis describes the **“Design and Implementation of a Media Entertainment System Running on a Carputer”** which plays a major role for all kinds of customers to enjoy the DVD Player, Music Player, Video Player, Radio, TV and GPS Navigation system as a single device in Car. Moreover the cost of the product is not so expensive like the present available systems in the market. The motto behind this thesis is to bring all kinds of entertainment systems along with GPS Navigation to all kinds of automobile customers.

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Chapter 1

Overview of Kiebel Computerdienste

1.1 Introduction

Kiebel Computerdienste is a small company located in south of Germany in a city called *Willstätt* mainly deals with computer hardware assembling and reselling business. Due to the enormous demands for the software projects, the company has recently launched its potential in the field of software developments to compete with the market challenges of day today software technologies.

1.2 History

The company started as a one man company about 10 years ago dealing with PC assembling only. Later the company has increased their capital to resell all kinds of computer hardware's, right now raised their flag as "*Power Seller*" in eBay. Also the company hold online shops to develop their business. The company has more than 1000 customers till today. Recently it focussed its interest in developing palms for Customer Maintenance System with a chip card reader facility; this project's success motivates the company to develop all kinds of Software Application projects also.

1.3 Hardware Development and Reselling

Hardware development includes assembling Desktop PCs and Mini PCs depends upon the customer's configuration requirements. The latest small PC is about 12 inches height called "Shuttle X" made the customer's interest towards small PCs.

The company holds the dealership for all kinds of "BENQ" products. Reselling of Laptops, Scanners, Printers, Beamers, LCD monitors, Fax machines, Audio & Video systems, Digital Cameras, and all its accessories are the backbone of the company's business.

Its main focus is to produce small PCs with updated configuration at an affordable cost. Now the company deals products like PCs with integrated TV and media entertainment systems also. The company deals both wholesale and retail sale for all the above mentioned products.

All the products marketing are done mainly via online shop and also through the online store *eBay*. The below figure shows the website of the company and how it deals with the product sales through online shops.



Figure 1 : Kiebel Computerdienste Web profile

1.4 Software Development

The hardware demands from the customers forced the company to turn their direction towards software developments also. The first software project is the *Palm with chip card reader facility for Customer Maintenance System* used in various clubs and discos to identify their customers with the help of photograph.

This system has a server contains all the information about the customers including their photographs. When the palm reads the chip card, the palm will communicate with the server to identify their customer. The whole project has been done in Delphi 7 and SQL server.

Apart from Application projects the company deals web related projects also for online shops using PHP scripts and HTML.

1.5 Current Focus

Later on developing mini PCs and tablet PCs raised “Why not a computer in Car?” which invent a very small computer inside the dashboard of a car like present music systems available. The main idea is to fix the computer unit and the 7 inch monitor such that it sits perfectly in the slot provided for the music system in car dashboard. The idea of implementing an integrated TV and Radio systems with an antenna is an added advantage of this product.

The ideas about the user interface and the entertainment systems to be included in the software for the above mentioned unit evolved this Master Thesis. The detailed overview of this Master Thesis will be discussed in chapter 2.

The company will launch the product under the name “CARPUTER” since the car dashboard has a computer unit inside.

Chapter 2

Master Thesis Requirements

2.1 Overview

As Automobile industry is the growing business in Germany, automobile manufacturers are always trying to improve the quality of the product by improving the testing procedures of almost every part of the automobile. The manufacturers also introduce attractive entertainment system and luxurious accessories in the present cars before delivering it to the customers. The motto behind the process is to keep hold the customers firm and tight with the company product.

Only luxurious category cars can able to avail most of the privileges. For example BMW 7 series cars have a good entertainment system with a 7 inch display in dashboard along with GPS Navigation system. Normal small cars should use GPS Navigation system as a separate device in car, same holds well for the entertainment system also. Of Course the separate media entertainment system and separate GPS navigation systems are very expensive that a normal small car customer can not afford it.

The company “Kiebel Computerdienste” has planned to overcome the problem such that all kinds of automobile customers should be able to experience the modern entertainment system along with GPS navigation system at an affordable price.

This plan induces a cheaper media entertainment system along with GPS Navigation that could be considered as the hardware requirements of the Master Thesis. The total hardware requirements of the project had been undertaken by the company.

The requirement of the Master Thesis is to develop a user-friendly software for the above mentioned product using Delphi 7.

The software includes user interface to invoke GPS Navigation, DVD Player, Music Player and Video Player. The Music Player and Video Player accommodate with Windows XP so that the company doesn't need to pay for the license. To use the DVD Player the company was in a position to pay license for the DVD Player Software; this is a problem regarding cost measure.

Also the company has planned to implement a cheaper remote control which plays as a remote mouse so that LCD touch screen can be replaced with ordinary LCD screen, this step is cost effective to reduce the price of the product.

2.2 Suggested Solution

The suggested solution to avoid paying license for the DVD Player Software was to develop an own DVD Player Software using Delphi 7.0.

With this plan we can design and customize the DVD Player software depends on our 7 inch screen display by avoiding unwanted options.

By using customised DVD Player software the customers can easily play around with the mouse since it will be designed keeping our hardware's in mind.

Suggesting the solution raised the target market, which makes the company to focus on "PORSCHE", thereby the company has planned to include the Porsche logo inside the user interface of the project since it has been planned as the target market.



PORSCHE

