Racing Equipment Online Store

by

Mr. Nataphol Naewthai

A Final Report of the Three-Credit Course
IC 6997 E-Commerce Practicum

Submitted in Partial Fulfillment
of the Requirements for the Degree of
Master of Science
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ABSTRACT

The Project Report includes database programming and web design racingequipment.net as well as well defined Situation Analysis, SWOT Analysis, Marketing Analysis, Customer Analysis, Financial Analysis and Break Even Analysis in order to accomplish the objective. Nevertheless, the function of database is complied by the used of Microsoft Access and ASP scripting tool, while web design is relied on HTML, and Java technology developed by Edit Plus.

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I. INTRODUCTION

1.1 Background of the Project

The most cost-effective, rapid, and innovative means of conducting business will be successful in the current dynamic era of Information Technology. The traditional market is an obsolete method of providing goods and services to customers with full customer satisfaction. Neither profit maximization, competitive market share, nor cost-saving can be achieved by the old-fashioned business store. E-commerce and the Virtual Market are the new ways of doing business. The integration of Internet technology with an inclusive marketing strategy will benefit customers by providing the opportunity to conduct online transactions through the Virtual Market. We will do this in our website, The Virtual Store for Racing Equipment, www.racingequipment.net.

1.2 Objectives of the Project

(1) To launch a website equipped with partial E-Commerce implementation in order to offer racing products, particularly the Engine Management System.

(2) To revolutionize the traditional marketplace for racing equipment by offering a Virtual Store to the customer.

(3) To provide an online community for Auto lovers and interested people to exchange their ideas on the topic of Car and Motor-Sport by the implementation of a web board and chat room.

(4) To promote WWW business and encourage the use of online transactions.

(5) To shorten customer lead-time and increase convenience to the customer by saving both cost and time using Virtual Store.

(6) To generate revenues and maximize profit through Web-based sales.

1.3   Scope of the Project

(1)   To apply acquired knowledge about technical and business aspects of Internet and E-Commerce Technology to the real functioning of a Virtual Store.

(2)   To provide a marketing plan including the target market, the market positioning and the promotional mix in the environment of the web and E-Commerce Technology.

(3)   To define SWOT Analysis in order to analyze and decide marketing strategy for implementing a real business.

(4)   To conduct an E-Commerce store following pre-determined goals and objectives in order to generate profit.

(5)   To design, develop and promote the website as well as provide access to all potential customers.

1.4   Deliverables

(1)   Prototype of http://www.racingequipment.net, which will be published as an actual online shop in October 2003.

(2)   Project Report with the source code of the online shop.

II. LITERATURE REVIEW

2.1   What Is Motor Sport?

Motor sport, put simply, is competition with motorized vehicles, both two and four-wheeled. Motor sport exists to provide entertainment for the public but also acts as a catalyst for high-performance engineering development. At the same time motor sport serves as a far-reaching marketing tool for companies and sponsors – given the fact that motor sport commands the biggest global audience of any sport. At the heart of the concept of motor sport is an organized, competitive, and legal environment for individuals to go racing in the pursuit of speed and adrenaline.

Motor sport has a long and colorful history throughout the world stretching back nearly one hundred years to the start of competitive racing on this planet.

Motor sport serves a vital role in the world in the present day. Not only is it a breathtaking entertainment experience watched by millions across the world, but it is also supported by an extensive infrastructure. Motor sport takes place at a number of venues across the world showcasing a variety of different types of motor sport such a Formula One, World Rally Championship, Touring Cars, Hill climbs, Sprints and Drag Racing to name but a few.

The world of motor sport and the high-performance engineering industry provide an immensely valuable vehicle for the advancement of cutting-edge technology. Developments in motor sport are up to four times faster than in the automotive industry, setting a pace that makes racing cars faster, but benefits the everyday consumer at the same time by speeding up the development process of road vehicles.

2.2 History of Motor Sport

Motor sport is primarily a sport and hobby, but is also more than that. Motor sport involves human qualities but also depends on the quality of the machine. Motor sport competition serves as a catalyst for car manufacturers to raise the performance levels of their machines. Competition has acted as an incentive since the origins of the motorcar. At the same time, the extremely difficult conditions of competition driving have provided an excellent testing ground for technical innovations. In this paper, we trace the evolution of the motorcar, from its origins to the present time, and discover that competition has played an important role in making the motorcar as efficient and reliable as it is today. Although any historical division is somewhat arbitrary, we divide the history of the motorcar into three major periods.

(1) The pioneer era, from 1895 to 1914, taking the motorcar through infancy to adolescence.

(2) The periods between the two World Wars, when techniques are consolidated; taking the motorcar to maturity.

(3) The high technology period, from the end of Second World War to the present day. The keynote is technical perfection. Preliminary steps are taken towards the creation of "intelligent cars," and initiating the control unit in the motorcar.

The review of these periods will concentrate on the principal components and functions of the motorcar. We will trace the various stages of technical development, and will see that often, new inventions were tested on sports cars before being introduced on production models. Motor racing follows parallel lines of development, depending on technical developments as well as greater social acceptance and overcoming the constraints of energy crises and environmental concerns.

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During the pioneer era, there were no restrictions on the motorcar, and new techniques were tested. Motor racing was in the form of races such as the Paris-Bordeaux-Paris trial in 1895 or the Paris-Berlin, Paris-Vienna, Paris-Madrid races from the first years of the twentieth century. The aim of these competitions was to "test" raw mechanics, to judge between competitors, and to analyze the good and bad points of alternative technical solutions.

During the next "consolidation" period, the racing nature of the motorcar was established and motor racing as such began to develop. Now, in events such as the ACF Grand Prix, and Sarthe Circuit trials, both mechanic and driver were put to the test. Winning involved not only possessing the best vehicle, but also getting the most out of it. Public acclaim went to both car and driver.

During the third period, from the end of the Second World War until the present, motor racing became more generalized, more diverse, and more democratic. To premier events such as the "Le Mans 24 hours" (Sarthe Circuit), other events like Tracks and Rallies were added. These were subject to modifications in rule changes in accordance with changing circumstances such as the energy crisis, increased public awareness of ecological problems, and technical developments. Treks and rallies involved racing on different surfaces and under different conditions using sports versions of standard cars, rather than purpose-built track vehicles.

2.3   The Evolution of Racing Products in Motor Sport

In the 19th century, the motorcar industry started to focus on research of electronic control units. Their aim was to provide high standard control functions for the fuel injection and ignition systems of the motorcar. Electronically controlled units began to be standard in production of cars by the middle of the 20th century. However, research

on such units continues. The advent of the era of information technology and the expansion of digitalized products enabled research teams to develop the adjustable electronic control unit, which today is known as EMS (Engine Management System).

2.4 What Is the Engine Management System?

The EMS is an integrated system for the electronic control of the fuel injection and ignition systems using micro processing of data on operating conditions from sensors in the engine. EMS products help tune turbo engines to maximize horsepower delivery. The Digital Fuel Injection Engine Management System (DFI) is a state of the art computer system used in the fastest cars in the world. Total engine control requires just the touch of a button. When ordering this system DFI computer will be offered, all under hood wiring harnesses, and communication cables between the computer and PC. Sold separately through most aftermarket companies is the software to get customer started and a stock program designed to get car running.

This, however, comes standard from ESP Products. Just like 40 lb. Injectors and chip; customer cannot use one without the other, so both are sell together. However, if so desired, customer can purchase them separately. This DFI system will allow "on the fly" calibrations in the car under actual driving conditions. Calibrations may then be saved in a computer file to be stored, changed, and re-used as often as desired. The digital approach utilized in DFI's ECU allows the software to provide direct user interface with fuel injection and engine system controls to accommodate virtually any engine components selected. There are many engine management systems available, but the DFI system by Accel offers superior technical support, and is very user friendly. The entire Engine Management System consists of the following parts:

2.5 What Is Electronic Control Unit

The Electronic Control Unit is a Central Unit of EMS. It evaluates the data delivered by the various engine sensors. It then uses these data to calculate the optimal ignition point and generates control impulses for the fuel injectors. This determines the quantity of fuel to be injected by the duration during which the fuel injectors are opened.

Fuel Injectors

Fuel Injectors inject the fuel into the individual intake ports of the cylinders by means of electronic impulses from the control unit.

Oxygen Sensor

The Oxygen Sensor continually measures the residual oxygen contents in the exhaust gas and sends signals to the ECU to increase the efficiency of the catalytic treatment and to reduce harmful exhaust emissions from the spark-ignition engine.

Air Flow Sensor

The Air Flow Sensor measures the amount of air drawn in by the engine and sends signals to the ECU. It varies according to the way air drawn in is measured: - the Karman-Vortex type by Karman-Vortex theory, the Hot Film type by heated ceramics and the Speed Density type (MAP sensor) by engine speed, manifold absolute pressure and throttle position.

MAP Sensor

The Manifold Absolute Pressure (MAP) sensor measures pressure change in the intake manifold and sends signals to the ECU. The MAP sensor allows the ECU to evaluate the amount of air for the engine and effectively control optimized fuel injection and ignition timing.

MAPAT Sensor

The Manifold Absolute Pressure and Air Temperature (MAPAT) Sensor measures the changes of pressure and air temperature in the intake manifold, and send signals to the ECU. The MAPAT sensor allows the ECU to effectively calculate an appropriate amount of air for the engine in accordance with the density variation of air caused by variable temperature and pressure.

Acceleration Sensor

The Acceleration sensor calculates road surface roughness at the front of the shock absorber and evaluates whether misfires result from changes in road conditions or not. If misfires come from road conditions, the Acceleration sensor signals the ECU to temporarily stop the misfire-detecting function.

Idle Speed Actuator (ISA)

Fuel consumption at idle is largely determined by the engine's efficiency and by the idle speed. The ISA regulates airflow in order to achieve the desired idle speed by bypassing or adjusting the throttle valve.

Throttle Position Sensor

The Throttle Position Sensor monitors the throttle valve angle for optimizing fuel consumption and emission especially during transient conditions.

Fuel Tank Pressure Sensor

The Fuel Tank Pressure Sensor measures the fuel tank pressure to detect leakage.

2.5 The Essentials of the Engine Management System (EMS)

The EMS interprets data from sensors to optimize engine performance. EMS have greatly improved the reliability of cars and reduced the need for maintenance. Employing up to 50 microprocessors, various systems help regulate fuel intake, control engine sparking, and diagnose problems.

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The most recently developed EMS allow users to tune up engines in real time, "on the fly" through mobile computers with specific software packages. Users can also perform real-time diagnostics of engine problems such as miss firing. The highly detailed Haltech, AEM, Motec and Greddy products are the most popular, while Apex and Blitz offer a less detailed tuning function but at a more affordable price.

Benefits of the Engine Management System

The following benefits of the EMS have been proven:

(1) Improved fuel efficiency.

(2) Reduced catalyst light-off time leading to improvements in emissions.

(3) Smoother running engine.

(4) Improved sensing since pressures are acquired over complete cycle. Replacement of air mass sensor, knock detection sensors, and cam phasing sensor.

(5) Adaptive capability - robustness against production build and fuel type variations.

(6) Greater scope for model-based methodologies such as Neural Networks Improved on-board diagnostics with more reliable misfire detection.

III. SITUATION ANALYSIS

3.1 Reasons for Engaging in Online Business

The Internet allows both small and large enterprises to reach their full potential. A web site is recognized as the most inexpensive way to gain exposure to millions of customers, keep them informed about new products and make business transactions easier. The following are some of the ways the Internet can empower business.

(1) Accesses to limited markets.

Small local companies can compete for business anywhere in the world by presenting an on-line image of the company. The Internet offers high accessibility. Sales can be made 24 hours a day, 7 days a week.

(2) Instant information updates.

Advertising brochures may contain errors or missing information. Internet advertising allows changes to be made in real time.

(3) More convenient customer service capabilities

Customers with complaints or questions can post their messages on the web board or send e-mails to customer service personal directly for prompt response. Frequently asked questions can also help both customer and customer service personal find the best solution to recurring questions.

(4) The ability to provide real time information

If users have employees on the road that need current information outside regular office hours, the Internet can provide a solution via GPRS through their computer notebook or even mobile phone.

(5) Information customized to customer's needs

Users can create brochures on-line that appeal to specific customer markets without concern about printing costs and paper.

(6) Improved operating efficiency and reduced overhead

An on-line store eliminates overhead related to having a building, displaying inventory and hiring sales personnel to watch the store.

The specific benefits of having a Web site for my business are:

(1) On-line Sales

Visitors to the website can order products or services in real time, without worrying about whether a traditional store is open or not.

(2) Instant Information

The Internet never closes so online information is always readily accessible.

(3) Company Image

Having a web site demonstrates that a business is staying ahead of the competition and is trying to provide customer satisfaction. A web site address on a business card or advertisement makes this point effectively.

3.2 How Can A Web Site Increase Business from Existing Clients?

A web site can be used to increase business from existing clients. Marketing seminars stress the virtues of cross selling. Current clients can be the best source of new work if they can be educated about provided business services and reminded of how valuable can be in areas of customer business in which providers are not currently active.

Although most of clients already have some idea about products, an e-mail system and a Web site is a way to show them that providers are dedicated to keeping up with new technology to better serve their needs by quick, efficient communication. A Web site is a flexible way for clients and colleagues to contact business providers. It is a combination of a business card, resume, and marketing brochure.

Of course, a Web site cannot replace face-to-face contact or a personal referral as a strategy for finding new clients nor can a Web site overcome poor service. However, the Web site is a useful supplement to existing marketing efforts. A Web address, or Uniform Resource Locator (URL), on a business card gives immediate access to our site to potential customers. Follow-up remains necessary, but Web site information bypasses general formalities and focuses on demonstrating what we can bring to the prospective client's business. Finally, a Web site is a cost-effective way to communicate changes or additions to the firm, a new location, or new areas of practice.

Potential Business Benefits:

When defining the aims of Internet marketing, a company should conduct a comprehensive review of all the business benefits that could accrue. This can be of value in arguing the case for investment in a web site. Www.racingequipment.net identifies the following as the main benefits of setting up an Internet site:

(1) Improve corporate image.

(2) Improved customer service.

(3) Increase visibility.

(4) Market expansion.

(5) Online transactions.

(6) Lower communication costs.

3.3 Introducing www.racingequipment.net

Racingequipment.net has several products, grouped under the general title of electronic devices for controlling fuel and ignition systems. Other electronic equipment is also offered, such as boost gauges and boost controllers. A variety of items and models are offered to cover the market's need. The best quality and high performance products are only offered to target customers. Free, after sales service is a high priority. For instance, full-service packing and shipping guarantees on time delivery will bring customer satisfaction.

3.4 Motor Sport on the Web

Currently, there are no competitors since any EMS vendors or racing product companies are online in Thailand. However, some web sites provide related products online, such as car care kits and an outlet for the Thai Motor Sport community. Most car web site operators in Thailand are focused on selling used cars rather than equipment. The following lists potentially competing websites:

www.racingweb.net

(1) Provides online Motor Sport community web boards and chat rooms to serve web surfers. Their web boards are grouped by automaker names, e.g. Honda club, Toyota club, Cefiro club.

(2) Racingweb.net offers a free classified board for trading racing products.

(3) No racing product sales are offered online.

(4) Car racing knowledge for a variety of interests is provided.

www.racing-club.net

(1) As with racingweb.net, online web boards, and chat rooms to web surfers are provided for Motor Sport enthusiasts.

(2) No racing products are offered online.

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(3)   No trading is offered online.

www.toonmotorsport.com

(1)   Provides online information about a limited number of racing products.

(2)   No online shopping is available.

www.aimracing.com

(1)   Focus on providing news and information about motor sport events in Thailand.

(2)   No racing products are available.

(3)   This website offers the possibility to browse for information about the background of Motor Sport in Thailand.

IV. MARKETING ANALYSIS

4.1 Mission Statement

A mission statement sets one organization apart from others and is a prerequisite to developing a marketing mix and marketing plan. The mission statement of racingequipment.net is:

"Racingequipment.net performs E-commerce using the most advanced web applications in order to offer the best performance racing equipment and highest quality service for the development of motor sport in the kingdom."

Racingequipment.net's mission is different from that of other motor sport websites like Racingweb.net, even though all Motor sport industry websites share the goal of developing Motor sport in Thailand.

4.2 Marketing Objectives

Setting objectives is the conversion of mission into target outcomes and performance milestones with a deadline for achievement. Objectives can be stated in terms of financial performance and strategic performance.

Like other companies, Racingequipment.net needs both long-term and short-term objectives. Long-term objective three years ahead drive targeted long term performance guided by short-term goals.

Long-term objectives of racingequipment.net emphasize the following:

(1) Improve the quality of services for a higher market share.

(2) Enhance revenue from value-added service development.

(3) Develop an organizational as well as a website image.

(4) Reduce cost for a better net profit margin.

(5) Build up an online Motor Sport community.

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Short-term objectives indicate the specific level of performance to be achieved. Current unsatisfactory performance and the external environment will lead to the next short-term objective of Racingequipment.net.

Racingequipment.net is in the introductory stage of the business life cycle and is a new operator in online business. Big investment is not considered important. Rather, developing a website image and offering high value added service together with customer satisfaction will be emphasized.

The short-term objectives of racingequipment.net are therefore:

(1) Complete the introductory stage with a sales volume at the growth rate of 10% annually.

(2) Emphasize quality service by developing competitive customer satisfaction.

4.3 Marketing Mix

Two components are involved in marketing strategy, the target market (customer), and the marketing mix. Marketing Mix refers to the controllable variables the company puts together to satisfy the target group whereas the target market is a homogeneous group of customers to whom a company wishes to appeal. Controllable variables are product, price, place, and promotion.

To be successful in online business, a well-planned marketing strategy is essential for Racingequipment.net. Marketing strategy must be adapted to the cyber market environment. Racingequipment.net will plan marketing strategy according to the online market situation and to the nature of transactions, referred to as Business to Consumer transaction. The marketing strategies of Racingequipment.net are focusing on how to convert opportunities and marketing variables to maximize customer satisfaction by giving significant value to the customer as much as possible.

Racingequipment.net is a specialized E-Store offering electronic racing parts to customers online by implementing a partial cyber marketing strategy and reactive distribution strategy. In other words, some business procedures are done through traditional paths using a direct marketing approach. The greatest challenge is to build up customer awareness during the introductory stage of racingequipment.net.

For example, Dell's cannot sell their product in purely digital form because of product limitations. However, Dell's sells their computer digitally through advanced web applications, using the best customer database marketing as well as global reach (using the internet) and value added services at a single contact point, Dell's website.

Therefore, marketing strategy concentrates on how to offer higher value to the customer to maximize consumer satisfaction. Using the web is one of the best value added service tools for customers.

Qualified marketing mix requires product, price, place, promotion and customer, described as follows:

Product

Product is a key element in the market offering. Marketing-mix planning begins with formulating an offering to meet the target customer's needs or wants. Product can be offered in many forms; physical goods, services, experiences, events, persons, places, properties, organizations, information, and ideas. The target customer will judge the offering by three basic elements: product features and quality, service mix and quality, and price appropriateness.

Product of Racingequipment.net is a physical goods, divided into 2 product lines or product width control units. These are engine management system and electronic gauges. Product length refers to the total number in the mix. Control units have nine items and the electronic gauge line has 14 items. Product depth refers to how many

variants, sorted by brand, are offered for each product line. AEM has a depth of one, APEX has a depth of seven, Blitz has a depth of six, Greddy has a depth of five, and HKS has a depth of four.

Since racing equipment products cannot be sold in purely digital form like books and songs, but selling product in a digitalized way is being tried. Therefore, product strategy is to provide detailed information to the customer. E-Mail, Chat or telephone calls can be used to provide such information.

Moreover, racing equipment products are high-priced specialty products and require basic skill and knowledge for use. The customer must be willing to search for information to order the best product for their needs. Most of potentials know the basics about our products and have already decided to buy this kind of specialty product. Like Ferrari, named products can be sold because of the prestige associated with their name. People who have decided to use an Engine Management System will purchase this product despite its high price.

Price

Price is the marketing-mix element that produces revenue. Others produce costs. Price is one of the most flexible elements: it can be changed quickly, unlike product features and channel commitments.

Profit-oriented objective is set as pricing policy. Lack of competition leads racingequipment.net to first attempt to generate profit rather than increase market share. Racingequipment.net will therefore ask top prices to make product special and exclusive. Price skimming is used to enhance customer demand for specialty products. Uniform delivery prices within Thailand will be set.

A Skimming price policy refers to a method of setting high prices to build up customer prestige for specialty products. Once there is business growth and a mature

stage of the business life cycle is reached, prices can be lowered to be more competitive.

Pricing is set as follows:

(1) A 10-20% mark up to generate profits, depending on each product.

(2) Uniform Delivered pricing of 200 baht per delivery to all areas in Thailand. Foreign buyers are charged according to the actual delivery prices of United Parcel Service.

Racingequipments.net offers three methods of payment:

(1) Cash on Delivery (COD) for the Bangkok metropolitan area only. The sender will deliver by motorcycle and receive cash.

(2) Money transfer. Upon receipt of confirmed documents from the customer, A call for confirmation will be made and prepare the shipment afterward.

(3) However, Credit Card payment is in development plan and will be available after implementing the real shop. Payment can be made via VISA, MASTER Card, TFB Local Card, JCB, and SCB Local Card.

Place

While place refers to the availability of the goods and services, the importance of the place is the critical key because it is only a marketing variable that customer can reach to the product and service. Place also refers to channel of distribution starting from supplier to ended user.

Recently, the Internet is considered as the most dynamic, attractive, and low operation cost for using as a place. The Internet offer convenience, wide range of information, and fewer hassles to the customer, while business owner can achieve higher audience volume, greater relationship with lower operation cost

Racingequipment.net is based on cyber marketing, so no traditional physical store will be used. Rather, online ordering and distribution will be done. However, the store

cannot be considered to exclusively use cyber marketing. Some transactions will still be performed in the traditional way. The use of traditional physical distribution channels and traditional payment methods is a reactive strategic posture toward cyber marketing.

Promotion

Promotion is regarded as one element of marketing variable, where their major task is to communicate and attract the target customer in order to build up awareness and generate sales growth.

Since Racingequipment.net is in the introductory part of its business life cycle, our initial focus will be on customer awareness rather than on sales promotions like discount pricing. Strong web advertising and direct marketing using active push and passive pull strategies will be used to build customer awareness of www.racingequipment.net

Compared to conventional advertising media such as TV, radio, and newspapers, the advantages of web advertising are:

(1) It is highly accessible. Advertisements can be accessed 24 hours a day, 365 days a year. Costs are the same regardless of audience location.

(2) It affords a great opportunity to create a one to one direct marketing relationship with customers.

(3) Distribution costs are low. Millions of customers can be reached for the same cost as one customer.

Therefore, advertising method will rely on the use of banners. Banner swapping and banner exchanges with our partners can promote racingequipmet.net to customers effectively while keeping advertising costs relatively low compared to the click ratio. Choosing the right partner is the key to success of banner advertising, and requires detailed study of the number of browsers of potential partners. A bigger audience

means a better opportunity to attract customers. Banner advertising is known as pull/passive advertising strategy.

Our push/active advertising strategy will be performed by e-mail. We will randomly send e-mails to potential customers who are interested in motor sports, cars and racing parts. The disadvantage is that customers may regard our e-mail as junk mail. The key is careful selection of customers.

Both the active and passive advertising strategies of our web site share the goal of raising customer awareness and loyalty to increase our market share and be a leader in the Motor sport market. Promotion is costly, but keeping customer loyalty is an even greater challenge.

Targeting Customers

Customers are one of the key elements in the marketing mix. To maximize satisfaction, Racingequipment.net must provide high quality service. This includes providing high quality products and efficient online service.

Customer orientation is also important for success. This requires getting and circulating customer information, and evaluating customer information. The customers' needs and values as well as how they wish to be served must be understood. This applies to both existing and potential customers. Marketing surveys are one of the best ways of getting this information. Circulating customer information refers to the process of translating customer needs into effective actions. Main and support divisions involved in customer satisfaction will take action and monitor their performance against a common benchmark. Evaluating customer information is the evaluation of these actions to see if they meet the target and setting benchmarks. A market survey questionnaire is a popular tool for performing these evaluations.

Customer Relationship Management (CRM) will be used to collect customer information as per the customer orientation concept. Every transaction and customer profile will be kept in a customer database. Customer data can be retrieved for multiple purposes such as order tracking and tracking of customer's needs, and acquiring customer feedback. CRM will help Racingequipment.net satisfy their customers better and help improve our market share.

4.4   SWOT Analysis of Racingequipment.net

SWOT Analysis is a comparison of strengths, weaknesses, opportunities, and threats. SWOT analysis helps the management team summarize the major facts and forecasts derived from external and internal analyses. SWOT Analysis allows management to derive a series of statements identifying primary and secondary strategies to capitalize on opportunities, counteract threats, and alleviate internal weaknesses.

SWOT Analysis of Racingequipment.net can be described as follows:

Strengths:

(1)   Racingequipment.net offers only high performance racing products, primarily Engine Management Systems and Electronic equipment.

(2)   Racingequipment.net provides free tuning and installation to our customers.

(3)   Racingequipment.net is specialized in EMS, which is very popular in Thailand Motor Sport today.

(4)   Racingequipment.net offers a 30-day money back guarantee.

(5)   Racingequipment.net provides online self-tuning and installation instructions as well as basic guidelines to those interested in tuning their cars themselves.

(6)   Racingequipment.net provides a web board to those interested in exchanging ideas about Motor Sport to develop Motor Sport in Thailand.

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(7)   Racingequipment.net provides a free classified board to those who want to exchange their racing parts online.

(8)   Racingequipment.net sells products online, providing both high accessibility and flexibility to the customer.

Weaknesses:

(1)   Racingequipment.net has limited financial resources and a small investment fund.

(2)   Racingequipment.net is in the introductory stage with a small customer base and a low market share.

(3)   Racingequipment.net is a sole proprietorship so risk cannot be shared with partners.

(4)   Racingequipment.net has limited experience in conducting online business.

Opportunities:

(1)   There are no direct competitors who sell Engine Management System and electronic racing parts online in Thailand.

(2)   Motor sports in Thailand are increasing in popularity.

(3)   The numbers of both track and road racers are growing rapidly.

(4)   EMS is increasing in popularity both for racing and passenger cars.

(5)   Internet technology in Thailand is developing fast and broadband Internet will be available in the near future. Product display is therefore available anytime and anywhere.

(6)   Selling through The Internet and E-Commerce offers accessibility and flexibility to the customer.

(7)   Banner advertising on the web can reach a high number of target customers and can promote effectively.

Threats:

    (1)   Most Thai customers want to see, touch and test a product before buying.

    (2)   Globally there is a lack of confidence in online payment online because of security concerns.

    (3)   Customers may lack trust in online business partners.

4.5 Five Forces Analysis

Threat of Entrants

The effects of a new company entering the motor sport industry are complex. Offering lower prices and increasing the cost of competition are possibilities. Anyone can build a competitive web site. The expanding motor sport market gives incentive to new entrants. However, this incentive is counterbalance by high entry marketing and development costs.

Power of Buyers

The threat of buyers not being retained and thereby giving only a modest return is high in the motor sport industry. Buyers have alternatives and low switching costs, giving them moderate to high bargaining power. Trying to add value by providing demand value is the solution. Value is comprised of strong/applicable/trustworthy racing equipment, high customer service, utilization of advanced technologies for installation, ease-of-use of service, timesaving benefits, and cost-saving benefits.

Threat of Substitutes

The extent, to which products or services, other than those in a given category, meet a buyer's needs, will be determined. Therefore, buying limits a selection of racing equipments. Some of the possible substitutes for racingequipment.net are: adding more related product, advertising in all of the same places that Racingequipment.net will advertise for them in the web site.

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Power of Supplier

Determining the extent, to which value created for Racingequipment.net, will be appropriated by suppliers. For instance, Racingequipment.net offer a special racing product, The Engine Management System, a tune up and installation is essential to those who buy our product. Supplier is the important, because all components must be from the same supplier for the best tune up and standardized for all cars.

Rivalry among Existing Firms

The Motor Sport and racing equipment industry makes an attractive business proposition because there are few strong competitors at the moment and growth is rapid. Companies that sell racing equipment do not focus on EMS.

4.6   Customer Analysis

By sorting out targeted customer in order to plan and apply the best-fitted marketing strategy, Racingequipment.net has also concerned in customer orientation concept. Thus, the best customer satisfaction can be achieved as well as generate higher sales volume and higher market share.

To understand customer characteristics is also another key to achieve those objectives. Customer analysis is the process of analyse customer wants and needs in order to decide the appropriated approach for satisfying those needs. Customer behavior is influenced by cultural, social, personal, and psychological factors. Therefore, the best firms can understand these factors, the best firms can satisfy their targeted customer.

Racingequipment.net must sort target customers according to car manufacturer name, type, model, and year. For example, Subaru, model Imprezza, year 1998, engine code is EJ20DET. EMS must be correctly fitted and installed to the appropriate car model; otherwise, engine failure will occur. Our technical engineer must know the correct engine code in order to tune the EMS correctly.

Customers will also be sub-grouped by demographic features in order to offer the best customization, achieving the highest possible customer satisfaction.

4.7 Market Segmentation

Segmentation is a process of defining a possible target market. Market segmentation is a two-step process: First, broad product markets are named. Then, these broad product markets are segmented to select target markets and develop suitable marketing mixes. The segmented group can be single or multiple depending on product characteristics and company resources. Multiple target markets are appropriate for those with substantial financial resources. Good market segments follow these criteria:

(1) Homogeneous: The market segment should be as similar as possible with respect to likely responses to marketing mix variables and segmenting dimensions.

(2) Heterogeneous: The market segment should be as different as possible with respect to their likely responses to marketing mix variables and segmenting dimensions.

(3) Substantial: The segment should be big enough to be profitable.

(4) Operational: The segment should be useful to identify a target market and decide on marketing mix variables.

The major transactions of racingequipment.net will be focused on B2C (Business to Customer) environment. Customers can be both Thai and international. Racingequipment.net segments our target group based on demographic, behavioral, and geographic criteria.

(1) Demographic

(a) Age: 20 – 35 years.

(b)   Income: Baht 30,000 per month

(c)   Interests: Motor Sport and Car

(2)   Behavioural

(a)   Personality: Likes challenges and risks.

(3)   Geographic

(a)   Bangkok based

Due to financial resources and product characteristics, major target group will be segmented as a single target market. Racingequipment.net will focus on Car racers, aged between 20-35 years, with an income of about 30,000 Baht per month who live mainly in Bangkok. All segmented group will be categorized according carmaker, model and year.

4.8   Positioning and Differentiation

By differentiating, the marketing mix will do a better job meeting the customer's needs and the firm builds a competitive advantage by making the customer view the firm as unique in the market. The development of the customer's view of the firm in the market is referred to as the positioning process. Once you know what your customers think, then you can decide appropriate marketing strategy, repositioning or even leave the market. Racingequipment.net is can easily be differentiated from competitors because it offers online selling of high performance racing products and free EMS tune up and installation.

To reinforce our customers to think of racingequipment.net as the leading racing equipment online store by using a substantial website promotion campaign will be focused. Building up a strong brand image and customer loyalty are the keys to eventually generating high sales volumes and increasing market share.

4.9 Associated Risks

Defective Product Risk

A defective product is a major risk that can occur at any time. After supplier confirms the defect, Thirty days warranty for every item bought from racingequipment.net will be offered.

Hardware Breakdown Risk

Hardware breakdown is notorious and creates uncertainty in customer's minds. Reliable hardware with effective back up solutions like redundant servers will be used to prevent such problems. These servers should be placed far from each other to protect against loss from robbery and natural destruction. Network protection such as firewall, intruder detection and virus protection are extremely important to prevent systems from computer attacks.

4.10 System Security

Customers' data is strictly protected against any unauthorized access at racingequipment.net. Protecting order information is the highest priority. Racingequipment.net protects online orders by the use of Secure Sockets Layer (SSL) technology. SSL encrypts order information so that it can only be decoded by racingequipment.net. The security of the connection can be verified by looking at the bottom of the customer's browser window after accessing the server.

Some versions of browsers and some firewalls do not permit communication through secure servers. In these cases, customer will be unable to connect to the server, so customers do not have to worry about mistakenly placing an order through an unsecured connection

At Racingequipment.net, protecting customer privacy is highly concerned. The information from our customer database by the implementation of customer relationship

management will be used. Customer can experience a dynamic, customized web page to serve their individual needs. Special offers will be informed through this function for customer appreciation. The customers will never have to worry about receiving a barrage of unexpected e-mail since selling, rental, or trading customer information will not be done.

When registering with Racingequipment.net, some contacting information will be asked, such as customer's name and e-mail address. The customer contact information from the registration form will be used to send customer information about company information and promotional material from some of partners. If customers do not wish to receive future mailing, they can choose not to get this service.

4.11 Future Plans of Racingequipment.net

Expand Market Coverage

Besides maintaining our existing group of customers, expansion of the market by focusing on international markets will be achieved. The USA and Japan have the greatest potential.

Extend Product Line

Adding other categories of racing products will be done. In the near future, all components of EMS, Boost controllers, Air-Fuel ratio controllers, and all kinds of electronic gauges will be offered.

Develop and Apply Supply Chain Management Concept into Current System.

Strong supply chain management is essential to save distribution, transportation, inventory, and operation costs and to prevent out of stock and over stock problems. Effective vendor management inventory and collaborative planning and forecasting replenishment will be implemented in order to build a win-win environment between customer, supplier, and racingequipment.net.

Accurate sales forecasting will rely on collaborative planning and an integrated supply chain. Meanwhile, vendor management inventory will help racingequipment.net plan stocking levels according to demand effectively and efficiently.

Supply chain management requires tools that enable the integration and collaboration of whole chains together. The Internet is considered as the best enabling tool of supply chain management. For real time communication, The Internet allows all members to share information about sales volume and sales forecasting.

V. FINANCIAL ANALYSIS

5.1 Break-even Analysis

One of the most common tools used in evaluating the economic feasibility of a new enterprise or product is break-even analysis. The break-even point is the point at which revenue is exactly equal to costs. At this point, no profit is made and no losses are incurred. The break-even point can be expressed in terms of baht sales. That is, the break-even units indicate the level of sales that are required to cover costs. Sales above that number result in profit and sales below that number result in a loss. The break-even sales indicate the baht of gross sales required to break-even.

Break-even analysis is based on two types of costs: fixed costs and variable costs. Fixed costs are overhead-type expenses that are constant and do not change as the level of output changes. Variable expenses are not constant and do change with level of output. Because of this, variable expenses are often stated on a per unit basis.

Once the break-even point is met, assuming no change in selling price, fixed and variable cost, a profit in the amount of the difference in the selling price and the variable cost will be recognized. One important aspect of break-even analysis is that it is normally not this simple. In many instances, the selling price, fixed costs or variable costs will not remain constant resulting in a change in the break-even point. In addition, these changes will change the break-even. So, a break-even point cannot be calculated only once. It should be calculated on a regular basis to reflect changes in costs and prices and in order to maintain profitability or make adjustments in the product line.

Formula

The basis equation for determining the break-even unit is:

Average Annual Fixed Cost / (Average Sales Price per Unit – Average Variable Cost per Unit)

The basis equation for determining the break-even sales:

Average Annual Fixed Cost / 1 – (Average Variable Cost per Unit ÷ Average Sales Price per Unit)

Racingequipment.net would like to know the number of units required to reach the break-even point in each month. We assume:

Average Sales Price per Unit: 15,000   Baht

Average Variable Cost per Unit: 1,000   Baht

Average Annual Fixed Costs: 5000 Baht/Month

Therefore, we should sell an average of 4.2 units within 4 weeks, as illustrated in the table below:

Table 5.1. Break Even Analysis.

Break Even Analysis	
Monthly Units Break-even	4
Monthly Sales Break-even	4,285
Assumption:	
Average Per-Unit Revenue	15,000
Average Per-Unit Variable Cost	1,000
Estimated Monthly Fixed Cost	5,000
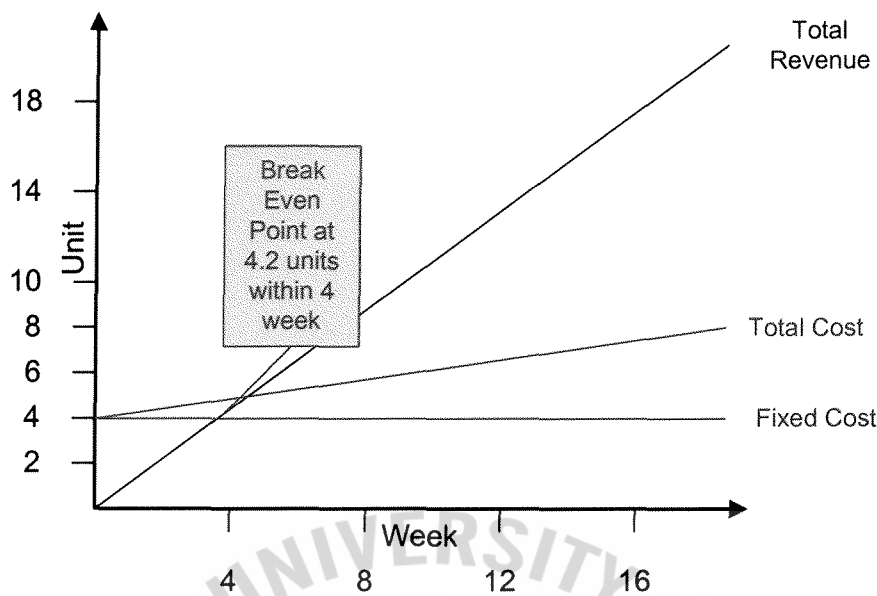
Figure 5.1. Break Even Point.

5.2 Return on Investment

A measure of the net income a firm is able to earn with it is total assets. Return on investment is calculated by dividing net profits after taxes by total assets. i.e. what do I get back ('return") for the money I am being asked to spend ("investment")?

Return on investment will be calculated by subtracting revenue while integrating capital investment cost as well as pre-operation cost. The annual fixed cost and variable cost every year is included. The expense and revenue summary in the first five years is shown below.
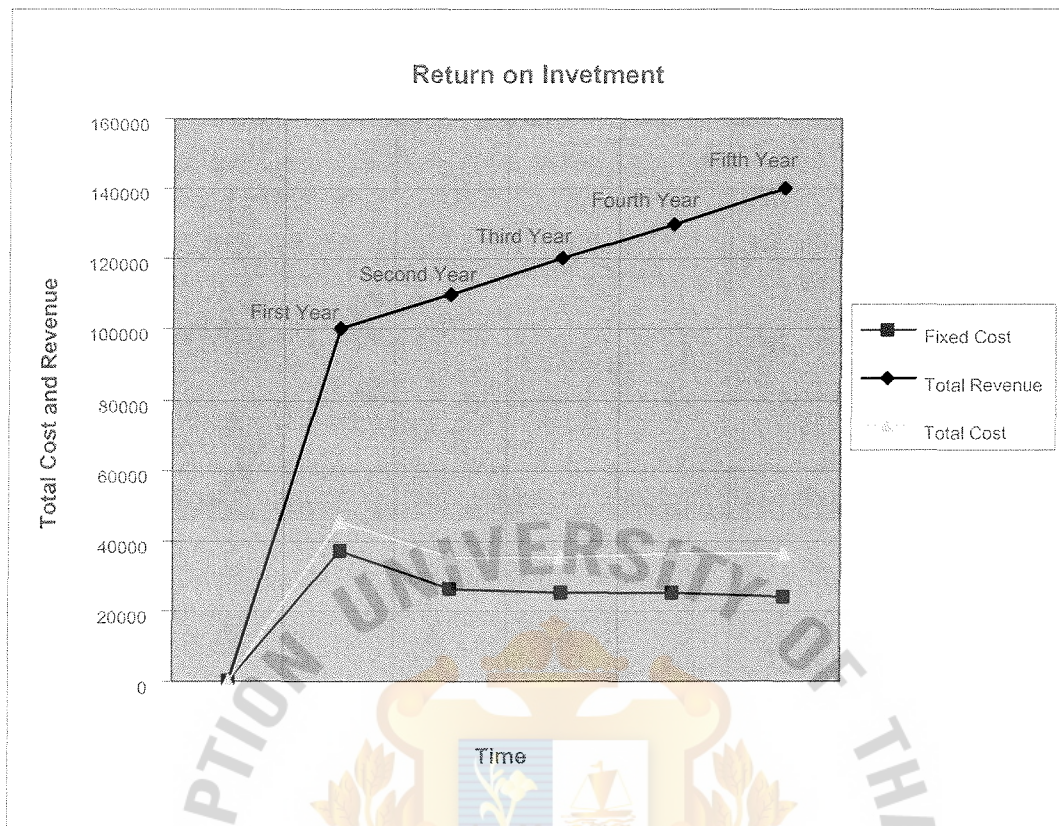
Figure 5.2. Return on Investment.

At the figure above, the return on investment is shown in five years time frame, while the detailed calculation is illustrated at the table display at the next page.

Table 5.2. Expense and Revenue Summary.

Expense	1st Year	2nd Year	3rd Year	4th Year	5th Year
Fixed cost					
Web Implementation	10,000	-	-	-	-
Facilities *Includes telephone	10,000	10,000	10,000	10,000	10,000
Internet/Hosting	12,000	12,000	12,000	12,000	12,000
Advertisement	5,000	4,000	3,000	3,000	2,000
Variable cost					
Transportation/ Delivery Costs	8,400	9,240	10,164	11,180	12,298
Total Cost	45,400	35,240	35,164	36,180	36,298
Revenue					
Sales	630,000	693,000	762,300	838,530	922,383
Direct Cost of Sales *Includes Cost of Goods Sold	530,000	583,000	641,300	705,430	775,973
Other Costs of Sales	0	0	0	0	0
Total Cost of Sales	530,000	583,000	641,300	705,430	775,973
Total Revenue	100,000	110,000	121,000	133,100	146,410
Total return	54,600	74,760	85,836	96,920	110,112

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According to calculation shown in Table 5.2 and Figure 5.2, total return in the first year is 54,600Baht, therefore; the ROI period is one year.

5.3 Net Present Value

Net Present Value (NPV) is a way of comparing the value of money now with the value of money in the future.

Due to the economic situation, the interest rate is at 3 % according to the Bank of Asia for May 2003. Research estimates that the interest rate will be flat for about three years. NPV will be calculated for the next five years since it is estimated that the ROI is one year. Revenue is estimated for five years. An interest rate of 3% will be assumed.

Net Present Value = Present Value of Cash Inflow - Present value Of Cash Outflow

Present values of cash out flow

Assumption: The payment is paid at the beginning of the year.

Present value of cash out flow for the first year = 45,400

Present value of cash out flow for the second year = 35,240/1.03 = 34,213.59

Present value of cash out flow for the third year = 35,164/1.03^2 = 33,145.44

Present value of cash out flow for the fourth year = 36,180/1.03^3 = 33,109.82

Present value of cash out flow for the fifth year = 36,298/1.03^4 = 32,250.30

Therefore, present value of cash out flow = 178,119.15

Present value of cash in flow.

Assumption: The money is got at the beginning of the year.

Present value of cash in flow for the first year = 100,000

Present value of cash in flow for the second year = 110,000/1.03 = 106,796.11

Present value of cash in flow for the third year = 121,000/1.03^2 = 114,054.09

Present value of cash in flow for the fourth year = 133,100/1.03^3 = 121,805.34

Present value of cash in flow for the fifth year = 146,410/1.03^4 = 130,083.37

Therefore, present value of cash in flow = 572,738.91

Net Present Value = Present Value of Cash Inflow - Present value of Cash Outflow

Net Present Value = 572,738.91-178,119.15 = 394,619.76

The net present value is therefore positive for this five-year estimate, equaling 394,619.76 Baht. Financial analysis indicates a return on investment in one year, which is reasonable in today's economic situation.

The results of this analysis give positive signs for investment since after the first year there will be profit. There is also considerable opportunity for growth. Therefore, this project is a suitable one for investment.

VI. WEB DATABASE AND IMPLEMENTATION

6.1 Setting up Database Driven Websites

Some of the more popular tools for doing this are IIS and Microsoft Access. Therefore, we have installed them for further process as indicated in the figure below.
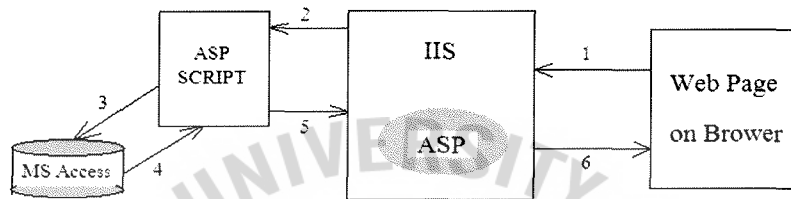
Figure 6.1. Web Server and Database Operation.

According to the Figure 6.1, there is a web page that pulls some data out of a database. The user requests data from his browser and sent to the web server, which in turn calls an ASP script. The ASP script will be executed by the ASP preprocessor, which pulls data from the database. The results are then messaged by the rest of the ASP script and turned into HTML. The final HTML is sent back to the user's browser. For better understanding, we have illustrated them below:

(1)   The users clicks on a link from his web browser; the web browser sends a request.

(2)   The file, which has the extension, name as ".asp" is an ASP script that contains commands. One of these command generate a connection and retrieve data from the database

(3)   The data from the database, and the file, which has extension name ".asp," format the data. Typically, it will be organized before formatting it into HTML.

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(4) The HTML sends back to IIS.

(5) IIS sends response back to the user's browser to complete user's request. The user now can view a well-designed web page containing information from a database.

6.2 Building a Product Catalog

All E-Commerce systems involve three basic functions: Displaying a product catalog, browsing function through the product catalog, and purchasing function from the product catalog

Building a product catalog is also another critical activity to success an E-Commerce. Due to the importance of product catalog, it is concerned as only of channel that can generate revenue from customer. Therefore, product catalog design should be planned and implemented carefully in order to attract all potential customers and generate sales volume.

Here is a simple diagram to illustrate the process:
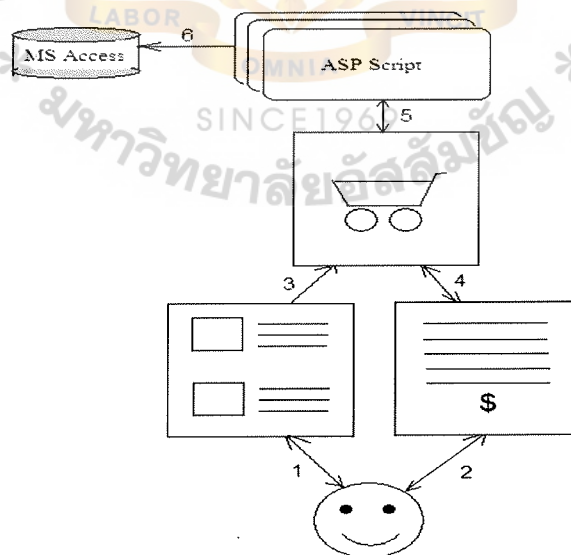
Figure 6.2. Product Catalog.

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(1)   User visits the website and accesses the product catalog.

(2)   User confirms his payment for completing the transaction.

(3)   User browses through the catalog and adds items into his shopping cart.

(4)   The server updates the user's shopping cart with the items he has selected.

(5)   HTML sends user's data to server through ASP script.

(6)   The server generates user order summary calculating the price of the order and store it in server itself.

According to the figure, the product catalog plays a very important role in E-Commerce as the channel that can create transaction from the customer. However, only product catalog itself cannot work independently. They required HTML, ASP script to communicate with the database and server in order to complete the transaction.

6.3 Managing Users with Sessions

The session management allows multiple users to communicate with web server in the same time. Moreover, session management also allows web server to recognize you and retrieve your personal information such as order, payment, etc from the database.

Since the web (or specifically, the HTTP protocol) is connectionless, that means each request made to a web server is independent of all the other requests. Whereas user's computer keeps information in primary memory and acquainted when user has log in and out; a web server does not. A web server simply waits for requests and sends responses.

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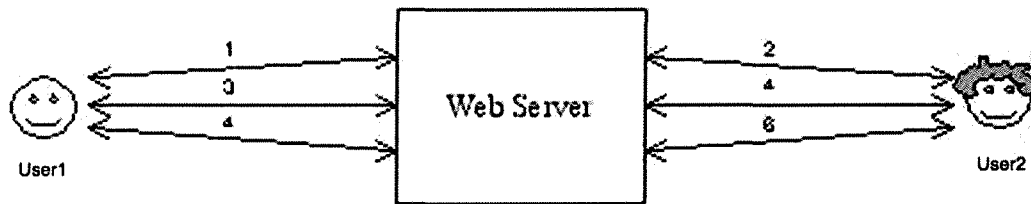
Figure 6.3. Session Management.

According to the above figure, there are two users, User1 and User2, accessing Web Server, and their actions are like this:

(1, 2)   User1 and User2 look at the product catalog.

(3, 4)   User1 and User 2 add an item to his basket.

(5, 6)   User1 and User 2 go to the checkout.

Regarding that, HTTP is connectionless, each request is completely isolated from the other requests. The web server can complete those actions by response to all request by the implemented of session management through the scripting language.

6.4 Hardware and Software Requirements

Hardware Requirements

Only one portable computer is functioned as our workstation and web server, which is the existing hardware whereas the details of hardware specification is listed below:

Table 6.1. Hardware Specification.

HARDWARE	DESCRIPTION
Cpu	Intel Pentium4 2.0 Mhz
Mainboard	VIA PLE133
Memory	Double Data Rate Sdram 256 Mb
Harddisk	Maxtor 30G /ATA133
Graphic Card	SIS6326
Sound	Sigma Tel Codec
Floppy Disk Drive 1.44	Default
Monitor	ATI Mobility M6
Modem	Lucent Internal Modem

Software Requirements

The software requirement is listed as below, while the major function is a web server. Window 2000 Server (Microsoft Internet Information Server) is functioned as operating system and Microsoft Access treated as database because its flexibility. Since ASP provides session management functions, is being used as scripting tool.

Table 6.2.   Software Specification.

SOFTWARE	DESCRIPTION
Web Server	Microsoft Window 2000 Server
Database Server	Microsoft Access or higher
Server-side Scripting Tool	ASP version 2
Web Development Tool	Edit Plus 2.11
Graphic Tool	Adobe Photoshop version 6.0.1
Screen Capture Tool	HyperSnap-DX version 4.22.01

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VII. CONCLUSIONS AND RECOMMENDATIONS

7.1 Conclusions

In conclusion, the advance of Internet and E-commerce technology drive Racingequipment.net to initiate the cyber shop.

Therefore, Web Design of Racingequipment.net is implemented through HTML and Java Script, which developed by Edit Plus. Apart from web model, web database is another key to complete the function of cyber shop. Microsoft Access and Microsoft Window 2000 Server is functionized as Database and Web server, while ASP functioned as Server-side scripting Tool.

Moreover, Racingequipment.net could not be success by focusing only Web Design and Database. Situation Analysis, Marketing Analysis including Customer Analysis, as well as Financial Analysis must be performed. Situation Analysis as well as SWOT Analysis figure the online business environment and implied the lack of online competitor in The Engine Management System is the opportunity to success in this business. Meanwhile, Marketing Analysis particularly in Customer Analysis assist in targeting customer and segmenting the market. As a result, one segmented is the best approach for Racingequipment.net to maximize customer satisfaction. Accordingly, Financial Analysis answered that the return on investment will be only within one year and the profit could be gained in this business.

Finally, by addressing those analysis and the function of web design and database, Racingequipment.net can be achieved its objective efficiently and served target customer with provided online service.

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7.2 Recommendations

During the first launch, COD (Cash on Delivery, the sender gives goods to the receiver and the receiver pays cash to the sender) is the alternative to the customer. However, best effort will be made to develop a secure payment system to ensure customer trust. Electronic payment shops to encourage online payment will be carried out in the near future.

Supply chain management must be implemented efficiently to supply racing parts to customers on time. Internet Technology to link customers and suppliers together for better information sharing will be developed.

Raingequipment.net plans to increase the number of racing parts available as well. In addition to selling and tuning engine management systems, Thailand Motor Sport by organizing activities like Autocross Racing or Gymkhana Racing will be promoted.

Promotion and advertising will be necessary to increase the visibility and popularity of the company and site during the introductory period. Continuous surveying and research are also required to ensure success.

A satisfied customer is essential for the survival of an online business. Customer Relationship Management concept (CRM) will be used in order to maintain targeted customer.

APPENDIX A

SITE MAP AND WEB DESIGN

A.1 Site Map
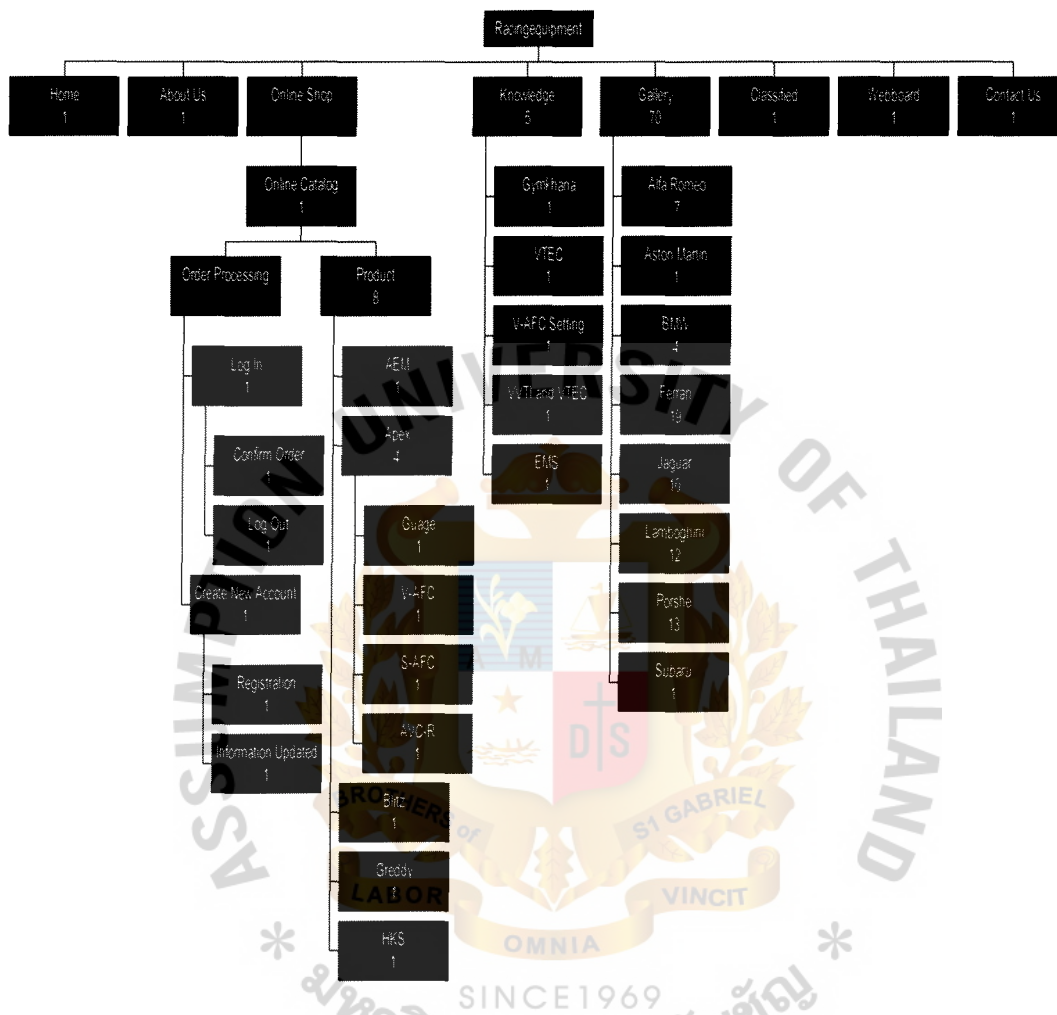
Figure A.1. Site Map.

A.2 Homepage
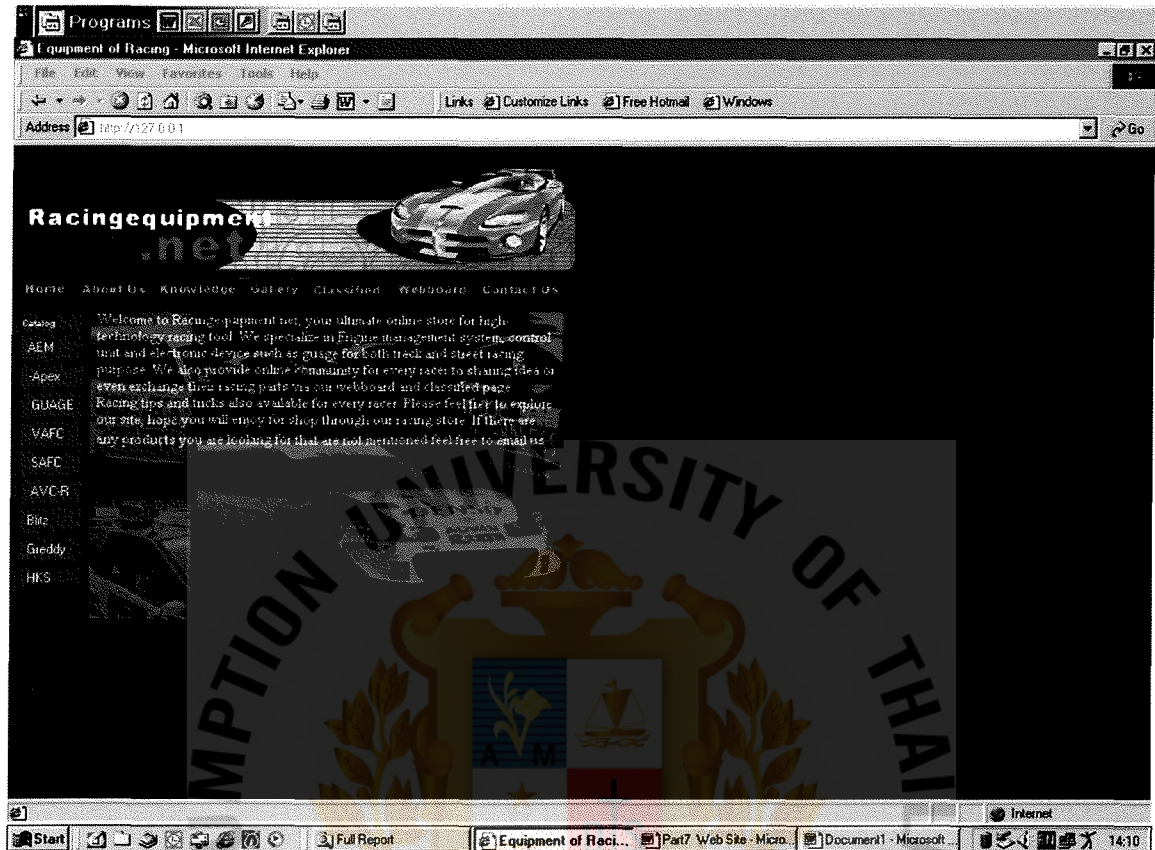
Figure A.2.   Homepage.

A.3   Shop Online

Shop Online offer online catalog for our products as well as payment method.

Product pages are display at the left purple bar, which can be sorted by their brands.

Currently, we have 5 brands with 9 sub-product menus;

Online Catalog
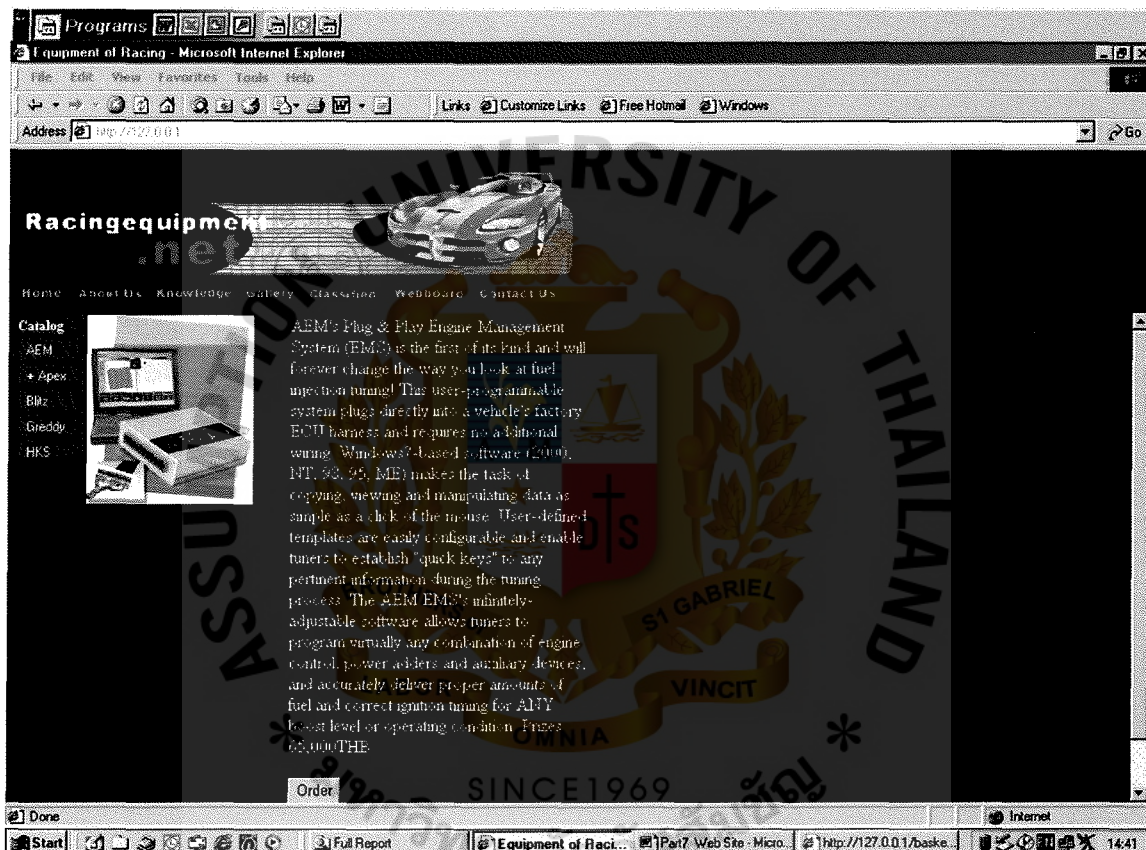
Figure A.3.   AEM.
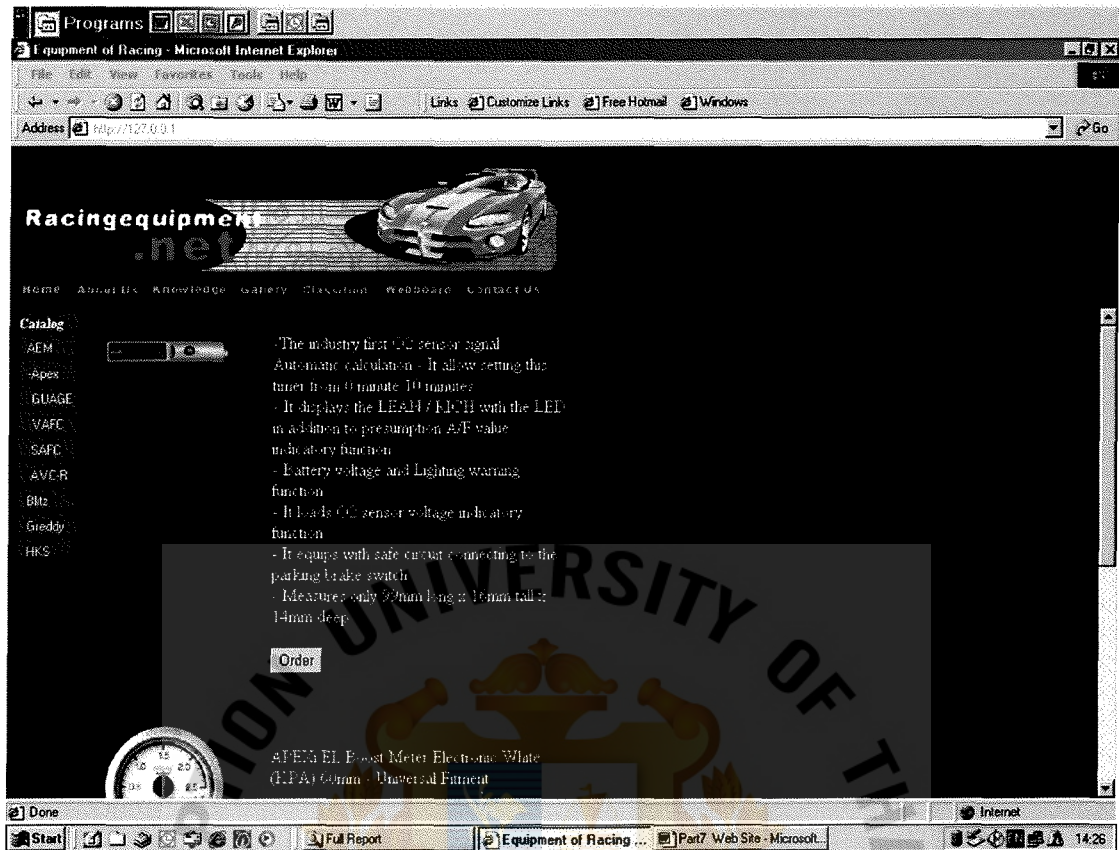
Figure A.4.   Apex Gauge.

50
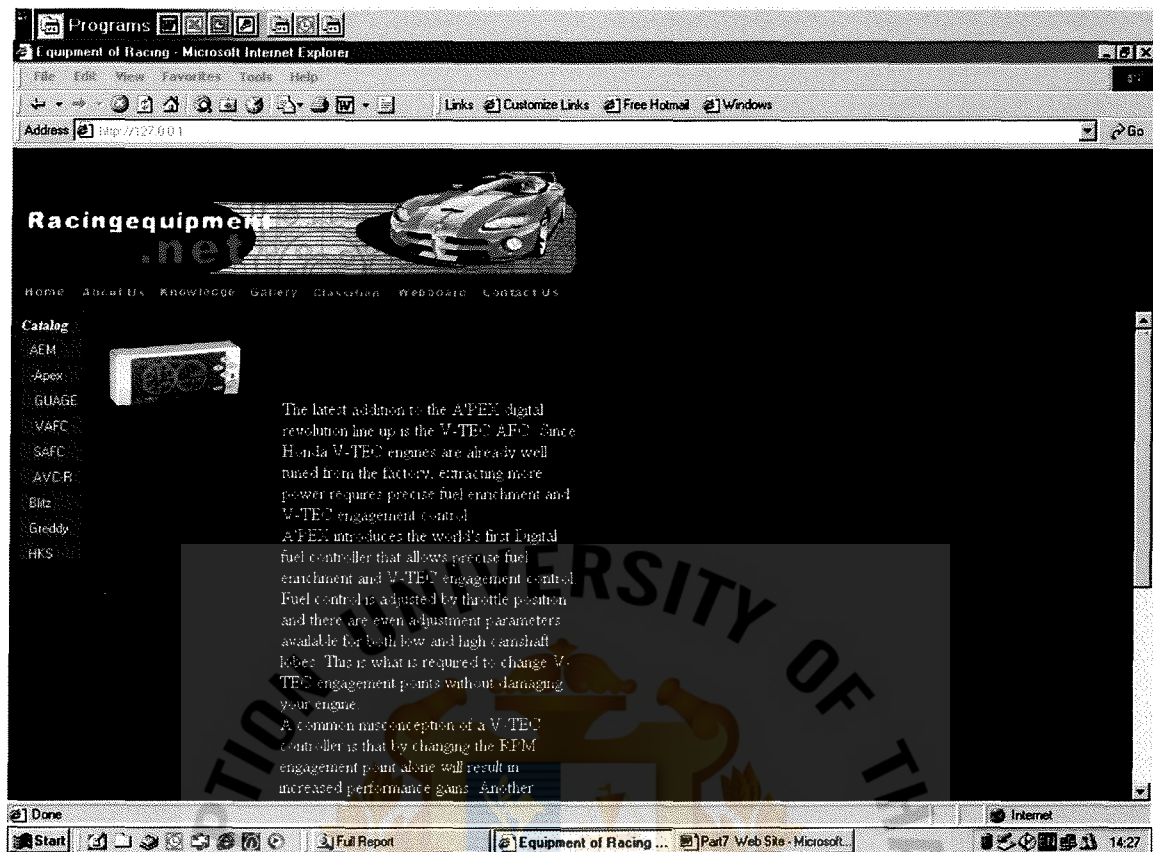
Figure A.5.   Apex V-AFC.
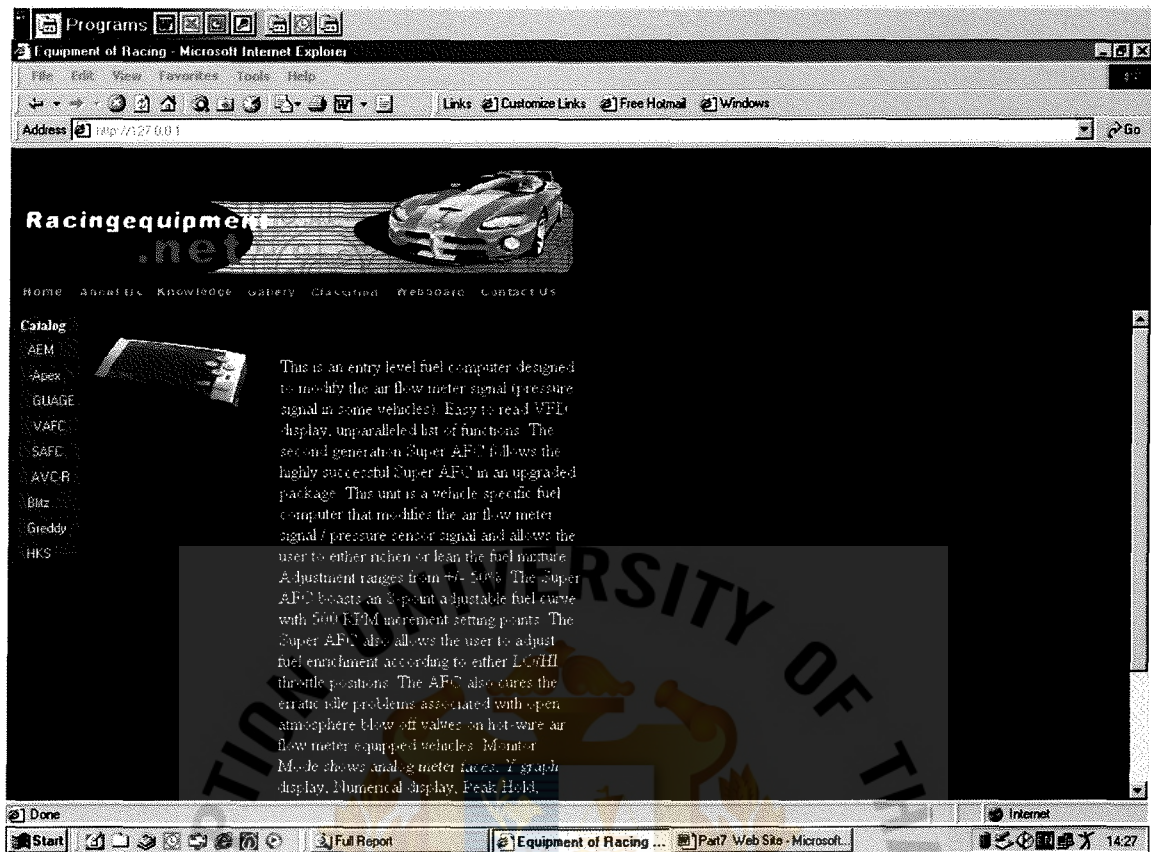
Figure A.6.   Apex S-AFC.
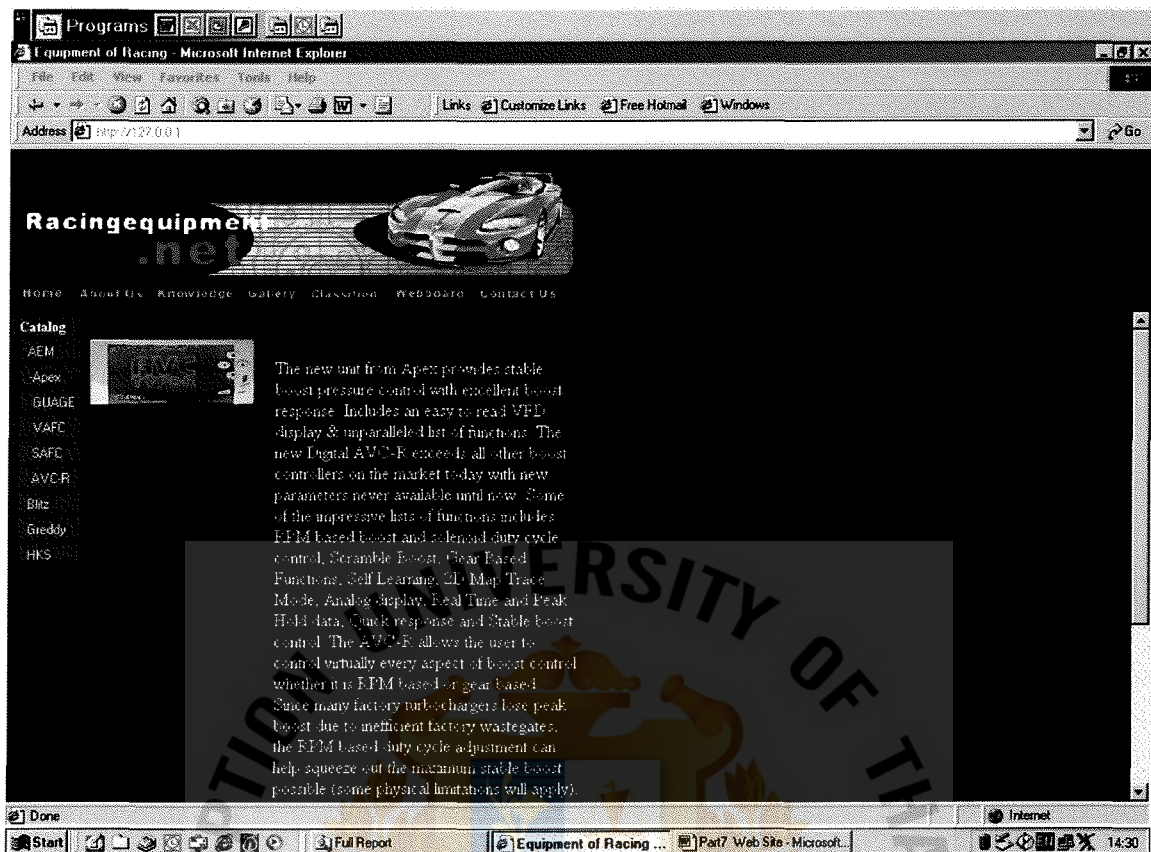
Figure A.7.   Apex AVC-R.
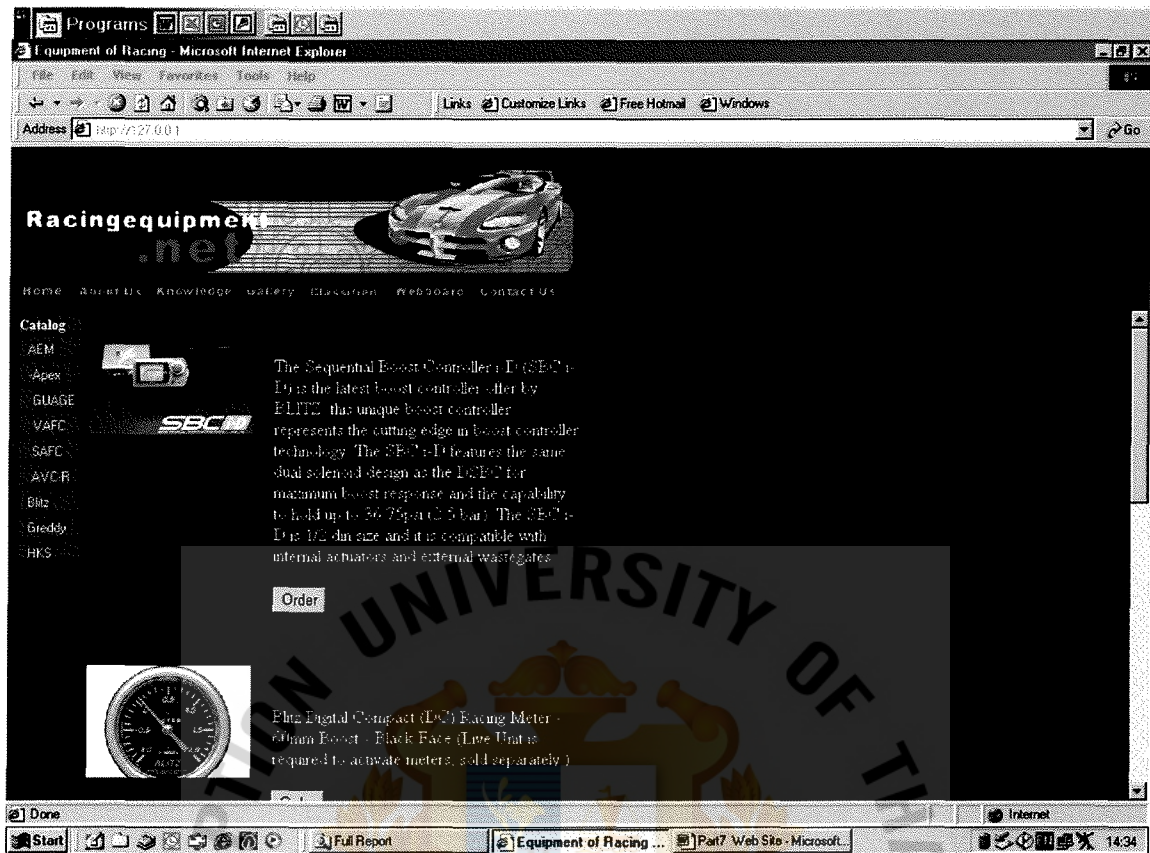
Figure A.8. Blitz.
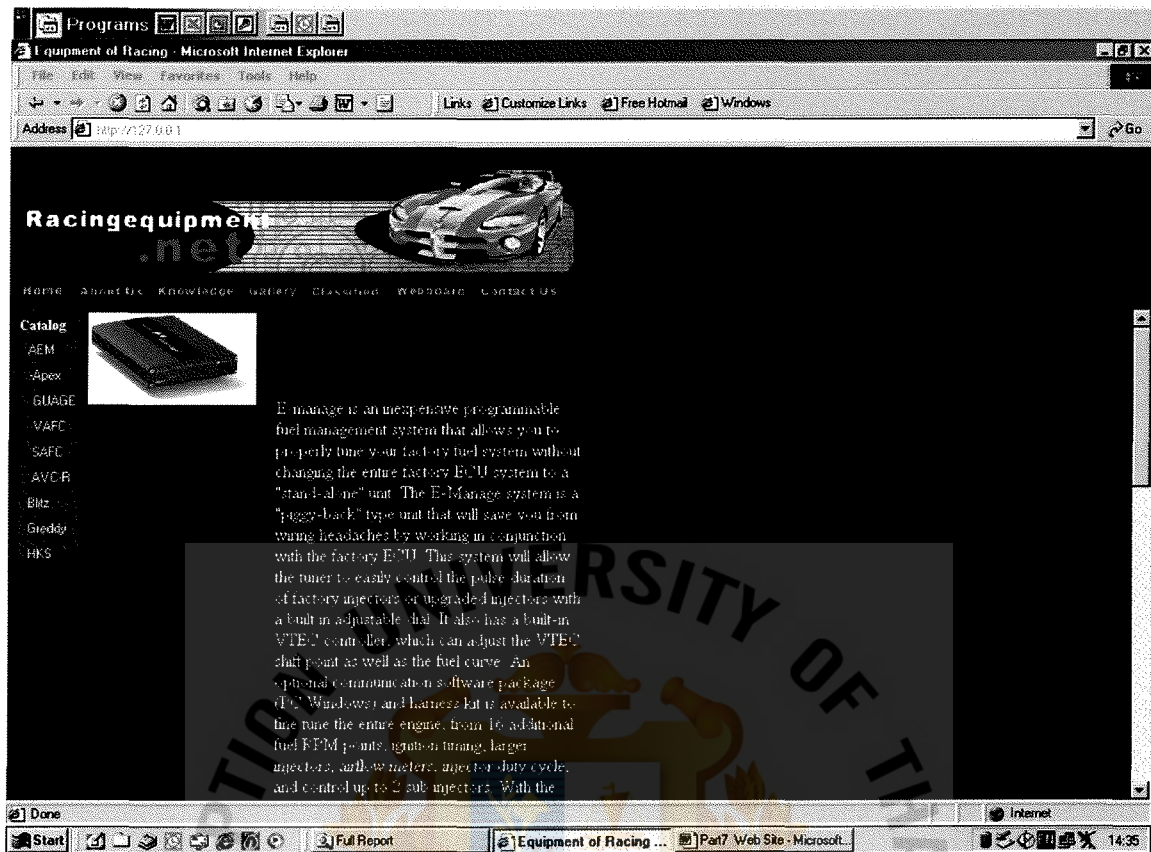
Figure A.9.   Greddy.
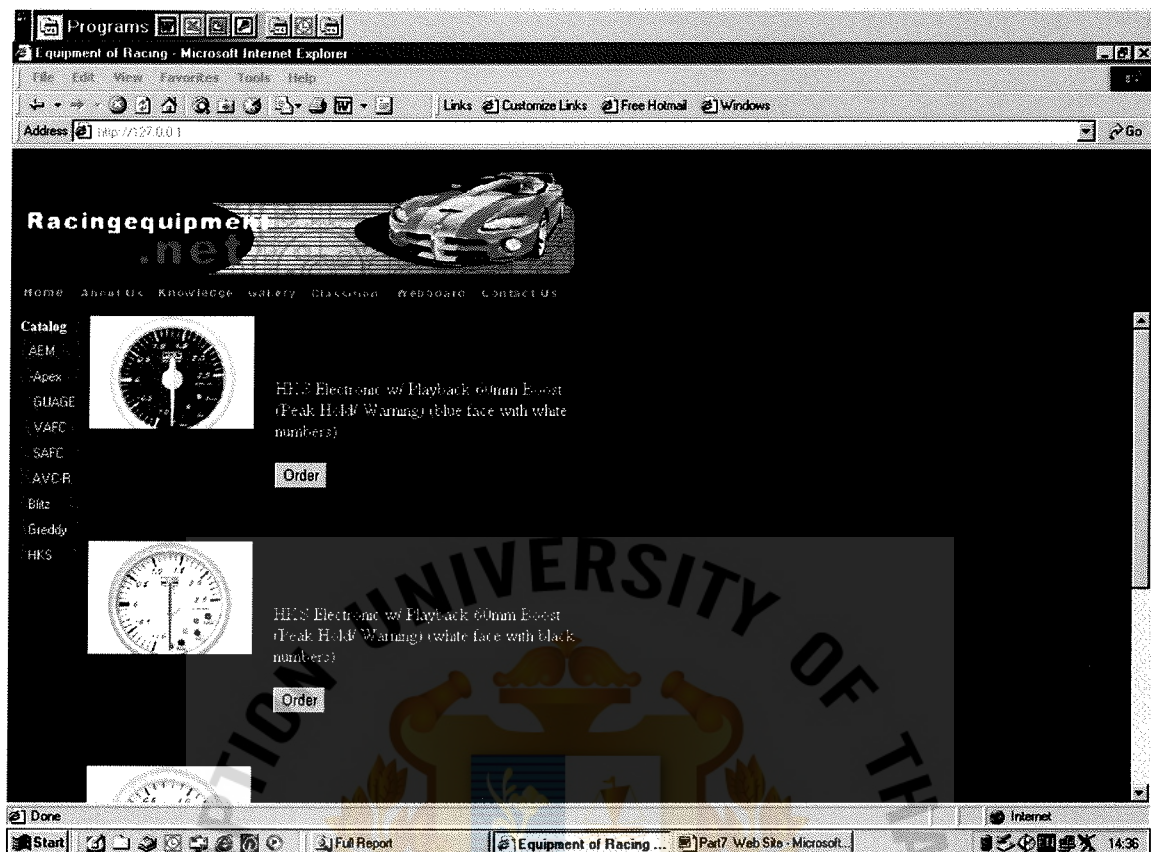
Figure A.10.   HKS.

A.4 Ordering Page

The customer can shop for Racingequipment.net by doing the steps as follows:

(1)   The web site will bring customers to the form page. If they are already

members, just fill in their username and password.
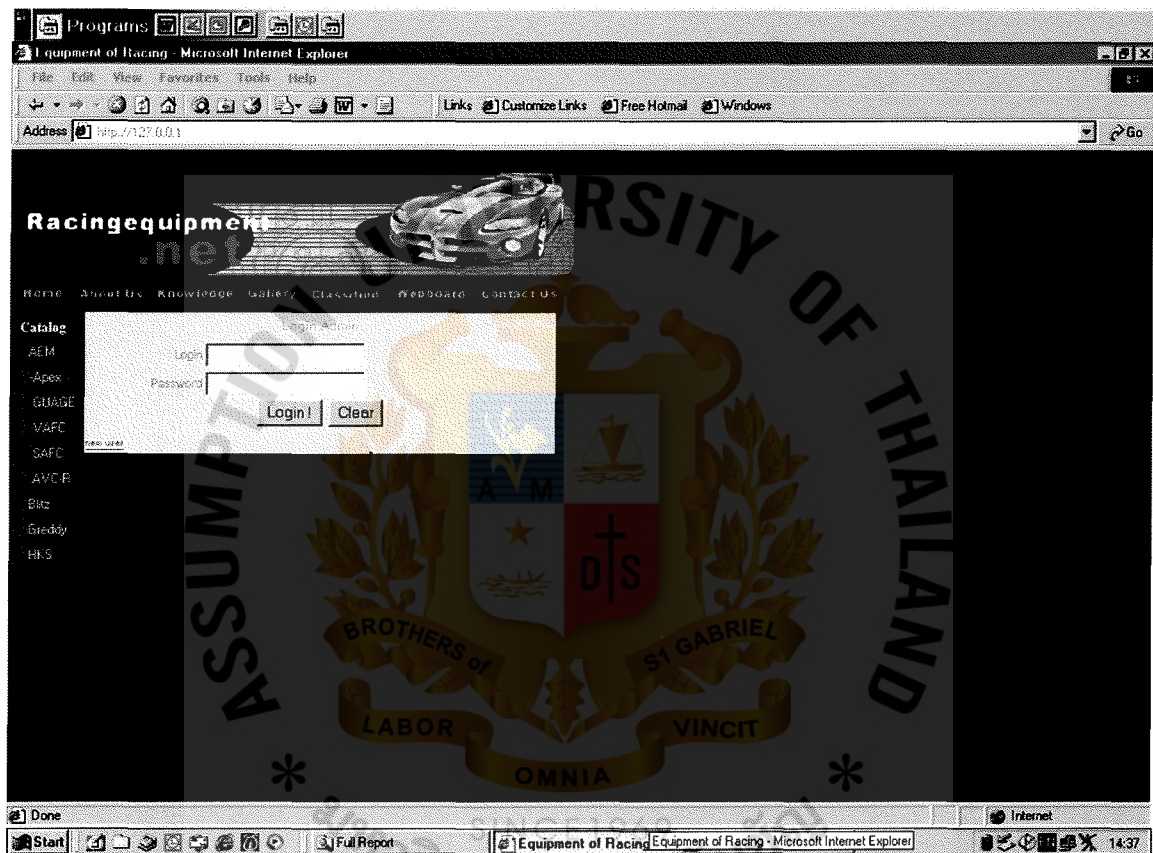
Figure A.11.   Ordering Page/ Member Log In.
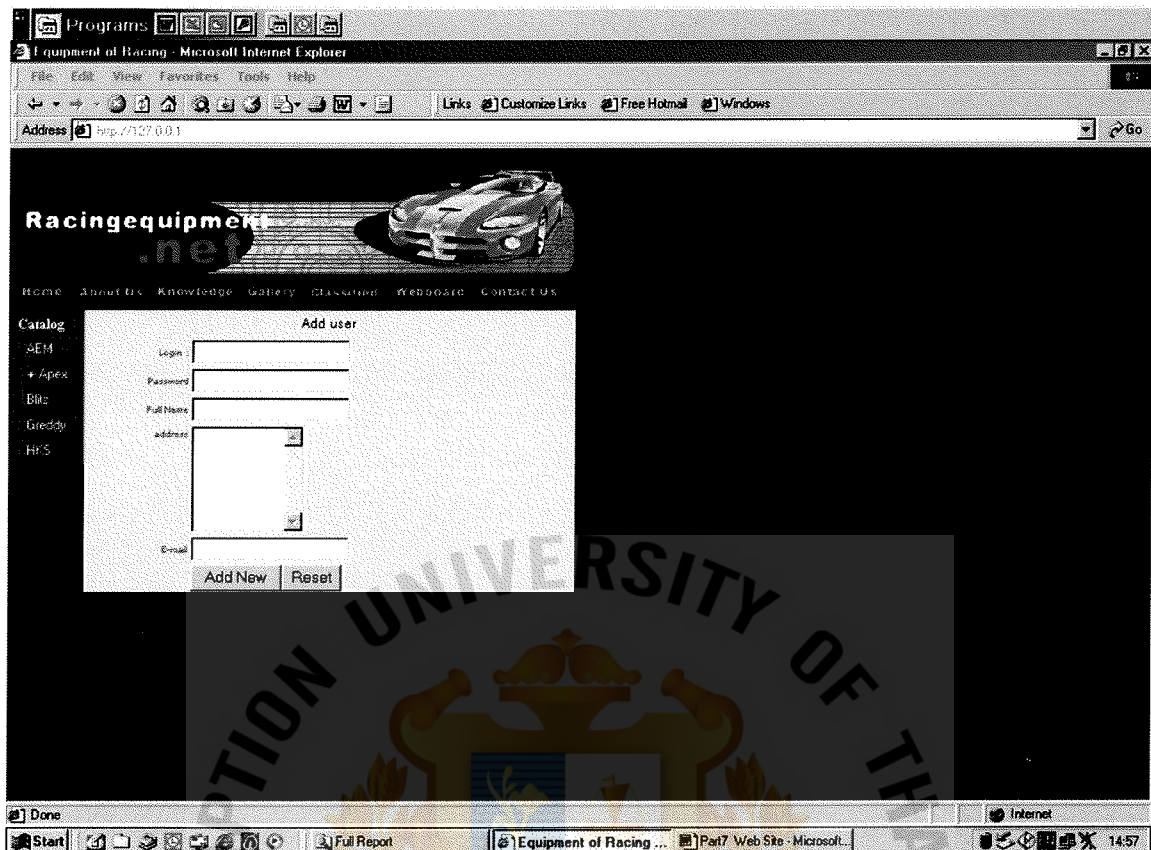
Figure A.12.   Create New Account for New User.

(2)   In case of new user, they have to register for their account before ordering any product. New user has to fill in the information included login name, password, name, address and e-mail address.
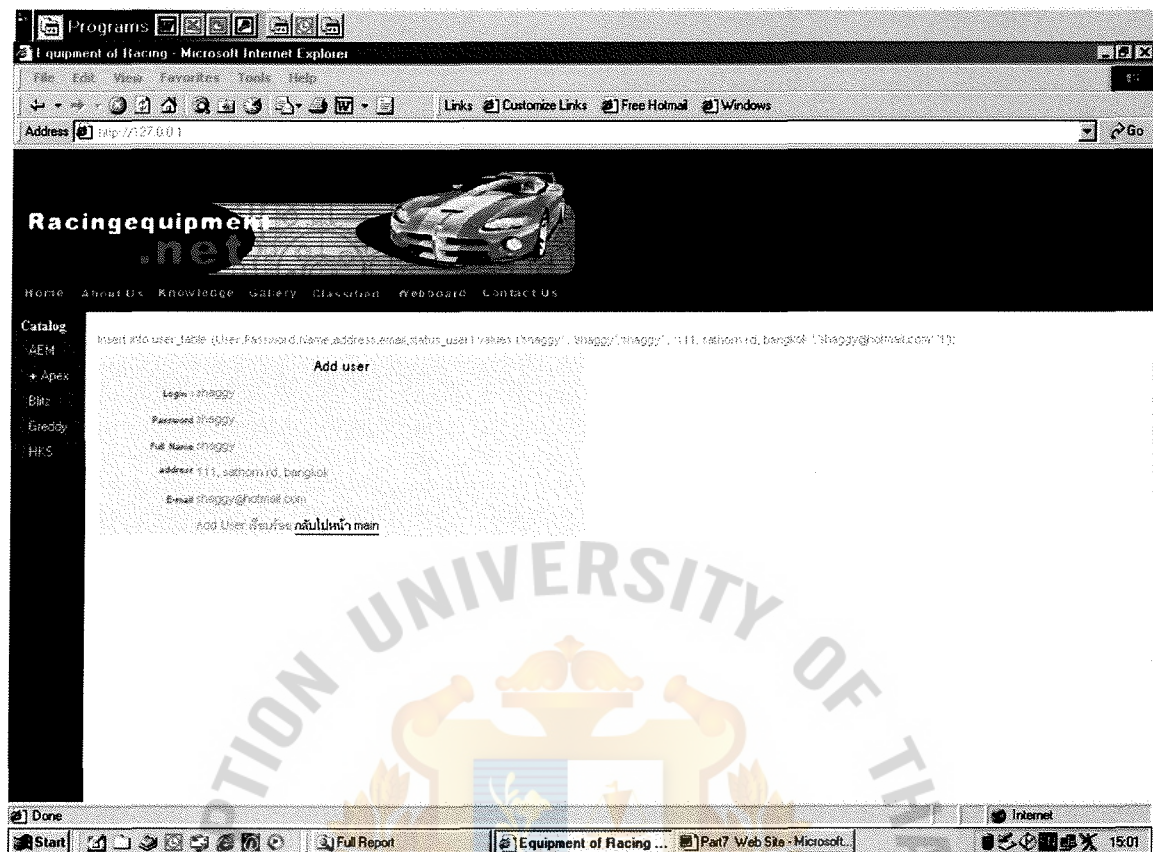
Figure A.13. Account Information.

(3) After new user finished their filling account information, they are ready for order any product in Racingequipment.net

The main section consist of six sub-menus, described as follows:

A.5 About Us
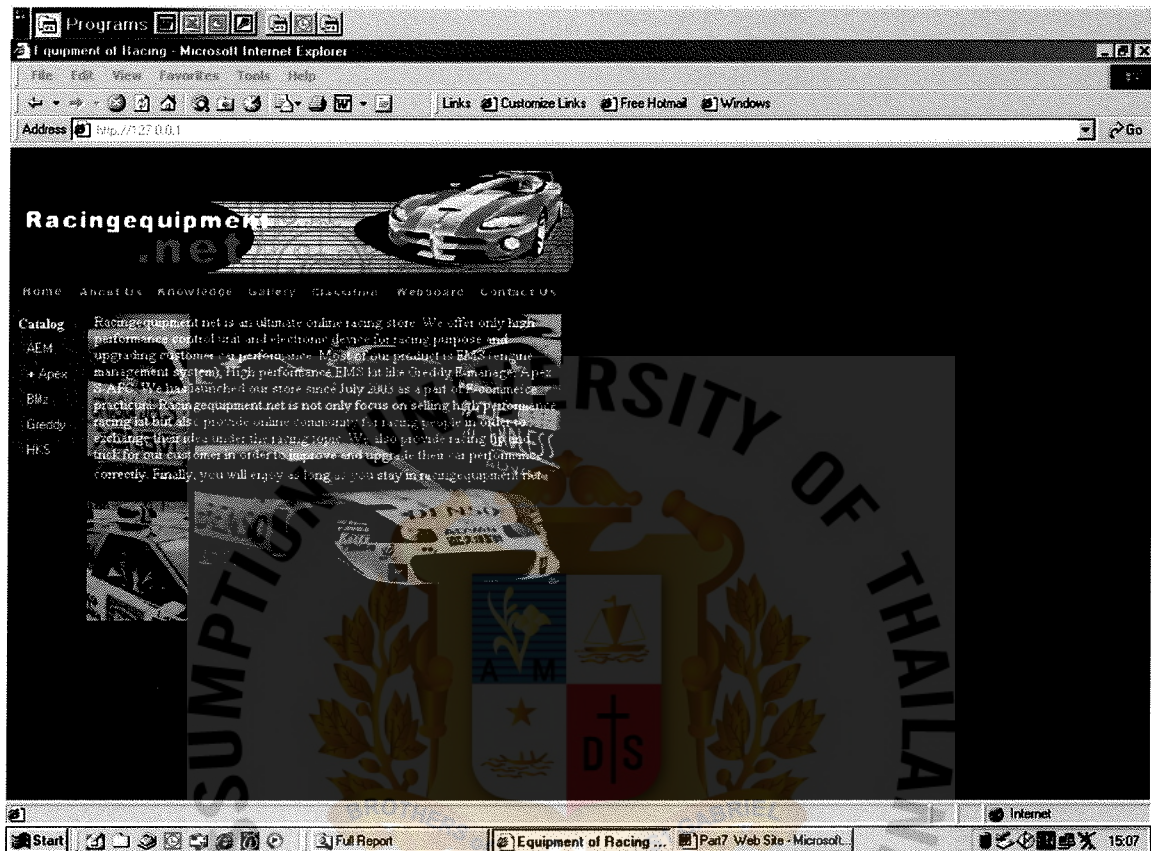
Figure A.14.   About Us.

A.6   Knowledge
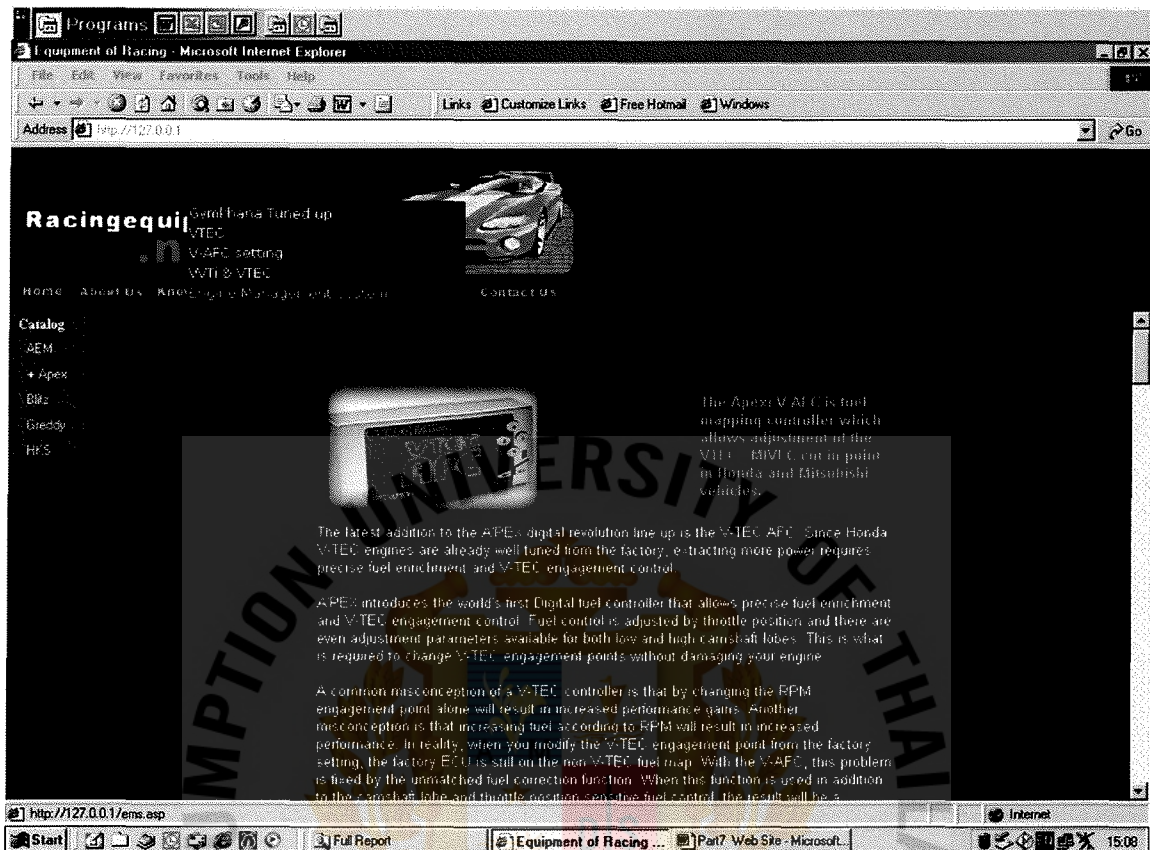
Figure A.15.   Knowledge.

Knowledge page consist of:

(1)   Gymkhana Tune Up

(2)   VTEC

(3)   V-AFC Setting

(4)   VVTI & VTEC

(5)   Engine Management System

A.7   Gallery
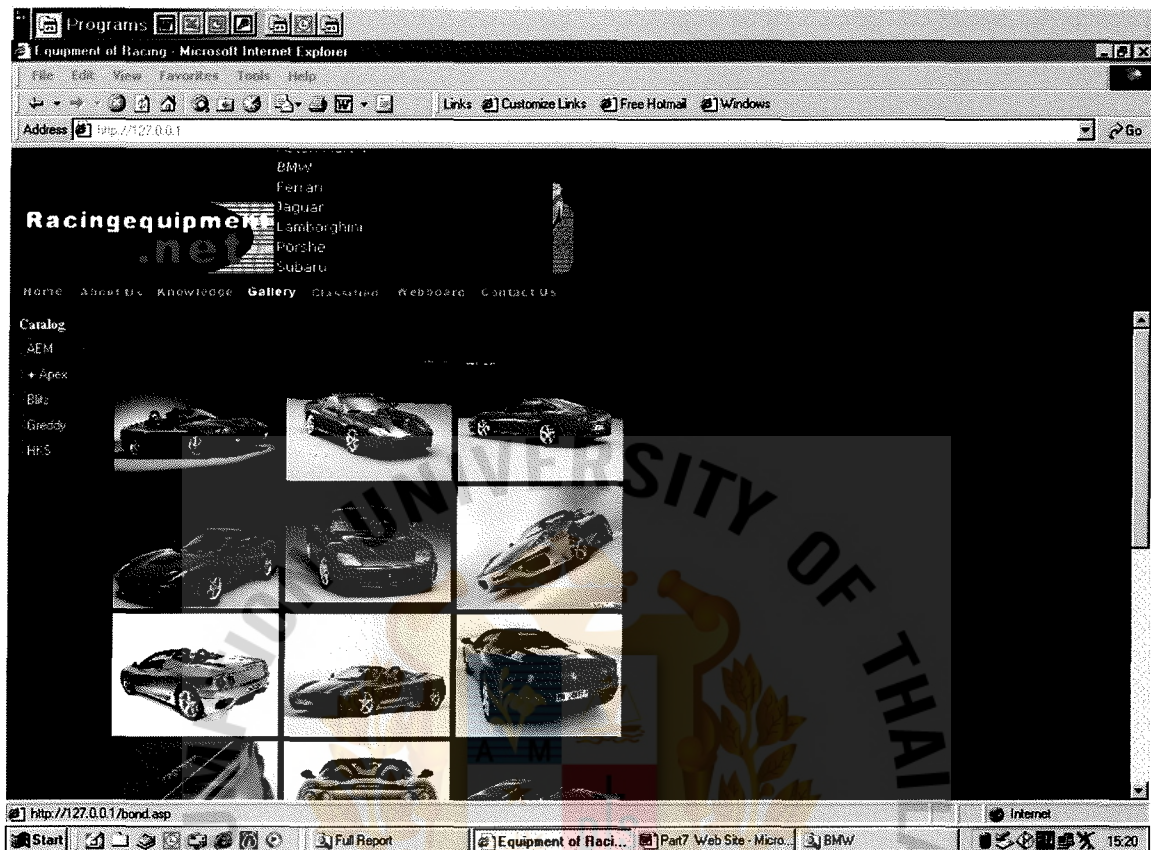
Figure A.16.   Gallery.

Gallery page consist of:

(1)   Aston Martin

(2)   BMW

(3)   Ferrari

(4)   Jaguar

(5)   Lamborghini

(6)   Porshe

(7)   Subaru
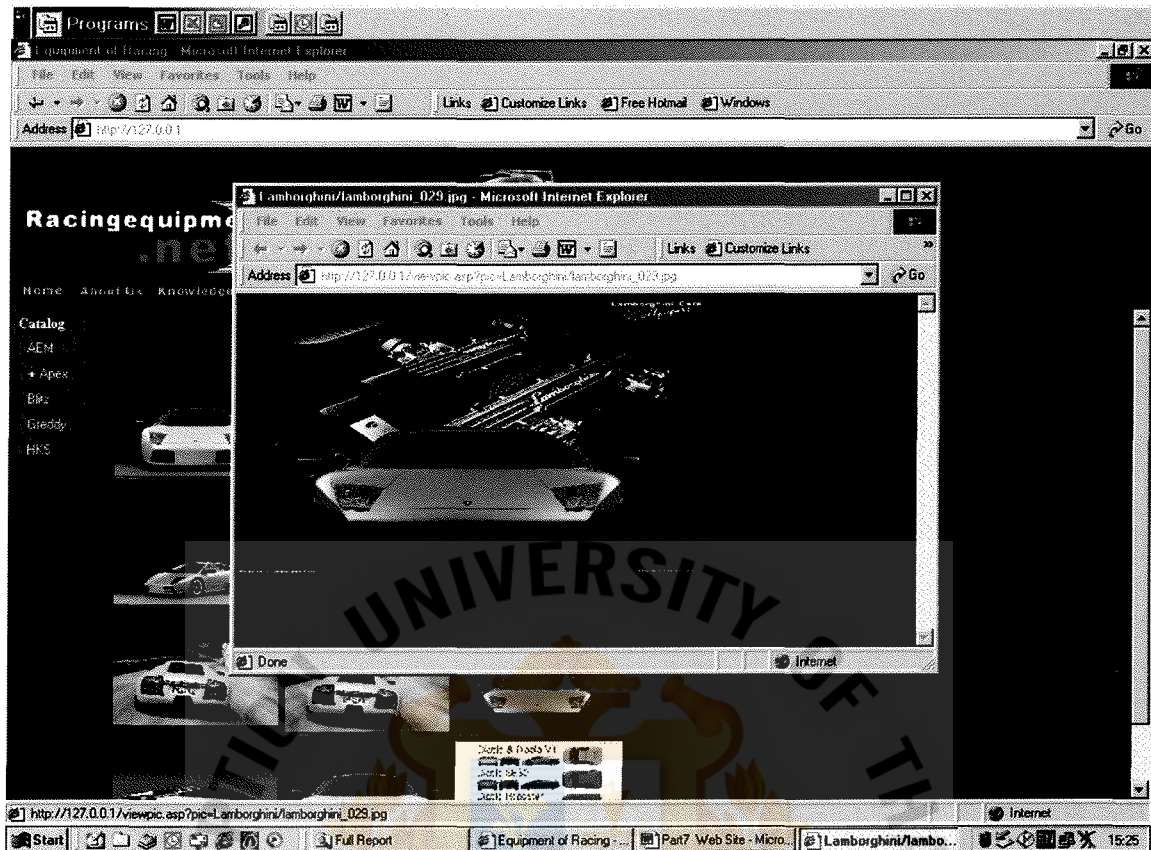
Figure A.17.   Gallery Pop Up.

It will show the product customers select, they can click on the picture to enlarge.

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A.8 Classified

Classified page allow customer to exchange their racing parts online.
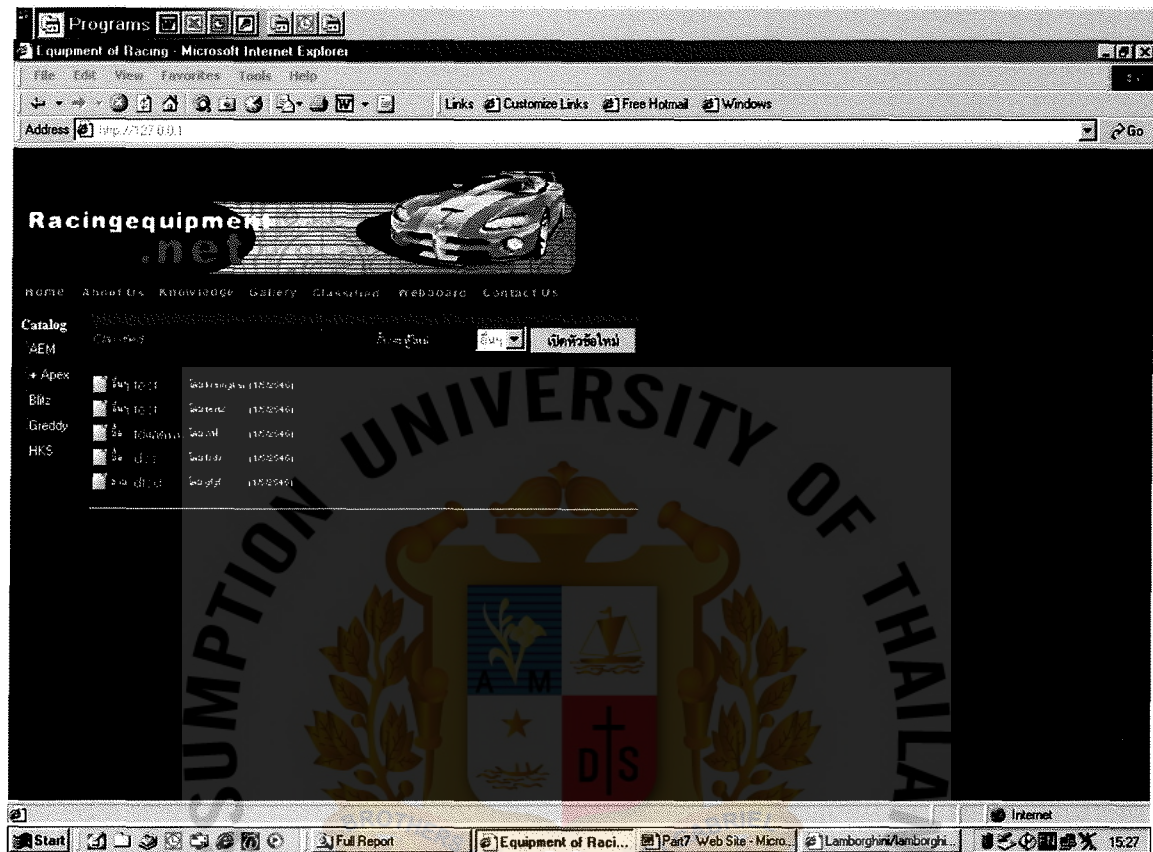
Figure A.18. Classified.
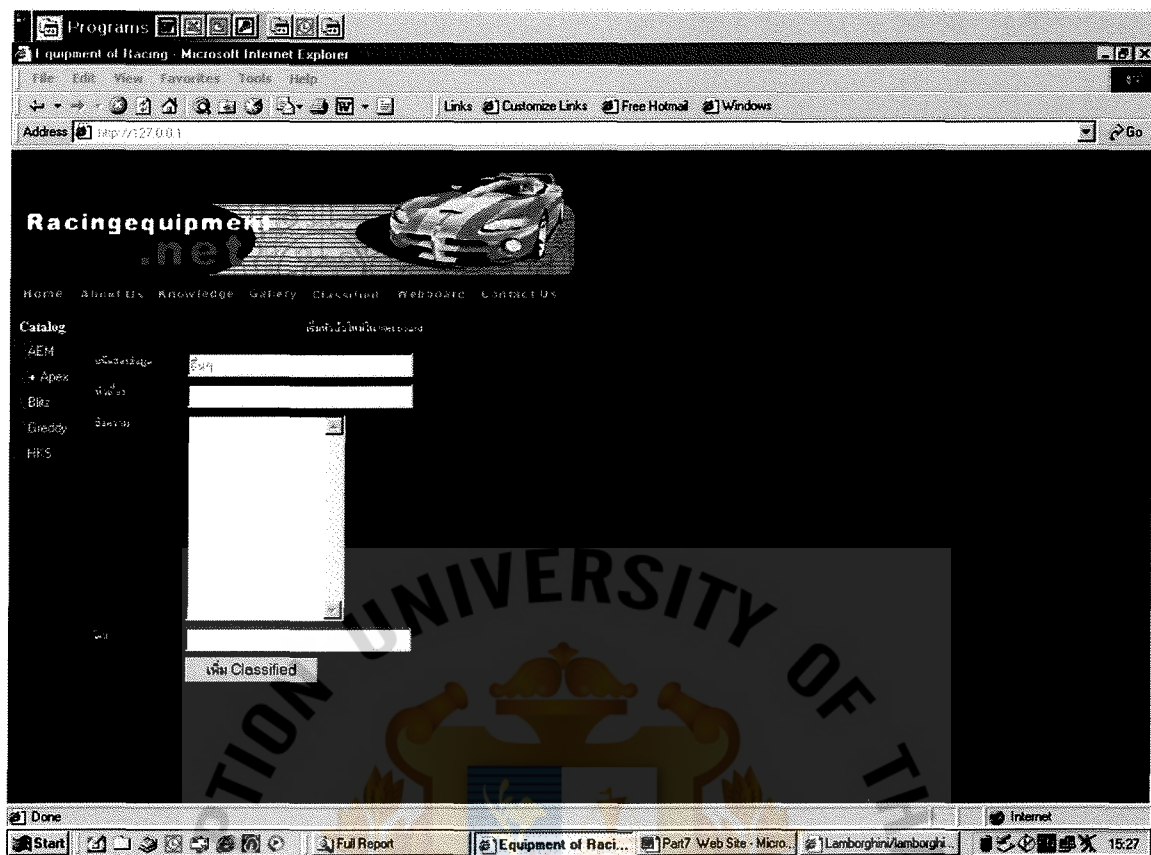
Figure A.19.   Add New Topic.

A.9 Webboard

Webboard allow customer for sharing or exchange their idea under the topic of motor sport or racing product for promote Motor Sport in Thailand.
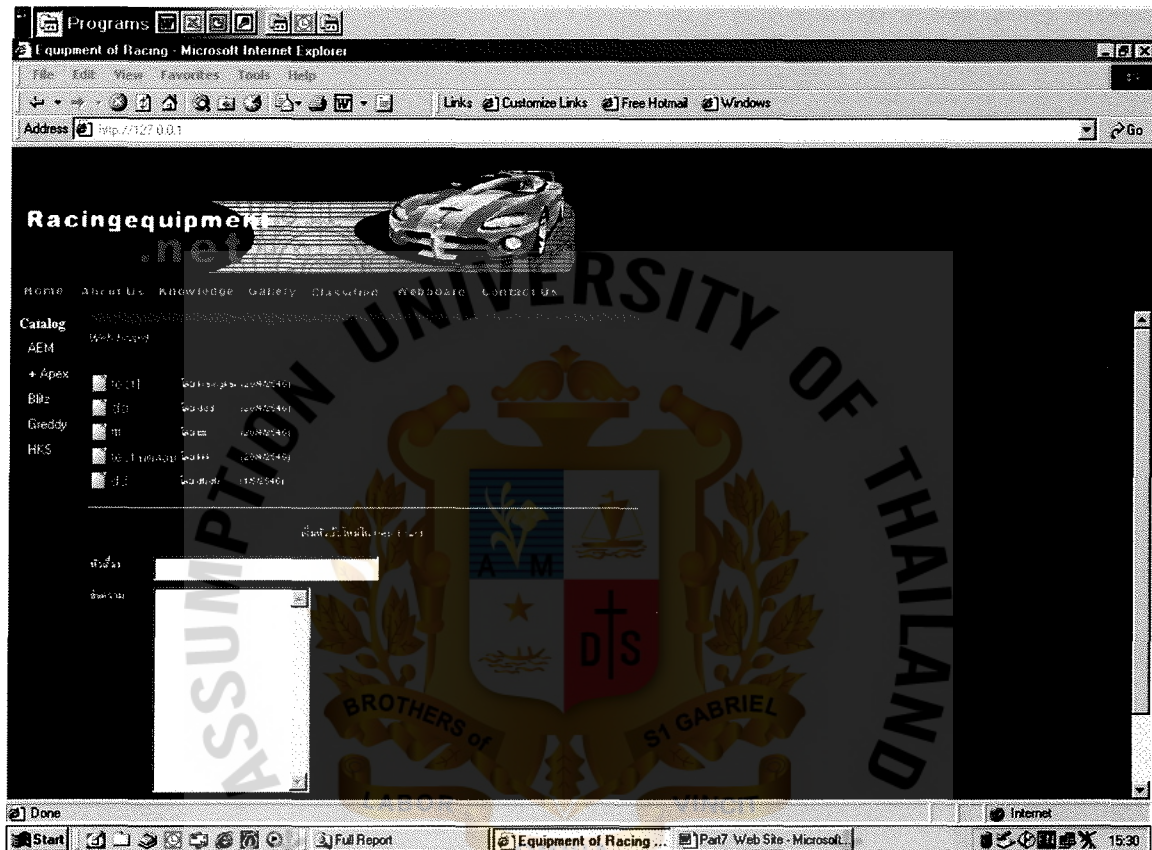
Figure A.20. Webboard.
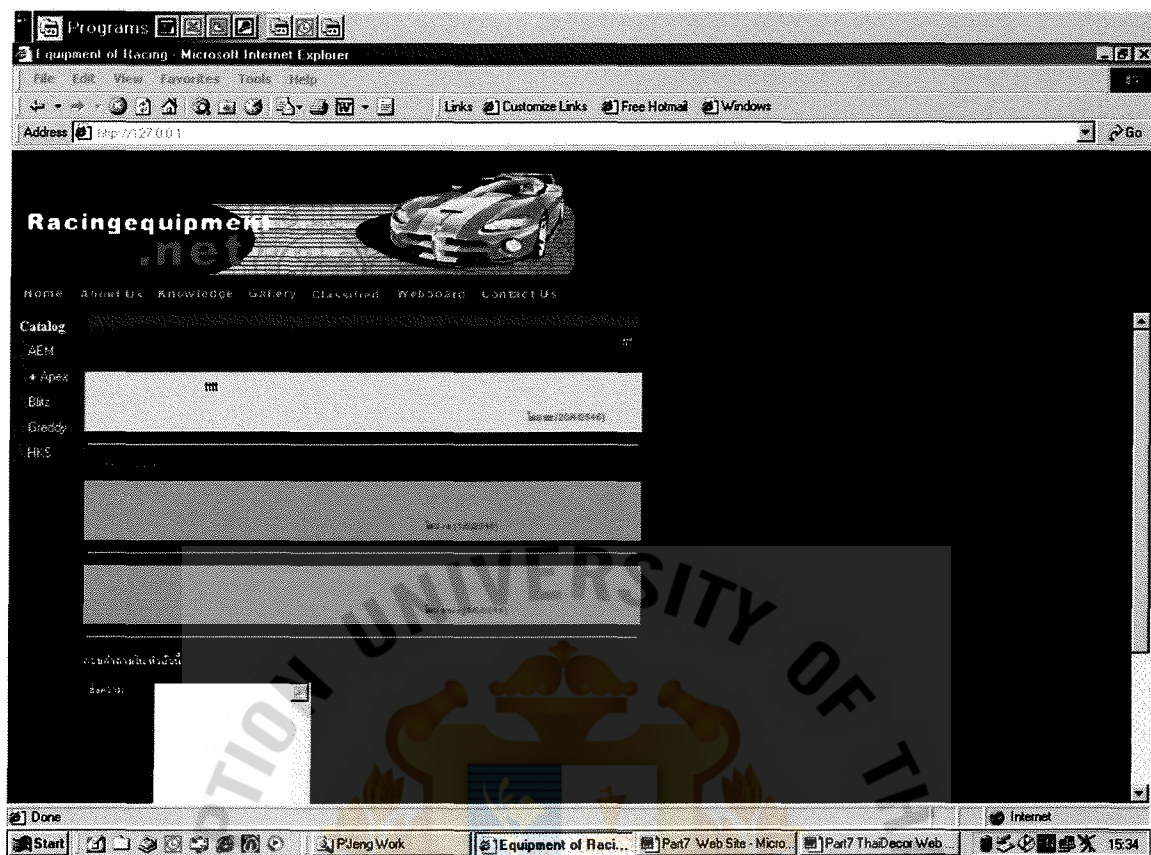
Figure A.21. Topic Page.

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A.10 Contact Us

Customer can contact with Racingequipment.net via E-Mail by contacting our

menu.
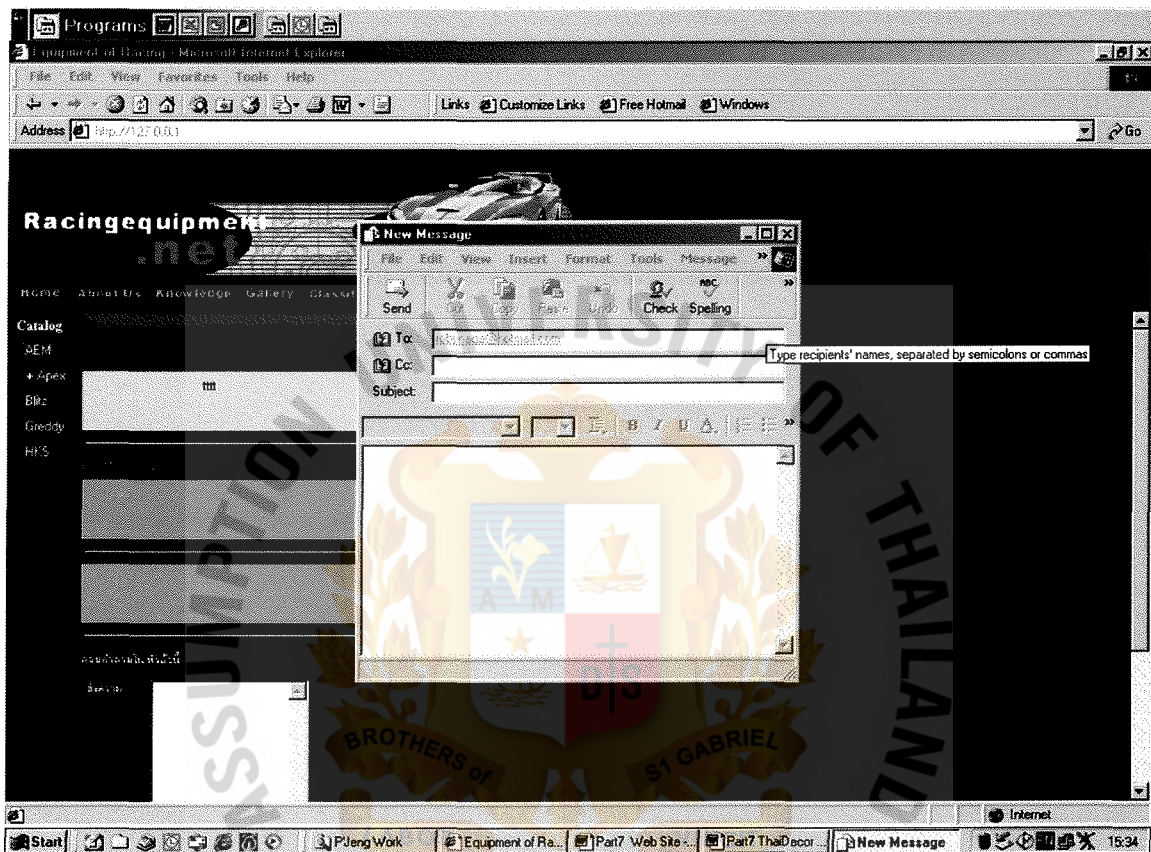
Figure A.22. Contact Us.

APPENDIX   B

DATABASE DESIGN

Database Design for User's Profile
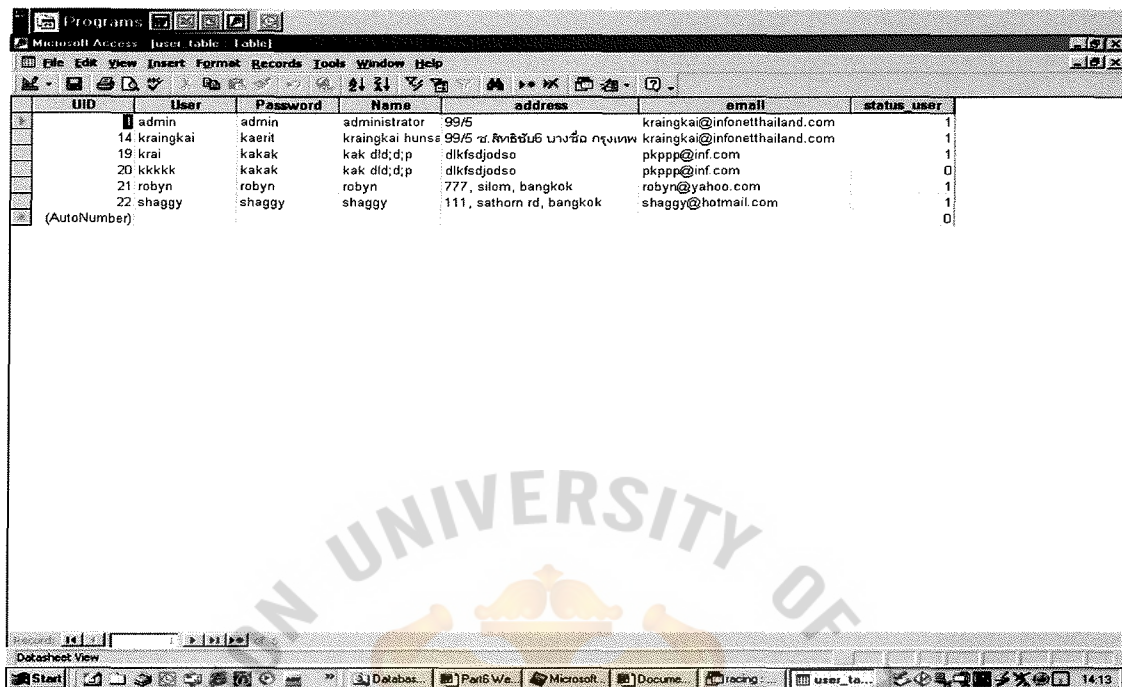
Figure B.1. User's Data Input.

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Database Design for User's Profile

UID	User	Password	Name	address	email	status_user
1	admin	admin	administrator	99/5	kraingkai@infonetthailand.com	1
14	kraingkai	kaerit	kraingkai hunsa	99/5 ซ.สิทธิชัย6 บางชื่อ กรุงเทพ	kraingkai@infonetthailand.com	1
19	krai	kakak	kak dld;d;p	dlkfsdjodso	pkppp@inf.com	1
20	kkkkk	kakak	kak dld;d;p	dlkfsdjodso	pkppp@inf.com	0
21	robyn	robyn	robyn	777, silom, bangkok	robyn@yahoo.com	1
22	shaggy	shaggy	shaggy	111, sathorn rd, bangkok	shaggy@hotmail.com	1
(AutoNumber)						0

Figure B.2. User's Profile Database.

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Database Design for Order Handling

Figure B.3. Order Data Input.

Database Design for Webboard

Figure B.4. Webboard Data Input.

Database Design for Sub-Webboard


Figure B.5. Sub-Webboard Data Input.

Database Design for Classified Board

Figure B.6. Classified Board Data Input.

Database design for sub-classified


Figure B.7. Sub-Classified Board Data Input.

BIBLIOGRAPHY

1. Drucker, Peter. Managing Challenges for the 21st Century. New York: Harper Business, 1999.

2. Kotler, Philip. Marketing Management, 10th Edition. New Jersey: Prentice-Hall, 2000.

3. Laudon, Kenneth C. and Jane P. Laudon. Management Information System, 6th Edition (International). New Jersey: Prentice Hall, 2000.

4. Porter, Michael. Techniques for Analyzing Industries and Competitors. Competitive Strategy. New York: The Free Press, 1980.

5. Turban, Efraim, Jae Lee, David King, and H. Michael Chung. Electronic Commerce: A Managerial Perspective. New Jersey: Prentice Hall, 2000.