



LIQUID PETROLEUM GAS (LPG) CYBER SHOP

by

Ms. Isaree Thinsaingam

A Final Report of the three-Credit Course
CE 6998 Project

Submitted in Partial Fulfillment
of the Requirements for the Degree of
Master of Science
in Computer and Engineering Management
Assumption University

July 2002

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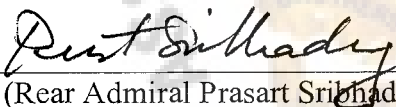
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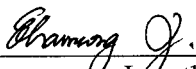
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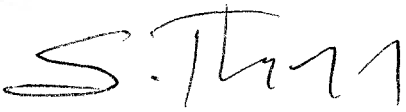
The Graduate School of Assumption University has approved this final report of the three-credit course, CE 6998 PROJECT, submitted in partial fulfillment of the requirements for the degree of Master of Science in Computer and Engineering Management.

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ABSTRACT

Today the Internet makes the things to be easy. Most of today's on-line commerce came from B2B (Business to Business). Some parts of the conventional way of doing business are replaced by more effective ways, E-Business.

Liquid Petroleum Gas (LPG) Shop is an online for both retailer and wholesaler. This Shop offers the advantages of providing gas in various types and tank sizes_ The goal of this Web plan is to extend the reach of the store to others outside the area and add to the revenue base.

Market research indicates a specific and growing need in the area for the products that the Shop offers in the market it serves, and there are indications that Web sales will play an increasing role in connecting customers with sellers. The website will focus on its selection, competitive pricing, and customer service to differentiate itself among other Internet options.

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L INTRODUCTION

1.1 Background of the Project

Electronic commerce is an attention in every type of business. A basic attraction of it is that on-line shopping allows customers to make purchases while they view images of products and read descriptions of features and benefits. If they like what they see, they can make their purchase from wherever they are by ordering from transaction, telephone, and other contact information which further encourage sales to customers worldwide.

Businesses are making or saving money every day using the Internet on the Web to communicate information and service. The Web delivers information and makes sales more efficiently and inexpensively than any other medium. And unlike traditional media, marketing on the Web or the Internet is decentralized and entrepreneurial in nature. This means anyone can market on the Internet through the Web without the high cost of advertising in the traditional "big" media newspapers, magazines, radio, and television).

Nowadays many businesses have adopted the successful online store models such as "yahoo. corn" a well known search engine and "amazone.com" selling books. E-commerce has become the most talked about topic in Thailand during the past few years. Internet users in Thailand tend to use Internet for searching information about products that they need Liquid Petroleum Gas (LPG) is the basic need in every house. Most customers are call the seller and order by telephone but we have not seen any significant adopter of online order system in Thailand.

Liquid Petroleum Gas Shop Online is a business that would like to serve the new way of ordering process in gas market. Not only the new way to order products but this online shop has collected various brands of gas that is convenient to customers who can

select and put the order in this site. So the solution to approach this goal is to create own Web site on the Internet.

1.2 Objectives of the Project

- (a) To study the Liquid Petroleum Gas industry in Thailand
- (b) To find out the possibilities of operation an online Liquid Petroleum Gas shop in Thailand
- (c) Identify the problems and user requirements of the existing system.
- (d) Analyze and design the proposed system to online system.
- (e) Create an online Liquid Petroleum Gas shop in Thailand.
- (f) Operate an online Liquid Petroleum Gas shop in Thailand.
- (g) To find the results of the operation

1.3 Scope of the Project

Establishing a prototype of an online shop to sell Liquid Petroleum Gas

1.4 Deliverables

- (a) Prototype of online shop
- (b) Program written in HTML
- (c) Project Report

IL LITERATURE REVIEW

2.1 Meaning of Internet Marketing

Internet is a worldwide collection of computer networks, cooperating with each other to exchange data, using a common software standard. Through telephone wires and satellite links, Internet users can share information in a variety of forms. The size, scope and design of the Internet allow users to:

- (a) Connect easily through ordinary personal computers and local phone numbers.
- (b) Exchange electronic mail (E-mail) with friends and colleagues with accounts on the Internet.
- (c) Post information for others to access, and update it frequently.
- (d) Access diverse perspective from around the world.
- (e) Access multimedia information that includes sound, photographic images and even video.

Internet marketing is a system for selling products and services to target audiences who use the Internet and commercial online services by utilizing online tools and services in a strategic manner consistent with the company's overall marketing program.

World Wide Web is fast becoming one of the best ways for individuals and organizations to effectively, efficiently and economically communicates with an influential consumer. So any web company that requires promoting their business in cyberspace should implement Internet marketing in order to increase visitors and traffic in their web.

In today's economy, E-commerce plays a very significant role in a rapidly increasing number of cooperation across a wide spectrum of industries. The ability to conduct secure business transactions across the Internet can give instant access to a new

way to reach existing and new customers. There are numerous advantages to selling online or electronic commerce, but most of them come back to a single reality; it saves your company hard cash. From reducing reliance on call centers to eliminating printing and postage costs for catalogs, e-commerce enables business to address their customers directly and complete real-money transactions in highly efficient ways.

There are two main approaches to do business on the Internet

- (a) Directly offering a product/service for sales at web site

The company can offer a product or services on web pages or offer free information to lure people link to another web that products or services are available. This is the most popular way of making money on the cyberspace because it is easy to set up and get the initial profits overnight.

- (b) Aim at sponsor ship or banner Advertising

The company tries to persuade as many visitors as possible to the web site by enticing them to come with something special available on the site. Such as valuable information, help, files stuff, etc. then, once the visitor counts are high enough, the company can sell advertising space on the site or sponsorships of banner advertising.

In addition to text documents, the Internet makes available graphics files (digitized photographs and artwork), and even files that contain digitized sound video. Through the internet, users can download software, participate in interactive forums where users post and respond to public messages, and even join "chats" in which users and other users type (and, in some cases, speak) messages that are received by the chat participant instantly.

2.2 Internet Marketing Strategies

There is no clear cut approach for Internet marketing strategy but the 13 keys to success with Internet marketing are:

- (a) Appreciate the new paradigms in online marketing and advertising.
- (b) Internet marketing supports the integrated marketing program which includes 4 Ps (product, price, place and promotion)
- (c) Mass market is over. Customization is implied.
- (d) Build relationships one at a time.
- (e) Appreciate the long-term value of the customer.
- (f) Advertising must be interactive.
- (g) Provide reams of information, not persuasion. Implements push rather than pull strategy.
- (h) Create interactive dialogue.
- (i) Contribute to the community.
- (j) Adjust to the compression and distortion of time.
- (k) Blend advertising, public relations, promotions, catalogs and sales.
- (l) On-line is a competitive advantage.
- (m) Company size is irrelevant on-line.

Criteria that make Internet marketing different from traditional marketing in consumers and marketers aspect are:

(a) Convenience

Customers can order products from the comfort of their home or office 24 hours a day, 7 days a week.

(b) Information

Computers can store and display reams of product descriptions and prices and many other information than can be found in a billboard, newspaper or magazine ad, TV commercial, radio spot or even a catalog.

(c) Respond to market conditions

Companies can quickly add products, descriptions and prices and keep them up-to-date.

(d) Reduce printing and postage costs

Production costs for digital catalogs are far less than printing and mailing catalogues.

(e) Reduce expenses

Online stores do not carry huge expense of traditional storefronts, with rent, utilities and insurance.

(f) Fewer hassles

Consumers do not need to deal with pushy salespeople.

(g) No limitation of time and place

Companies can reach the customer at any time and place.

(h) Build relationships

Merchant can interact with consumers to create dialogues that lead to long-term relationships.

2.3 Benefits of the Internet

The organizations are already benefiting from the use of Internet in many ways, reducing communication costs, enhancing communications and coordination, accelerating the distribution of knowledge, improving customer service and satisfaction,

and facilitating marketing and sales. The Internet has enormous potential for helping organization participate in electronic commerce and for reducing their transaction costs.

(a) Reducing Communication Costs

Prior to the net, to realize the communications benefit, organizations had to build their own wide-area networks or subscribe to a value added network service. Employing the Internet, accept being cost free, is certainly more cost effective for many organizations than building one's own network. And small businesses find reduced communication cost particularly beneficial because it sometimes enable them to compete with larger companies in markets that would otherwise be closed to them.

(b) Enhancing Communication an coordination

The Internet has made easier and less expensive for companies to coordinate small staffs when opening new markets or working in isolated places because they do not have to build their networks.

(c) Accelerate the Distribution of Knowledge

Because modern economies have become information economies, access to knowledge is critical to the success of many companies. Organizations are using E-mail and the availability of databases all over the world to again easy access to information resources in such key areas as business, science, law, and government.

(d) Improving customer service and satisfaction

The companies large and small are using the Internet to communicate efficiently to make product information, ordering, and technical support easier and immediately available.

(e) Facilitating Marketing and Sales

Marketing and sales via the Internet are new and only beginning to be viable. The advent of the web has made marketing and sale possible because the web is a passive instrument, it requires potential customers to seek out offering by companies rather than having those companies actively reach out to potential customers, as is traditional in most marketing and advertising. Retailers update their web pages offering virtually as often as needed. Suppliers can also update technical use by consumers just as easily. Even with Limitations, the Net help buyers and sellers make contact.

As for the benefits of the Internet to organization, the best aspects of marketing and sales product or service online are that start up and operational costs are minimal and it is possible to access potential buyers at an unprecedented speed. The reason is that earnings can come only after 24 hours of online business launch. The advertising can be tested in a matter of days, whereas conventional media advertising takes months to conduct a single test.

Among the ways that users are taking advantage of the Internet are:

- (a) Sharing research and the business data among colleagues and like-minded individuals.
- (b) Communicating with other and transmitting files via E-mail.
- (c) Requesting and providing assistance with problem and question.
- (d) Marketing and publicizing products and services.
- (e) Gathering valuable feedback and suggestion from customer and business partners.

Only users' vision and creativity limit the Internet's potential. And as the Internet grows, new and innovative uses will surely follow.

Internet marketing and running an Internet business is a fantastic way of business if it is done right. The Net simply works better than traditional media, but it is new, so it requires some imagination to envision role and character to be online. There are two basic attitudes towards online marketing:

(1) The Silent Marketer

It gets direct from web sites, newsgroups, BBC's, and email without any directly interaction with the customer. The company gets the customers coming to it.

(2) The mouth piece

It gets sales from active participation in newsgroup, mailing lists, etc. (i.e. starting advice in forums, thereby building a relationship with each potential customer individual).

2.4 Overview of E-commerce

Electronic commerce is the process of buying and selling goods and services electronically with computerized business transactions using the Internet, networks, and other digital technologies. It also encompasses activities supporting those market transactions, such as advertising, marketing, customer support, delivery, and payment. As with many new services, simply defining what constitutes "electronic commerce" is not clear and differs significantly according to the source. Various definitions of Electronic Commerce are as follows:

- (1) Electronic commerce is the carrying out of business activities that lead to an exchange of value across telecommunications networks."
- (2) Electronic commerce refers generally to all forms of transactions relating to commercial activities, including both organizations and individuals, that are

based upon the processing and transmission of digitized data, including text, sound and visual images."

- (3) Electronic commerce is about doing business electronically. It is based on the electronic processing and transmission of data, including text, sound and video. It encompasses many diverse activities including electronic trading of goods and services, online delivery of digital content, electronic fund transfers, -electronic share trading, electronic bills of lading, commercial auctions, collaborative design and engineering, online sourcing, public procurement, direct consumer marketing, and after-sales service. It involves both products (e.g. consumer goods, specialized medical equipment) and services (e.g. information services, financial and legal services); traditional activities (e.g. healthcare, education) and new activities (e.g. virtual malls)."
- (4) The Internet will also revolutionize retail and direct marketing. Consumers will be able to shop in their homes for a wide variety of products from manufacturers and retailers all over the world. They will be able to view these products on their computers or televisions, access information about the products, visualize the way the products may fit together (constructing a room of furniture on their screen, for example), and order and pay for their choice, all from their living rooms.
- (5) "What is Electronic commerce? Electronic commerce supports an entire range of activities - product design, manufacturing, advertising, commercial transactions, settlement of accounts — using a variety of kinds of computer networks."

As electronic commerce grows, the ability to identify electronic commerce merchants from traditional merchants is fading as traditional merchants start trading by electronic means as well.

Electronic Commerce refers generally to all forms of transactions relating to commercial activities, involving both organizations and individuals that are based upon the processing and transmission of digitized data including text, sound and visual images. It also refers to the effects that the electronic exchange of commercial information may have on the institutions and processes that support and govern commercial activities.

Firms engage in Electronic Commerce in order to achieve better management of commercial transactions and transaction-generated information, and to increase business efficiency. In today's globalized economic environment, however, the most important incentive is the opportunity to create whole new business areas for information and knowledge-based "intangible" products.

2.5 Benefit of E-commerce

Few innovations in human history encompass as many potential benefits as EC does. The global nature of the technology, low cost, opportunity to reach hundreds of millions of people, interactive nature, variety of possibilities, and resourcefulness and rapid growth of the supporting infrastructures result in many potential benefits to organizations, individuals, and society. These benefits are just starting to materialize, but they will increase significantly as EC expands. It is not surprising that some maintain that the EC revolution is just "as profound as the change that came with the industrial revolution".

Benefits to Organizations

The benefits to organizations are as follows:

- (1) Electronic commerce expands the marketplace to national and international markets. With minimal capital outlay, a company can easily and quickly locate more customers, the best suppliers, and the most suitable business partners worldwide. For example, in 1997, Boeing Corporation reported a savings of 20 percent after a request for a proposal to manufacture a subsystem was posted on the Internet. A small vendor in Hungary answered the request and won the electronic bid. Not only was the subsystem cheaper, but it was delivered quickly.
- (2) Electronic commerce decreases the cost of creating, processing, distributing, storing, and retrieving paper-base information.
- (3) Electronic commerce allows reduced, inventories and overhead by facilitation "pull"- type supply chain management. In a pull-type system the process starts from customer orders and uses just-in-time manufacturing.
- (4) The pull-type processing enables expensive customization of products and services, which provides competitive advantage to its implementers.
- (5) Electronic commerce reduces the time between the outlay of capital and the receipt of products and services.
- (6) Electronic commerce support business processes reengineering efforts. By changing processes, productivity of salespeople, knowledge workers, and administrators can increase by 100 percent or more.
- (7) Electronic commerce lowers telecommunications cost.
- (8) Other benefits include improved image, improved customer service, newfound business partners, simplified processes, compressed time

increased productivity, eliminating paper, expediting access to information, reduced transportation costs, and increased flexibility.

Benefits to Consumers

The benefits of EC to consumers are as follows:

- (1) Electronic commerce enables customers to shop or do other transactions 24 hours a day, All year round, from almost any location.
- (2) Electronic commerce provides customers with more choices; they can select from many vendors and from more products.
- (3) Electronic commerce. frequently provides customers with less expensive products and services by allowing them to shop -in many places and conduct quick comparisons.
- (4) In some case, especially, with digitized products, EC allows quick delivery.
- (5) Customers can receive relevant and detailed information in seconds, rather than days or weeks.
- (6) Electronic commerce makes it possible to participate in virtual auctions.
- (7) Electronic commerce allows customers to interact with other customers in electronic communities and exchange ideas as well as compare experiences.
- (8) Electronic commerce facilitates competition, which results in substantial discounts.

2.6 Managing On-line Marketing

Today, the explosion of media enables many companies to sell their products and services directly to customers without intermediaries. The existing media-print and broadcast, catalogs, direct mail and telephone marketing-have been complemented by fax machines, e-mail, the Internet, and on-line services. Companies are increasingly using all these media to make direct offers to existing customers and to identify new

prospects. Direct marketing enables companies to target their offers and to measure their result more accurately.

The Growth and Benefits of Direct Marketing

The Direct Marketing Association (DMA) defines direct marketing as follows:

Direct marketing is an interactive marketing system that uses one or more advertising media to effect a measurable response and/or transaction at any location.

This definition emphasizes a measurable response, typically a customer orders. Thus direct marketing is sometimes called direct-order marketing

Today, many direct marketers see direct marketing as playing a broader role, that of building a long-term relationship with the customer (direct relationship marketing). Direct marketers occasionally send birthday cards, information materials, or small premiums to select member base. Airlines, hotels, and other business build strong customer relationships through frequency award programs and club programs.

The Growth of Direct Marketing and Electronic Business

Sales produced through traditional direct-marketing channels (catalogs, direct mail, and telemarketing) have been growing rapidly. The extraordinary growth of direct marketing is the result of many factors. Market "demassification" has resulted in an ever-increasing number of market niches with distinct preferences. Higher costs of driving, traffic congestion, parking headaches, lack of time, a shortage of retail sales help, and queues at checkout counters all encourage at-home shopping. Consumers appreciate direct marketers' toll-free phone number available 24 hours a day, 7 days a week and their commitment to customer service. The growth of next-day delivery via UPS, Federal Express, and Airborne has made ordering fast and easy. In addition, many chain stores have dropped slower-moving specialty items, creating an opportunity for direct marketers to promote these items directly to interest buyers. The growth of

affordable computer power and customer database has enabled direct marketers to single out the best prospects for any product that they wish to sell. Increasingly, business marketers have turned to direct mail and telemarketing in response to the high and increasing costs of reaching business markets through the sales force.

Electronic communication is showing explosive growth. In 1997 the Internet user population numbered 100 million worldwide, of which 67 million were in the United States. Internet traffic is doubling every 100 days. There are more than 1.5 million Web sites. Electronic business is the general term for buyers and sellers using electronic means to research, communicate, and potentially transact with one another. Electronic markets are sponsored web sites that:

- (1) Describe the products and services offered by sellers and
- (2) Allow buyers to search for information, identify what they need or want, and place orders using a credit card. The products is then delivered physically (to the customer's house or office) or electronically (software can be downloaded to a customer's computer).

The Benefits of Direct Marketing

Direct marketing benefits customers in many ways. Home shopping is fun, convenient, and hassle-free. It saves time and introduces consumers to a larger selection of merchandise. They can do comparative shopping by browsing through mail catalogs and on-line shopping services. They can order goods for themselves or others. Business customers also benefit by learning about available products and services without tying up in meeting salespeople.

Sellers also benefit. Direct marketers can buy a mailing list containing the names of almost any group: left-handed people, overweight people, millionaires. They can personalize and customize their messages. According to Pierre Passavant: "We will

store hundreds... of messages in memory. We will select ten thousand families with twelve or twenty or fifty specific characteristics and send them very individualized laser print letters." Direct marketing can be timed to reach prospects at the right moment, and direct marketing material receives higher readership because it is sent to more interested prospects. Direct marketing permits the testing of alternative messages in search of the most cost-effective approach. Direct marketing also makes the direct marketer's offer and strategy less visible to competitors. Finally, direct marketers can measure responses to their campaigns to decide which is the most profitable.

The Growing Use of Integrated Direct Marketing

Although there are direct and on-line marketing, a large number of companies still relegate them to minor roles in their communication-promotion dollars and jealously guard their budgets. The sales forces may also see direct marketing as a threat when it has to turn over smaller customers and prospects to Direct mailers and Tele-marketers.

Customer Databases and Direct Marketing

Companies that know their individual customers can customize their product, offer, message, shipment method, and payment method to maximize customer appeal. Today's companies are building customer databases:

A customer database is an organized collection of comprehensive data about individual customers or prospects that is current, accessible, and actionable for such marketing purposes as lead generation, lead qualification, sale of product or service, or service, or maintenance of customer relationships.

Database marketing is the process of building, maintaining, and using customer databases and other databases (products, suppliers, and resellers) for the purpose of contacting and transacting.

Many companies confuse a customer mailing list with a customer database. A customer mailing list is simply a set of names, addresses, and telephone numbers. A customer database contains much more information.

In business marketing, the customer profile contains the products and services the customer has bought; past volumes, prices, and profits; team member names (and their ages, birthdays, hobbies, and favorite foods); status of current contract; an estimate of the supplier's share of the customer's business; competitive suppliers; assessment of competitive strengths and weakness in selling and servicing the account; and relevant buying practices, patterns, and policies.

In consumer marketing, the customer database contains demographics (age, income, family members, and birthdays) psychographics (activities, interests, and opinions), past purchases, and other relevant information about an individual.

Database marketing is mostly frequently used by business marketers and service retailers (hotels, banks, and airlines). Packaged-goods companies use it less often, though some have been experimenting in this area. A well-developed customer database is a proprietary asset that can give the company a competitive edge.

Armed with the information in its database, a company can achieve much more target market precision than it can with mass marketing, segment marketing, or niche marketing. The company can identify small groups who receive fine-tuned marketing offers and communication. Lands' End, for example, has tons of information about its customers and their past purchases: This is called a data warehouse. Lands' End engaged IBM to use a set of techniques called data mining to cluster its customers into segments. IBM identified 5,200 different market cells. One market cell consists of 850 customers who had purchased a blue shirt and red tie. This alerted Lands' End to the possible interest of these customers in buying a dark blue jacket, at which point it sent

them a special offer. Lands' End would expect a higher response rate to this offer than if it made it to 1 million customers independently of past purchase patterns.

Companies use their databases in follow:

- (1) To identify prospects: Many companies generate sale leads by advertising their product or offer. The ads generally contain a response feature, such as a business reply card or toll-free phone number. The database is built from these responses. The company sorts through the database to identify the best prospects, then contacts them by mail, phone, or personal call in an attempt to convert them into customers.
- (2) To decide which customers should receive a particular offer: Companies set up criteria describing the ideal target customer for an offer. Then they search their customers database for those most closely resembling the ideal type. And U.S. West are now creating vast data warehouses that allow them to pinpoint which customers are profitable and which are not. They manipulate the data to compare the complex mix of marketing and servicing costs that go into retaining each individual customer versus the revenues he or she is likely to bring in.
- (3) To deepen customer loyalty: Companies can build interest and enthusiasm by remembering customer preferences; by sending appropriate gifts, discount coupons, and interesting reading material.

Database marketing requires a large investment. Companies must invest in computer hardware, database software, analytical programs, communication links, and skilled personnel. The database system must be user friendly and available to key marketing groups. A well-managed database hopefully will lead to sales gains that cover more than its costs. Royal Caribbean uses its database to offer spure-of-the-

moment cruise packages to fill all the berths on its ships. Fewer unbooked rooms mean maximized profits for the cruise line.

Major Channels for Direct Marketing

Direct marketers can use a number of channels for reaching prospects and customers. These include face-to-face selling, direct mail, catalog marketing, telemarketing, TV and other direct-response media, and on-line channels.

Face to Face Selling

The original and oldest form of direct marketing is the field sales call. Today most industrial companies rely on heavily in a professional sales force to locate prospects, develop them into customers, and grow the business. Or they hire manufacturers' representatives and agents to carry out the direct-selling task. In addition, many consumer companies use a direct-selling force; insurance agents, stockbrokers, and distributors working for direct-sales organizations such as Avon, Amway, and Tupperware.

Direct Mail

Direct mail marketing involves sending an offer, announcement, reminder, or other item to a person at a particular address. Using highly selective mailing lists, direct marketers send out millions of pieces each years-letters, flyers, foldouts, and other "salespeople with wings" some direct marketers mail audiotapes, videotapes, CD, and computer diskettes to prospects and customers.

Direct mail is a popular medium because it permits target market selectivity, can be personalized, id flexible, and allows early testing and response measurement. Although the cost per thousand people reached is higher than with mass media, the people are much better prospects. Over 45 percent of Americans purchased something

through direct mail in 1993. The same year, charities raised over \$ 50 billion via direct mail.

There are three new forms of mail delivery appeared:

- (1) E-mail: E-mail (short for electronic mail) allows users to send a message or file from one computer directly to another. The message arrives almost instantly but is stored until the receiving person turns on the computer. Marketers are beginning to send sales announcements, offers, and other messages to message to e-mail addresses-sometimes to a few individuals, sometimes to large groups.
- (2) Fax mail: Fax machines enable one party to send a paper-based message to another party over telephone lines. Today's computers can also serve as fax machines, Fax mail can be sent and received almost instantaneously. Marketers have begun to send fax mail announcing offers sales, and events to prospects and customers. Fax numbers of companies and individuals are now available through published directories.
- (3) Voice-mail: Voice mail is a system for receiving and storing oral messages at a telephone address. Telephone companies sell this service as a substitute for answering machines. Some marketers have set up programs that will dial a large numbers and leave the selling message in the recipients' voice mailboxes.

In constructing an effective direct-mail campaign, direct marketers must decide on their objectives, target markets and prospects, offer elements, means o testing the campaign, and measures of campaign success.

Objectives

Most direct marketers aim to receive an order from prospects. A campaign's success is judged by response rate. An order-response rate of 2 percent is normally considered good, although this number varies with product category and price.

Direct mail has other objectives as well, such as producing prospect leads, strengthening customer relationships, and informing and educating customers for later offers.

Catalog Marketing

Catalog marketing occurs when companies mail one or more product catalogs to selected addresses. They may send full-line merchandise catalogs, specialty consumer catalogs, and business catalogs, usually in print form but also sometimes as CDs, videos, or on-line.

The success of catalogs business depends on the company's ability to message its customer lists so carefully that there is little duplication or bad debts, to control its inventory carefully, to offer quality merchandise so that returns are low, and to project a distinctive image. Some companies distinguish their catalogs by adding literary or information features, sending swatches of materials, operating a special hot line to answer questions, sending gifts to their best customers, and donating a percentage of the profits to good causes.

Electronic Commerce

The most recent channels for direct marketing are electronic channels. The term electronic commerce (e-commerce) describes a wide variety of electronic platforms, such as the sending of purchase orders to suppliers via electronic data interchange (EDI); the use of fax and e-mail to conduct transactions; the use of ATMs, EFTPOS, and smart cards to facilitate payment and obtain digital cash; and the use of the Internet and

on-line services. All of these involve doing business in a "marketplace" as compared to a physical "marketplace."

Underlying electronic business are two phenomena: digitalization and connectivity. Digitalization consists of converting text, data, sound, and image into a stream of "bits" that can be dispatched at incredible speed from one location to another. Connectivity involves building networks and expresses the fact that much of the world's business is carried over networks connecting people and companies. These networks are called Intranets when they connect people within a company; extranets when they connect a company with its suppliers and customers; and the Internet when they connect users to an amazingly large "information highway."

The most popular consumer purchases over the Internet have, thus, far been in computer hardware and software, airline tickets, books, and music. There is also growing e-commerce in food, flowers, wine, clothing, and electronics. Business transactions over the Internet are at much higher volume and cover a great variety of goods and services. There is considerable growth in the amount of Internet financial transacting (stock trading, home banking, insurance sales). There are two types of e-commerce channels:

- (a) Commercial channels: various companies have set up on-line information and marketing services that can be accessed by those who have signed up for the service and pay a monthly fee.
- (b) The Internet: the Internet is a global web of computer networks that has made instantaneous and decentralized global communication possible. Internet usage has surged with the recent development of the user-friendly World Wide Web and Web browser software such as Netscape Navigator and Microsoft Internet Explorer. Users can surf the Internet and experience

fully integrated text, graphics, images, and sound. Users can send e-mail, exchange views, and shop for products, and access news, recipes, art, and business information. The Internet itself is free, though individual users need to pay an Internet service provider to be hooked up to it.

The On-line Consumer

As a whole, the Internet population is younger, more affluent, better educated, and more male than the general population. But as more people find their way onto the Internet, the cyberspace population is becoming more mainstream and diverse. Younger users are more likely to use the Internet for entertainment and socializing. Yet 45 percent of users are 40 or older and use the Internet for investment and more serious matters. Internet users in general place greater value on information and tend to respond negatively to messages aimed only at selling. They decide what marketing information they will receive about which products and services and under what conditions. In on-line marketing, the consumer, not the marketer, gives permission and controls the interaction.

Internet "search engines," such as yahoo! Infoseek, and Excite, give consumers access to varied information sources, making them better informed and more discerning shopper. Buyers have gained the following capabilities in the new information-rich regime:

- (a) They can get objective information for multiple brands, including costs, prices, features, and quality, without relying on the manufacturer or retailers.
- (b) They can initiate requests for advertising and information from manufacturers.
- (c) They can design the offerings they want.

- (d) They can use software agents to search for and invite offers from multiple sellers.

These new buyer capabilities means that the exchange process in the age of information has become customer initiated and customer controlled. Marketers and their representatives are held at bay till customers invite them to participate in the exchange. Even after marketers enter the exchange process, customers define the rules of engagement, and insulate themselves with help of agents and intermediaries. Customers define what information they need, what offering they are interested in, and what prices they are willing to pay. In many ways this customer-initiated and customer-controlled marketing completely reverses time-honored marketing practices.

On-line Marketing; Advantages and Disadvantage

Why have on-line services become so popular? They provide three major benefits to potential buyers:

- (a) Convenience: Customer can order products 24 hours a day wherever they are. They don't have to sit in traffic, find a parking space, and walk through countless aisles to find and examine goods.
- (b) Information: customers can find reams of comparative information about companies, products, competitors, and prices without leaving their office or home.
- (c) Fewer hassles: customers don't have to face salespeople or open themselves up to persuasion and emotional factors; they also don't have to wait in line.

On-line services also provide a number of benefits to marketers.

- (d) Quick adjustment to market conditions: companies can quickly add products to their offering and change prices and descriptions.

- (e) Lower costs: On-line marketers avoid the expense of maintaining a store and the costs of rent, insurance, and utilities. They can produce digital catalogs for much less than the cost of printing and mailing paper catalogs.
- (f) Relationship building: On-line marketers can dialogue with consumers and learn from them. Marketers can download useful reports or a free demo of their software or a free sample of their newsletter.
- (g) Audience sizing : Marketers can learn how many people visited their on-line site and how many stopped at particular places on the site. This information can help improve offers and ads.

Clearly, marketers are adding on-line channels to find, reach, communicate, and sell. On-line marketing has at least five great advantages. First, both small and large firms can afford it. Second, there is no real limit on advertising space, in contrast to print and broadcast media. Third, information access and retrieval are fast, compared to over night mail and even fax. Fourth, the site can be visited by anyone anyplace in the world at any time. Fifth, shopping can be done privately and swiftly.

2.7 History of World Wide Web

The WWW was studied by group of development at the European Laboratory for particle Physics (CERN) in Geneva, Switzerland in 1981. It is "the universe of network accessible information, an embodiment of human knowledge." It has a body of software, and a set of protocols and conventions. WWW uses hypertext and multimedia techniques to make the Web easy for anyone to roam, browse, and contribute to "(Title & James 1995, p. 5). The WWW is not the only way to explore the Internet. 1P, Gopher, e-mail, Usenet, WATS (Wide-area information Service), and others are available means for exploration. However, the WWW is "easy for anyone to roam, browse, and contribute to, "and it allows you to use HTML (Hyper Text Markup

Language), providing users with the ability to create virtual storefronts that will make it attractive to business interested in marketing on the Web. Soon people realized that the applications of this "interconnected community" could reach far beyond those involved with physics. After the phrase "World Wide Web" was born, organizations began feverishly to assemble the hardware and know-how to develop this expansive network.

The WWW is built on the client-server model. One-computer (the server) has information. Linked to the server by a network is a computer (the client) which can display the data for a human to read. The software on which the client asks the server for its data and which displays the information it gets in a readable format is called a browser. There is no need for the server and the client to be different machines or even that there be a network. If the client is its own server and the network is not used., then the browser is being used in stand-alone mode.

The Web built around "hypertext" and "hypermedia". A hypertext document has certain keywords or phrases linked to other on-line documents. A person reading a hypertext document about dogs, for example, might able to select the highlighted word "beagle" and call up another document giving more information about that particular breed. With documents intertwined by links into a "web" of information, users can select their own path through which they browse on-line resources, a process often referred to as "surfing".

The World Wide Web also subsumes previous Internet information system such as Gopher and 1- IP. These resources can still be accessed through the Web, but the Web provides a wealth of additional capabilities not previously offered by these more restricted connection methods.

To use the World Wide Web, users need access to a "Web browser", a program that lets computer using communicate in the Web's language with other computers on

the Internet. Users can run a Web browser program from an account on a shared system, or from a desktop computer or workstation that has a direct connection to the Internet.

The World Wide Web has been developed to make it possible for high-energy physicists to distribute results of experiments easily and quickly. The design used was very flexible, and as a result, the WWW has been used for a vast variety of purposes, ranging from academic too commercial. WWW has become the most visible of the activities on the Internet.

The World Wide Web is a way of exchanging information between computers on the Internet, tying them together into a vast collection of interactive multimedia resources. Thousand upon thousands of computers around the world are now connected to the Web and offer tremendous variety of information and services to visitors. These on-line documents composed and supported by various people and organizations are generally referred to as "pages". Web pages are available for an amazing variety of tasks ranging from the playful to the serious. Users can access Web pages that let them search database of mailing lists, see pictures of their favorite band and their concert schedule, or take a "tour" through a foreign country. Thousands of links to new services are added to the Web each day, and its growth has been explosive. The World Wide Web is the fastest growing part of the Internet, as well as the most exciting. With the click of a mouse, everyone can start on the adventure of a lifetime, going to places they never dreamed of and gathering information otherwise unattainable.

2.8 Web Site Terminology

The most important parts of the World Wide Web are the elements, such as servers, pages, hot links, and more all of which comprise the bulk of the World Wide Web the following are some related terms users may see:

Web site:	A collection of World Wide Web documents, usually consisting of home page and several related pages. Users might think of a Web site as an interactive electronic book.
Home page:	Frequently, the "cover" of particular Web site. The home page is the main, or first, page displayed for as organizations or person's World Wide Web site.
Link:	short for "hypertext link" A link provides a path that connects you from one part of a World Wide Web document to another part of the same document, a different document, or another resource. A link usually appears as a uniquely colored word that users can click to be transported to another Web page.
Anchor:	A link that takes users to a different part of the same Web page.
Image map:	A feature available on the World Wide Web that enables users to click various locations in a graphic image to link to different document.
Frame:	A feature available on the World Wide Web that presents text, links, graphics, and other media in separate portions of the browser display. Some sections remain unchanged, whereas others serve as an exhibit of linked documents.
Table:	A feature available on the World Wide Web that presents document text, links, graphics, and other media in row and column format. Table borders may be visible in some documents but invisible in others.

2.9 Basic Toolbar

It is important that the employees and customers know how to get help in using information.

(a) Using Toolbar Buttons

Users need to do more than simply click links to go from one place to another. Users need another set of tools to help them. Most major browsers offer a number of toolbar buttons to help users navigate the Web. The exact names and functions of these various buttons vary from browser to browser, but the most-used buttons are usually always the same. Some common toolbar items are shown in Table 2.1.

Table 2.1. Common Toolbar Buttons.

Button	Function	Browser
Back	Takes users back to the most previous page visited	Explore and Navigator
Forward	After using the Back button, takes users forward one page	Explore and Navigator
Home	Takes back to the user-defined home page	Explore and Navigator
Stop	Stops current page from loading into a browser	Explore and Navigator
Print	Prints current page	Explore and Navigator
Reload/ Refresh	Request the current page loaded into the browser	Explore and Navigator

Table 2.1. Common Toolbar Buttons. (Continued)

Button	Function	Browser
Find	Lets users quickly search for a phrase on the current page	Navigator
Font	Allow users to change the size of the displayed font	Explorer

(b) Popular Web browsers include the following:

- (1) Internet Explorer and Netscape Navigator

Internet Explorer and Netscape Navigator are full-featured graphical Web browsers that offer text, graphics, sound, and other multimedia resources. Both have a graphical user interface, which lets users click with a mouse on highlighted words and pictures to make selections or jump to other links.

- (2) Mosaic

Like Netscape Navigator and Internet Explorer, Mosaic is a graphical Web browser, but does not support as many multimedia features as Navigator and Explorer.

- (3) Lynx

Lynx is a text-only browser that lets users view hypertext Web document, but does not support viewing graphical images or sound files. It is useful if users have a slow or restricted connection to the Internet, or if their computer hardware does not support multimedia features. Lynx does not support a graphical interface; user must enter

all their selections with the keyboard, using arrow keys to move through menus and links.

2.10 HTML-based Development Tools

As the Internet began to take shape, it was essential that there be a common format for all Web sites to follow in order to make sure that any operating system could read any Web site. Using SGML, as a template, the Hypertext Markup Language was developed, with the first specification being released in the summer of 1991. Unlike SGML, HTML is a fixed programming language, which means that it has a clearly defined instruction set, in the form of HTML Tags, that all HTML documents must follow, although there have been several revisions to this language that will be discussed below.

The language of the Web, HTML (hypertext markup language), allowed to publish research papers electronically, and afforded simple tags like <H1> and <H2> or and <I>, to dictate a page's structure and some formatting. Other tags, like the <A> anchor markup, allowed documents to contain links to other documents and planted the seed for interactivity on the Web. But hyperlinks fell far short of providing full two-way communication.

The 3.0 versions of Internet Explorer and Netscape Navigator showed early signs of true user interactivity with added support for the <SCRIPT> tag. Commonly referred to as client-side scripting, this innovation allows Web pages to contain small programs written in JavaScript (IE also supports VB Script) that, like CGI, provide gateways between the user and the Web server. But scripting provides client-side support for error messaging via pop-up dialog boxes or messages in the browser's status line. Script can also contain special subroutines, called event handlers, whom the browser automatically executes when a user performs a keyboard or mouse action.

Although it has matured over the years to incorporate image manipulation and allow integration with other technologies, HTML was originally intended only to handle the formatting of text, as can be seen in the long version of its name. The term Hyper, as applied to HTML means that an HTML document can be coded to allow the reader to access other HTML documents through the use of Hyperlinks. The term Markup, as applied to HTML refers to the formatting of the text in an HTML document. Both of these terms offer us a key to understanding HTML. At its heart, HTML was designed to allow the developer to control how text will be displayed as well as to allow the user to access related documents via hyperlinks. This is important when understanding the limitations to HTML. Dozens of technologies have been developed to fill the void where HTML cannot go, simply because it was never intended to do more than format text in a platform-independent manner. Only now, with the Web becoming splintered because of platform-dependent or browser-dependent technologies such as Active X and JavaScript (Both will be discussed in a succeeding section of this module) is HTML broadening its horizons to encompass more than text.

The advantages of HTML are as follows:

- (a) Education is self-placed,
- (b) Material may be used simultaneously by multiple staff members,
- (c) Related Web sites can be easily accessed to enhance further study of the topic,
- (d) Easy to development and expansion,
- (e) Automatic cross-platform distribution (Macintosh, Windows, etc.),
- (f) Less labor-intensive individual training session.

If you are curious to see an example of HTML, all you have to do is to open a Web site in Internet Explorer, go to the View menu and select Source. This will bring up a Netscape window that will list the HTML source tags for the active Web page.

2.11 Web Navigation

Just as there are various tools to explore the Net, there are different browsers that will enable users to explore the WWW. For example, Lynx (a fairly primitive text-based Web browser), Mosaic, WinWeb, Internet Explorer and Netscape will all enable users to navigate the WWW. The difference between these browsers is their impact on "presence." While Lynx will only display text, Internet Explorer and Netscape will enhance the experience by displaying three-dimensional symbols and sounds. Experienced Internet users are constantly inundated with complaints about how useless the Internet has become because too much information is available. When one Web site can index over 50 million Web pages, users obviously can find a lot of information.

In a real sense, the Web is not different. A great deal of information is available, but like in many of the libraries users visit, tools are available to help users find what they need. Also, though it may not look like it at first, the Web does have an organization that enables users to span vast distance of resources in a short period of time.

The basic guides to navigate the Web page:

(a) Explorer Navigation Basics

Users must be familiar with several basics to start exploring the Web.

Users must understand how individual pages on the Web can be viewed and explored, users need to know hyperlinks work, and need to be familiar with browser toolbar buttons. Once users are familiar with these important parts of the Web users are well way to becoming an experienced Web user.

(b) Navigate Web Pages

If navigating an individual Web page seems simple and obvious to users. Users might be surprised, however, at the number of beginners who fail to realize how to get around on a Web page.

The key is in realizing that any particular Web page can be as long or as short as the Webmaster programs it to be. Many people, when they get on the Web for the first time, think that what appears on their screen is all there is.

2.12 What Is a Web Site?

Every place to visit on the Internet has an "address" or URL. A Web site is the "location" represented by the URL. In order for a business to create a Web site or "location" from which to advertise, they need to write their Web site using HTML or Java. HTML is "a markup language that describes the structure of a Web document's content plus some behavioral characteristics" (Title & James 1995, p. 37). This standardized language is a way of "representing text, and linking that text to other kinds of resources including sound files, graphics files, multimedia files, etc. That allows these different kinds of data to be displayed together, to let them augment and reinforce one another" (Title & James 1995, p. 37). Once business has used HTML to create their Web document (or virtual storefront, for small business who plan on using the site to advertise), they must deliver it to a Web server. A Web server is, in simplest terms, another computer that is always on a 24-hours connection to the Net.

2.13 What Is a Home Page?

The term home page has been in use from before the time of the World Wide Web. A home page is typically the starting page in an individual or organization's set of pages. A home page could be all the information that an author makes available through the WWW, though it more typically is a starting page that introduces an author or group

and lists categories of information that are available from the author. Combined with the material prepared by the author, there are typically references to other resources available throughout the network. Often the term home page is used to refer to the total system of pages that an individual or organization have available through a network address.

2.14 Advantages of a Home Page

There are different reasons for having a personal home page and a company home page, though the reasoning for both is related.

A personal home page can be useful for gathering and arranging network resources that are often used. For example, access to specific newsgroups, telnet addresses, or tiles on the network can be established through a home page. Often people use their home pages to list references that they are interested in.

A company home page can be used to represent a company and its services to customers and potential customers. Taking a very generalized view of a customer, government academic groups can communicate with their constituency in the same manner.

A home page should add to exiting communication with customers through making information more visible, easily accessible, understandable, and less expensive. One question about having a local home page is " how is having one's own home page preferable to using the information that is already available, what benefit is there to devoting the time to develop a local home page?

Opportunity for emphasizing local interests, concerns and resources and increasing on a local level using local resources including computers are some reasons. There may also be less likelihood of network inference. Providing a certain level of access to materials that are not available through the network as well as easy access to a

starting point are also benefits. There is also more control over presentation including accuracy and content and opportunity for learning for future projects or phases of the WWW project.

With the development of the Internet, companies and organizations now have access to immediate and easier means of advertising. This could help them to reach their full potential.

A home page or web site can be a relatively inexpensive way to gain exposure to millions of people, keep customers informed of new offerings, make business transactions easier and more importantly, attract potential clients.

The Internet offers benefits to businesses of all sizes. The following are only a few of the ways the Internet can empower business.

(a) 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 the ability to create sales 24 hours a day, 7 days a week. The Internet never sleeps. People can access and order their products and services any time of the day or night.

(b) Instant updates to the information

Advertising copy or brochure may be printed with errors or lack additional information that should have been included. With Internet advertising, the owner can change it anytime they want. They can make changes to any kind of information they provide to their customers for example products, pricing or other company information.

(c) More convenient customer service capabilities

Customer services personnel and their telephone lines can be freed up from frequently asked questions or requests for general information by presenting the answers and information on-line.

(d) The ability to provide up to the minute information

If users have employees on the road that need current information outside regular office hours, the Internet can provide a solution_

(e) Information customized to customer's needs

Without the concern for printing costs and paper, users can create brochures on-line that appeal to their specific customer markets.

(f) Improved operating efficiencies and reduced overhead

Create a "store" on-line. No need for overhead related to having a building, displaying inventory and hiring sales personnel to watch the store, and no less related to inventory 'walking out door'.

These are only a few of the reasons why companies are taking advantage of the Internet. And, why so many individuals are finding ways to starting up their own businesses from home.

Benefits of a having a Web site for any business:

(a) On-line Sales

A sharp image can create an on-line order taking service where any viewers can actually order products and/or services instantly, in real time. They can order whenever they please whether the stores are open or not. This is one very strong benefit of having a web site.

(b) Instant Information

Most people like to find information quickly and easily. This is possible with a Web site. The Internet never closes. This means that the information that is online is readily accessible anytime. It is easy to find this information because a sharp image can set up a www.businessname.com web site and users can put that address anywhere they would like. Business cards, flyers, brochures, ads, billboards etc. People who are interested have the option to view a web site easily because of this address and find out about this company, products and services.

(c) More Sales/Recover Lost Sales

With a web site, users can spark sales that they may not have otherwise got. One successful way to do that is to offer discounts from ordering on-line. This not only makes a web site more useful, but it also gives consumers a great reason to order with this company instead of the competition.

(d) Company Image

Having a web site and being able to insert a company's web site address (www.anyname.com) is a great way to depict that a business stays ahead of the competition and wants to give their customers an easy way to find out about it first. A web site addresses on a business card or advertisements does the job well.

(e) Prestige

Everyone should have to admit some people simply having everything and being on the top. Having a web site can only be a useful benefit.

III. EXISTING SYSTEM

3.1 Background of the LPG Shop

The LPG shop has been a long time around since 20 years ago fills and sells Liquid Petroleum Gas (LPG). Business runs as Gas stations that have both a retail and wholesale shop. The LPG Shop offers various brands of gas tanks. There are also many customers; both retailer and wholesaler. The shop is located on Bangna-Trad road and opens every day. Most customers order by call or fax to the shop.

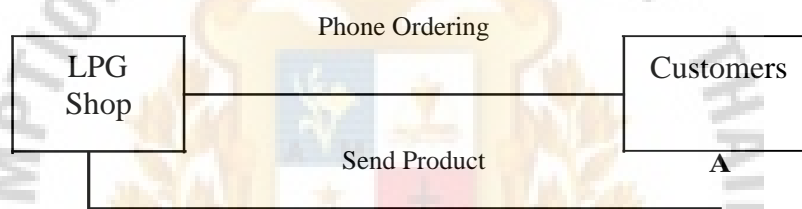


Figure 3.1. Existing Business Process.

3.2 Current Market Situation

Market situation: Now the LPG shop is located in location as normal market. Brands owner designed the gas tank, which are standard sizes. Now the shop has a plan to develop sales and value of products to bring it up to Internet Market by designing the WebPages to show the feature of tank, so that the customer can choose to order a correctly type.

Distribution situation, it will be distributed through their distribution channels including wholesaler and other retailer.

3.2 SWOT Analysis

3.2.1 Strength

The strength of LPG Shop will measure the internal factor of product and organization itself. These are as follows:

- (1) The company served various brands of gas tanks.
- (2) The high quality of Liquid Gas filled.
- (3) The company has filled gas in correct the Net weight of gas.

3.2.2 Weakness

- (1) The company sells only domestic market, which is a narrow market.
- (2) Problem of shipping time. Because some customer need to rapidly use product and we can not send on time.

3.2.3 Opportunities

- (1) Liquid Petroleum Gas products are price supported by government sector.
- (2) Brand owner (PTT, Siam Gas, Picnic Gas, and etc.) are responsible for repairing gas tanks to be safe for used.

3.2.4 Threat

- (1) Cost of shipping depends on cost of transportation.
- (2) Difficult in shipping method, has to be careful.

IV. DEVELOPMENT PROCESS

4.1 User Requirement

There is a desire to develop a high-level specification for a set of integrated advertising applications on the Internet for worldwide advertising. The design team sent the specifications to a number of computer vendors, expecting some of them to join with software houses for a complete proposal.

The objective of this project is to design a home page for the existing system and provide the ability to expand potential in front of customers and suppliers. The Internet also can assist the company to further their business opportunities. The proposed system will be an additional feature over the Internet.

4.2 Website Demographics

The target group of the site is divided into five primary groups listed in order of importance and expected use of the site.

- (1) Restaurants and Hotels: are most likely to use LPG in the business activity for cooking in the large amount of target group.
- (2) Housewives and housekeeper Internet Users: are expected to be the most likely targeted segments to use this product because of their relatively high LPG use compared to the other segments. This group should offer the greatest online revenue opportunity.
- (3) Online Wholesale Shop Store: most often find the site through search engines, and these online shoppers are browsing multiple sites for a best buy or find some accessory of gas stove.
- (4) Outsiders: are comprised of people outside the area with Internet access that have come in contact with the physical store or learned of it through a

referral or promotion. This group, most commonly located in far areas, is expected to be a small but faithful sector of buyers.

- (5) Internet Learners: represent all of the targeted segments that are just beginning to become familiar with the site and will increase their use of the Internet over time. Revenue expectations from this group are low at this point and it is viewed as an investment for the future.

4.3 Objectives

The objectives of the LPG shop are defined as follows:

- (a) Profit Maximization: by selling both the products and advertisement on the web site.
- (b) Image Server: by offering customer to always remain anonymous throughout the transaction process.
- (c) Knowledge Provider: by providing general and most update information relating to LPG shop issue including personal consulting service such as safety tips.

4.4 The Proposed Functions

- (a) Sell products

It is considered that telephone is a tool that allows salespeople to communicate with their customer, which in turn helps them sell products. The technology is different, of course, but before people decide to become customers, they want to know about the product, what the products do and what the products can do for them. Owners can do this easily and inexpensively on the WWW. Then this might be to turn people into customers.

(b) Make Business Information Available

A lot of what passes for business is simply nothing more than making connections with other people. Passing out a business card is part of every good meeting and every businessperson can tell more than one story about how a chance meeting turned into a big deal. Well, what if the opportunity comes to could pass out a business card to thousands, may be millions of potential clients and partners? This can be done 24 hours a day, inexpensively and simply, on the WWW.

(c) Establish a Presence

Approximately 70 million people worldwide have access to the World Wide Web (WWW). No matter what a business is, no one can ignore 40 million people and should show interest in serving them.

(d) Create a 24 Hours Service

Many organizations are not on the same schedule. Business is worldwide but office hours are not. A web page serves the client, customer and partner 24 hours a day, 7 days a week. No overtime either. It can customize information to match needs and collect important information that will put you ahead of the competition, even before they get into the office.

(e) Make Pictures and Sound Available

A picture is worth a thousand words, but what if the space is not enough for a thousand words? The WWW can add sound, pictures and short movie files to a company's information if that serves their potential customers. No brochure will do that.

(f) Answer Frequently Asked Questions

Most people in an organization say that their time is usually spent answering the same questions over and over again. These are the questions to which customers and potential customers want to know the answer before they deal with. Post them on a WWW page and this will remove another barrier to doing business with the company and free up some time for that impolite phone operator.

(g) Allow Feedback from Customers

After passing out the brochure, the catalogue, and the booklet, what if there is no sales, no calls, and no feedback? Wrong color, wrong price, and wrong market? With a Web page, owners can ask for feedback and get it instantaneously with no extra cost. An instant e-mail response can be built into Web pages and can get the answer while it is fresh in their customers' mind, with out the cost and lack of response of businesses reply mail.

(h) Make Changing Information Available Quickly

Sometimes, information changes before it gets published. The result could be a pile of expensive, worthless paper. Electronic publishing changes with the needs. No paper, no ink, no printer's bill. A web page can even be attached to a database which customizes the page's output to a database, so this can change as many times in a day as needed. No printed piece can match that flexibility.

4.5 Web Design

For the first design we would like customer to feel good and find it easy to browse and search information on site. Menu that will show on every page in order to make visitors feel comfortable.

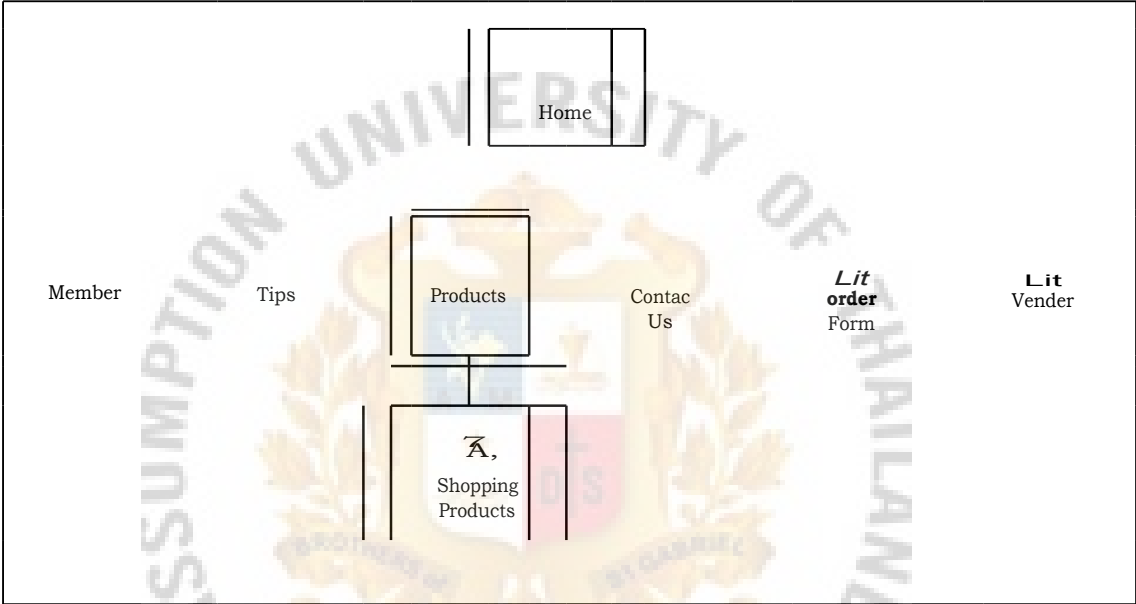


Figure 4.1. Site Map of the Project.

4.6 Web Interface Design

LPG Cyber Shop Page is developed for customers to find information on the web page. The user interface design needs to be user-friendly.

The Homepage will show links page on this site and today price of gas. (See Figure 4.2 - Figure 4.3)

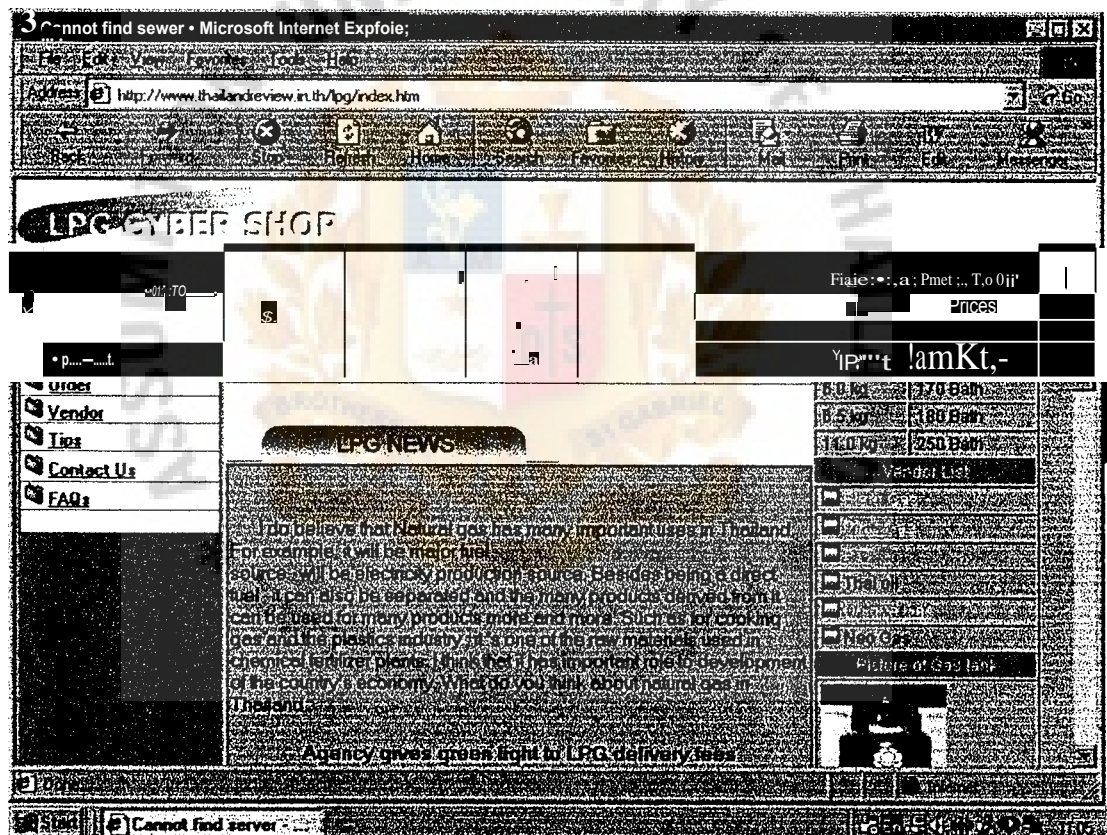


Figure 4.2. Home Page of Website.

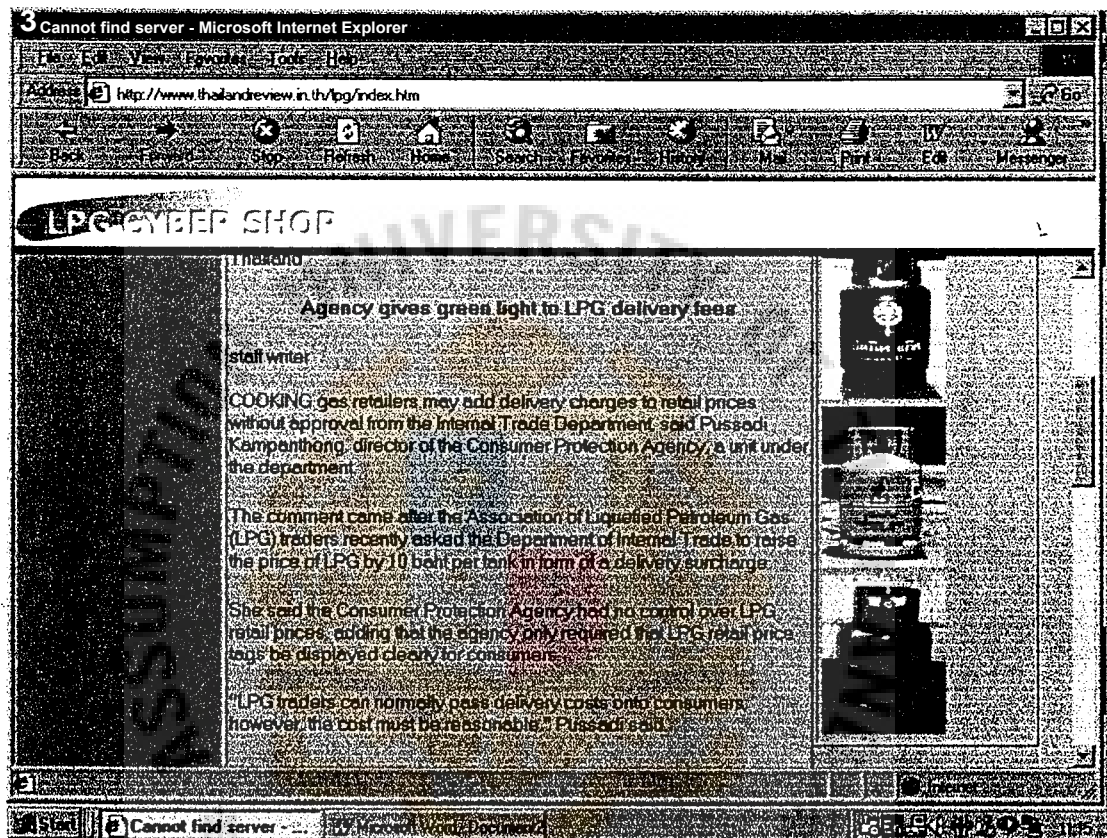


Figure 4.3. Home Page of Website.

When the new user clicks he/she need to be a member to order products. When the user clicks on New Member, the member sign up form which will show (See Figure 4.4) and the user has to put username, password and some personal data in order to make security system to access the web. The old member has to sign in before sending order. This page will show when we click on Member at the left side (See Figure 4.5).

The screenshot shows a web browser window titled "3 Cannot find server • Microsoft Internet Explorer". The address bar displays "http://www.thailandreview.in.th/lpg/index.htm". The browser's toolbar includes buttons for Back, Forward, Stop, Reload, Home, Search, Favorites, History, Mail, Print, Edit, and Messenger. The website header features the text "LPG CYBER SHOP". On the left side, there is a vertical menu with links: "LogOn", "Products", "Order", "Vendor", "Tips", "Contact Us", and "FAQs". The main content area is titled "Member Form" and contains a sign-up form with the following fields: "Username", "Password", "Confirm Password", "First Name", "Last Name", "Email", "Phone", and "Address". Each field is accompanied by a small square icon. The status bar at the bottom of the browser shows the text "Lpg2:il_a Gonne...Kid seviere" and the date "Pentecost 2005".

Figure 4.4. New Member Sign Up.



Figure 4.5. Member Log On.

Menu of this web site will contain on left side path of every page. User can click to open the other page.

If user clicks on Products, it will show the list of products page (See Figure 4.6). When the user sees all of listed products they can put the amount of quantity in blank box beside ORDER button then click on ORDER button to make order.



Figure 4.6. Products List Page.

If user click on Vender, it will show detail about each brand of Gas Company (See Figure 4.8). Below of Vender page, user can click to link to other vendors such as PTT, Unique Gas and Picnic Gas. All are linked to every vender that will show about business information such as company name, address and telephone number.



Figure 4.8. Vender Page.

Safety tips page will show the user about safety of gas users. It presents in terms of both text and pictures. The user can click on Tips at menu bar (See Figure 49 - Figure 4.10)

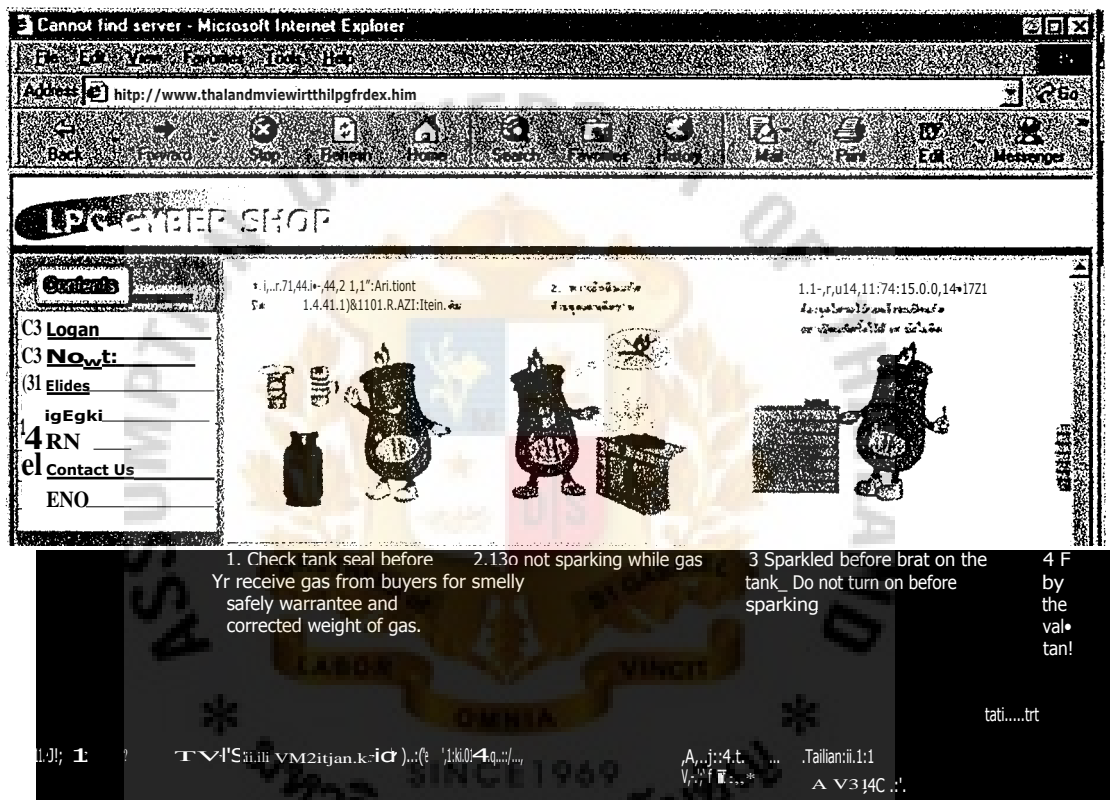


Figure 4.9. Usage Tips.

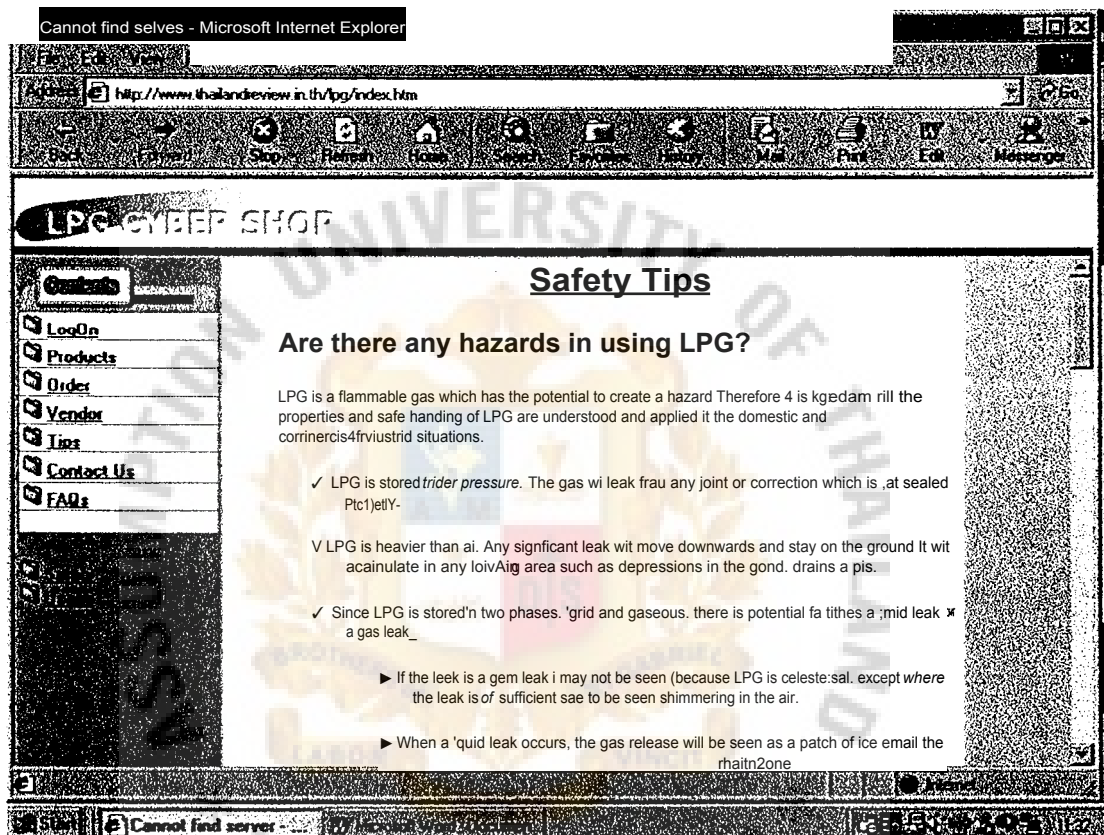


Figure 4.10. Safety Tips.

Contact us page will show the company name and address. The user can contact to company by electronic mail at the e-mail address that shows in this page (See Figure 4.11)

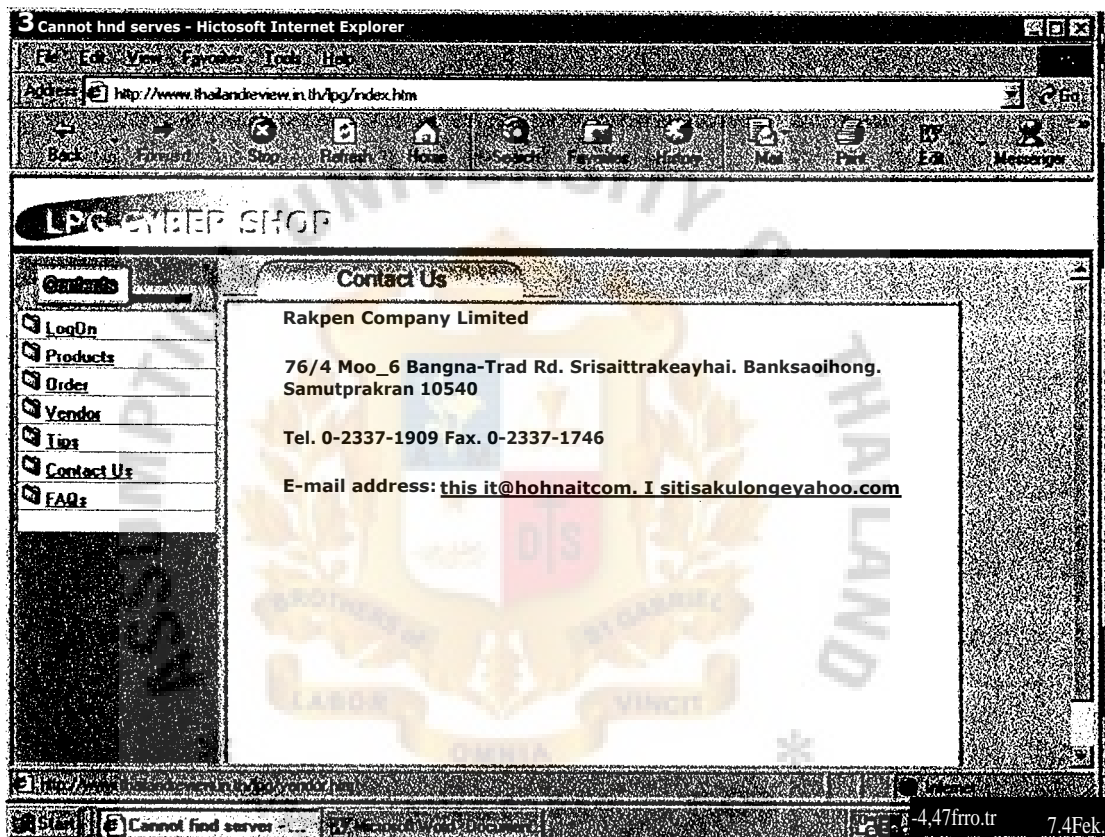


Figure 4.11. Contact Us Page.

The company user can change price of product and add the new product to database by click on Add Products in the content menu, which is show only in the company users (not show to the customer or other Internet users). At this page the company user can add new product by select vender and type the size and price of new products then click on Add to Database button (See Figure 4.12). If the company need to delete some product they just to click on delete button that will show in the Function column of the product list table.

LPG CYBER SHOP

Vendor: Size: (Kg) Price: (Bath) Picture:

ID	Vendor	Size (Kg)	Price (Bath)	Path	Function
	PICNIC GAS	2	50	images/a1.jpg	<input type="button" value="Update"/> <input type="button" value="Delete"/>
	PICNIC GAS	5	200	images/a1.jpg	<input type="button" value="Update"/> <input type="button" value="Delete"/>
	SiamGas	2.5	120	images/a1.jpg	<input type="button" value="Update"/> <input type="button" value="Delete"/>
	SiamGas	15	205	images/a2.jpg	<input type="button" value="Update"/> <input type="button" value="Delete"/>
	UniqueGas	11.5	158	images/a2.jpg	<input type="button" value="Update"/> <input type="button" value="Delete"/>

Figure 4.12. Add New Product

4.6 The proposed System Requirements

4.6.1 Hardware Specification

To develop the project, we use a computer to work as web server and client.

Hardware suitable for using to create the project is in Table 4.1.

Table 4.1. Hardware Specification.

Hardware	Specification
CPU	Pentium III, or higher
Cache	256 KB or higher
Memory	256 MB or higher
Hard Disk	17GB or higher
CD-Rom Drive	1 X or higher
Floppy Drive	1.44 MB
Network Adapter	Ethernet 10-Base T
Display Adapter	SVGA card
Display	14" SVGA Monitor or higher

4.6.2 Software Specification

Software section is used to create website. The major software is web server that helps personal computer to perform as web server, so we can use only one computer to work as both web server and client. The table below is the list of software for creating website.

Table 4.2. Software Specification.

Software	Details	Description
Operating System	Windows 95, Windows 98, Windows 2000, or Windows NT 4.0.	We use Windows 98 for this project.
Web Server	Personal Web Server 4.0 when using windows 95/98 IIS 4.0 when using Windows NT HS 5.0 when using Windows 2000	We use Personal Web server for this project
Web Browser	Should be Internet Explorer 4.0 or Netscape 4.0	We use Internet Explorer 5.0
Graphic tools	AdobePhotoshop v.60	Use for edit and decorate image

Table 4.2. Software Specification. (Continued)

Software	Details	Description
HTML & ASP Editor	Homesite 4.5 Macromedia dream weaver Ultra Dev 4.0	Use for write html and asp code
Web design tools	Macromedia dreamweaver 4.0	Use for design layout of web page



V. STRATEGY AND IMPLEMENTATION SUMMARY

5.1 Strategy and Implementation Summary

For the customer who would like to find a comfortable way to order LPG at home, this site is an excellent source. The great design and high quality of products will impress customer. The ability to offer a positive Web experience will extend the reach of the store and generate additional revenues with a minimal monthly investment. LPG Cyber Shop Site represents an excellent opportunity to open up a *new* sales channel.

5.2 Web Site Marketing Strategy

On-line marketing will be critical to LPG shop. It will be the best way to spread the news about our Web site and let target audiences around Thailand know about this new commerce **and** content site.

5.2.1 Marketing Mix

Product

Products that are sold on this site are Liquid Petroleum Gas in various brands and tanks size. Customer can open the one site to choose the different brands. Company will fill gas to meet the Net Weight that is shown on the bodies of tanks.

Price

The company supplied our products to both retail shops and end users, so that the prices of our products are lower, we have to sell large quantities in order to get more revenue.

To sell through website, we settle the price to be lower or at least equal to price of our retail shop in order to keep our old customers.

Place

All types and brands of tanks will be shown on our website. Customers can search our products. Product details such as weight and size will be notified to customers. Customer can reach to order various brands at this site, because we offer a the variety of tank sizes and brands.

Promotion

We have to promote our website through many popular websites such as www.energy.com or www.lpgworld.com which present the information in the energy.

Banner advertising will be necessary to make the customers remember our websites. However the cost seems to be high. We plan to advertise for the beginning period and will reduce continuously after creating awareness.

5.3 **Marketing Competencies**

Customer Delivered Value

The Value

Product Value

- (a) High quality
- (b) Variety of brands and tanks size

Service Value

- (a) Home-Delivery Service
- (b) Web board
- (c) Always remain anonymity

The Cost

Monetary cost

- (a) Internet access cost
- (b) Telephone dial-up cost
- (c) Product fee

Energy Cost

- (a) Net surfing time
- (b) Save travelling time

Target Market

- (a) Retailers
- (b) Wholesalers

5.4 SWOT Analysis

Strengths

- (a) Being the in marketing providing LPG on-line
- (b) Offering reliable quality product and services
- (c) Providing interactive communication while customer remain anonymity
- (d) Becoming *new* knowledgeable community
- (e) All transactions are completed on-line

Weaknesses

- (a) Addition charge to market original price
- (b) Limited target market size

Opportunities

- (a) Promoting the web by creating a group of web-based business alliances
- (b) Increasing in number of internet users
- (c) Increasing in internet coverage area

Threats

- (a) Economic Slowdown
- (b) No supporting E-commerce laws
- (c) Illegal abortion

5.5 On-line Sales Strategy

The more successful our on-line marketing is, the more traffic and users we will bring to our site. As long as we build a flawless commerce site, we can then turn traffic and users into actual sales of LPG.

We will also use traffic statistics to show how many times a month our users visit our site, and how much time they spend on the site, in order to sell banner advertising and sponsorships.

The Front End

For the LPG shop user, interface design of the web is one of the keys to the success of the shop. The user interface needs to:

- (1) Have a clear and easy to use navigation scheme.
- (2) Be fast loading, non-graphic-intensive pages. Many of the audience will be accessing the site from home or remote areas by dial-up connection where the Internet speed is not so powerful.
- (3) Graphics and User Interface that the audiences can identify with. The site needs to have a warm, knowledgeable, reliable, confidential personality to appeal to the audiences.
- (4) A consistent user interface on all applications built for the commerce and content. Users should always know how to browse relevant product and information needed.

The Back End

- (1) Web hosting with 99.99% uptime. We will host the site at a major data center, such as Met Internet, KSC, Loxinfo and etc.
- (2) Statistics to determine: page views, unique users, banner impressions, sponsorship impressions and click through.
- (3) A back end that is easily plugged into the following commerce tools:
 - (a) Shopping cart
 - (b) Product database that is easily browsed and searched
 - (c) Ability to rate products or recommend them to audience of certain expertise levels.
 - (d) Reliable online payment software

VL FINANCIAL ANALYSIS

6.1 Start-up Budget

- (1) Start-up expense (Including legal cost, logo design, stationery and related expenses) come to 5,000 Bahts.
- (2) Star-up assets required include 120,000 Bahts in long-term assets (Web Server)
- (3) Shot-term assets (office furniture, etc.) come to 50,000 Bahts.
- (4) Initial cash to handle the first few months of service operations as sales and accounts receivable play through the cash flow come to 32,000 Bahts.

Table 6.1. Start-up Expense.

Start-up Expense	Baht
Company Registration	7,000
Stationary etc.	5,000
Office Rental	200,000
Domain Name Registration	2,000
Office Decoration	50,000
Total Start-Up Expense	264,000

Table 6.2. Start-up Assests.

Start-up Assets	Baht
Web Server	120,000
Graphics Workstation	50,000
Total Start-Up Asets	170,000

6.2 Financial Plan

Cost

Table 6.3. First Year Investment Budget

Investment	Baht
Web Server Hardware	120,000
Graphics Workstation	50,000
OpenOSource Web Server Software	2,000
ISDN Connection	21,000
Company Registiation	7,000
Office Rental	200,000
Office Decoration	50,000
Stationary	5,000
Domain Name Registration	2,000
* Total Investment	* 457,000

Table 6.4. Average Monthly Expense in First Year.

Monthly Expense	Baht
Internet Connection	15,000
Programmer and Designer	20,000
Hardware Maintenance	5,000
Clerk	7,000
Accounting	4,000
Total	51,000

Table 6.5. Average Monthly Income in First Year.

Monthly Income	Baht
Sales Commission	30,000
Web Development	20,000
Advertising	5,000
Total	55,000

Table 6.6. Marketing Data.

Marketing Data	
Total LPG Shop in Thailand	7,000
Expected Market Coverage in 2003	20%
Purchasing Power/Member/Month (Baht)	20,000
Commission	1%

Break-even Analysis

Break-even Point Calculation.

	Jan	Feb	Ar	3	Jun	Jul	Aug	Oct	Nov	Dec
Growth Rate (%)	30	30	30	30	30	30	30	30	30	30
Total Member	0.030	0.030	0.030	0.030	0.240	0.240	0.380	0.540	0.630	0.720
Monthly Order	0.000	0.000	2.800	3.800	4.800	6.200	7.800	9.800	12.000	14.400
Commission	0.000	0.012	0.008	0.008	0.048	0.000	0.000	0.108	0.128	0.144
Web Development	0.000	0.000	0.000	0.020	0.000	0.000	0.000	0.020	0.000	0.020
Advertising	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.000	0.000
Total Income	0.000	0.000	0.043	0.063	0.000	0.087	0.100	0.133	0.160	0.180
Accru Income	0.000	0.000	0.000	0.000	0.000	0.387	0.488	0.540	0.630	0.720
Monthly Expense	0.000	0.000	0.052	0.000	0.000	0.000	0.052	0.000	0.000	0.000
Accru Expense	0.000	0.000	0.000	0.717	0.000	0.821	0.873	0.940	1.029	1.100

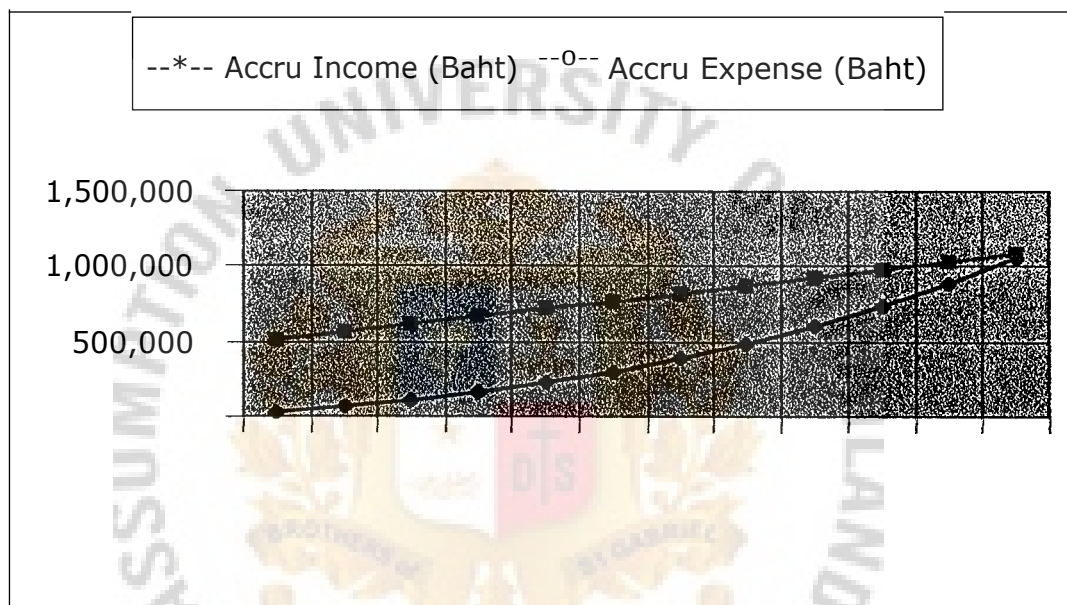


Figure 6.1. Break-even Point.

VII. CONCLUSIONS AND RECOMMENDATIONS

7.1 Conclusions

The overall objective of this project is to sell products online based on the LPG shop. At present, Internet is one of the most effective tools in helping to expand potential in front of customers, suppliers and distributors all around. It also assists the LPG shop to further business opportunities. At present, most people have to come to the market to buy things. In doing so, it takes time. The LPG shop tries to do via Internet in order to assist customers and to provide a better service to the customer.

LPG Cyber Shop has already finished a prototype of total website and needs some period of time for inspection of security and function of the system before uploading to hosting. We have to continue in promoting and creating awareness for both existing and new customers.

The existence of this business very much depends on the promotion of government (price of gas), adjust electronic commerce law and deregulate rule of customs, which are the problems of most businesses. Although the trend of using Internet is increasing, the number of people who are shopping on Internet is still low because they do not trust security and law. Moreover, Thai people have a habit of wanting to see the real products before deciding to buy, which is a big problem for electronic commerce.

Finally, if the government intends to eliminate gas pricing and electronic commerce law problems, our business will grow and be more successful in the future.

7.2 Recommendations

As the web is rapidly becoming a multi-billion dollar source of revenue for the world's businesses, apart from marketing and advertising products, a company should consider the following:

(a) Security

The most important challenge when implementing e-commerce is the ability to guarantee customers' privacy and safety when send the personal data to purchase on-line. Use of secure servers for on-line transactions can overcome this problem. These secure servers encrypt data that is sent over telephone lines so that information cannot be intercept by a third party.

(b) E-commerce

Using web site as a place for direct retail shopping because of its 24 - hours availability, global reach, and ability to interact and provide customer information and ordering. Doing business on-line will enable business to expand, increase profits, and reduce operating cost as well_

(c) Electronic Data Interchange (E DI)

Rather than preparing paper and sending it through mail or using other communication methods such as fax, EDI users exchange business data directly between their respective companies. Business data can be purchase orders generated from retailer to supplier to retailer. By implementing this, it will bring about faster processing of actions, lower personnel requirements and increase availability of timely and accurate data for decision-makers.

(d) Search engine

Company should consider posting their link in various search engines such as Alta Vista, Yahoo, Info Seek, etc. This will lead to more amounts of customers from all over the world accessing the web site_

Advantage of Online System

The online system has many advantages over the present system and it also provides many benefits to the users, for example:

- (a) Provides user friendly operational screens.
- (b) Provides information they need, when they need it.
- (c) Users can enter orders with a click of a button.
- (d) Product information is never out of date.

7.3 Future Research

For other researchers who would like to sell LPG by Internet or interested person, you should survey more information to update your homepage because Electronic Commerce is very popular, many people spend most of their time surfing Internet.

Future Plan:

- (1) News and newsletter subscription for members.
- (2) FAQ (Frequently Asked Questions) pages implemented in database with search helper algorithm.
- (3) Policy pages and shipping policy.
- (4) Searching mechanism to find trade name.
- (5) Multi language (Thai, English)
- (6) Join with other industrial gas manufacturers.



Table A.1. below represents baseline WWW user demographics as reported by the Nilesen Internet Demographic Survey (1998) available:

<http://www.commercemet/information/surveys/margs5.html>

Table A.1. Internet Users Demographic Survey.

Age	WWW User Demographic	U.S. and Canadian Population Demographic
16-24	22%	18%
25-34	30%	21%
33-44	26%	22%
45-54	17%	16%
55 or older	5%	21%
Gen der	WWW User Demographic	U.S. and Canadian Population Demographic
Male	64.50%	-
Female	34.50%	
Education	WWW User Demographic	U.S. and Canadian Population Demographic
Less than High School	4%	11%
High school	8%	33%
Technical School	1%	2%
Some college	24%	24%
Graduated school	29%	17%
Some Post Grad	9%	3%

Tables A..1. Internet Users Demographic Survey. (Continued)

Occupation	WWW User Demographic	U.S. and Canadian Population Demographic
Professional	37%	18%
Technical	12%	6%
Admin/managerial	14%	9%
Clerical	3%	6%
Sales	5%	5%
Service Worker	2%	4%
Laborer	2%	7%
Crafeperson	1%	3%
Homemaker	1%	11%
Military	2%	1%
Full Time Student	16%	8%
Retired/Not Working	2%	17%

Household Income	WWW User Demographic	U.S. and Canadian Population Demographic
Under \$10,000	1%	7%
\$10-19,999	4%	9%
\$20-29,999	7%	12%
\$30-39,999	10%	14%
\$40-49,999	10%	11%

Table A 1. Internet Users Demographic Survey (Continued)

Household Income	WWW User Demographic	U.S. and Canadian Population Demographic
\$50-59,999	11%	9%
\$60-69,999	9%	6%
\$70-79,999	10%	4%
\$80-89,999	7%	3%
\$90-99,999	4%	2%
\$100,000 or Over	14%	5%
Do not know/Refuse	14%	17%

Table A.2. Below represents Internet User Profile of Thailand 2001 as reported by the NECTEC available:

Table A.2. Point of Access Internet.

Point of Access	Percent
Home	49.3
Office	29.0
School	11.4
Internet Café	9.7
Others	0.6
Total	100

Table A.3. Goods and Services Purchased by Gender.

Goods/Services	Female		Male	
	Frequency	Percent	Frequency	Percent
Book	754	56.6	1366	56.5
e-book, Information	102	7.7	206	8.5
Software (sent via postal)	185	13.9	662	27.4
Software (sent online)	74	5.6	253	10.5
Music (sent via postal)	166	12.5	340	14.1
Music (sent online)	39	2.9	63	2.6
Film (sent via postal)	124	9.3	492	20.3
Film (sent online)	25	1.9	34	1.4
Computer device	185	13.9	649	26.8
Toy	65	4.9	122	5.0
Electrical Appliance	93	7.1	221	9.1
Household item	58	4.4	47	1.9
Clothes, accessories	133	10.0	100	4.1
Cosmetic	83	6.2	44	1.8
Food	51	3.8	63	2.6
Medication, Supplement	61	4.6	52	2.1
Others	297	22.3	344	14.2

Table AA. Percent of Internet Purchase by Gender in Thailand.

Internet Purchase	Have	Never	Total
Female	13.6	86.4	100
Male	25.8	74.2	100



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