

CERTIFICATION OF APPROVAL

Survey Engine Management System

by

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1) PHP (computer program language)
2) internet programming

CERTIFICATION OF ORIGINALITY

This is to certify that I am responsible for the work submitted in this project, that the original work is my own except as specified in the references and acknowledgements, and that the original work contained herein have not been undertaken or done by unspecified sources or persons.



NURUL HAYATI BINTI ISMAIL

ABSTRACT

In today's highly competitive marketplace, business owners are continuously forced to act quickly in order to increase profits, create effective customer acquisition programs, and reduce customer defection. Web-based surveys continue to take on a strategic and instrumental role in the customer life cycle as they enable companies to gain valuable feedback, and hear the "voice" of the customer. The overall objective of the study is to identify why the issues of online surveys currently provided in Malaysia and to recognize important features to be considered at the implementation phase to enable successful implementation of a sound survey engine. Previous research efforts show that although plenty of survey engine have been developed, much effort and research is still needed to ensure proper feedback and higher response rate from the targeted audience. It is hoped that all the necessary information will be collected through the use of surveys, journals, previous researches and interviews. At the end of this study, a thorough and detailed survey engine will be created. It is hoped that this study will be able to achieve its objectives and make important contributions to the improvement of the creations of online surveys; particularly to the e-business sector in Malaysia.

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CHAPTER 1

INTRODUCTION

1.1 Background of Study

1.1.1 About Survey

Surveys are used to collect quantitative information in various fields such as marketing, political polling, and social science research. A survey may focus on opinions or factual information depending on its purpose, but all surveys involve administering questions to individuals. The followings are among some of the reasons why surveys are always favored compared to other data gathering techniques:-

- It is flexible in the sense that a wide range of information can be collected.
- It can be used to study attitudes, values, beliefs, and past behaviors.
- It is relatively easy to administer.
- It helps in the data collection process due to the focus provided by standardized questions. Only questions of interest to the researcher are asked, recorded, codified, and analyzed. Time and money is not spent on tangential questions.

Mainly, there are five ways to administer surveys. They are through the use of telephone, by mail, personal in-home survey, personal mall intercept survey and last but not least, online survey. Among all five, online survey has proved to be the most effective method. A survey conducted by Wikipedia.org, an online

encyclopedia shows that online survey has got the highest response rate of almost 90% from the targeted audience. This is much higher than the response rate of telephone (40%-60%), mail (5%-30%), personal in-home survey (40%-50%) and personal mall intercept survey (about 50%). Such difference in the response rate between the online survey and other types of surveys can make a huge difference especially when it comes to gathering valuable data for a particular research.

1.1.2 About Online Survey

The technology for online survey research is young and evolving. Until recently, creating and conducting an online survey was a time-consuming task requiring familiarity with web authoring programs, HTML code, and scripting programs. Today, survey authoring software packages and online survey services make online survey research much easier and faster. This is because online surveys are fast becoming a popular method of collecting data. A questionnaire on the World Wide Web is easy and convenient for many people to access. A large amount of data can be accumulated in a short amount of time. The data can then be analyzed, summarized, and written about. It's relatively fast, relatively easy and very inexpensive.

Among the sectors where online survey gives a great impact towards its everyday operation is the business sector. Online survey provides a rapid, yet detailed account of audience perceptions, opinions, and preferences. By proactively providing stakeholders - including customers, members, partners, and employees - a secure venue to provide frank, confidential feedback, organizations can quickly gain an unprecedented ability to listen, learn, and anticipate their needs. For most organizations, simply gaining this intelligence can provide clear competitive advantage, by providing a catalyst for change in business processes, customer service levels, and Web site or product usability that can measurably improve customer retention and satisfaction.

Confident, successful decisions require knowledge of the facts. Despite this, many organizations base their understanding on a small number of trusted personal contacts, who may not provide a balanced view. Results from a well-designed survey with a good response rate transform "we think" into "we know". Beneficial in many areas of business, surveys are used to gain market knowledge, evaluate customer perception and measure employee satisfaction. In organizational development, carefully constructed surveys are often used as the basis for data gathering, organizational diagnosis, and subsequent action planning, while in the marketing area, they are used to understand the changing needs of the targeted audience (clients), thus allowing them to provide new innovative services and improve work processes in line with the advent of E-technology. Finding out what the customers think about a company's offerings can have an enormous impact on the way businesses is shaped and online surveys can be quite the bargain and more effective than other traditional survey mediums such as the telephone and mail. Research has proven these traditional methods return low response rates. They are slow, resource hungry and expensive even for moderate survey populations.

The greatest advantages online surveys have over mail, phone and other types of surveys are faster turn-around time and lower costs. Response rates for online surveys are typically higher than telephone and mail surveys. Online surveys also tend to be the least obtrusive approach to gather feedback since the level of time and effort required of respondents is minimal. On the whole, survey engine empowers organizations to develop and deploy sophisticated online surveys that are easy and cost-effective to conduct. It delivers results in real time, giving organizations immediate insight into current market or audience conditions.

1.1.3 Online Survey in Malaysia

Although online survey has been steadily gaining name and popularity in the outside world, its use is still at an infant stage in Malaysia. Many here still depend on the traditional methods to gather their data. There are currently only two companies in Malaysia which offers the online survey services. They are:-

- WEBSE <http://www.webse.com.my>
- Perseus <http://www.perseus.com/>

Not much information can be gathered regarding the online survey service that is provided by WEBSE for its information is unavailable on the website. There is only a small description saying that the online survey service that they offer is *“a dynamic survey processing system that is powered by the backend weboffice administrative tool. With these tools, the administrator can easily administer and track the survey information submitted by the Internet users”*. There are no login page and no description on its price. It can be concluded that the online survey services provided by WEBSE is not a readily provided survey engine where user can log in anytime and start creating the questionnaire after paying the price but rather, it is built on request by its clients and appended on their website. The cost can then vary from very little to thousands of ringgit depending upon the types of features and services selected by the clients.

Perseus, on the other hand, offers its services which focuses more on the large organizations. Its online survey is sophisticated and scales to meet the high-volume demands of the large enterprise. Its products are divided into 2 categories, namely the SurveySolutions/EFM which deploys web-based surveys and SurveySolutions Pro, which is a single user platform for professional level survey projects. The price for the SurveySolutions Pro is \$2495 each.

1.2 Problem Statement

1.2.1 Problem Identification

Although Malaysia has two online survey providers, there is still a need to have a simple, already running and functioning web-based online survey, just waiting for users to log in, start creating and deploying the survey online with real time result using easy, and intuitive based interface. In today's fast-paced business environment, researchers need to be able to quickly understand their world of customers, employees, resellers, students and web site visitors. Hence, the availability of such online survey is a crucial factor.

The services provided by WEBSE are on the basis of customer request. This would mean that if a customer wants to do a research using online survey, they must first contact WEBSE and discuss about the requirements and other things before WEBSE can really start developing the survey engine. This process can take weeks and even months. In today's highly competitive marketplace, business owners are continuously forced to act quickly in order to increase profits, create effective customer acquisition programs, and reduce customer defection. Those few weeks or months are precious times wasted if the subject being researched are very important and requires fast feedback from the targeted audience.

Persues, on the other hand, provides online survey service which focuses more on large organizations, incorporating sophisticated survey methods. Such advanced service comes with a price. This might not be in a budget for a smaller organizations, personal individuals or even students.

1.2.2 Significance of the Project

The greatest importance of this undertaking is the vast need highlighted in the problem statement, which is to make available a simpler online survey in Malaysia with step-by-step and intuitive interface and cost-effective while requiring no technical expertise from its users. This way, more researches and findings in

Malaysia can be encouraged to be done through online which, from past research had shown to have been able to return greater feedback and information. The significance of this project can be seen from two points of view.

1.2.2.1 Researcher's Perspective

From the researcher's perspective, getting a lot of good responses from the targeted audience means that more sound and useful information can be collected for any particular study. This could bring to the better improvement of work processes, new inventions of products and services and many more. By getting excellent replies from audiences, researchers are able to keep up with the changing trends that are happening around them and gain new information.

1.2.2.2 Target Audience's Perspective

From the audience's perspective, by being able to give out useful information to the researchers, they have in a way improved their own quality of life. They certainly will be able to enjoy improved services and new innovations of products. They manage to enjoy all that by just giving feedbacks to the researchers. Through the improved online survey, audiences will be able to communicate better with the researchers.

1.3 Objectives and Scope of Study

This study about online survey in Malaysia is initiated based on several objectives as listed below:-

- 1.3.1 The main purpose of this study, which builds on previous reports and journals on online survey, is to determine the weaknesses in the two currently existing online survey in Malaysia.

1.3.2 This will bring to the second objective, which is to develop a better, more refined survey engine that will address the problems found in the first objective based from findings and research. This solution is hoped to encourage future researchers and targeted audiences to fully utilize the advantages online survey has to offer.

In general, this study will expand the knowledge on conducting survey online in Malaysia as well as explores current features, issues, pricing, and limitations associated with products and services, such as online questionnaire features and services to facilitate the online survey process, such as those offered by the present online survey provider currently in Malaysia.

CHAPTER 2

LITERATURE REVIEW

The past decade has seen a tremendous increase in internet use and computer-mediated communication (Fox, Rainie, Larsen, Horrigan, Lenhart, Spooner, & Carter, 2001; Horrigan, 2001; Nie & Erbring, 2000; Nie, Hillygus, & Erbring, 2002). As an increasing amount of communicative activity takes place through this new medium, there has likewise been a significant increase in primary research on virtual communities, online relationships, and a variety of other aspects of computer-mediated communication (Flaherty, Pearce, & Rubin, 1998; Matheson, 1991; Nonnecke, Preece, Andrews, & Voutour, 2004; Preece, 1999; Preece & Ghozati, 2001; Walther, 1996; Walther & Boyd, 2002; Wood & Smith, 2001; Wright, 2000a, 2002a, 2002b, 2004). Studies of online populations have led to an increase in the use of online surveys, presenting scholars with new challenges in terms of applying traditional survey research methods to the study of online behavior and Internet use (Andrews, Nonnecke, & Preece, 2003; Bachmann & Elfrink, 1996; Stanton, 1998; Witmer, Colman, & Katzman, 1999; Yun & Trumbo, 2000).

It is indeed true that online survey is capable of empowering businesses with a cutting edge tool that enables them to gain insights in the current market. According to Squires (2005); "In today's highly competitive marketplace, business owners are continuously forced to act quickly in order to increase profits, create effective customer acquisition programs, and reduce customer defection." Through survey engine, organizations are able to stay competitive, by improving their work processes and serving better improved services and product. All by getting customers' critical and valued information.

Researchers in a variety of disciplines may find the Internet a fruitful area for conducting survey research. As the cost of computer hardware and software continues to decrease, and the popularity of the Internet increases, more segments of society are using the Internet for communication and information (Fox et al., 2001; Nie et al., 2002). Thousands of groups and organizations have moved online, many of them aggressively promoting their presence through the use of search engines, email lists, and banner advertisements. These organizations not only offer information to consumers, they also present opportunities for researchers to access a variety of populations who are affiliated with these groups.

Communication researchers may find the Internet an especially rich domain for conducting survey research. Virtual communities have flourished online, and hundreds of thousands of people regularly participate in discussions about almost every conceivable issue and interest (Horrigan, 2001; Wellman, 1997; Wellman & Haythornthwaite, 2002). Areas as diverse as interpersonal (Parks & Floyd, 1996; Tidwell & Walther, 2002; Wright, 2004), group (Hollingshead, McGrath, & O'Connor, 1993; Hobman, Bordia, Irmer, & Chang, 2002), organizational (Ahuja & Carley, 1998), health (Rice & Katz, 2001; Wright, 2000a), and mass communication (Flaherty et al., 1998; Flanagan & Metzger, 2001) have been studied using online surveys.

One advantage of online survey research is that it takes advantage of the ability of the Internet to provide access to groups and individuals who would be difficult, if not impossible, to reach through other channels (Garton, Haythornthwaite, & Wellman, 1999; Wellman, 1997). In many cases, communities and groups exist only in cyberspace. For example, it would be difficult to find a large, concentrated group of people conducting face-to-face discussions of topics such as cyber-stalking, online stock trading, and the pros and cons of virtual dating. While people certainly discuss such issues among friends, family members, and co-workers, few meet face-to-face in large groups to discuss them. One advantage of virtual communities as sites for research is that they offer a mechanism through which a researcher can gain access to people who share *specific* interests, attitudes, beliefs, and values regarding an issue, problem, or activity. For example,

researchers can find a concentrated number of older individuals who use computers on the Internet-based community SeniorNet (Furlong, 1989; Wright, 2000a, 2000c). In contrast, with traditional survey research methods it may be more difficult to reach a large number of demographically-similar older people who are interested in computers.

Another example is the case of individuals with diseases or conditions, such as HIV, eating disorders, and physical disabilities. Individuals with these conditions and diseases are often difficult to reach because they are stigmatized offline. Health communication researchers have been able to go online to study these populations, including examining how features of the computer medium help people cope with the social stigma of their condition (Braithwaite, Waldron, & Finn, 1999; Wright, 2000b). More generally, the Internet enables communication among people who may be hesitant to meet face-to-face. These individuals and groups often can be reached on the Internet in larger numbers than would be possible using face-to-face research methods.

A second advantage is that Internet-based survey research may save time for researchers. The advantage most often cited by marketers for using online surveys is 'speed.' For instance, e-mail surveys can be completed in 72 hours (Cross & Neal, 2000). More specifically, the speed obtained by online surveys can be explained in terms of two different perspectives: recruiting samples and gathering responses. For an online survey, hundreds to thousands of respondents can be recruited in one day, compared with weeks for a traditional survey. And the turnaround time for online surveys is two to three days because answers can go directly into a spreadsheet or database for analysis (Mosley-Matchett, 1998), while it typically takes four to five weeks for a traditional survey (Maddox, 1999). The period of time when a study was conducted can have a profound effect on the value or meaningfulness of the data. In other words, the accuracy of responses in a study is affected by the time interval between the study and the event being measured (ARF, 1984).

Other than that, online surveys can also allow a researcher to reach thousands of people with common characteristics in a short amount of time, despite possibly being separated

by great geographic distances (Bachmann & Elfrink, 1996; Garton et al., 2003; Taylor, 2000; Yun & Trumbo, 2000). A researcher interested in surveying hard-to-reach populations can quickly gain access to large numbers of such individuals by posting invitations to participate to newsgroups, chat rooms, and message board communities. In the face-to-face research environment, it would take considerably longer-if it were possible at all-to find an equivalent number of people with specific attributes, interests, and attitudes in one location.

Online surveys may also save time by allowing researchers to collect data while they work on other tasks (Llieva, Baron, & Healey, 2002). Once an invitation to participate in a survey is posted to the website of a community of interest, emailed to people through a listserv service, or distributed through an online survey research service, researchers may collect data while working on other projects (Andrews et al., 2003). Responses to online surveys can be transmitted to the researcher immediately via email, or posted to an HTML document or database file. This allows researchers to conduct preliminary analyses on collected data while waiting for the desired number of responses to accumulate (Llieva et al., 2002).

Online survey researchers can also save money by moving to an electronic medium from a paper format (Bachmann & Elfrink, 1996; Couper, 2000; Llieva et al., 2002; Yun & Trumbo, 2000). Paper surveys tend to be costly, even when using a relatively small sample, and the costs of a traditional large-scale survey using mailed questionnaires can be enormous. The use of online surveys circumvents this problem by eliminating the need for paper and other costs, such as those incurred through postage, printing, and data entry (Llieva et al., 2002; Watt, 1999; Witmer et al., 1999). Similarly, conducting online interviews, either by email, or in a synchronous "chat" format, offers cost savings advantages. Costs for recording equipment, travel, and the telephone can be eliminated. In addition, transcription costs can be avoided since online responses are automatically documented. Newer online survey creation software and web survey services costs can vary from very little to thousands of dollars depending upon the types of features and

services selected; however, this is relatively inexpensive compared to the cost of traditional paper-and-pencil surveys.

Online surveys also enable marketers to not only survey huge samples of people, but to survey tiny sub-samples of the population (Taylor, 2000) by selectively showing questionnaires on a particular web site or to a certain types of people. Moreover, its digital nature makes the surveys more understandable for respondents and simpler to complete by using pop-up definition boxes and relational navigation links (Matchett, 1998), and even by showing lists, and still or moving images (Taylor, 2000).

CHAPTER 3

METHODOLOGY

3.1 Questionnaire

3.1.1 Participants

For data collection, this study used a set of questionnaires which was distributed to 50 possible respondents from various backgrounds. The questionnaire consists of three segments, namely Section A, B and C. There are six questions in Section A which address respondents' background, five questions in Section B which address their computer and Internet usage and lastly nine questions in Section C which address the usage of online survey among the respondents. The questionnaires were distributed all around Malaysia to obtain responses from respondents all over the country. Targeted respondents can be any Malaysian citizens aged above 15 and there is no age limit. Therefore these questionnaires were distributed in a university for the students, lecturers and staffs, public primary school and secondary school teachers, public sector employees, shopkeepers, hawkers, businessmen, retirees and government employees as well. The participants varied from different background in terms of age, race, education level, knowledge about computer, Internet, and online survey.

3.1.2 Procedure

To reach Malaysian citizens throughout the country, several approaches other than personal distribution were used for this purpose. Out of 50 questionnaires distributed to respondents, 30 were sent online through electronic mails (e-mails) and through the chat rooms in local university network as well as chat rooms in the Internet. These are

among the simple, yet efficient ways to reach respondents from all over the country. For questionnaires which were personally distributed to respondents, some of them were monitored while answering based on their request to provide clarification in helping them answer the questions smoothly. To ensure the reliability and validity of the responses, the response from the questionnaire will be revised to make sure that respondents answer all of the questions and explanation will be given to them should they face any difficulties in understanding the questions.

3.2 Development Phases

Five phases were involved in the development for this project. The first phase is the research, followed by designing, development, conformation of requirements and finally testing phase. The phases involved are depicted in Figure 1. The first phase is the research phase which involves identifying the problem to be studied in this project.

The purpose of this phase is to document the objectives, scope and requirements of the system. This phase is critically necessary in order for the project to succeed. Only with a clear view of what is about to be undertaken, can the project flows smoothly. Much reading from journals and the internet and information gathering is needed in this stage so as to gain insights on the matter the project is trying to resolve. Other than that, data is also gathered by administering questionnaire to a group of respondents. Their answers are analyzed and the main gist are extracted in order to further understand about the current features, issues, pricing and limitations associated with the already existing online survey in Malaysia. In this phase, the specifications pertaining the system are also identified such as the hardware and software specifications.

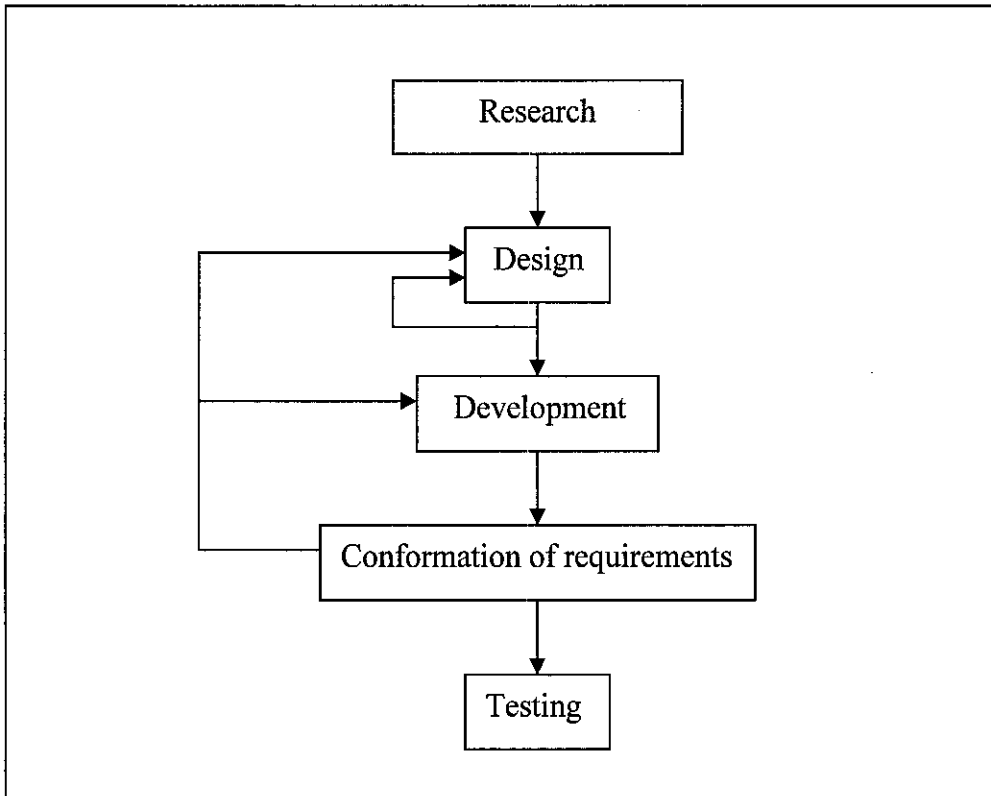


Figure 1: Phases involved in development of system

Design phase consists of the tasks necessary to describe how the proposed system is to be built. This includes designing the database, storyboarding and creating the actual interface for the whole system. This stage is crucial as it will determine how the overall page will look like. Each page of the online survey is designed and the designs are to be approved before moving on to the next level. There is iteration within this phase because some of the designs needed to be redone. Figure 2 shows the template for all five pages before logging in to the system which is the landing page, profile of the company page, join the mailing list page, enquiry page and contact us page. Figure 3, on the other hand shows the template for the five pages after logging in to the system, which is the index page, creating the survey page, viewing the result page, guides page, and logout.

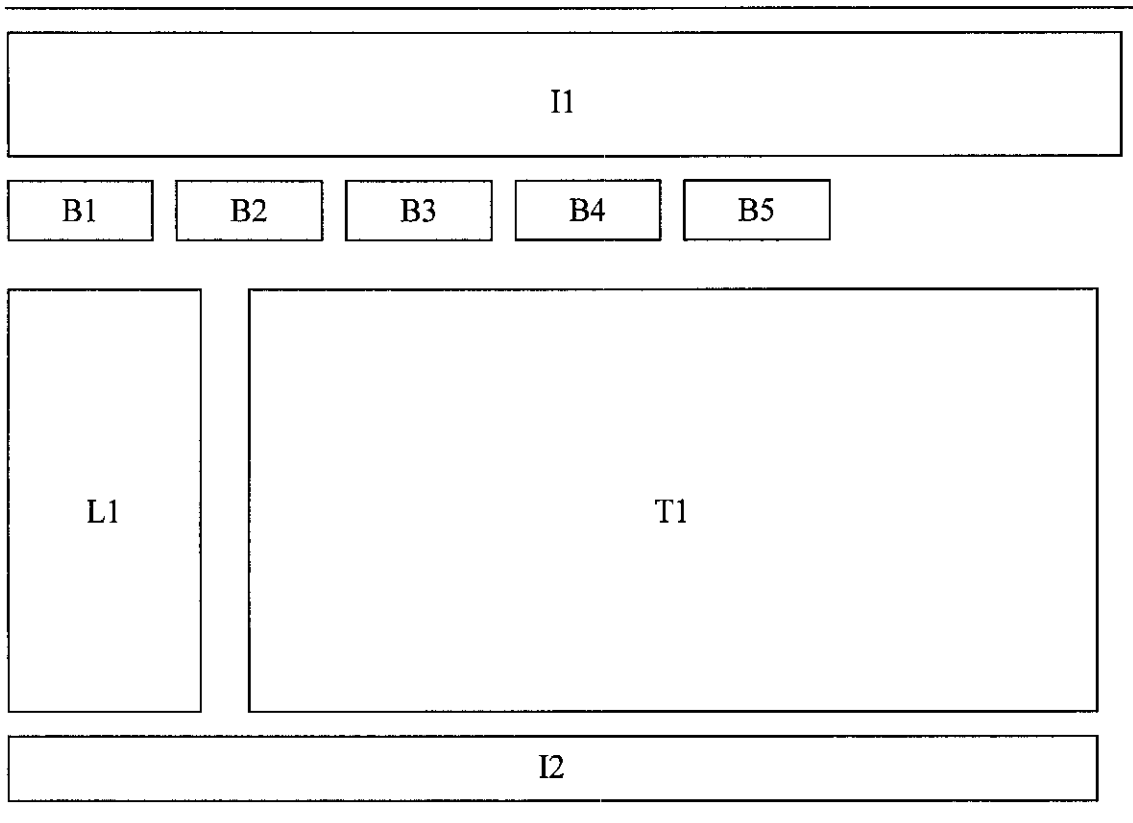


Figure 2 : Storyboard before logging into the system

I1 : Banner of the site titled “Survey Engine Management System – the premium global online survey website”

I2 : Copyright banner

B1 : Button for ‘Home’

B2 : Button for ‘Profile’

B3 : Button for ‘Join Us’

B4 : Button for ‘Enquiry’

B5 : Button for ‘Contact Us’

T1 : The main contents for each links

L1 : Login form

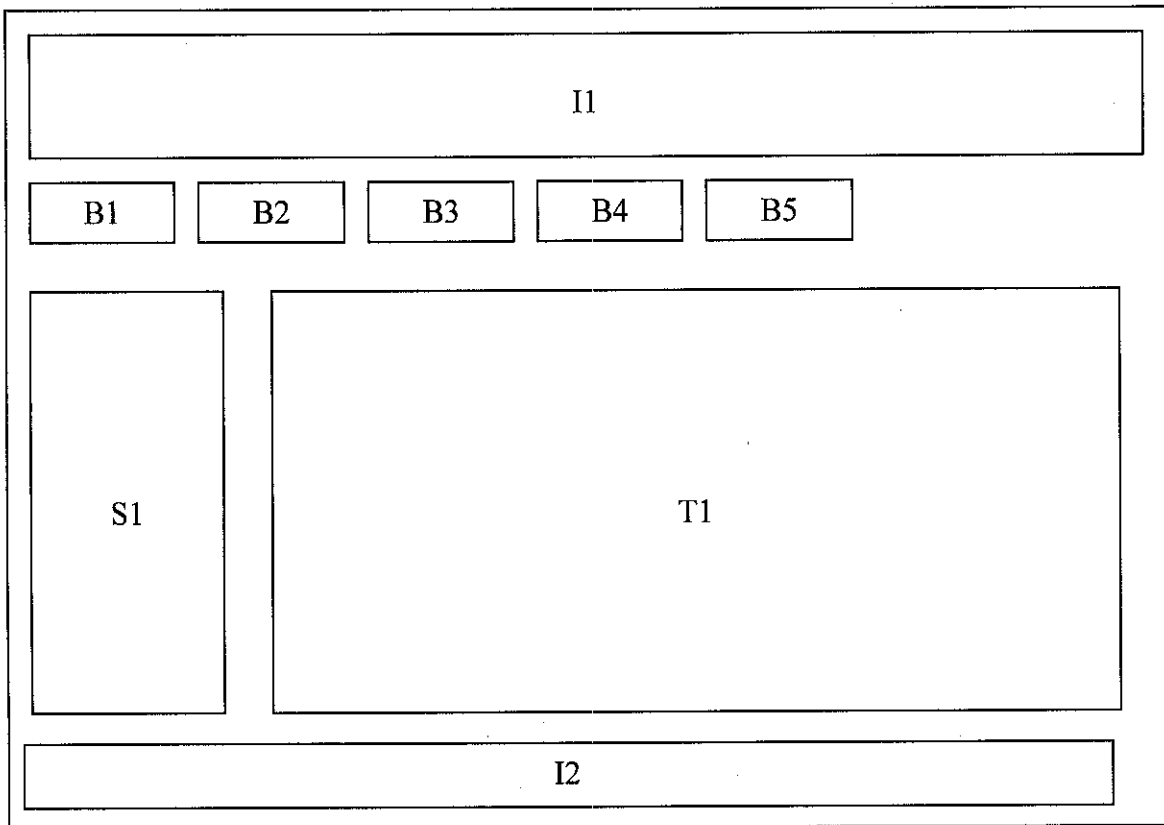


Figure 3 : Storyboard after logging in to the system

I1 : Banner of the site titled “Survey Engine Management System – the premium global online survey website”

I2 : Copyright banner

B1 : Button for ‘Home’

B2 : Button for ‘Survey’

B3 : Button for ‘Result’

B4 : Button for ‘Guide’

B5 : Button for ‘Log Out’

T1 : The main contents for each page

S1 : Sub navigations in each page

After all the designs were approved, this project moved on to development phase. This is the longest phase in this project as it took about two months to complete the system. The interface is designed using Macromedia Flash MX and later incorporated into the website using Macromedia Homesite 5.5 authoring tool. The back-end coding of the system which is the most difficult yet important part that translates the whole project is powered by PHP and MySQL server. This is the part that actually takes up most of the two months time allocated to build the system.

After the system is developed based on the design, it is confirmed by revising the requirements with supervisor to see if it meets the requirements. If there is anything lacking, the design and development phase is revised to amend the particular part so it meets requirements as gathered from the analysis in the first phase. Finally, when the system confirms to requirements, it is tested to examine the functionality of the system. First, decoy data will be fed into the system to ensure that it's working perfectly. Testing of the system is done so as to ensure it works according to expectations. Then, user acceptance tests will be conducted with the users in order to determine if the objective has been achieved.

3.3 Tools Required

3.3.1 Hardware

- Personal Computer (PC)
 - Specification:-
 - Pentium 4 1.5 GHz
 - 256 RAM
 - 20 GB hard disk
- Internet connection (Dial-up Modem / Wireless LAN)

3.3.2 Software

- Windows 2000/ME/XP
- Macromedia Homesite 5.0
- PHP & mySQL
- Microsoft Visio & Project
- Microsoft Office
- Macromedia Flash MX
- Adobe Photoshop

CHAPTER 4

RESULTS AND DISCUSSION

4.1 Respondents' Background

The questionnaires were distributed to 50 people all over Malaysia throughout various ways such as through personal distribution, local university network, electronic mails (e-mails) and through several other ways using the Internet. The returned feedback recorded is 30 out of all questionnaires sent, with a percentage of 60% in the form of hardcopy as well as electronic. Table 1 below summarizes the results of section A in the questionnaire which addresses respondents' backgrounds.

Category	No. of respondents (#)	Percentage %
Age range :		
15-20 years	2	6.67
21-25 years	14	46.67
26-30 years	4	13.33
31-35 years	2	6.67
36-40 years	2	6.67
41-45 years	4	13.33
46-50 years	1	3.33
51-55 years	1	3.33
56-60 years	0	0
above 60 years	0	0
Gender :		
Male	9	30
Female	21	70
Race :		
Malay	25	83.33
Chinese	3	10
Indian	1	3.33
Others	1	3.33

Table 1 : Results on responses from Section A - Respondent's Background

Category	No. of respondents (#)	Percentage %
Employment category :		
Banking or finance	1	3.33
Administration	2	6.67
Education sector	4	13.33
Executive	1	3.33
Business	1	3.33
Student	16	53.33
Trainee	2	6.67
Self employed	1	3.33
Retiree	2	6.67
Supported by partner	0	0.00
Others	0	0.00
State :		
Perlis	3	10
Kedah	5	16.67
Pulau Pinang	1	3.33
Perak	6	20
Wilayah Persekutuan	1	3.33
Selangor	5	16.67
Negeri Sembilan	0	0.00
Melaka	2	6.67
Johor	2	6.67
Pahang	1	3.33
Terengganu	1	3.33
Kelantan	3	10
Sabah	0	0.00
Sarawak	0	0.00

Table 1 (continued)

From the results, it shows that most of the respondents of this study range are from 21-30 years of age with a percentage of 46.47% compared to the other age range. Gender wise, it shows that the responses come mainly from female compared to male respondents. In terms of race, there are only 1 Indian respondents (3.33%), with 25 Malay respondents (83.33%) and 3 Chinese respondents (3.33%) while 1 respondent comes from the others category. Most of the respondents are students (53.33%) and the second highest percentage (13.33%) comes from education sector, which consists of lecturers, head of departments, librarians, lab technicians, executives and administration staffs. Respondents from the state of Perak, Kedah and Selangor record as the three highest states with returned feedback with percentages of 20% and 16.67% for both Kedah and Selangor respectively.

4.2 Computer and Internet Usage

The result for Section B which addresses the usage of computers and Internet among respondents is described in Table 2. Only 4 respondents (13.33%) do not own computers at home and out of 26 respondents (86.67%) who have, 20 (66.67%) of the computers have access to the Internet connection. When asked about their frequency of using the Internet, 18 respondents (60%) out of 30 rates 4 and 5 of scale from 1 (never) to 5 (very frequent). None of the respondents had never used the Internet.

Category	No. of respondents (#)	Percentage %
Presence of computer at home :		
Yes	26	86.67
No	4	13.33
Computer at home with Internet connection :		
Yes	20	66.67
No	10	33.33
Frequency of Internet usage :		
[1] Never	0	0.00
[2]	2	6.67
[3] Moderate	10	33.33
[4]	13	43.33
[5] Very frequent	5	16.67
* Reasons for using Internet :		
Education	29	34.52
Occupation	4	4.76
Leisure	25	29.76
Entertainment	15	17.86
Others	11	13.10
* Use Internet from :		
Home	10	20.83
Work place	5	10.42
Schools	0	0.00
University	27	56.25
Cyber Café	2	4.17
Public library	4	8.33

* Respondents could tick all that apply

Table 2 : Results on responses from Section B - Computer and Internet Usage

The main reason for using the Internet as rated by respondents is for educational purposes (34.52%) as the main respondents are students, followed by for leisure purposes (29.76%). Other than for occupational and entertainment, respondents stated that they use the Internet for information gathering for their projects as well as to check the daily updates online, namely reading the online newspapers daily. The respondents usually access the Internet mainly from university (56.25%), followed by home (20.83%), work place (10.42%) and public library (8.33%).

4.3 Use of Online Survey in Malaysia

Category	No. of respondents (#)	Percentage %
* Usual method of doing survey :		
Telephone	30	28.57
Mail	32	30.48
Personal at Home	13	12.38
Personal Mall Intercept	25	23.81
Online Survey	5	4.76
Others	0	0.00
Awareness of the existence of survey engine in Malaysia :		
Yes	18	36
No	32	64
* First to know about survey engine through :		
Colleagues	7	29.17
Internet	15	62.5
Others	2	8.33
Experience in using survey engine :		
Yes	5	10
No	45	90
Managed to get the desired information for research using the survey engine :		
Yes	3	60
No	2	40

Table 3 : Results on responses from Section C - Use of Online Survey

Face difficulties when using survey engine :		
Yes	4	80
No	1	20
* Respondents could tick all that apply		

Table 3 (continued)

The last section, Section C, address the usage of survey engine among respondents. The result is described in Table 3, whereby it states 30.48% of respondents have been doing survey for their respective researches through the mail while the other 28.57% prefers using the telephone. Other methods used are personal mall intercept, 23.81% and personal at home, 13%. So far, the use of survey engine as a tool for collecting feedback has been quite low, that is 4.76%. Asked whether they are aware of the existence of survey engine 36% answered yes while the other 64% replied with a no.

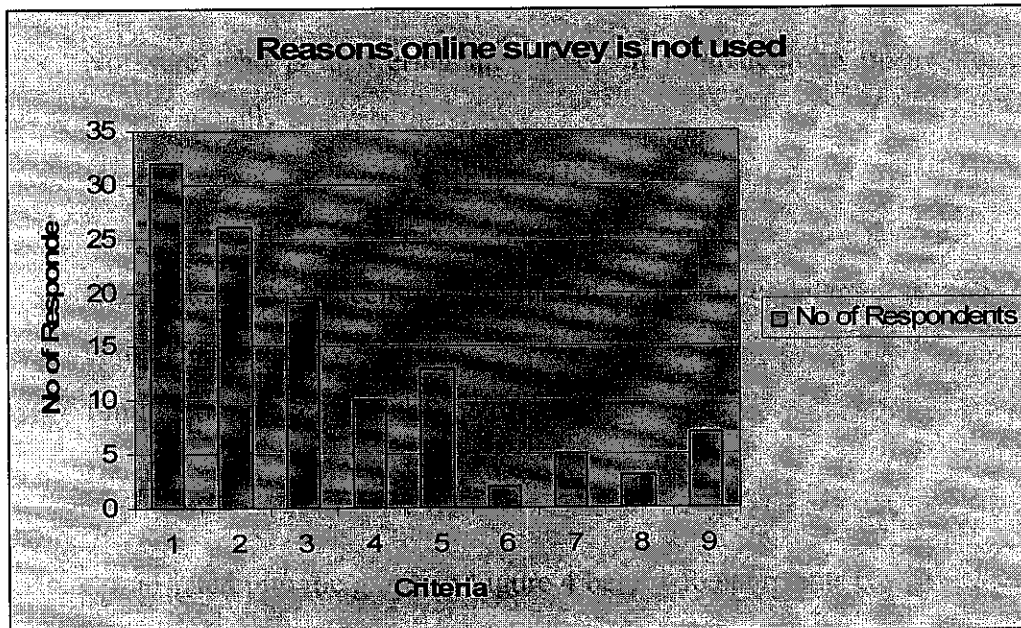
18 of the respondents who knew about the existence of survey engine stated that they knew it mainly from their colleagues (29.17), through the internet (62.5). When asked whether they have any experience in using the survey engine, only 5(10%) stated that they do. However, out of the 5, only 3 (60%) admitted that they managed to find all the information that they were looking for through the survey engine. For those who did not manage to collect the desired information, reasons given include little or no response from respondents, the server is not responding (where as other commercial pages surfed at the same time are available), and the pages loaded very slowly. In addition, 4(80%) stated that they faced difficulties in using the survey engine.

When asked about the reason why those who did not do their research using online survey preferred other methods, answers that can be gathered include:-

- Do not know about the existence of online survey in Malaysia
- Skeptical about the response rate of online survey in Malaysia
- More comfortable using other methods of survey
- Prefer to see and read user's behavior when asking the questions

- Not sure who is answering the survey. It is difficult to insure the desired person actually answers the survey
- Long surveys are more difficult. The personalities of today's online users make it difficult to coerce respondents into completing long surveys
- Difficult to pay incentives online in order to encourage respondents to complete the survey
- Limited or no access to the internet
- Online survey in Malaysia is expensive

The result is translated into the graph in Figure 4 below. Respondents can give more than one answer.



Criteria:

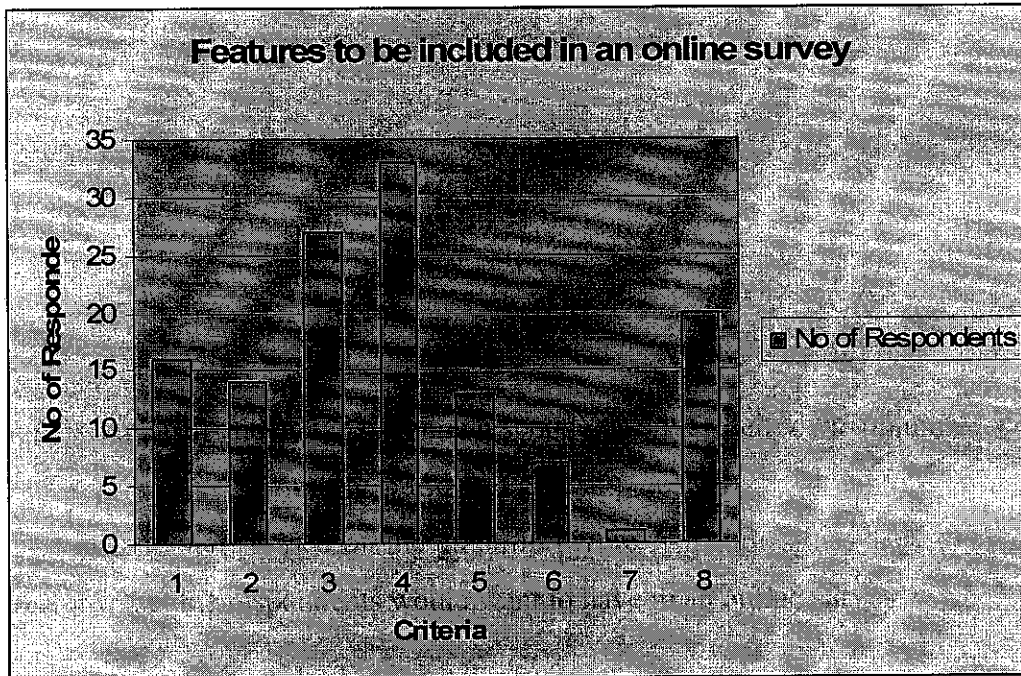
1. Did not know about the existence of online survey in Malaysia
2. Skeptical about the response rate of online survey in Malaysia
3. More comfortable using other methods of survey
4. Prefer to see and read user's behavior when asking the questions
5. It is difficult to insure the desired person actually answers the survey
6. Long surveys are more difficult, hence, hard to coerce respondents into completing long surveys
7. Difficult to pay incentives online in order to encourage respondents to complete the survey
8. Limited or no access to the internet
9. Online survey in Malaysia is expensive

Figure 4: Respondent's reasons for not using online survey in Malaysia

From the graph above, it can be noticed that the majority of the respondents do not even realize about the existence and use of online survey, particularly in Malaysia. It shows that online survey still has not made its name in the eyes of Malaysian researchers. Another reason for not using the online survey is because the respondents are quite skeptical about the effectiveness of the online survey. The respondents, who used the traditional methods of survey such as the telephone or mail did not think that using online survey would return the amount of feedback that they required. In other word, the respondents believe that by asking their target audience personally, be it by telephone or personal at home survey, they would be able to gather more data. Other respondents stated that the reason they prefer traditional survey compared to online survey is because they want to observe the target audiences' behavior when answering the question given. Such behavioral data cannot be accumulated using online survey. Other reason stated in the questionnaires is the inability of the online survey to ensure that the desired person actually answers the question. Using online survey, the questions can be sent to the targeted group either by sending it to their emails or posting it at a website which is related the subject being researched. That is the only way to attract the respondents. Online survey however, cannot ensure that the targeted person actually is the one who answers it. It can be anybody who might not be in the sample group. Hence, the use of traditional method is more practical in ensuring the study to focus only in the targeted group. One more reason is because the nature of the questionnaire being distributed itself. Suppose the questions are long, targeted audience will easily get discouraged. By using online survey, researchers cannot encourage the audience to complete the survey. Furthermore, the use of incentives to encourage the audience to complete the survey would also be difficult when using online survey when compared to using other traditional methods. Other answers to the reasons why the respondents thinks online survey is not so popular in Malaysia is because of no or limited access to the internet and some of the respondents thinks that the present online survey in Malaysia is very costly and not suitable to be used by small organizations.

In other questions, respondents are asked about what factors or features that they think is important that should be included in the online survey should they want to use it. The

question is an open-ended type where respondents give their own opinions. For this question, respondents can opt to put down as many answers as they think is important based on their opinion. Based on the graph in Figure 5, it shows that there are basically eight features that the respondents would want to have in an online survey.



Criteria:

1. Provide a template of questions
2. Provide panel of respondents for answering the questions
3. Cost effective / not to expensive
4. Have simple step-by-step interface
5. Provide instruction to use the online survey effectively
6. Provide guide as to create a good online survey
7. Support multiple language versions of an online survey
8. Able to export result into word processing software

Figure 5 : Respondents' views on the criteria that an online survey should have

As shown in the Figure 5 above, the features that is required most by respondents is for the online survey to have simple step-by-step interface. This is because online survey is still new in Malaysia; hence, not many respondents have an experience of using such system. That is why having an easy to be understand interface is a critical factor. Next on the most required feature is cost-effective. Most respondents are under the impression that the complexity of the survey engine would translate into higher price. That is why they require a more cost-effective solution to be used when using the online survey. Another important feature is the ability to export result into word processing software such as Microsoft Excel or Microsoft Words. The respondents feel that this would really be an advantage as compared to other survey type. Having been able to quickly generate the result and translate it into report is one of the most important features that the respondents think the online survey should have. Another important feature that an online survey should have includes many different templates to help first-time web survey researchers. The next important features include providing a panel of voluntary respondents for researchers who do not have any target group. This is followed by providing sufficient instructions as to effectively utilize the online survey. Some respondents believed that the system should also provide guides for creating good online survey so as to help beginner researchers getting started with their own online survey. The last feature as stated by a respondent is to be able to support multiple language version of an online survey.

4.4 Miscellaneous Findings

In another research which is different from the questionnaire being distributed, findings had shown that online survey has had the highest response rate as compared to other types of survey. However, the data collected is not from Malaysia only. This is the data that have been gathered from all over the places. This shows that although online survey is still new in Malaysia, it has already gained name and popularity of its own in the outside world. This is because people have acknowledged the importance and advantages that online survey can bring to their research process. The graph of the result which is the

highest response rate that can be obtained by each respective survey type is shown in Figure 6 below.

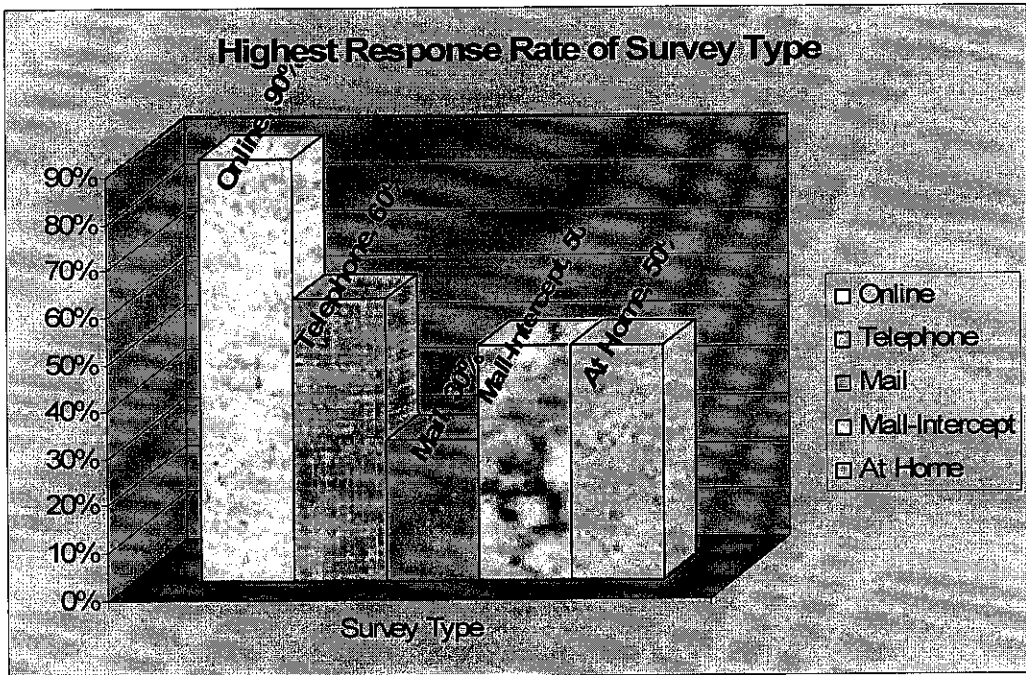


Figure 6: The highest response rate of survey type

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

The primary objective of the study was to identify key issues and limitations in the current online survey provided in Malaysia. From that finding, the second objective is to come up with a more feasible and better product as compared to the online surveys studied based on thorough research on what constitute a good online survey as well as from the feedback given by a group of respondents. The study has fulfilled the objectives of the research. Several general and important references can be made. Based on the findings from previous section, it shows that online survey or survey engine is still in its very first step of being accepted by Malaysian citizens. Malaysian citizens are used to doing surveys the old fashioned way. Although Internet is very frequently used, most Malaysian citizens are not aware of online survey services on the Internet. A lot of efforts have to be made in order to introduce the online survey and its advantages. From the finding also, it is clear that online survey has been getting the highest response rate. Businesses can use the advantages of online survey in order further improve either their work processes or production line or services.

5.2 Recommendations

Based on the findings from previous section, it shows that online survey is still in its very first step of being accepted by Malaysian researchers. In order for online survey to be accepted by researchers in Malaysia, more user-friendly online survey must be built. The two existing online survey are either too big and complicated to be used by smaller organizations or are not available there and then whenever researchers want to use them on the spot. It could take weeks or even months before the online survey can be completed and this would really waste a lot of time.

It cannot be denied, that online survey also has its disadvantages. These disadvantages are some of the reasons why researchers are opting for the traditional survey method when conducting their study. But, in overall, the advantages of online survey outweigh its disadvantages. The quality and features of online survey in Malaysia must be improved in order to give researchers reasons to switch to this better method. Among recommendations are:-

- Come up with an online survey engine that is ready to be used by researcher whenever they feel like to. Researchers can pay for the subscriptions to use the survey engine using online payment and from there, can straightforward proceed to the creation and deployment of online survey. These benefits can certainly attract more researchers to use this system.
- To come up with a system that is cost-effective. In other words, to have an online survey system that delivers all the key functions that would ease the work of the researchers and at the same time would be able to keep expenses at a minimum.
- Ensure the system built is user-friendly and have simple, step-by-step and intuitive interface. This way, new researchers will have no problem in handling the system and when problems can be kept at minimal, researchers will be very

happy, encouraging the switch from the use of traditional survey type to the online survey.

- Promote online survey by creating the simplicity of exporting the result of the survey into other word processing documents so that researchers can easily create reports from their findings.
- Have a system that has a readily provided panel of respondents made available to all researchers who uses the system. This advantage will definitely benefit researchers who want to do a research on a certain subject but do not have any target groups.
- Provide different templates of questions for researchers to ease the creation of questions in the survey. Researchers do not have to type repeatedly basic questions. Instead, if the required question is available in the template, researchers can just click on it, and the question will automatically be copied to the researcher's survey questions.
- Ensure that online assistance is available to users of the system so that the users can fully utilize the use of the online survey. Online assistance can be provided by either providing a help section, enquiry section or even a list of journals can that helps to create a good online survey.
- Provide other research elements results other than graphs that might help researcher's in their research. For example, by providing the min, median, mod, max, and standard deviation of each question, researcher's time is saved greatly for not having to count it one by one for themselves.
- Set the system so that the invitations to answer the survey can be done in many ways such as through the email, using researcher's own website or in a pop up menu.

By providing these advantages in the online survey system, researchers can overlook some of its disadvantages and quickly switch from the tedious and time consuming traditional methods. Researchers can then get more and better data by having access to more populations on the internet for their research. However, as with all other studies, this one is not free from weaknesses. Several limitations of this study qualify for findings and suggest directions for future research. This study lacks the disadvantages of online survey, such as the issues related to sampling frames, response rates, participant deception, and access to populations. The research design could be further improved by Researching more on its disadvantages and coming up with the solutions to overcome it. This study is the first to address the online survey issues in Malaysia. Therefore, it is recommended that other study be carried out, based upon more variables. This will hopefully provide a better insight of the online survey in general as well as in Malaysia.

5.3 Future recommendations of project

5.3.1 Recommendations on the research

The set of questionnaires used for this research has successfully managed to achieve the objectives of the study. However, in the future, if a research related to online survey in Malaysia were to be done, there should be more questions addressing the issues of pricing, more features and limitations. With addition of these questions, it is hoped that more reliable and valid data will be obtained to satisfy the issues of e-government usage among Malaysian citizens.

Apart from that, there should be more on-the-spot follow up questions to the respondents after they have finished answering the questions to resolve any misunderstandings of their inputs when the data is being analysed. For example, when a respondent answer that they do not use online survey services because they are skeptical about the effectiveness of the system, then it would be good if they were asked to clarify in what area are they not confident with

the services, whether it is validity issues, reliability issues, or response rate issue. Even though it will consume a great deal of time by clarifying with each respondent or most of them, it will be able to resolve any ambiguities arising during analysis of results.

Furthermore, in the future, it is hoped that this research will be able to use a focus groups as one of the data collection methods. By using focus groups, this study is able to gather several respondents in one group and ask them to view certain online survey services and their responses can be obtained at once with better physical contacts with the researcher. This will enable them to clearly voice out the responses and opinions.

5.3.2 Recommendations on the system

As for the system developed for this project, it can be enhanced by adding more features in it so that the users will be fully satisfied. These features cannot be integrated with the current system due to the time constraints. For example, users will have more choices of viewing the result if the system is added with a feature of multiple chart type to view the analyzed data. The current system can only view the result in the form of a bar graph. Future enhancements can include pie chart, line graph, scatter graph as well as area graph.

Furthermore, due to the budget constraints, the feature of sending invitations automatically via email is only limited to five respondents. This is because the mail server used to send the emails is a free mail server available on the internet. This mail server limits the email addresses that it can send to only five respondents. In order to be able to send to a larger group of respondents, a better mail server would have to be purchased and this cannot be covered by the budget.

Another recommendation for the future improvement of the system is about the online payment method. The system would be more effective if users can just pay for the subscription fees online, using their credit card.

CHAPTER 6

ISSUES

Towards the end of the research, a startling discovery had been made. The nature of this study is about online survey in Malaysia. Hence, researches had been made to discover the background of the study and from there, to come up with a problem statement. Based on the research which had been conducted since June 2005, there are only two online survey services currently in Malaysia, provided by WEBSE (<http://www.webse.com.my>) and Perseus (<http://www.persues.com>). The service that WEBSE provide is not a readily provided online survey. It is created based on order by customers. In other words, clients have to call and tell WEBSE that an online survey is needed. From there, discussions will be made and subsequently, a survey engine will be produced. The service provided by Perseus on the other hand focuses on large corporations. Its system is complicated with a lot of sophisticated research element combined together. Because of that, the system comes with a price.

From these findings, it is discovered that there is a need for a system that is simple, yet thorough and also feasible to be used by individuals and corporates, large and small. As a result, a system with the qualities as mentioned in the statement before is built. Throughout the development of the system, research is still being done continuously in order to detect any changes in the online survey issues in Malaysia. After the system has been completed, it is discovered that Perseus had put any new addition in their website, which is a system that is almost similar to the system that is built for this project.

Like the system which is built for this project, the new system by Perseus is also simple, implementing the 1-2-3 create-a-survey concept. It is also not complicated, having only

a few basic features of research elements. What's more, this system comes for free. Still, there are some features that separate the system from the one that's being built for this project. For example, the system that's being built for this project provides a panel of readily provided respondents. The system also has a template of questions from which users can choose from. Furthermore, the system provides a function where researchers can send the questionnaires automatically to respondent's email with a click of a button. The new system provided by Persues does not provide all this functions. Below are some screenshots from the new system provided by Persues.

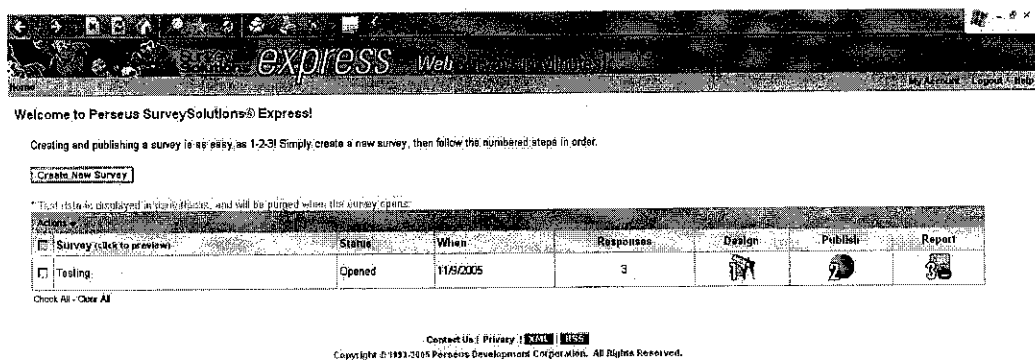


Figure 7: A screenshot of the new system provided by Persues

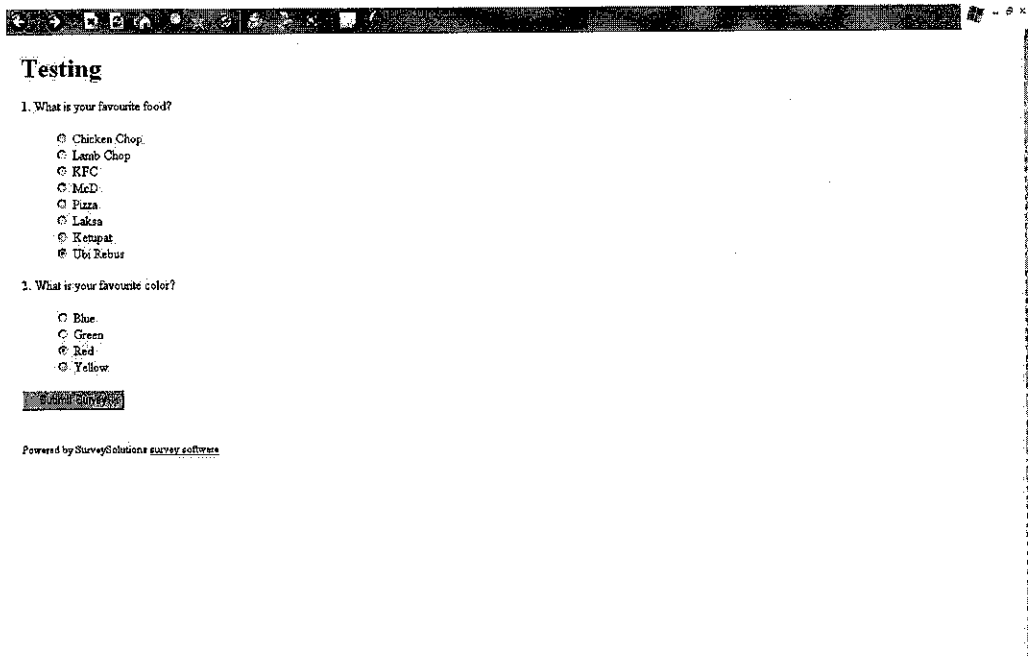


Figure 8: A screenshot of the new system provided by Persues

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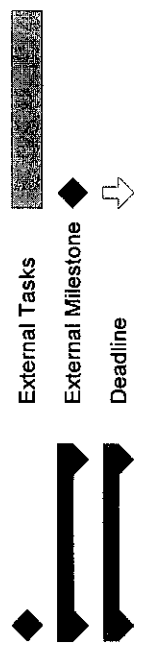
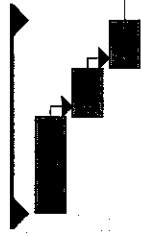
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APPENDICES

APPENDIX A:

PROJECT TIMELINE

Task	Days	Start	End
Research on Title	2 days	Mon 5/9/05	Tue 5/10/05
Decide on Title	1 day	Wed 5/11/05	Wed 5/11/05
Propose Project	1 day	Thu 5/12/05	Thu 5/12/05
Project Planning	4 days	Wed 7/27/05	Mon 8/1/05
Develop Project Plan	4 days	Wed 7/27/05	Mon 8/1/05
Preliminary Research Work	15 days	Tue 8/2/05	Fri 8/19/05
Initial Data Gathering	2 days	Tue 8/2/05	Wed 8/3/05
Detailed Information Gathering	9 days	Thu 8/4/05	Mon 8/15/05
Data Collection	2 days	Thu 8/4/05	Sat 8/6/05
Journal Collection	4 days	Sun 8/7/05	Wed 8/10/05
Questionnaires	3 days	Thu 8/11/05	Mon 8/15/05
Research Analysis	4 days	Tue 8/16/05	Fri 8/19/05
Data Analysis	3 days	Tue 8/16/05	Thu 8/18/05
Analysis Report	1 day	Fri 8/19/05	Fri 8/19/05
Project Design and Prototyping	6 days	Mon 8/22/05	Mon 8/29/05
Interface Design	3 days	Mon 8/22/05	Wed 8/24/05
Database Design	3 days	Thu 8/25/05	Mon 8/29/05
Project Construction	13 days	Tue 8/30/05	Thu 9/15/05
Project Coding	7 days	Tue 8/30/05	Wed 9/7/05
Interface Modification	3 days	Thu 9/8/05	Mon 9/12/05
Output Design	3 days	Tue 9/13/05	Thu 9/15/05
Project Testing	19 days	Fri 9/30/05	Wed 10/26/05
Error Checking	4 days	Fri 9/30/05	Wed 10/5/05
Output Testing	15 days	Thu 10/6/05	Wed 10/26/05
Report Compilation	17 days	Thu 10/27/05	Fri 11/18/05
Presentation	11 days	Mon 11/28/05	Mon 12/12/05
Presentation Preparation	10 days	Mon 11/28/05	Fri 12/9/05
Final Presentation	1 day	Mon 12/12/05	Mon 12/12/05



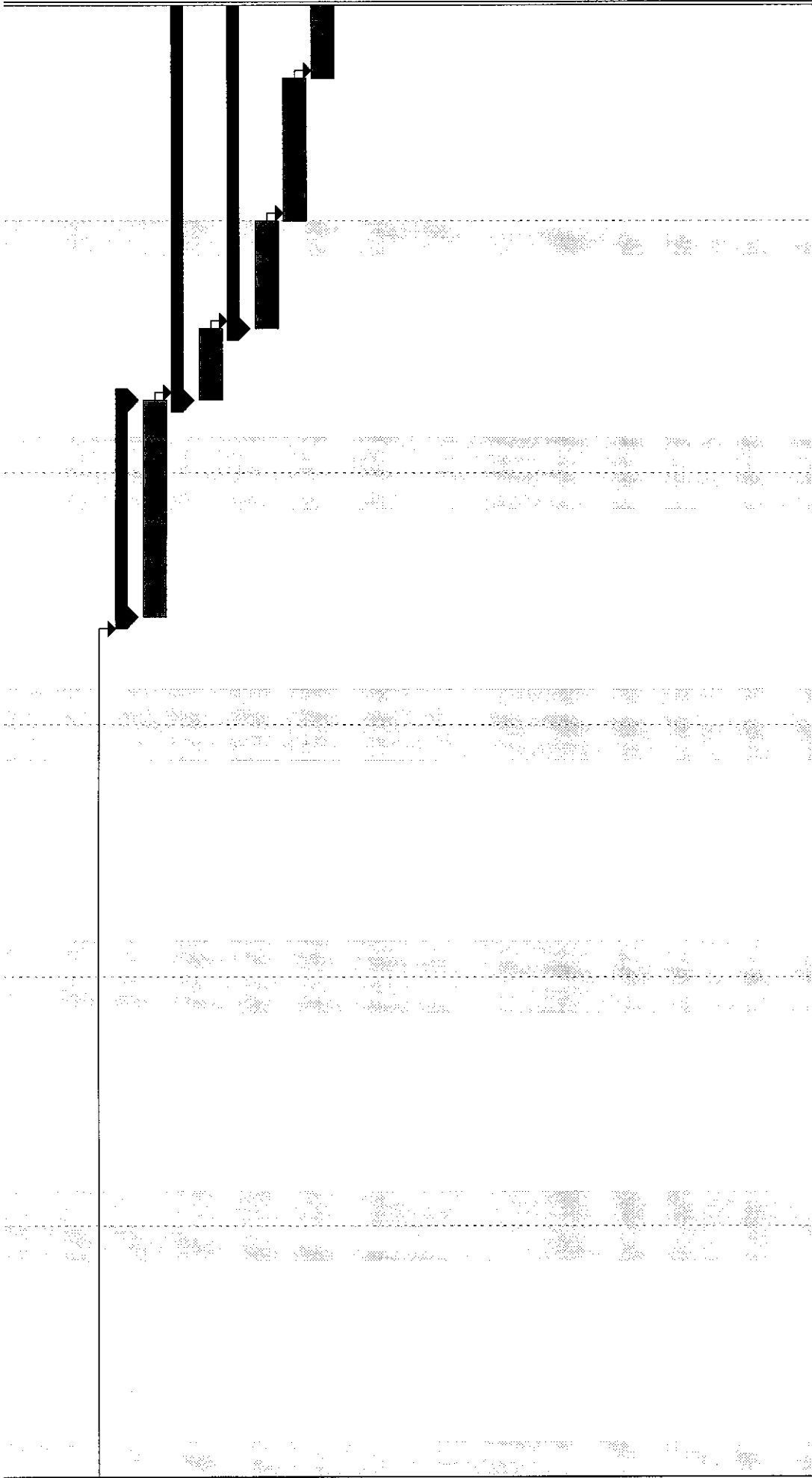
Task
Split
Progress


Project: SEMS 2
Date: Tue 12/13/05


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Project: SEMS 2
Date: Tue 12/13/05


Task		Milestone	
Split		Summary	External Milestone
Progress		Project Summary	Deadline





External Tasks 

External Milestone 

Deadline 

Milestone 

Summary 

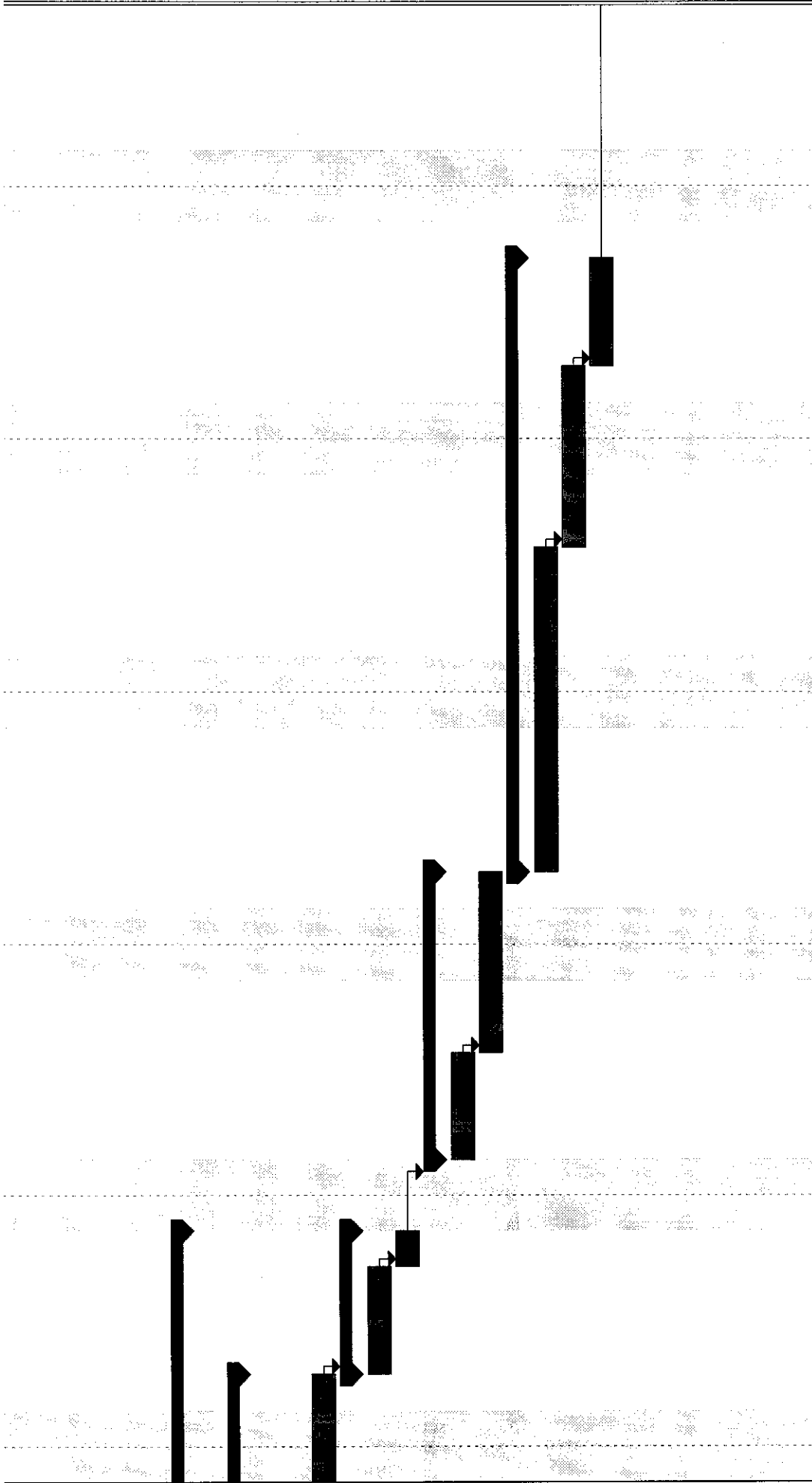
Project Summary 

Task 

Split 

Progress 

Project: SEMS 2
 Date: Tue 12/13/05

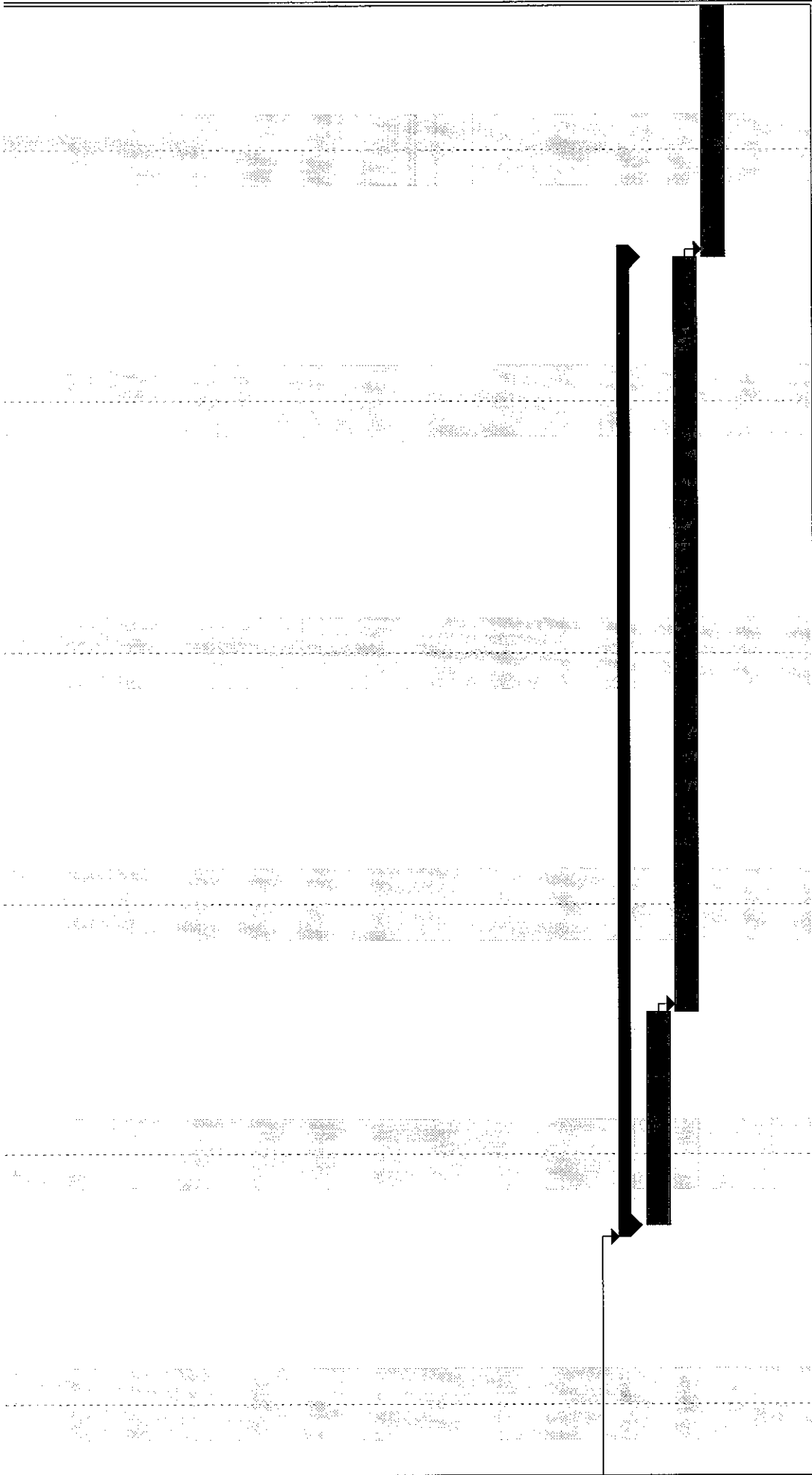



Project: SEMS 2
 Date: Tue 12/13/05


Task
 Split
 Progress


Milestone
 Summary
 Project Summary


External Tasks
 External Milestone
 Deadline





External Tasks 

External Milestone 

Deadline 

Milestone 

Summary 

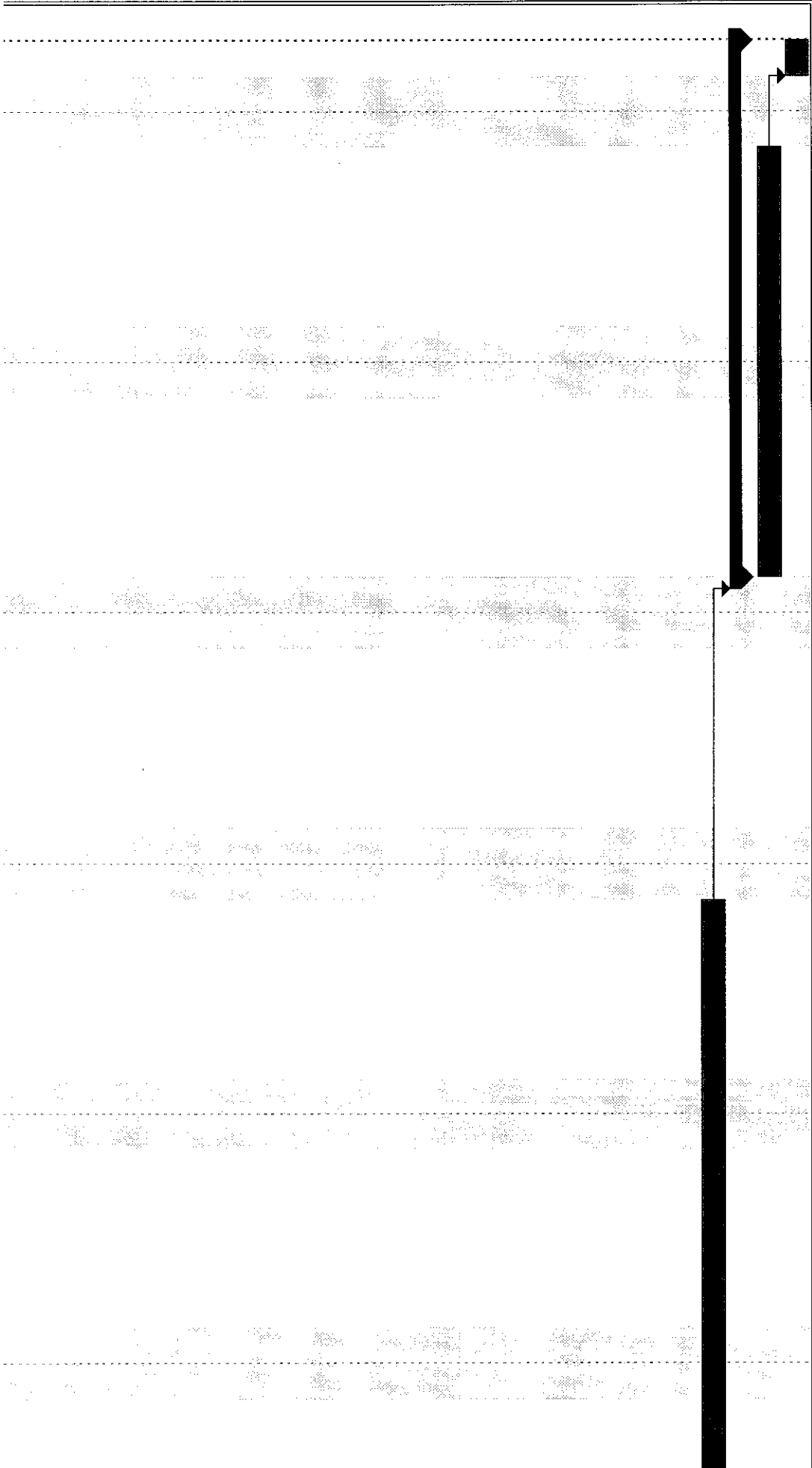
Project Summary 

Task 

Split 

Progress 

Project: SEMS 2
 Date: Tue 12/13/05



External Tasks

External Milestone

Deadline

Milestone

Summary

Project Summary

Task

Split

Progress

Project: SEMS 2
Date: Tue 12/13/05

APPENDIX B:

QUESTIONNAIRE SAMPLE

QUESTIONNAIRES (ONLINE SURVEY IN MALAYSIA)

Dear valued user,

Please take a moment to fill in this questionnaire about *Online Survey in Malaysia*. Your cooperation is appreciated. Please bold your answers.

SECTION A : RESPONDENT'S BACKGROUND

Q1. What is your age range?

- ◆ 15 – 20 years
- ◆ 21 – 25 years
- ◆ **26 – 30 years**
- ◆ 31 – 35 years
- ◆ 36 – 40 years
- ◆ 41 – 45 years
- ◆ 46 – 50 years
- ◆ 51 – 55 years
- ◆ 56 – 60 years
- ◆ > 60 years

Q2. What is your gender?

- ◆ **Male**
- ◆ Female

Q3. What is your race?

- ◆ Malay
- ◆ **Chinese**
- ◆ Indian
- ◆ Siamese
- ◆ Sabahan or Sarawakian bumiputeras

Q4. What is your employment category?

- ◆ Banking or finance
- ◆ Administration
- ◆ Education sector
- ◆ Executive
- ◆ Business
- ◆ Student
- ◆ Trainee
- ◆ Self employed
- ◆ Retiree
- ◆ Supported by partner
- ◆ Others (please specify) : IT Specialist

Q5. Which state are you from?

Wilayah Persekutuan

Q6. Which state are you currently working in?

Wilayah Persekutuan

SECTION B : COMPUTER AND INTERNET USAGE

Q1. Do you have a computer at home? *

- ◆ Yes
- ◆ No

**(If your answer is 'No', skip question 2 and proceed to question 3, onwards)*

Q2. Does your computer have an Internet line?

- ◆ Yes
- ◆ No

Q3. How frequent do you utilize Internet connection?

1 2 3 4 5
Never Moderate Very frequent

Q4. What is your MAIN REASON for using the Internet?

- ◆ Education
- ◆ **Occupation**
- ◆ Leisure
- ◆ Entertainment
- ◆ Others (please justify) : _____

Q5. Where do you usually access the Internet?

- ◆ Home
- ◆ **Workplace**
- ◆ School
- ◆ Cyber cafe
- ◆ Public Library
- ◆ University
- ◆ Others (please justify) : _____

SECTION C : USE OF ONLINE SURVEY IN MALAYSIA

Q1. Have you ever done any kind of survey before? *

- ◆ Yes
- ◆ No

**(If your answer is 'No', proceed to question 3 and 4, only)*

Q2. What is the usual method that you used when conducting a survey?

- ◆ **Telephone**
- ◆ Mail
- ◆ Personal at Home
- ◆ Personal Mall Intercept
- ◆ Online Survey
- ◆ Others (please justify) : _____

Q3. Are you aware of the existence of survey engine in Malaysia?

- ◆ Yes
- ◆ No

**(If your answer is 'No', skip question 4 and proceed to question 5, onwards)*

Q4. How did you first know about survey engine in Malaysia?

- ◆ Colleague
- ◆ **Internet**
- ◆ Others (please justify) : _____

Q5. Do you have any experiences in using online survey before?

- ◆ Yes
- ◆ No

**(If your answer is 'No', skip question 6 and 7 and proceed to question 8, onwards)*

Q6. Did you managed to get the desired information using the online survey?

- ◆ Yes
- ◆ **No (please justify)**
Insufficient Response from Respondents

Q7. Did you face any difficulties when using the online survey?

- ◆ **Yes (please justify)**
The pages load very slowly
- ◆ No

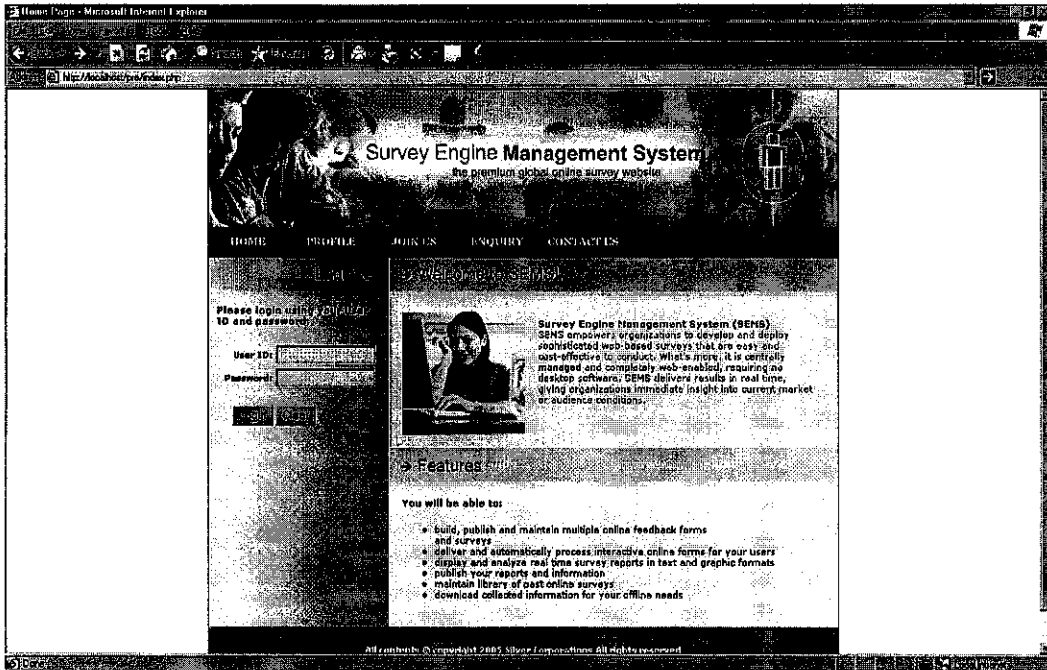
Q8. Why didn't you use online survey as your method of gathering survey data?

Q9. What are the features that you would like a survey engine to have?

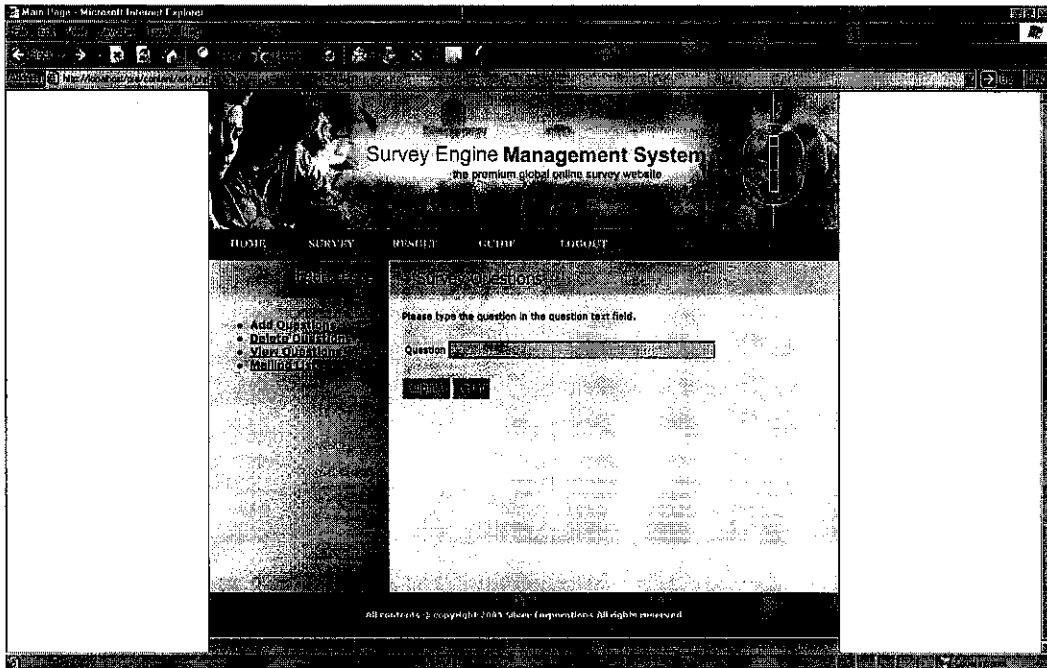
cheap

APPENDIX C:

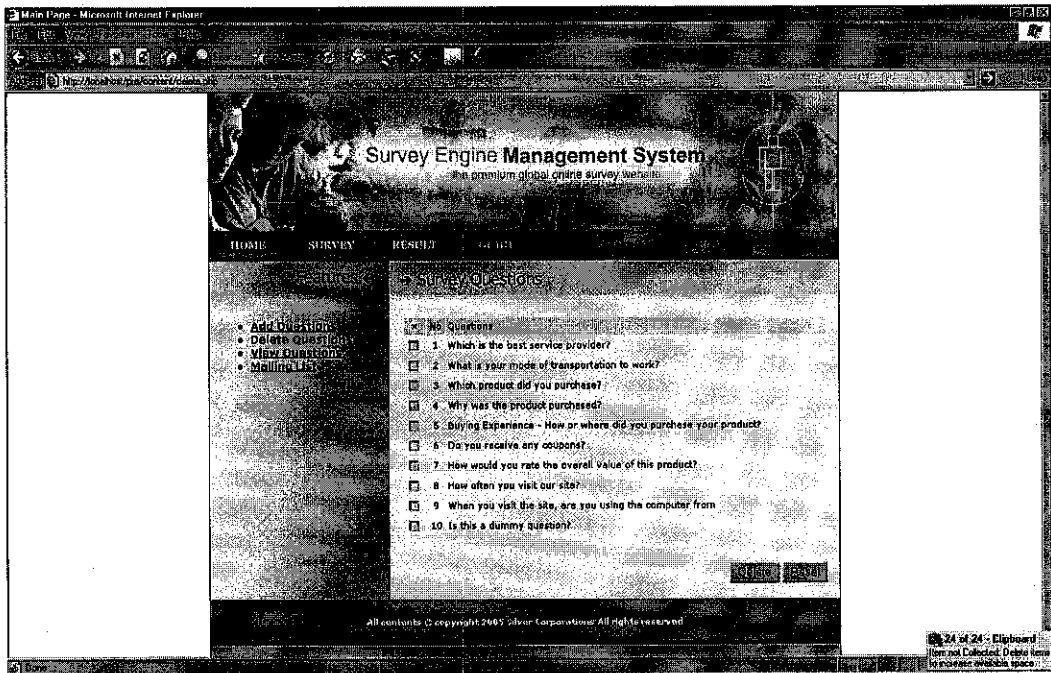
SYSTEM SCREENSHOTS



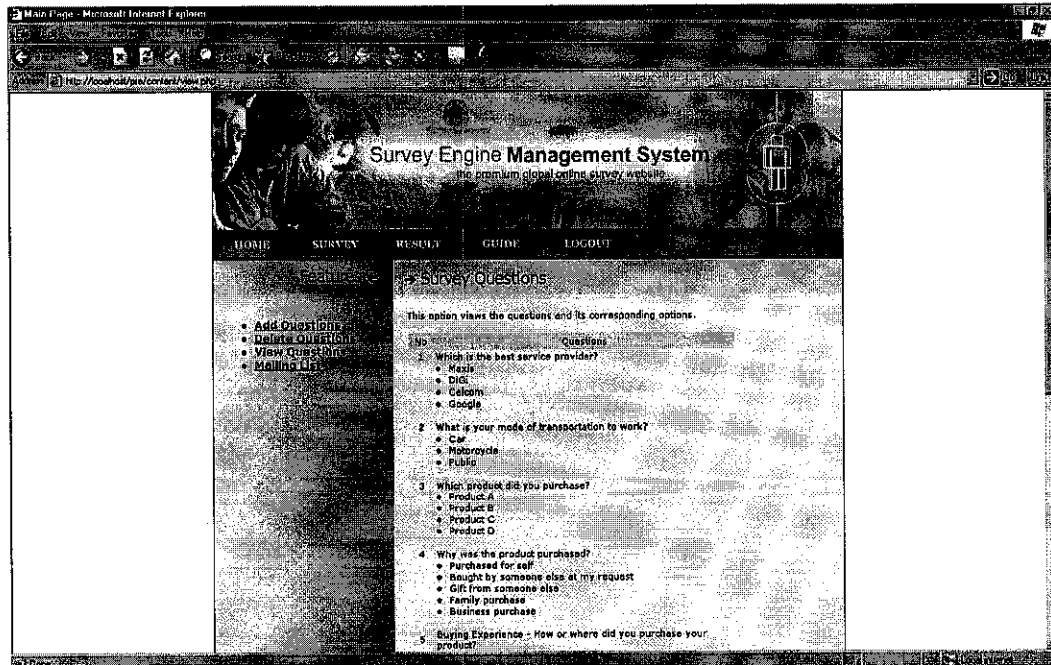
Appendix C : Login Page



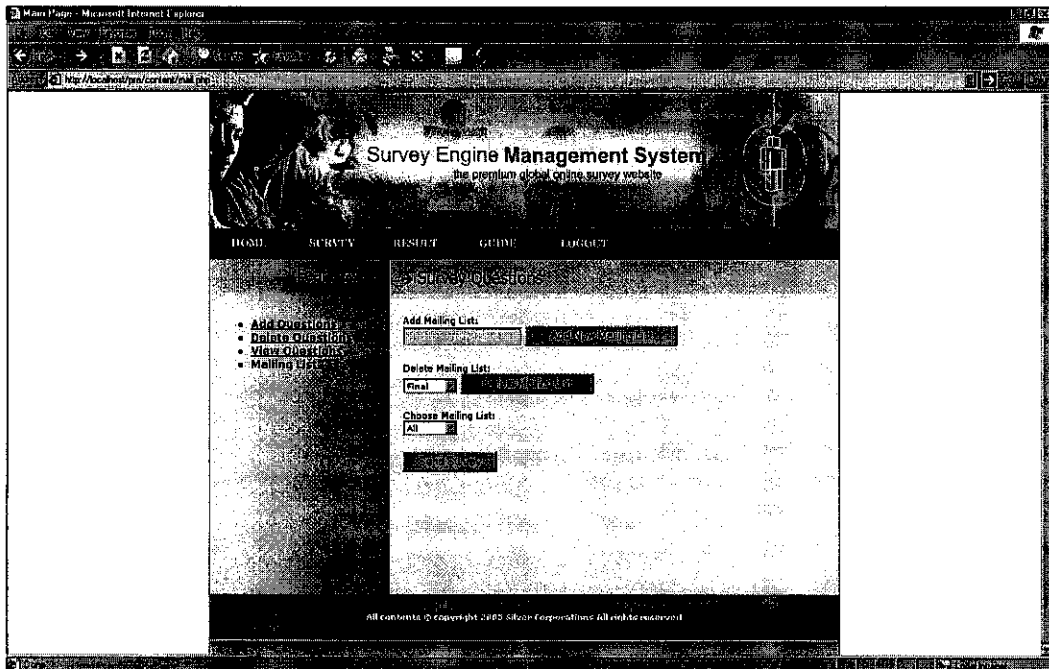
Appendix C : Add Question Page



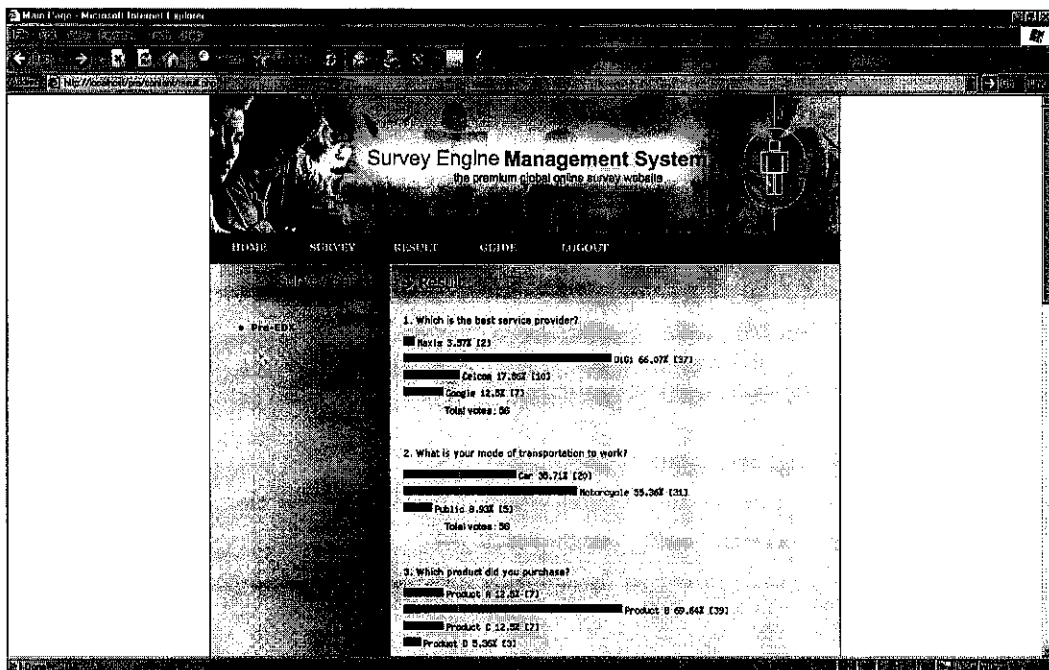
Appendix C : Delete Questions Page



Appendix C : Preview Survey Page



Appendix C : Send Survey Page



Appendix C : View Results Page

