

ONLINE LIBRARY SERVICES WITH LIVE CUSTOMER SUPPORT

by

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Dissertation submitted

In partial fulfillment of the requirement for the

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CERTIFICATION OF APPROVAL

Online Library Services with Live Customer Support

By

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A project dissertation submitted to the

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Approved by,

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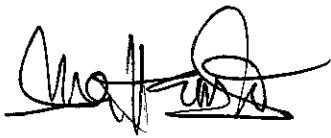
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TRONOH, PERAK

June 2004

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 the original work contained herein have not been undertaken or done by unspecified sources or person.



WAN MAHANI WAN HASHIM

2050

ABSTRACT

The popularity of Internet as it capable to handle various type of multimedia formats, give a new face for the community to change an idea and information. Main purpose of developing the portal is to use the information technology and multimedia widely. Many organizations nowadays use an internet as a medium to promote their organization and a place to interact with the user. User can logon to an organization portal and use the facilities provided.

Currently, the problem is the customer support services provided is not efficient enough for the organization and for the user itself. If user has any problem regarding the portal, they only can interact with the customer services by calling the office or send an email to the administration of the portal. This way is not very user-friendly and user has to wait for a long time to get the response from the organization.

In order to overcome the problem, an Online Library Services with Live Customer Support should be developed. The objective of the project is to give online facilities to the user to interact with an operator of the portal. This can enables live customer support and visitor communication directly from the website. Provides real-time customer service support from any computer, anywhere!

As a conclusion, Online Library Services with Live Customer Support can provide an efficient user service by the organization.

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CHAPTER 1

INTRODUCTION

1.1 Background of study

Online Library Services (OLS) with Live Customer Support (LCS) is a portal that provides many services to the user. The main purpose of developing the portal is to use the information technology and multimedia widely. The portal can be used as an aid or instrument of communication, information searching and reference. User can search and find the information about book in that library. From the use of technology of web-based application, it can provide an advantage to the whole community, residents, students, lectures, teachers, researchers and others.

By using Live Customer Support Services (LCS), an organization can provide assistance in real-time, answer visitor questions and add that extra customer care touch. Human interaction goes a long way especially on the Net. LCS uses direct dialog to build customer loyalty and provide extra attention to the visitors deserve. In our ever growing *High-Tech* world, a human interaction goes a long way. Sometimes, a single product/service question answered from a live support person could be enough to make the sale. Up-selling and cross-selling of other products/services are also an important part in the sales process. Being there to provide important information is most critical at the point of purchase. This not only ensures higher sales revenues but also adds credibility to your product/service and company. LCS can help the organization to accomplish the level of client care required to keep the organization ahead of competitors.

LCS can also reduce cost. Phone, fax, staff and other major costs of operation can be greatly reduced by a single live support or sales representative. LCS will enable the organization to communicate instantly with the visitors and pass crucial information at virtually no cost.

Online Library Services with Live Customer Support is a strategy used to learn more about customers' needs and behaviors in order to develop stronger relationships with them. After all, good customer relationships are at the heart of business success. Live Customer Support (LCS) can increase up customer relationship with the organization.

It is a hope that this online library services can become one stop center for the entire community and become a very preferable and powerful portal among other services.

1.2 Problem Statement

The usage of information technology and multimedia become broadly nowadays. In Malaysia the organization does not implement the system yet. OLS provides a variety of information to the user. User doesn't have to call an operator or open the directory to search the information. They just have to login to the web portal and search what they want to find. They also can use LCS in order to get further information regarding web portal or about the information needed. The system can be implemented for the organization web portal to support the customer support services.

Online Library Services provide services that user can search the details of the book only. User cannot know the status of the book if it is on the shelf. Users also cannot book the book they want to borrow. By using LCS they can make it through online and real time. So the librarian in charge can give whatever information users want and users also can book the book they want to borrow. User also can find out the status of their book whether it's overdue.

1.3 Objective

The objectives of this project are:

- i. To develop a portal that lets user search a variety of information globally and give better services according to user's needs and requirement.
- ii. To attract the use of information technology and multimedia among the user and provide current information and data those are very useful to the user.
- iii. To bring Online Library Services with Live Customer Support as a road to the world class physical and information infrastructure.
- iv. Online Library Services with Live Customer Support can become an effective online service and be one stop solution information.

1.4 Scope of study

Online Library Services with Live Customer Support will be implemented in web-based environment. The portal is developing for any library usage. All the information and data are according to the customer information services. The whole world can use this web page to search for the information. User also can view the information in alphabetical order and according to the services. This portal is open for all users. But for certain module, only registered user can use it. Every user who log on to the website can use the Live Customer Support services. The services will be open to the user during office hour. An operator in-charge will help the user.

This portal consists of several modules:

i. Online Library Services Module

a) Book Searching

User can search the books by typing the keyword.

b) Dictionary / Keyword Searching

User can search the meaning of the any word by typing the keyword in provided textboxes

ii. Live Customer Support Module

User can communicate with operator online through real time.

iii. Customer Services Module

User has to register in order to use the facilities provided.

iv. Administration Module

Pages where administrators upload all the information and data about the books and dictionary in online library services and operate Live Customer Support services.

CHAPTER 2

LITERATURE REVIEW

The internet is fast, versatile business environment. However studies reveal, that despite this, 90% of online buyers would prefer to make purchases via human interaction. The increasing growth of internet user, made web technology now accessible to varieties of users that have different degree of knowledge, skills and preferences.

2.1 Online Library Services

Online Library Services is a portal that provides many services to the user. Perpustakaan Negara Malaysia aspires to be a world class library in the provision of excellent information services towards the realization of Malaysia's Vision of becoming an industrialized and developed nation by the year 2020 (Vision 2020). With its multifarious functions and services, supported by high-tech facilities and a well-qualified team committed to excellence, Perpustakaan Negara Malaysia is poised to lead the nation in its pursuit of knowledge.

In consonance with the government's objective to create a reading and informed society, the National Policy for Library and Information Services aims at the provision and progressive improvement of library facilities and services in order to contribute effectively to national development and provide, in particular, effective support for:-

- the policy formulation and decision and decision making process;
- planning, research and development activity;
- the educational process;
- the intellectual development of the people, their economic activity and the fulfillment of their cultural and recreational needs;

The National Library of Malaysia is an excellent and premier library in this region that can provide and channel reference and research information in various media to be enjoyed by all levels of society in the country. National Library of Malaysia want to ensure that all Malaysians regardless of their status and locations shall have equal access to library services and facilities, as well as, have the capability to utilize the Malaysian and universal intellectual heritage through the integrated knowledge infrastructure of electronic libraries of the nation.

Objectives of developing the library are:

- To make available for the use of present and future generation a national collection of library resources
- To facilitate nation wide access to library resources available within the country and abroad
- To provide leadership on matters pertaining to libraries.

A few strategies are:

- Ensuring that Malaysia's intellectual heritage as well as, all the latest and retrospective Malaysiana publications are collected for the convenience of researchers and for the reference of present and future generations
- Ensuring that the Malaysiana databases and publications of the National Library of Malaysia on Malaysia's sources are always up to date
- Forging strategic alliances with related agencies in order to consolidate the library and information service infrastructure of the nation
- Preparing standards and guidelines for the development of Centers of Excellence in specific fields of information
- Development of long and short term action plans to establish a library and information network throughout the nation
- Promotion of various library services including sources of information on the nation's products at national and international levels.

The Internet generation is all grown up and has moved on to college, but they haven't left their Internet habits behind with their old prom dates. According to a new report by the Pew Internet & American Life project, 73 % of college students use the Internet more than the library for research. Steve Jones, a Pew research fellow and head of the communications department at the University of Illinois Chicago, says libraries have been evolving ever since they started putting card catalogs into electronic form. Now, he says, collections and journals are finding their way online. He says the findings shouldn't alarm librarians.

"They're not going away," Jones says. "They're going to be sticking around, but the nature of what they do have been changing for the last 15 to 20 years. The vast majority of what's in a library at present is not available electronically. The library plays an important role being a portal to that information." Jones says that 20 years ago, when he was a student, the college library was a place to study and socialize. Nowadays, he says, students go to the library with one mission—to do research. "Students are much more purposeful now," Jones says. "Many go there to study or get materials."

The survey also found that college Internet users are twice as likely as the population at large to download music. However, Jones notes, the more compelling finding (for academics at least) is that 38 % of students use the Internet mostly for academics. "Everyone knows college students go online a lot," Jones says. "Everyone seems to think that they're just downloading music, but they also do a lot of academic stuff, too."

Communicating with classmates, friends and professors also rate high with college students. According to the survey, 42 % of respondents use the Internet to stay in touch with their friends. Nearly half (46 %) say that they use e-mail to ask questions of professors that they wouldn't in class. Jones says peer pressure factors into some of that, but he also says that good questions don't always come up during class discussions. If students have thoughts after hours, they can use e-mail to get their messages to classmates and professors. "Students' days are pretty heavily scheduled," Jones says, "so they're using email and IM to stay in touch with their professors and classmates."

2.2 PHP Live! – Live Customer Support Solution

There are many online services that provide live customer support. Its can provide many benefits to the organization and customer. One of the services is PHP Live! – Live Customer Support Solution. PHP Live! Live Customer Support Solution enables live customer support and visitor communication directly from the webpage. It does provide real-time sales and/or customer services support from any computer, anywhere. With PHP Live! The webpage can provide assistance in real time, answer visitor questions and that extra customer care touch. Human interaction goes a long way especially on the Net. PHP Live! Use the direct dialog to build customer loyalty and provide the extra attention the visitors deserve.

2.2.1 Benefits of PHP Live! Customer Support

- i) **Real-time web-based support and sales chat with website visitors**
Chat live with the customer on one to one basis solve their queries at the point of their buying interest. This helps in closing sales faster. Live support brings more confidence to the customers.
- ii) **Increase sales and sales conversion**
Make web site live and interactive, offer best customer care services, support them when they need. Help multiple customers at the same time, this reduces cost and improves response time.
- iii) **Simple solution for your business needs**
CRM (customer relation management) solution at no big expense, Easy in setup/use, monitors your site visitors from any where. Keep log even if you are offline. Very affordable hosted software application even for small business houses.

- iv) **Increase customer support and client retention**
 With the help of traffic monitor, operator can quickly view where each visitor has clicked from, which page they are currently viewing and how long they have been on the site. The information can be vital in lending targeted support. This will gain an understanding of the visitors before the chat interaction. Visitors will thank you for the considerate and targeted support.

- v) **Decrease phone and other operational costs**
 Phone, fax, staff and other major cost of operation can be greatly reduced by a single live support or sales representative. Live Customer Support will enable you to communicate instantly with the visitors and pass crucial information at virtually no cost.

- vi) **Track your ad click-through rates and provide targeted support**
 Live Customer Support able to view visitors as they navigate through the website and gather other crucial data that is assent in understanding the website traffic.

2.2.2 Features of PHP Live! – Live Customer Support Solution

PHP Live! Is the leading solution that delivers the most feature powerful tool needed to begin providing LIVE sales and customer support on the websites?

FEATURES	
Real-Time Communication	
Real-time Chats	✓
Multiple Chat Requests	✓
Operator-to-Operator Chats	✓
"Party is typing" Notify	✓
Email Signature	✓
Auto Save Transcripts	✓
Search Transcripts	✓
Department Share Transcripts	✓
Email Transcripts	✓

Capture Visitor Data	✓
Sales and Marketing	
Ad Tracking (Track' it)	✓
Track Visitor Refer URL	✓
Initiate (Proactive) Chat	✓
Proactive Survey Exclusive!	✓
PUSH HTML pages	✓
Customization and Administration	
Operator Console Monitor	✓
Operator Online/Offline Activity Monitor	✓
Department Chat Icons Exclusive!	✓
TEXT LINK to support	✓
Remote Administration	✓
Time Zone Setup	✓
Reporting and Stats	
Operator Rating System	✓
Visitor Traffic Monitor	✓
Daily Request Reports	✓
Log Transcripts	✓
Efficiency Control	
Knowledge Base (FAQ) Integration	✓
Assign Operator to Multiple Departments	✓
Canned Responses	✓
Canned Commands	✓
Department Canned Responses	✓
Set Operator Request Order	✓
Request Load Balancing	✓
Request Polling	✓
Set Request Polling Type	✓
Transfer Calls	✓
Support Hour Message	✓
Sound Request Alert	✓
Leave a Message	✓
Source Code Advantage	
Runs on Your Server and Domain	✓

Table 2.1: Features of PHP Live!

2.2.3 PHP Live! Screenshots

PHP Live is simple to install. The installation needed for source code version only: web based setup wizard - easy to configure packed with features and tools you need to maximize the support and sales potential.

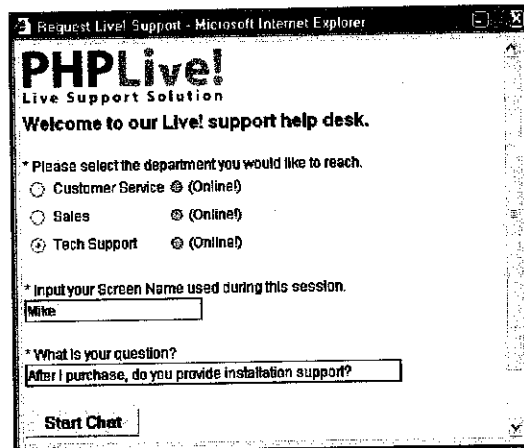


Figure 2.1: Chat Request Window

Customize the support logo and text, create unlimited department with a single PHP Live installation.

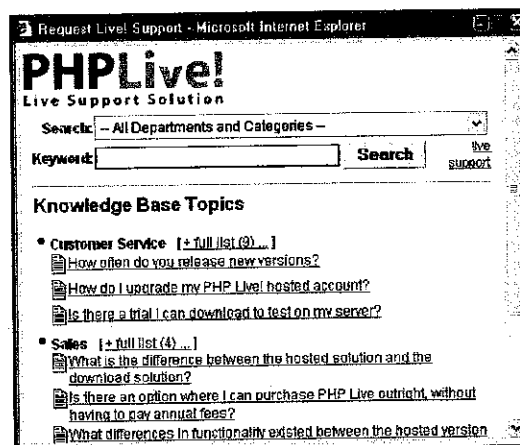


Figure 2.2: Knowledge Base Integration

Self-service knowledge Base allows your visitors to search for answers prior to support or when the operators are offline.

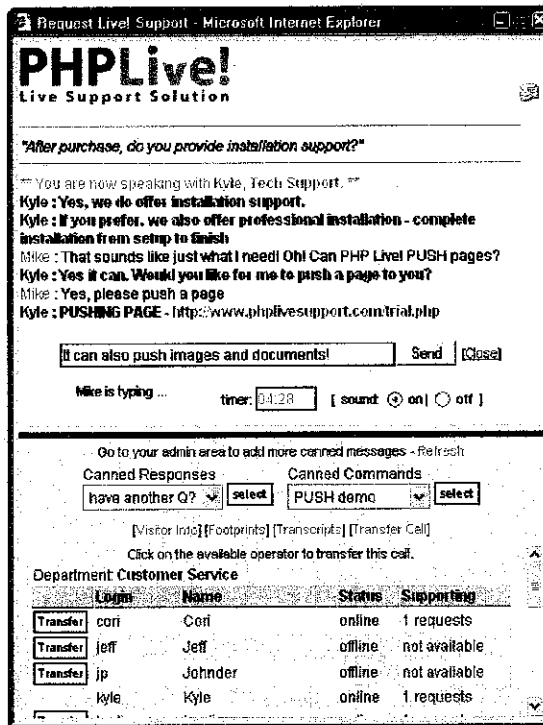


Figure 2.3: Chat Window (operator)

Operators can view visitor's footprints, time zone and previous chat transcript. Operators can also transfer a call to other online operators.

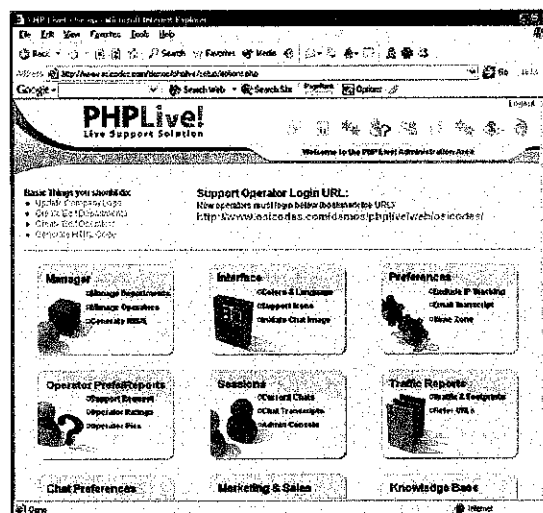


Figure 2.4: System Setup Area

Manage the unlimited operators and unlimited departments; customize the window colors and language, build the service Knowledge Base and many more.

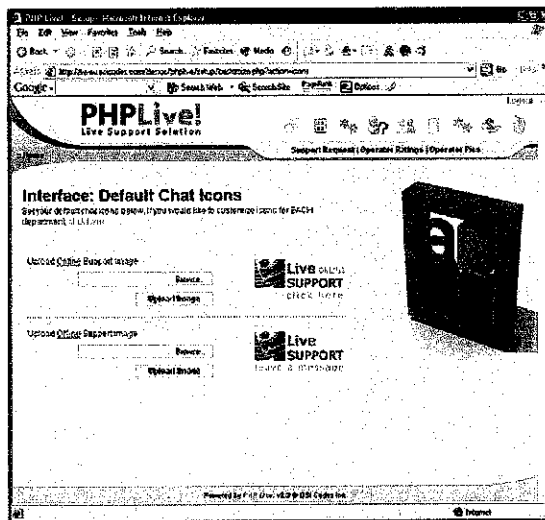


Figure 2.5: System Setup (Customize Chat Icons)

PHP Live makes it easy for you to upload our own personal chat icons directly to the browser. Just click and upload.

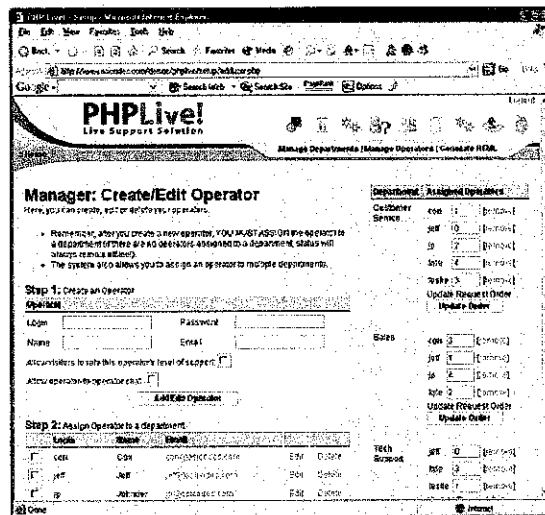


Figure 2.6: System setup (Manage Operators)

Assign a single operator to multiple departments using a friendly web interface.

2.2.4 Support for Support

In spite of questionable performance and mounting budget pressures on IT departments, automated or online support (dubbed e-support by Gartner) for enterprise hardware and software systems remain popular among many businesses, according to a recent survey.

Gartner surveyed 223 North American users of IT support solutions and found that 73 % planned to use and invest in e-support technologies in the next year. They said this even though 52 % indicated that e-support did not effectively solve their problems. E-support could be an application that is deployed internally, or it may be a support portal (from a vendor). Robert Igou, principal analyst in Gartner's IT management sector, says companies are enthusiastic about the prospects of e-support. "They see value in it, and they plan to do more of it. They use it to keep costs down and to scale the resources that they have," Igou says. "However, the budget pressures that IT organizations are facing are good reasons to expect that it won't happen in the future."

The survey helps buoy Igou's point as 60 % of respondents listed budget restrictions as the primary barrier to adoption. According to previous Gartner research, 2003 marks the third straight year of high-level cost pressures and budget constraints facing IT departments. Although telephone support is more popular, there is a business case for e-support, says Igou. By deploying an e-support application (or portal), companies can cut costs on their help desk and potentially improve the efficiency (time) with which problems are solved. "E-support allows companies to keep their costs down and allows them to scale the resources that they have," Igou says. One reason e-support hasn't met expectations, according to Igou, is that neither vendors nor buyers of e-support applications promote its use enough. Igou says companies need to promote e-support and train users to achieve the touted benefits. "If people don't know about it, they won't use it," Igou says. "The more awareness a company (or vendor) creates around a product, the more people will use it."

And for those who are using e-support, many think it could work better. More than half (54 %) of respondents said the availability/reliability of Web-based support needed improvement. Igou says the future success of e-support will depend on four factors: availability (Can I get support?), content (Can I get the right answer?), response time (How long must I wait for the right answer?) and security (Does this portal protect my company data?). According to the survey, larger businesses (more than 2,500 employees) seem more eager to use e-support as 80 % of respondents in that category said they plan to use it more. Smaller companies (fewer than 100 employees) were less likely to use e-support as only 45 % indicated a future interest.

2.3 Customer Relation Management (CRM)

2.3.1 What is CRM?

CRM stands for Customer Relationship Management. It is a strategy used to learn more about customers' needs and behaviors in order to develop stronger relationships with them. After all, good customer relationships are at the heart of business success. There are many technological components to CRM, but thinking about CRM in primarily technological terms is a mistake. The more useful way to think about CRM is as a process that will help bring together lots of pieces of information about customers, sales, marketing effectiveness, responsiveness and market trends.

The term has been applied to almost every element of business that even remotely interacts with a customer. According to Randy Harris 2003, Customer Relationship Management is about maximizing value with the customer. In this competitive global economy, a key business strategy is focused on infrastructure and delivery of business processes to manage and deliver customer value across multiple channels. CRM systems were a series of mainframe or server-based applications specific to sales, marketing and support business functions. The applications were lightweight by today's standards and did little more than capture and file critical data. But as cultural boundaries within organizations weakened, individual fiefdoms of information gave way to sophisticated applications that could span business functions. By doing so, these applications created the vision of a single view of the customer. For the first

time, organizations could track and analyze shifting customer needs, link marketing campaigns to sales results, and monitor sales activities for improved forecasting accuracy and manufacturing demand.

In other word, CRM is a comprehensive approach which provides seamless integration of every area of business that touches the customer - namely marketing; sales, customer service and field support-through the integration of people, process and technology, taking advantage of the revolutionary impact of the Internet. CRM creates a mutually beneficial relationship with the customers. CRM is an information industry term for methodologies, software, and usually Internet capabilities that help an enterprise manage customer relationships in an organized way. For example, an enterprise might build a database about its customers that described relationships in sufficient detail so that management, salespeople, people providing service, and perhaps the customer directly could access information, match customer needs with product plans and offerings, remind customers of service requirements, know what other products a customer had purchased, and so forth. Live Customer Support (LCS) can increase up customer relationship with the organization.

2.3.2 Why is CRM Important?

The task of implementing and maintaining a CRM solution can seem overwhelming. But, when the goal of cheaper, faster, better customer service is considered, the results far outweigh the challenges. CRM, at no time, has been more crucial than it is today with heightened attention to cost cutting, revenue generation and customer retention. CRM is not just a software solution, but also a set of skills and competencies that will enable a company to better leverage and profit from each and every customer relationship. In a tough economy, competition is more evident than at any other time, and the ability to compete on the basis of customer relationships is more important than ever.

According to one industry view, CRM consists of:

- Helping an enterprise to enable its marketing departments to identify and target their best customers, manage marketing campaigns with clear goals and objectives, and generate quality leads for the sales team.

- Assisting the organization to improve telesales, account, and sales management by optimizing information shared by multiple employees, and streamlining existing processes (for example, taking orders using mobile devices).
- Allowing the formation of individualized relationships with customers, with the aim of improving customer satisfaction and maximizing profits; identifying the most profitable customers and providing them the highest level of service.
- Providing employees with the information and processes necessary to know their customers, understand their needs, and effectively build relationships between the company, its customer base, and distribution partners.

2.3.3 What is the goal of CRM?

The idea of CRM is that it helps businesses use technology and human resources to gain insight into the behavior of customers and the value of those customers. If it works as hoped, a business can:

- provide better customer service
- make call centers more efficient
- cross sell products more effectively
- help sales staff close deals faster
- simplify marketing and sales processes
- discover new customers
- increase customer revenues

2.3.4 CRM's Evolution

Every system has its own evolution. CRM has evolved since its earliest incarnation, originally driven by an inside-out focus, through three phases of evolution: technology, integration and process.

- **Technology**

In its earliest incarnation, CRM meant applying automation to existing sales, marketing, support and channel processes as organizations attempted to improve communications, planning, opportunity and campaign management, forecasting, problem solving, and to share best practices. To some degree, it worked. However, automating poorly performing activities or processes rarely improves the quality of the outcome. So, for the most part, the quality of the return on investment (ROI) was meager — if measurable at all. The promise of the technology was there, but few organizations were realizing the pinnacle of performance. The metric of success was increased efficiency in sales, marketing, support and channel processes.

- **Integration**

By developing cross-functional integration, supported by data warehousing and shared roles and responsibilities, organizations began to create a customized view of the customer. Support issues, Web hits, sales calls and marketing inquiries started building a deeper understanding of each customer and allowed aggressive organizations to adapt their tactics to fit individual needs. Integration focused around two primary components:

- i. ***Make it easier to do business with the seller:*** Instead of operational silos that inhibited superior customer relationships, the organization as a whole took ownership and responsibility for customer satisfaction. With a single view of the customer, it was much easier for anyone to respond to sales opportunities or impending support issues and take appropriate steps. Expected benefits are to improve retention and lower support costs.

ii. **Predictive modeling:** Data mining of an aggregate of corporate knowledge and the customer contact experience was used to improve operational and sales performance. By applying complex algorithms to a history of purchasing or inquiry characteristics, it became practical to predict the demands of individual customers. Up-selling, cross-selling, even the ability to preempt potential problems, was now possible for all customer-facing representatives. Expected benefits are to have better cross-selling/up-selling and improved product offerings or delivery.

- **Process**

By rethinking the quality and effectiveness of customer-related processes, many organizations began to eliminate unnecessary activities, improve outdated processes, and redesign activities that had failed to deliver the desired outcomes. Then, by re-creating the process through an understanding of the capabilities of the technology, the outcomes were more predictable and the promises for a meaningful ROI more substantial and realistic. The metrics for success became the improved effectiveness in serving the customer.

According to Randy Harris 2003, almost everything about CRM has focused on improving the effectiveness and efficiency of the seller's organization. Organizations have evolved from sales representatives working from paper notebooks, or a card system, to a tightly integrated network that sees movement in sales activity, predicts product demand on manufacturing, and manages the logistics of complex teams to serve the buyer and seller. Marketing, support services, channel management, revenue management, resource allocation/management, forecasting, manufacturing, logistics and even research and development have all seen the benefits of a well-designed CRM strategy.

However, the past decade of CRM and its associated improvements have been based on three assumptions:

- i. The past would be a logical foundation to predict future customer needs and profitability.
- ii. Demand for traditional value propositions would remain constant.
- iii. Better customer relationships would deter attrition.

2.3.5 Requirement for effective customer self-service.

- Technology, such as a search engine, that helps customers find what they need quickly.
- Knowledge management software that identifies each customer and his lifetime value to the company.
- Marketing tools like Epiphany that let you track customers and target them with relevant offers.
- Tools like Silknet that integrate all your communications channels.
- Links to the back office so that you can confirm orders and availability.
- Integrate everything. Consider letting an ASP such as Convergent handle the integration.
- Make sure your customer self-service strategy dovetails with your overall service strategy.

CHAPTER 3

METHODOLOGY

3.1 Procedure Identification

In order to develop the system, a few phases have been followed. First phase is planning and analysis, design, development, testing and evaluation and lastly, result analysis. The system development workflows have been created in order to suite the process of developing the system.

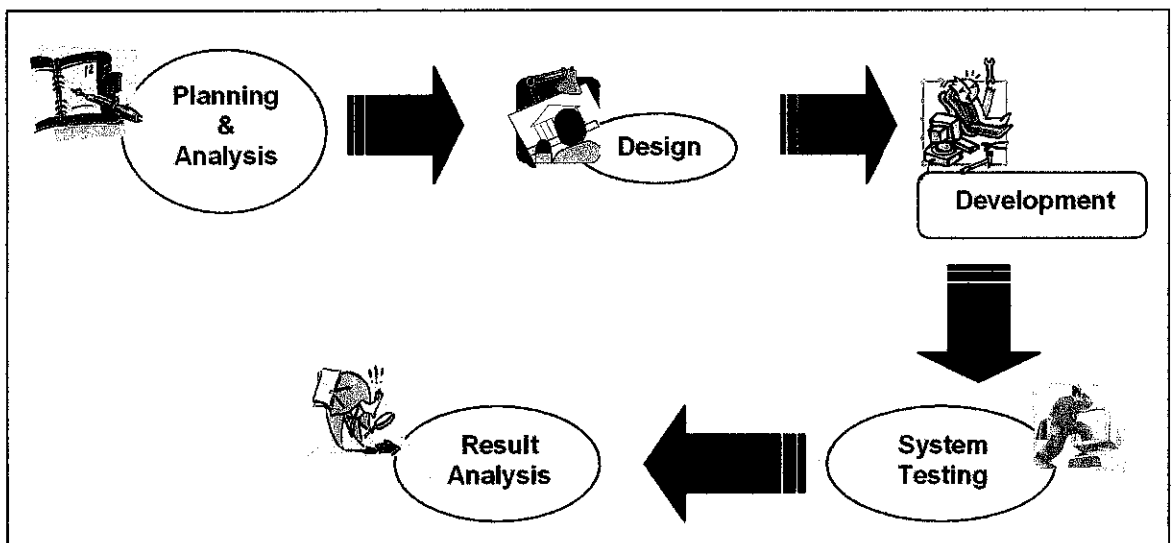


Figure 3.1 System Development Work Flow

3.1.1 Planning and Analysis

Selection of the topic was quite challenging in order to produce good final year project. A few steps have been followed in order to do the preliminary investigation.

i) Understanding the problem and opportunity.

All the problems have been list down. The problems have been analyzed and the solutions for the problem have been found out. The opportunity to develop the product is very high.

ii) Define Scope and constraints.

Scope and constraint have to be defined. So that the product id not too big and not too small. The product must be suitable and fit with Final Year Project requirement.

iii) Perform fact finding.

- Conduct interviews with several web developer and technical manager. They give full support, good recommendation and beneficial suggestion. The interview was conduct informally.

- Observe operation to obtain information
A few web portals in the internet have used the system. The feedbacks are very satisfied, and customer relation management between the company and customer increase.

iv) Estimate the project benefits.

The product can become very useful and manageable. User can use this product beneficially. User should know how to use this product. This product is developing to support the customer needs and requirement. The benefits are:

- Real-time web-based support and sales chat with website visitors.
- Decrease phone and other operational costs.
- Track your ad click-through rates and provide targeted support.

v) Estimate project development times.

Development of the product have time limit. So, all the information must be gathered in order for easy to develop the product. To estimate the time, sources of information that will be used and the difficulties that will be encountered in obtaining the information must be considered. The estimation should be focus on the overall project so that supervisor can understand the full impacted cost and timetable.

- vi) Present result and recommendation to final year project management.
Develop proposal to FYP management. Propose the topic that can be manageable to develop and design.

3.1.2 System Design

User interface, input and output design begins the system design phase in this system development life cycle. User interface begins with the concept, including function, layout and usability. Then covers input procedures, controls and formats. User interface describes how users interact with the systems. User interface mainly consisted of process control screen that allowed user to send commands to the system.

- i) System Storyboard
- Refer Appendix 4.0

ii) Database Design

Database for the system consist of two databases which is for Online Library Services and Live Customer Support. The databases were design using mySQL-Front. For kamus and istilah, the tables ware imported into the database.

Database for Online Library Services contain 7 tables which is:-

- User
- User_login
- User_confirm
- Kamus_komputer
- Kamus_KIMD
- Istilah
- Book

Database for Live Customer Support contain 11 tables which is:-

- Hcl_chat
- Hcl_department
- Hcl_footprints
- Hcl_icons
- Hcl_operators
- Hcl_responses
- Hcl_session
- Hcl_stats
- Hcl_system
- Hcl_traffics
- Hcl_transcripts

iii) Use case Diagram

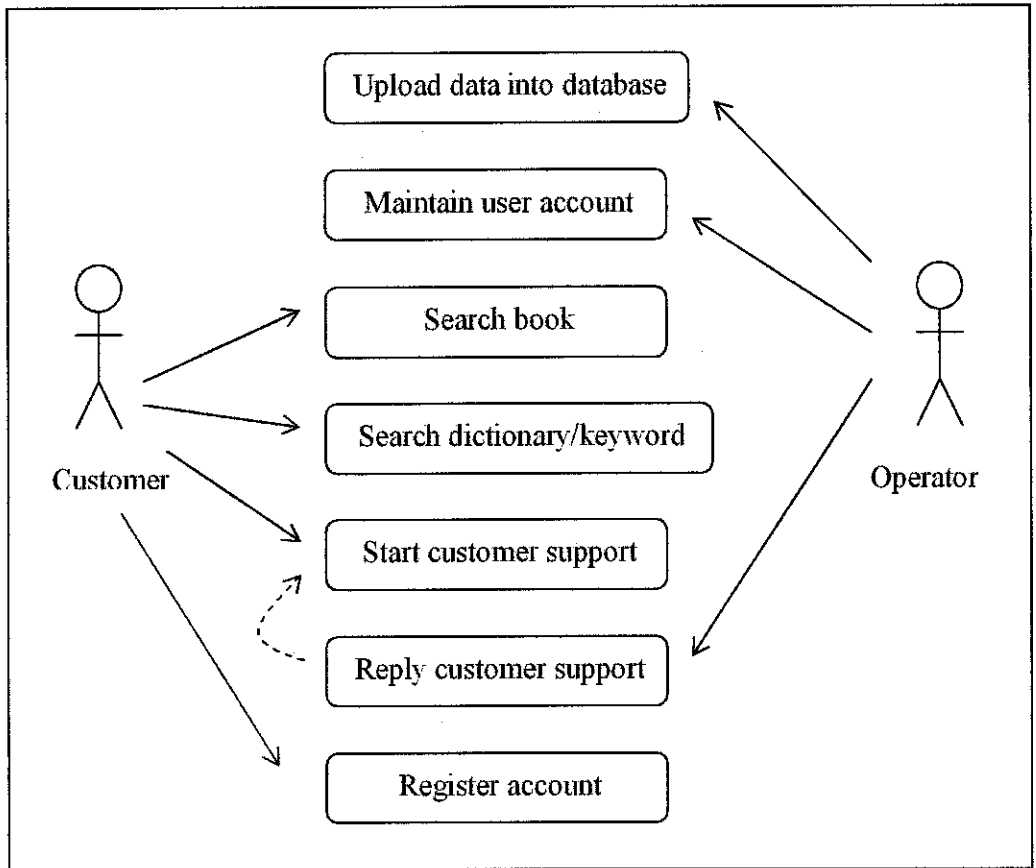


Figure 3.2 Use Case Diagrams for Online Library Services with Live Customer Support

iv) System Workflow Diagram
 • Administrator

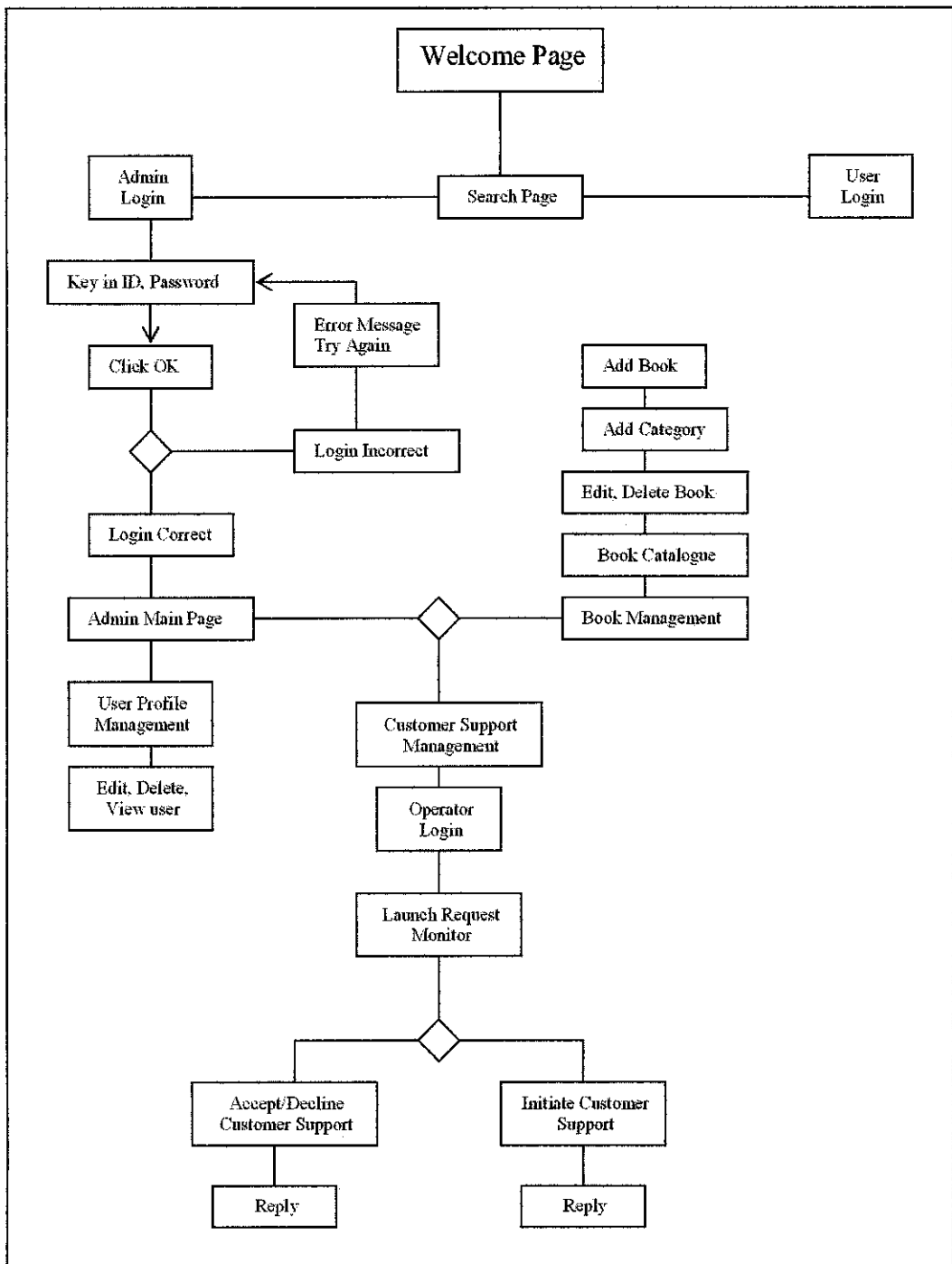


Figure 3.3 Process Workflow diagram for Administrator

• User

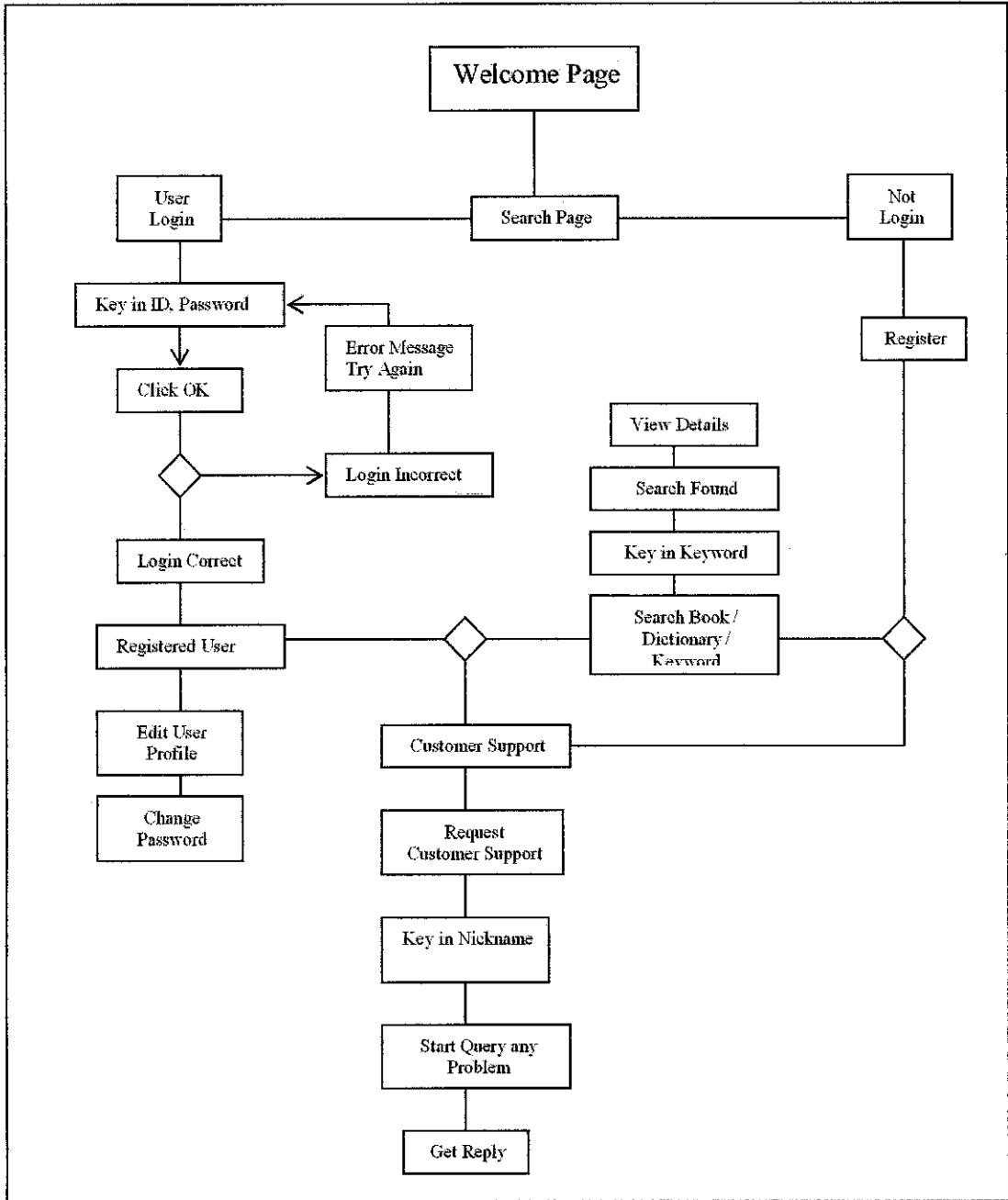


Figure 3.4 Process workflow diagram for User/Customer

- System

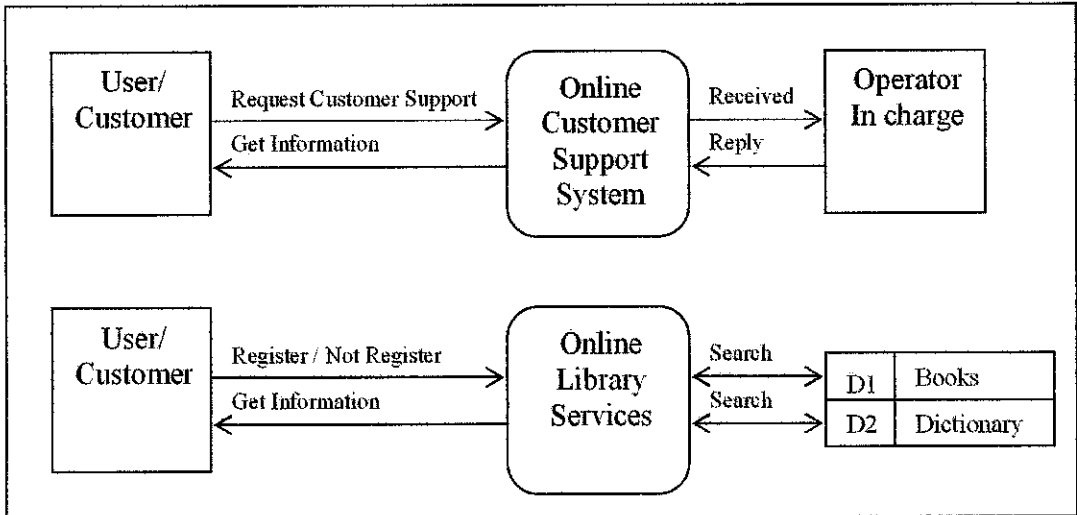


Figure 3.5 Process Workflow for the Systems

v) Entity Relationship Diagram

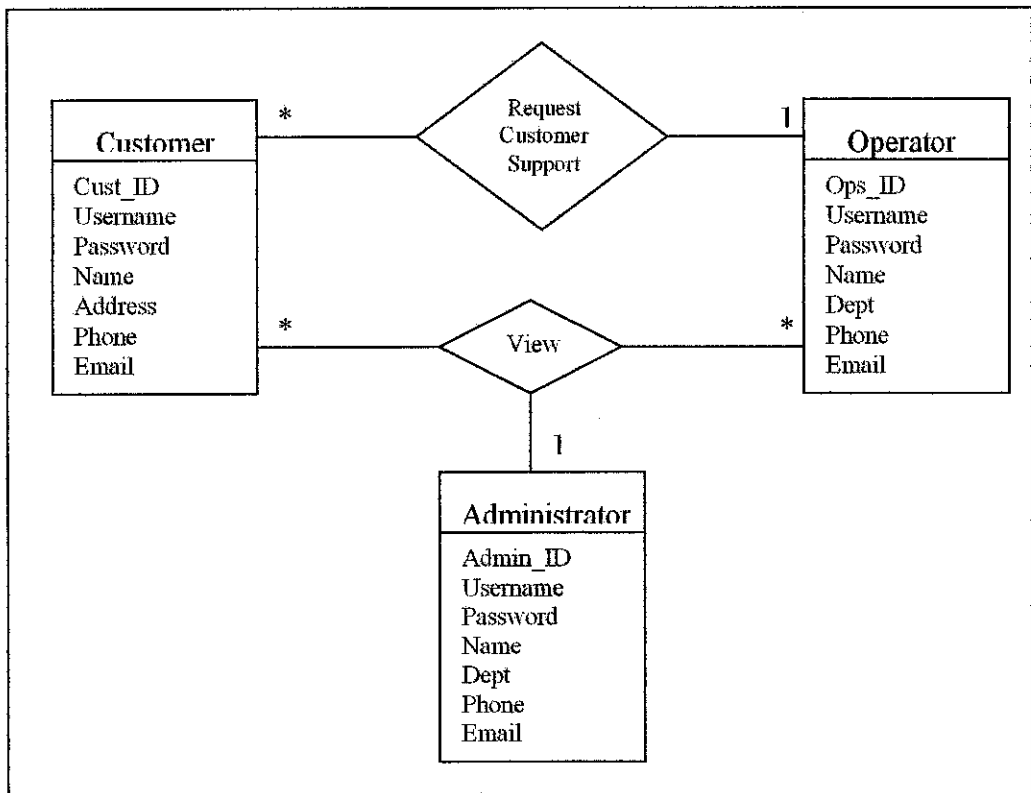


Figure 3.6 Entity Relationship Diagram for Live Customer Support

vi) Live Customer Support Network Architecture

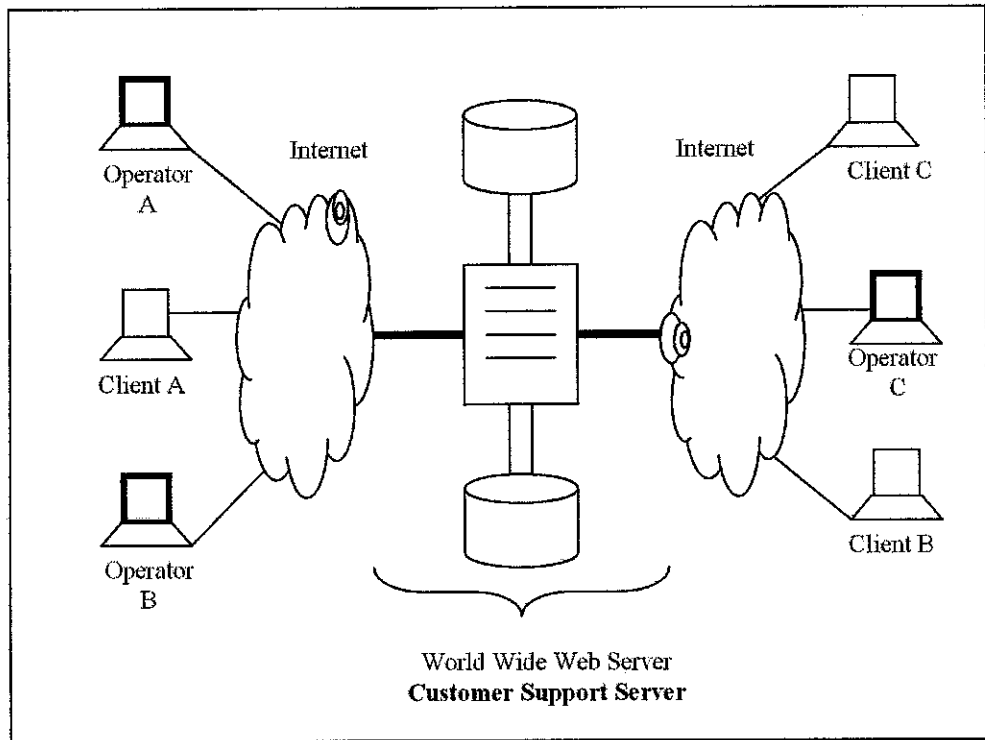


Figure 3.7 Simple Live Customer Support Network Architecture

A Live Customer Support network is defined by one server connected in the internet or local area network. The Live Customer Support protocol provides no mean for two clients to directly communicate with the operator. All communication between clients is relayed by the server.

3.1.3 Development

The next stage will be, developing the interface of the system and writing the programming codes. The database will also be integrated into the system during this stage.

i) Server configuration

Before start developing the system, apache server should be installed in the pc. The server was installed at Linux Operating System. A few configurations have to be done before the server can work smoothly. VMware Workstation have to be start first in order to make the system working.

ii) Online Library Services System Development

Basic user interface have been designed according to user requirement and needs. The system consist of searching the book available in the library and user also can search two type of dictionary which are Kamus Kompuer and Kamus Inggeris Melayu Dewan and search keyword in Istilah section. User also can register their account into the system. They have to key in their personal detail. This registration is for checking the status of the book borrower.

iii) Live Customer Support System Development

This system has been configured into the server in order to make it working. User must have network connection in order to use the system. User can ask any query regarding library services and book loan by using this system. They can communicate with the operator online through real time in order to get feedback directly.

Help Center Live is a tool that allows real-time conversation with visitors on your site and FAQ database. User can access Help Center live from any computer with an internet connection, anywhere. This powerful tool allows true 24/7 customer support on your website for free.

The traffic monitor allows operator to view how many visitors are on the website at one given time, what page they are on, what pages they have visited (footprints) and more such as their host name, total unique visits to your website, total requested chat sessions, the website they came from and more. When operator are chatting with a visitor, there are several built in features such as show images and transfer the chat session to a different operator. To make chat sessions more personalised a picture of the operator can be shown in the chat window.

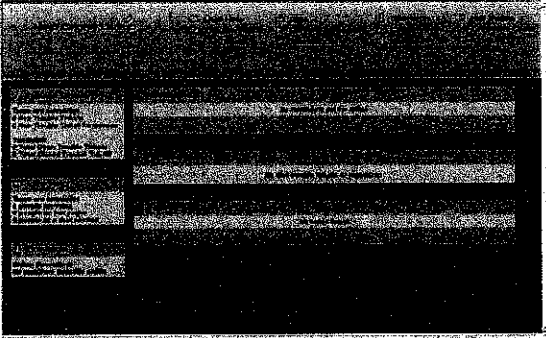
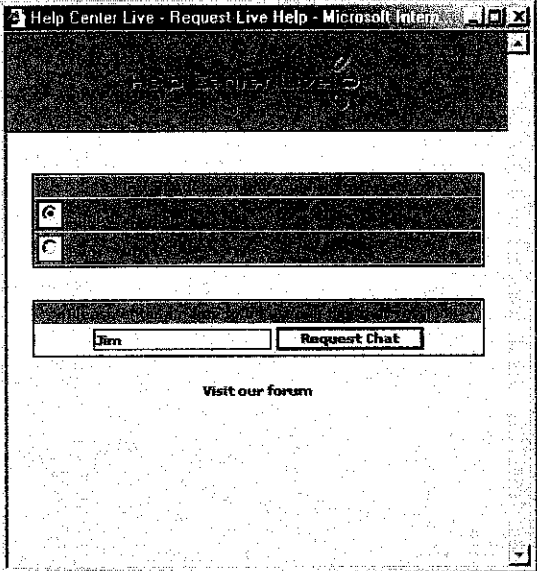
If all operators are offline or busy the visitor can create a trouble ticket that is sent to the department that they were trying to contact. This ticket can then be dealt with by an operator that belongs to that department. Once an operator replies to a new ticket they are assigned to that ticket which can then be replied to until the problem is solved.

If it is preferred that an email is sent when all operators are offline or busy this option is available also and the visitor can send an email to the departments email address. If the visitor prefers not to send a trouble ticket then they can look at your FAQ database which can easily be added to using the admin control panel.

iv) System Screen Shot

A few screen shot have been captured in order to show the overview of the system.

SCREEN SHOT

Description	Screen Shot
<p>i) Control Panel</p> <ul style="list-style-type: none">- Manage operators and departments- Manage trouble tickets- Manage FAQs- Manage canned messages- Manage icons- Manage hot pages- Generate implementation code- View transcripts	 <p>Figure 3.8 Control Panel</p>
<p>ii) Visitor Request Chat Window</p> <ul style="list-style-type: none">- Select a department- Remembers visitor's name	 <p>Figure 3.9 Visitor Request Chat Window</p>

iii) Visitor Chat Window

- Send and receive chat messages
- See operators profile picture
- See if operator is typing

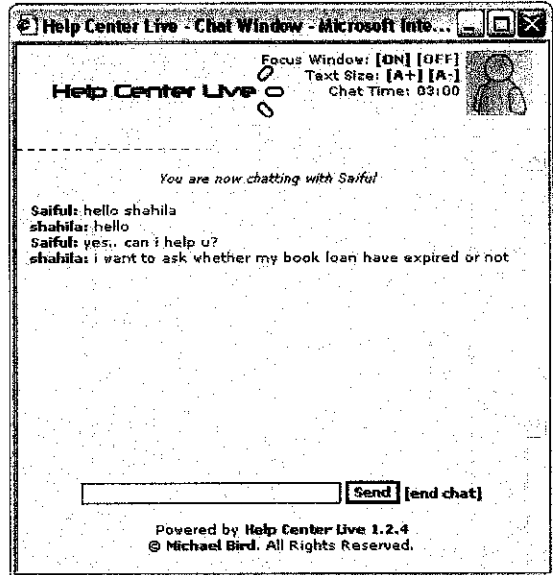


Figure 3.10 Visitor Chat Window

iv) Operator Chat Window

- Send and receive chat messages
- See if visitor is typing
- Transfer the chat session
- View visitor's information
- Push URLs, images, and emails
- Send canned messages
- Save chat Transcript

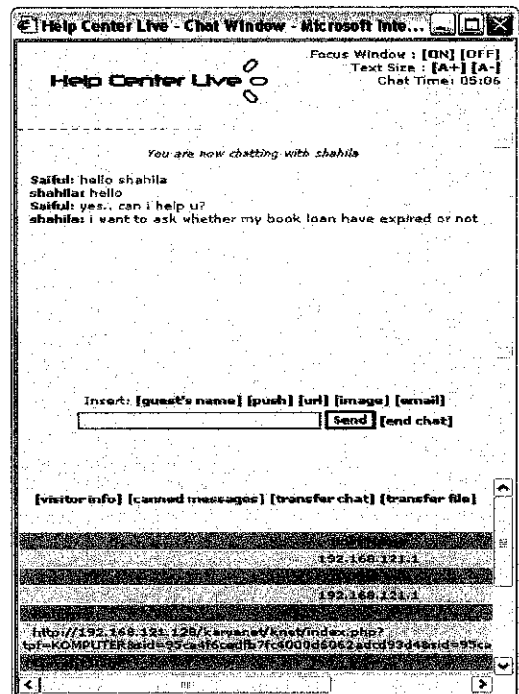


Figure 3.11 Operator Chat Window

3.1.4 System Testing

Testing is an important skill that is often overlooked in academic courses on computer programming. Testing should not be deferred until after the entire program has been written. The program should be test to make sure that it functions correctly.

Three level of testing be performed:

- i. **Stub testing** is the test performed on individual events and modules of a program. In other words, it is the testing of an isolated subset of a program.
- ii. **Unit or program testing** is a test whereby all events and module that have been coded and stub tested for a program are tested as an integrated unit; it is the testing of an entire program.
- iii. **System testing** ensures that application programs written and tested in isolation work properly when they are integrated into the total system.

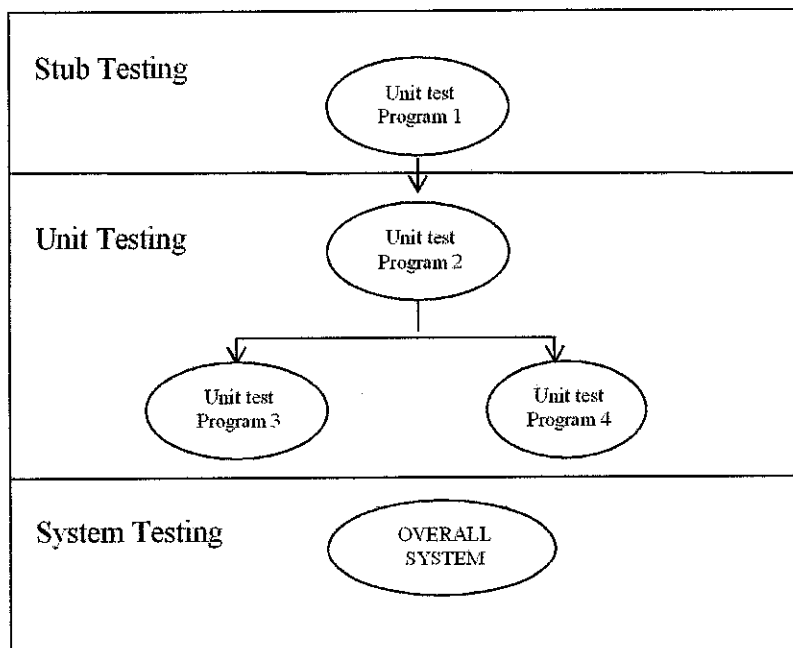


Figure 3.12 Steps in Testing Stage

Testing also has been conducted within users. There 12 users had become a tester. All the testers are from UTP population from different year and course. Result from the testing are discuss in next chapter.

3.2 Tool Required

Various tools will be used in order to assist the web development project. The major tools that are going to be used are highlighted as follows:

- i) **Red Hat/Linux**
Platform use for apache server

- ii) **Macromedia Dreamweaver**
Enable easier design of the HTML codes and support for web application and development that is more comprehensive compare to another product.

- iii) **XHTML / HTML / php / MySQL / Javascript**
Languages to be used in order to generate the website design for the content and database design.

- iv) **Adobe Photoshop 7**
Tools that helps editing and designing graphic that meets the target audience requirement.

- v) **Internet Access**
Provide by the university in order to assist the ongoing research of the particular subjects.

- vi) **Hardware requirement development**
AMD Athlon – 2.5 GHz
Microsoft Windows XP
512 MBRAM
30 GHz Hard disk

CHAPTER 4

RESULT AND DISCUSSION

Online Library System with Live Customer Support is a system that provides live customer support to the library services. Users can interact or having conversation with operator in charge regarding any matters about library services. The services are consist of book on the shelf, book loan status, book searching, booking the book and borrow and return book. Users do not have to go the library; they just can use online library services with live customer support.

In order to make the system well performed and working properly according to requirement and needed, some evaluation and testing has been conduct. Beside that, testing also was done to get feedback what are user's expectation if the live customer support was inserted into library system.

4.1 Testing

All of the system's newly written or modified application programs as well as new procedural manuals, new hardware and all system interfaces must be tested thoroughly. Haphazard, trial an error testing will not suffice.

Testing was done throughout systems development, not just at the end. It is meant to turn up heretofore unknown problems, not to demonstrate the perfection of the programs manual, or equipment. Although testing is tedious, it is an essential series of steps that helps assure the quality of the eventual system. It is far less disruptive to test beforehand than to have a poorly tested system fail after installation.

The systems as a working whole also have been tested. This includes testing the interface between subsystems, the correctness of output, and the usefulness and understandability of system documentation and output.

The testing and questionnaires were conducted mainly in Universiti Teknologi PETRONAS (UTP) area which is the target population group. The questionnaires consist of open ended question that cover about the usability of the services system. These particulars represent the Internet users. While the users navigating and using the services system, there have to fill out the questionnaire provided. Sample of questionnaire can be viewed at appendix section.

Users have been trained before using the system. The training was done by the programmer and users among UTP population. It takes about 15 minute to train the users. Users testing have been conducted between users and operator. Each user have 10 minute to test the system. The testing was including the online library system and live customer support. Users were given a set of questionnaire to answer while they are testing the system.

Interview session also was conducted while users test the system. A few questions were asked during the interviewed, for example, How about the layout and design of the interface? How about the user friendliness of webpage? and etc.

Questionnaire was conducted in order to get objective feedback from the users. While interview was conducted in order to get subjective feedback from the users. From the questionnaire, result can be directly calculated from the answer of the question answered. But, by interview, an analysis has been done in order to get the result. Each user has different perception about the system, so the factor must be taken care off.

4.2 Result Analysis

Result gained from questionnaire and interviewed will be analyze in this section. The system has been tested to 12 users. The entire users were from different courses and year. Users are given 10-15 minute to test the system. The system consists of two sections, 1 is for users/customers and the other one is for operator/customer representative. So, users have to test both of the roles.

The entire users have different background of computer literate. For users has good computer literate, it is easy to handle. But for users who are low of computer literate, it is quite difficult. Some of them never use the system although there are existing systems in the internet. A lot of web site has implemented the live customer support.

4.2.1 Result from questionnaire

There are 10 questions users have to fill in after they have done the testing. The questions are direct and users have to tick at the space provided. Below is the result from the questionnaire.

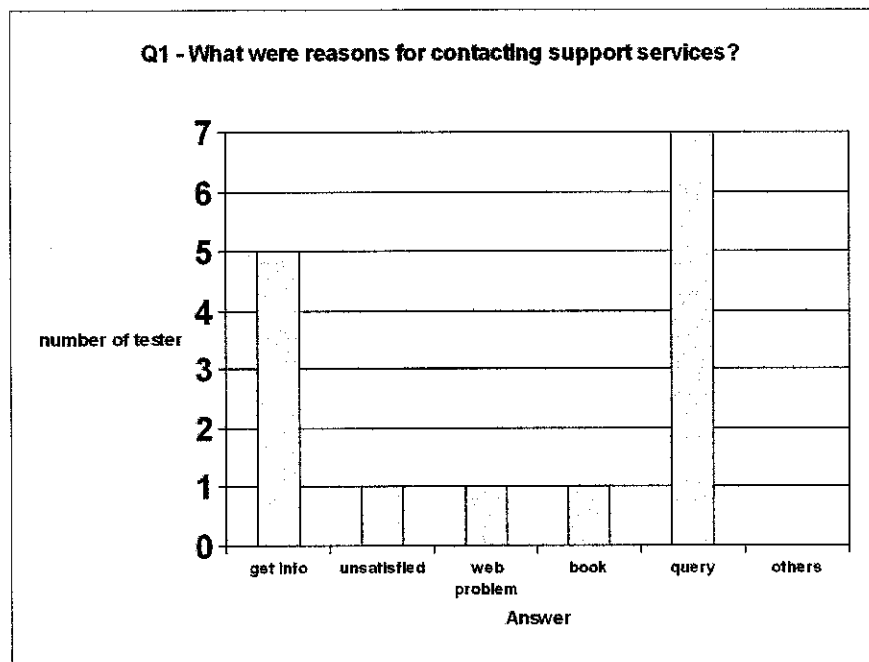


Figure 4.1 Finding from Question 1

From the graph, most of the users used or contact support services was to ask any related question to the customer representative and needed more information on the services. That is the purpose of developing the system. To help users in getting information and query about the book or any related issues. Users also are used to contact the librarian or customer representative through in person. This is because there are limited ways in order users to contact librarian. They have no choice in what matter to get in person with the customer representative. 67 % of the testers have no experience in using the services. This is because, the system is quite new. Most of the testers have been using this service for about less than 1 year.

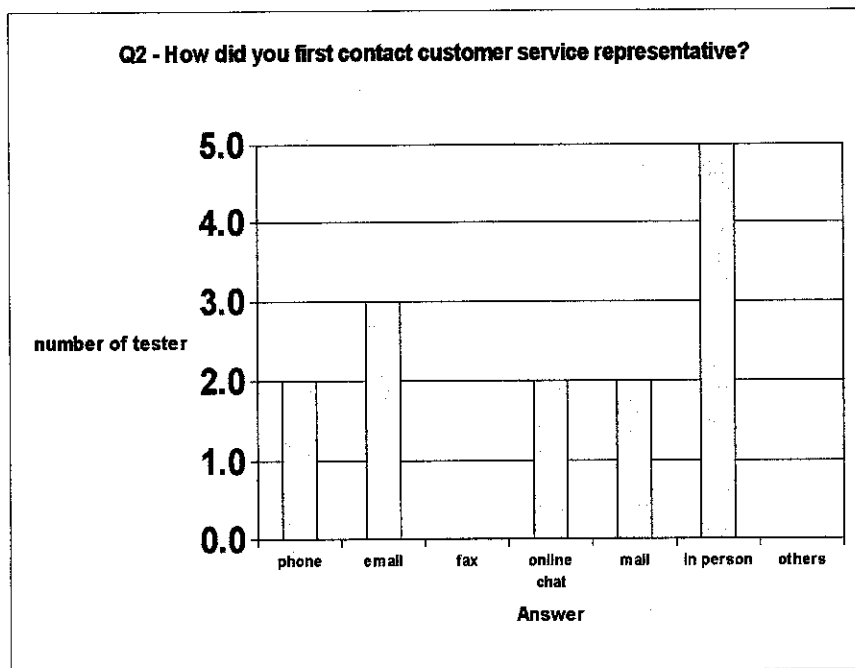


Figure 4.2 Finding from question 2

From the graph, most of the users contact the customer service representation through in person. They went to the library and communicate with the librarian in person. A few users contact the customer representative through email, but it takes a long time to get the reply.

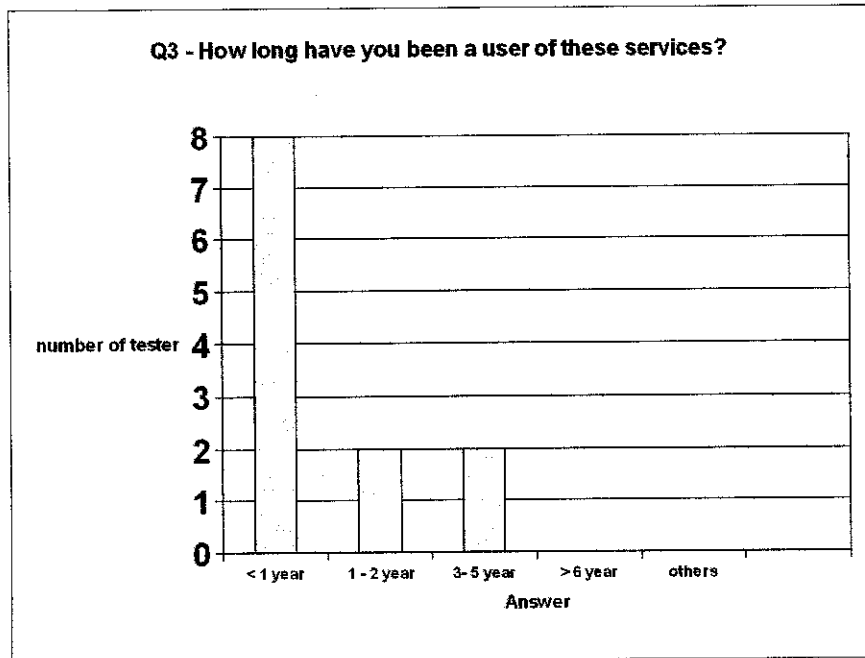


Figure 4.3 Finding from question 3

This question was to get whether the users have been used live customer support. Majority of the users was quite new with the services. They did not know that the services was already been implement in certain web application such as e-commerce.

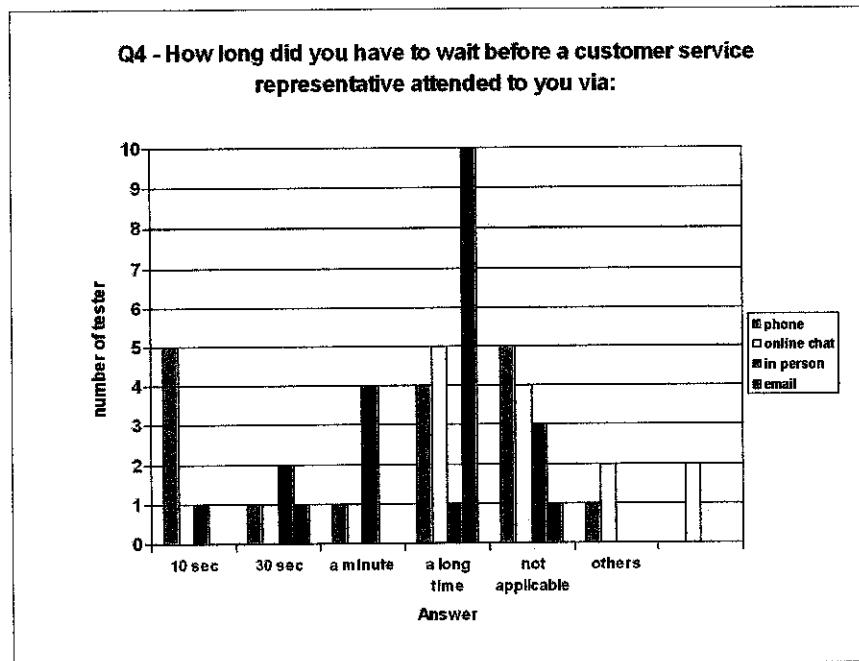


Figure 4.4 Finding from Question 4

From the graph, most of the testers have to wait for a long time before they get to be entertained. Most of the users prefer email to contact customer representative but they have to wait for a long time before the customer representative attended to the users.

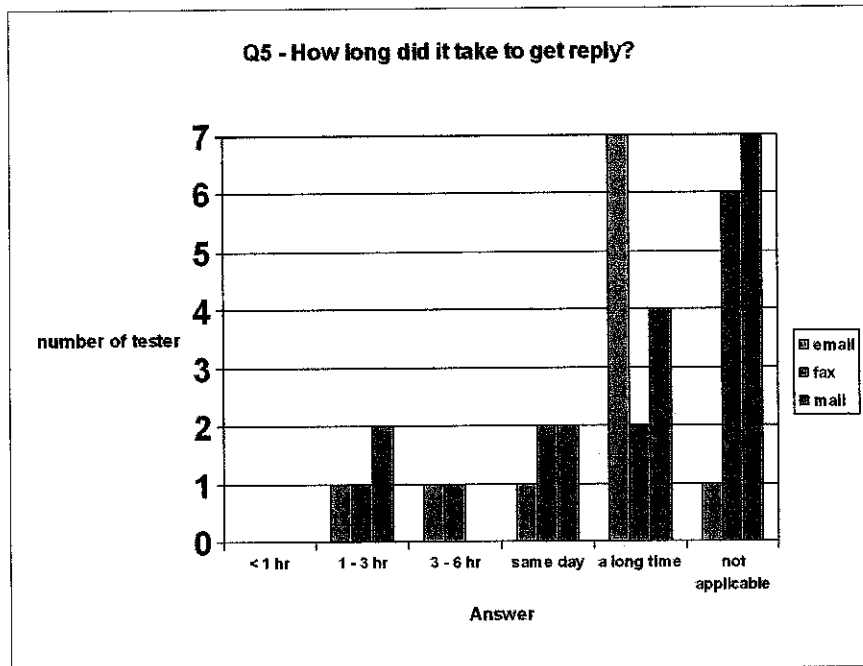


Figure 4.5 Finding from Question 5

Users are quite upset because they have to wait for a long time before there got a reply from the customer representative. So, the solution is to implement the system so that users can contact customer representative through online chat and they can get a reply as soon as possible.

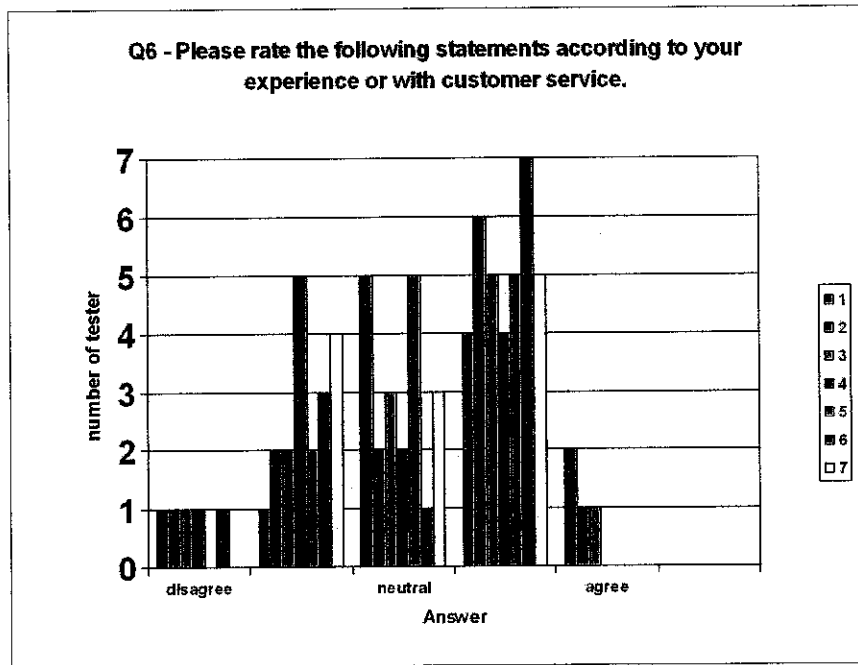


Figure 4.6 Finding from Question 6

From the graph, the tester found that the customer service representative is quite knowledgeable. They agreed that the customer representative is very helpful to the customer. Most of the representative answered the question asked and the questions are answered promptly. The testers found that the representative was positive and professional. They agreed that most of the representative showed initiative in helping and solve the problem. The testers will got a reply a little bit late if the users did not know the answer, because the representative have to research it.

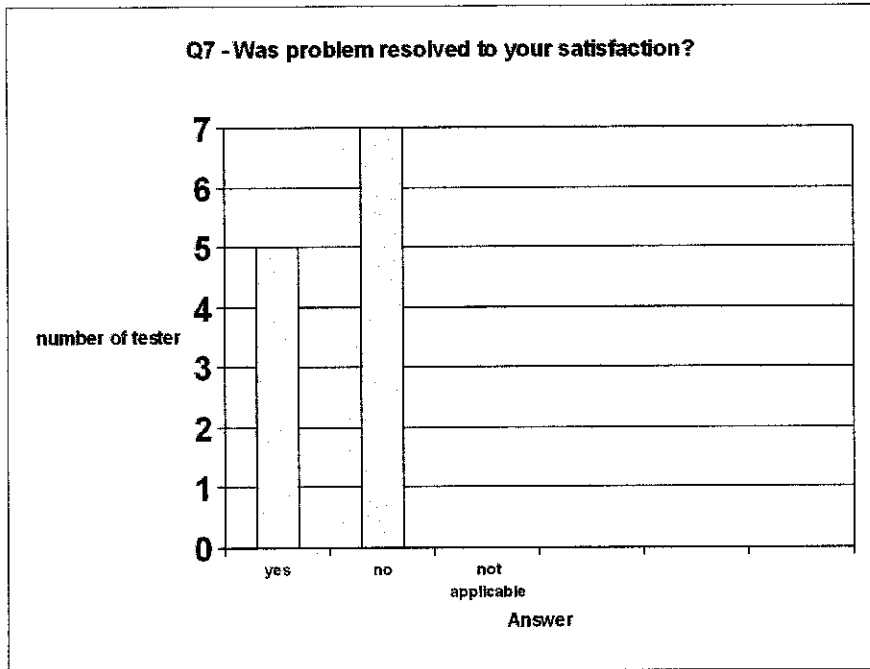


Figure 4.7 Finding from Question 7

From the graft, 58 % of the testers did not satisfy with the resolved problem. Only 42 % agreed that the problem have been solved.

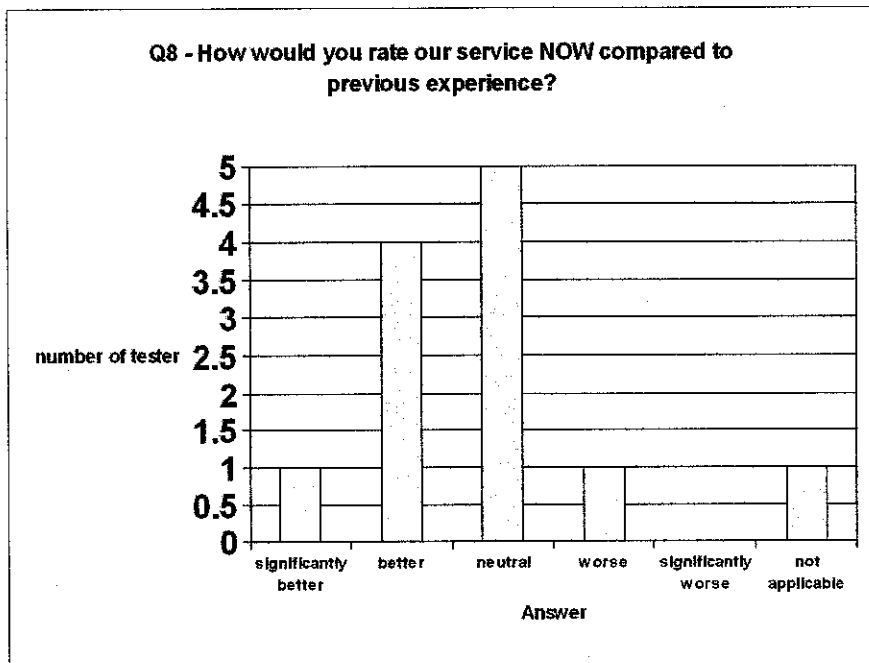


Figure 4.8 Finding from Question 8

From the graft, 42 % of the testers felt neutral with the services. But some of the testers also found that, the services provided are better than before.

For question 9, the question is about to get any ideas or solution in order to improve the services in the library. One of the testers suggested that to make sure that the services are in good condition for the users to feel comfortable to use the service and always update the services provided. The other users have suggested that the services should be faster and simple but applicable and reliable. The customer representative also must be professional and knowledgeable about the service provided and give efficient services to the users.

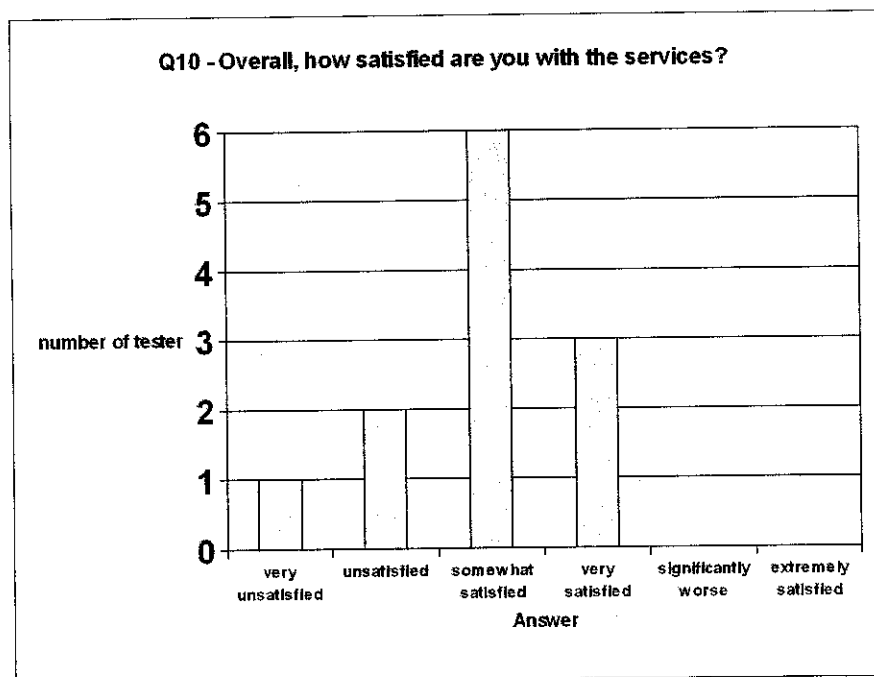


Figure 4.9 Finding from Question 10

From the graft, only 25 % satisfied with the online library services before the customer support system was implemented. Most of them are not very satisfied with the services provided before the live customer support was implemented.

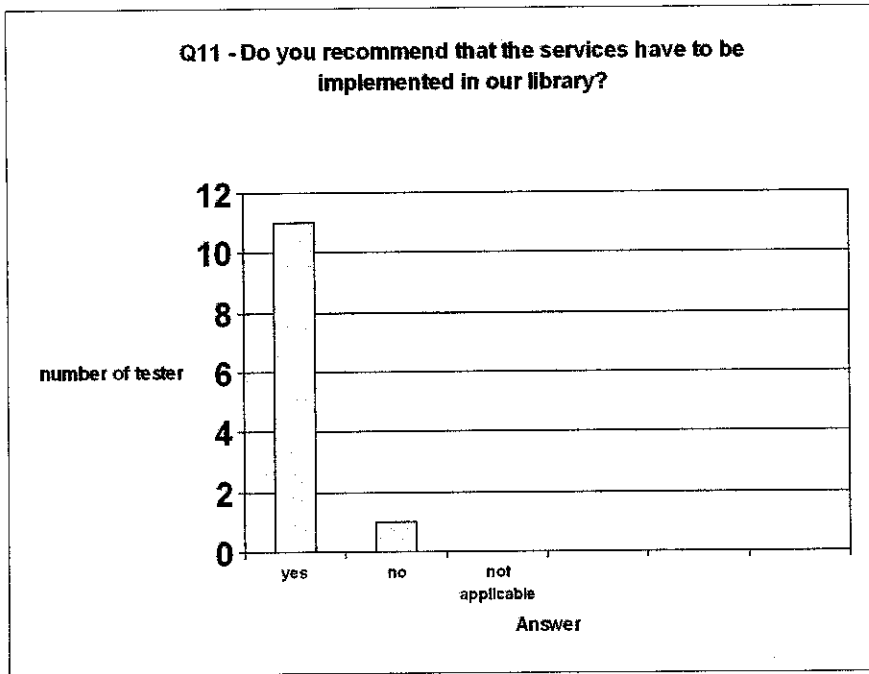


Figure 4.10 Finding from Question 11

From the graph, 92 % of the testers recommend that the services should be implemented in the library. The customer support should provide more services not only about the books on the shelf.

4.2.2 Result from Interview Session

Interviewed session was conducted in order to get verbal or subjective suggestion and opinion from the interviewee. There are 12 testers involved in the interview. While interviewee tested the system, a few questions have been asked to the user. Most of the questions are about the user friendliness of the system, layout and design of the system and about the overall design of the webpage. From the interviewed, 8 out of 12 interviewee were satisfied with the layout and design. The interfaces are user friendly and easy to use. But 25% of the interviewees recommended that the color of the interface should be brighter and not contain so many color.

From the graph below, most of them agreed with website. They just comment about human computer interaction, color and design. The interviewees are satisfied with other criteria such as picture inserted, grammar, user friendliness and functionality of the web pages

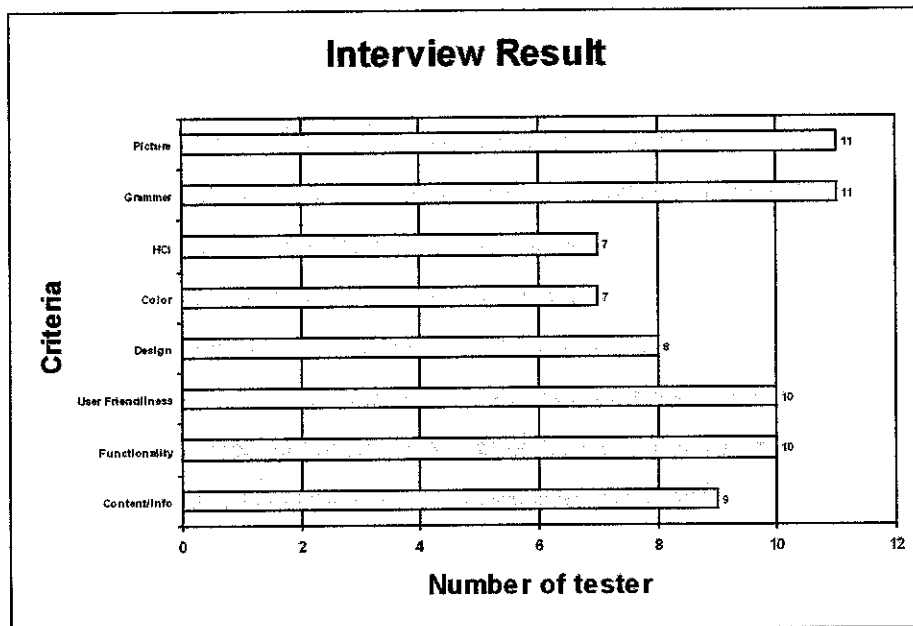


Figure 4.11 Interview Result

From the interview, one of the user said that Live Customer Support straight forward and it works! Live chat on the website tells the users there are real people there and prepared to interact with the users. This is a competitive edge over the many static websites. Live Customer Support has helped operators to overhaul the customer support systems. It's easy to use, the operators could get straight online and edit their admin area to add canned messages and commands, and the users love it.

Our existing understanding of interface design, usability, and information layout can be used to recast existing legacy data into new, easier-to-use systems on the web. By attempting to port screens or processes from legacy applications directly to the web, one will only prolong the inferiority of most user interfaces and reduce the utility and understanding of the web as a universal communication and information exchange medium. In order to maximize web efficiency it is necessary to explore the use of guidelines, develop usability methods and seek guidance from graphic and interface designers.

CHAPTER 5

CONCLUSION AND RECOMMENDATION

5.1 Challenges

A few challenges have been encounter while developing and finishing the project.

5.1.1 Searching relevant information

The duration of the project is approximately about 4 months. In gathering the preliminary data about the particular project there are amount numbers of information available either in the form of book, magazines, journals and internet. However, gaining relevant information is also one of the crucial steps that one can be involved. This is mainly because the researcher is not familiar with the topic. When gathering further data gathering, the problems seems less crucial that at the beginning.

5.1.2 Conducting Testing, Questionnaire and Interview

The goal of testing in basically to test the system whether it work properly and get any opinion and suggestions from the testers. Some of the testers did not give full cooperation while conducting the testing. This is also a challenges experience needed to encounter. The uses of word in questionnaire are also important because it should be easy to understand to avoid ambiguity.

5.1.3 Product Development

The next step after gathering the information is of course developing the product. During the product development, a number of technical problem in developing the web page have been encounter.

5.1.4 Time management

The ability to manage the time helps to develop the project in time. In order to overcome the time management problem, the system timeline have been planned. This help by increased the awareness of the importance of certain deadlines that have to be met besides assists in following the procedure as planning. However, managing the time effectively is rather difficult because currently the author is also committed with 4 other courses that also have deadline to be met.

5.2 Recommendation for future planning

This system is a first step towards recognizing the importance of live customer support towards the internet users' community as whole. Therefore, future improvement or planning is encouraged in order to exploiting the benefits from it. In this context, the following recommendation includes for the system improvements and also for the university consideration against the Final Year Project (FYP) course.

5.2.1 Future enhancement for the system

The developed system was only a simple program. It can be enhance with several recommendation for future planning.

- i) Users are not required to register in the system in order to use the customer support. In the future, the registered user can access many facilities in the webpage compare to unregistered user.
- ii) The services in live customer support can be enrich with more services such as email system and short messages system via phone for user to renew book loan and check their status.
- iii) Enhance the system with dual language, such as English and Bahasa Malaysia. The existing online library service is in Bahasa Malaysia.
- iv) The library services should be automated so that it can reduce work for the librarian and operator.

5.3 Conclusion

The usage of information technology and multimedia become broadly nowadays. Generally, this Online Library System (OLS) with Live Customer Support (LCS) is a system that provides live customer support to the library services. It is very useful to the library as it will be able to reduce problem and to interact with users through online in real time. In Malaysia most of the organization does not implement the system yet. OLS provides a variety of information to the users. Users do not have to call an operator or open the directory to search the information. They just have to log in to the web portal and search what they want to find. They also can use LCS in order to get further information regarding web portal or about the information needed. The system can be implemented for the organization web portal to support the customer support services.

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<http://www.pnm.my/>

APPENDICES

1.0 Project Workflow

Week Activities	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Planning														
Design														
Development														
Prototype Implementation														
Testing & Evaluation														
Result Analysis														

2.0 Interview Questions

There are 8 questions was asked to the interviewee.

1. What do you think about the inserted image?
2. How about the usage of grammar in the web pages?
3. Do you think the web pages meet human computer interaction criteria?
4. What do you think about the color of the web pages?
5. Are you satisfied with the design and layout of the web pages?
6. Are the system users friendly enough?
7. What do you think about the functionality of the system? For example, the usage of the button.
8. How about the content and information in the system?

3.0 Questionnaire

QUESTIONNAIRE FOR TESTING ONLINE LIBRARY SERVICES WITH LIVE CUSTOMER SUPPORT

1. What were your reasons for contacting customer support services?

<input type="checkbox"/>	Needed more information on the services
<input type="checkbox"/>	Unsatisfactory service
<input type="checkbox"/>	Website related problem
<input type="checkbox"/>	Get information about the book
<input type="checkbox"/>	Ask any related question
<input type="checkbox"/>	Others : _____

2. How did you first contact our customer service representative?

<input type="checkbox"/>	Telephone
<input type="checkbox"/>	Email
<input type="checkbox"/>	Fax
<input type="checkbox"/>	Online chat
<input type="checkbox"/>	Mail
<input type="checkbox"/>	In person
<input type="checkbox"/>	Others : _____

3. How long have you been a user of these online library services?

<input type="checkbox"/>	Less than 1 year
<input type="checkbox"/>	1 to 2 years
<input type="checkbox"/>	3 to 5 years
<input type="checkbox"/>	More than 6 years
<input type="checkbox"/>	Others : _____

4. How long did you have to wait before a customer service representative attended to you via:

	10 second	30 second	A minute	A long time	Not Applicable
Phone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Online Chat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In Person	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Email	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. How long did it take to get a reply?

	Less than 1 hour	1 to 3 hours	3 to 6 hours	Same day	Within 3 days	Not Applicable
Email	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fax	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mail	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. Please rate the following statements according to your experience or with customer service

	Disagree	→	Neutral	→	Agree
The Customer Service Representative was knowledgeable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Customer Service Representative was helpful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Customer Service Representative answered my questions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My questions were answered promptly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Customer Service Representative was positive and professional.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Customer Service Representative showed initiative in helping solve my problem.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When the Customer Service Representative did not know an answer, he/she researched it and got back to me right away.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. Was your problem resolved to your satisfaction?

- Yes, my problem was taken care of
- No, I am still experiencing the same problem
- Not applicable

8. How would you rate our customer service NOW compared to previous experiences?

- Significantly Better
- Better
- Neutral
- Worse
- Significantly worse
- In person
- Not applicable, this is my first experience

9. How might we have improved our service to you during your last call?

10. Overall, how satisfied are you with the services

- Very Unsatisfied
- Unsatisfied
- Somewhat Satisfied
- Very Satisfied
- Significantly worse
- Extremely Satisfied

11. Do you recommend that the services have to be implemented in our Information Resource Center?

- Yes, should be implemented
- No, not important at all
- Not applicable

4.0 System Story Board

ONLINE LIBRARY SERVICES

date:

MENU 1 MENU 2 MENU 3 MENU 4

JENIS-JENIS BUKU

Selamat Datang (?NAMAUSER?)

PICTURE

Fakafah
Membina bangsa Malaysia berbudaya
membaca dan mengamalkan pembelajaran
sepanjang hayat ke arah memantabakan
tradisi ilmu

Anda Merupakan Pelawat Yang Ke (?BILANGAN?)

JENIS-JENIS BUKU

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1

Customer Support

 Carian Perikatan
 Kamus Komputer
 Kamus Inggeris Melayu Dewan
 Istilah
 Administrator

ID Pengguna

 Kata Laluan

ONLINE LIBRARY SERVICES

date:

MENU 1 MENU 2 MENU 3 MENU 4

JENIS-JENIS BUKU

KAMUS KOMPUTER

KEPUTUSAN CARIAN

Perikatan yg ingin dicari :

Carian mengikut abjad :

JENIS-JENIS BUKU

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2

Customer Support

 Carian Perikatan
 Kamus Komputer
 Kamus Inggeris Melayu Dewan
 Istilah
 Administrator

ID Pengguna

 Kata Laluan

ONLINE LIBRARY SERVICES

date:

MENU 1 MENU 2 MENU 3 MENU 4

JENIS-JENIS BUKU

KAMUS INGGERIS MELAYU DEWAN

KEPUTUSAN CARIAN

Perikatan yg ingin dicari :

Carian mengikut abjad :

JENIS-JENIS BUKU

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3

Customer Support

 Carian Perikatan
 Kamus Komputer
 Kamus Inggeris Melayu Dewan
 Istilah
 Administrator

ID Pengguna

 Kata Laluan

ONLINE LIBRARY SERVICES

MENU 1 MENU 2 MENU 3 MENU 4

CARIAN ISTILAH

Istilah yang di cari :

Bidang :

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4

ONLINE LIBRARY SERVICES

MENU 1 MENU 2 MENU 3 MENU 4

CARIAN ISTILAH

Perikatan yang dicari (?WORD?):

Bili	d. inggeris	d. Melayu	Bidang	Istilah Lama	Herak

BIDANG

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5

ONLINE LIBRARY SERVICES

MENU 1 MENU 2 MENU 3 MENU 4

DAFTAR AHLI

ID Pengguna :

Katalaluan :

Nama :

IC No. :

Alamat :

Pekerjaan :

Emel :

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6

ONLINE LIBRARY SERVICES				
MENU 1	MENU 2	MENU 3	MENU 4	
PENDAFTARAN ANDA				
Permohonan pendaftaran anda telah kami terima.				
<p>Untuk melengkapkan pendaftaran anda, sila ikut arahan yang terkandung dalam e-mel yang telah kami hantar ke {?EMAIL?}. Sila lakukan proses ini dalam masa 48 jam untuk mengelakkan permohonan anda daripada dibatalkan.</p>				
TERIMA KASIH				
Klik di sini untuk kembali ke laman utama.				
Hak Cipta © 2004 Myhoney_Mahani. Hak Cipta Terpelihara.				7

ONLINE LIBRARY SERVICES				
MENU 1	MENU 2	MENU 3	MENU 4	
LUPA KATA LALUAN				
Anda boleh mendapat kembali kata laluan anda. Anda hanya perlu masukkan id pengguna dan emel anda.				
<p>ID Pengguna* : <input type="text"/></p> <p>Emel* : <input type="text"/> <small>(Masukkan emel yang sama seperti anda mendaftar)</small></p>				
<input type="button" value="HANTAR"/>				
Hak Cipta © 2004 Myhoney_Mahani. Hak Cipta Terpelihara.				8

ONLINE LIBRARY SERVICES				
MENU 1	MENU 2	MENU 3	MENU 4	
PERMOHONAN KATALALUAN				
Permohonan katalaluan anda telah kami terima.				
<p>Sila dapatkan katalaluan anda pada emel yang telah kami hantar ke {?EMAIL?}.</p>				
TERIMA KASIH				
Klik di sini untuk kembali ke laman utama.				
Hak Cipta © 2004 Myhoney_Mahani. Hak Cipta Terpelihara.				9

ONLINE LIBRARY SERVICES				
MENU 1	MENU 2	MENU 3	MENU 4	
LUPA ID PENGGUNA				
Anda boleh mendapat kembali ID Pengguna anda. Anda hanya perlu masukkan emel anda.				
<p>Emel* : <input type="text"/> <small>(Masukkan emel yang sama seperti anda mendaftar)</small></p>				
<input type="button" value="HANTAR"/>				
Hak Cipta © 2004 Myhoney_Mahani. Hak Cipta Terpelihara.				10

ONLINE LIBRARY SERVICES				
MENU 1	MENU 2	MENU 3	MENU 4	
PERMOHONAN ID PENGGUNA				
Permohonan katalaluan anda telah kami terima.				
<p>Sila dapatkan ID pengguna anda pada emel yang telah kami hantar ke {?EMAIL?}.</p>				
TERIMA KASIH				
Klik di sini untuk kembali ke laman utama.				
Hak Cipta © 2004 Myhoney_Mahani. Hak Cipta Terpelihara.				11

ONLINE LIBRARY SERVICES				
MENU 1	MENU 2	MENU 3	MENU 4	
TUKAR KATA LALUAN				
ID Pengguna anda : {?USERNAME?} Penukaran kata laluan				
<p>Kata Laluan semasa* : <input type="text"/></p> <p>Kata Laluan baru* : <input type="text"/> <small>(Bekal isiang daripada 6 alifbata)</small></p> <p>Kata laluan baru (sekali lagi)* : <input type="text"/> <small>(Bekal isiang daripada 6 alifbata)</small></p>				
<input type="button" value="TUKAR SEKARANG"/> <input type="button" value="ISI SEMULA"/> <input type="button" value="SEKRIN TERDAHULU"/>				
Hak Cipta © 2004 Myhoney_Mahani. Hak Cipta Terpelihara.				12

ONLINE LIBRARY SERVICES

	MENU 1	MENU 2	MENU 3	MENU 4
JENIS-JENIS BUKU				
data <input type="text"/> <input type="button" value="CARI"/>	Buku Pilihan Minggu Ini <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="border: 1px solid black; padding: 5px; width: 100px; text-align: center;">BOOK COVER</div> <div style="border: 1px solid black; padding: 5px; width: 150px;">Book Detail</div> </div>			ID Pengguna <input type="text"/> Kata Laluan <input type="text"/> <input type="button" value="LOG MASUK"/> <input type="button" value="LUPA ID PENGGUNA"/> <input type="button" value="LUPA KATALALUAN"/>
Customer Support <input type="button" value="SUPPORT"/>	Carian buku di Pustaka Buku yang ingin dicari : <input type="text"/> <input type="button" value="CARIAN KATAKUNCI"/> Carian mengikut tajuk : <input type="text"/> <input type="button" value="CARIAN AJEJAD"/>			Carian Perikatan Kamus Komputer Kamus Inggeris Melayu Dewan Istilah Administrator <input type="button" value="ADMIN"/>
JENIS-JENIS BUKU <small>Hak Cipta © 2004 Myhoney_Mehani. Hak Cipta Terpelihara.</small>				

ONLINE LIBRARY SERVICES

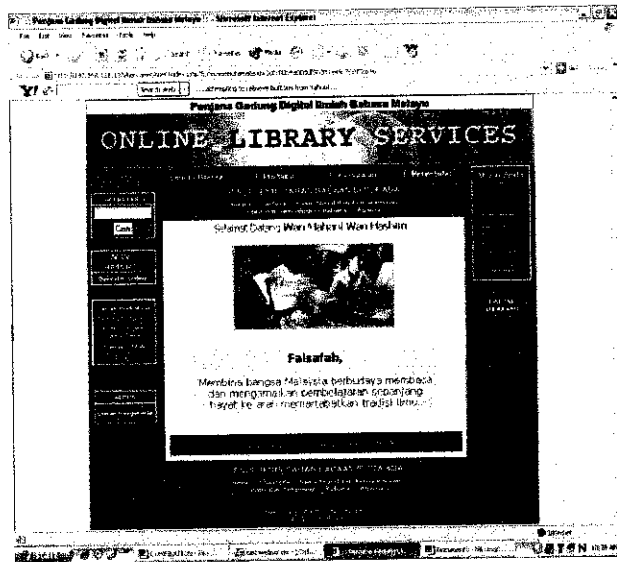
	MENU 1	MENU 2	MENU 3	MENU 4
JENIS-JENIS BUKU				
Carian : <input type="text"/> <input type="button" value="SeriBuku"/> <input type="button" value="A-Z"/> <input type="button" value="Cari"/>				
Keputusan Carian bagi perkataan (?WORD?), huruf A-Z Jumlah carian pada - KATALOG = # dan OPAC = #				
Buku Pilihan Minggu Ini <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="border: 1px solid black; padding: 5px; width: 100px; text-align: center;">BOOK COVER</div> <div style="border: 1px solid black; padding: 5px; width: 150px;">Book Detail</div> </div>				
JENIS-JENIS BUKU <small>Hak Cipta © 2004 Myhoney_Mehani. Hak Cipta Terpelihara.</small>				

ONLINE LIBRARY SERVICES

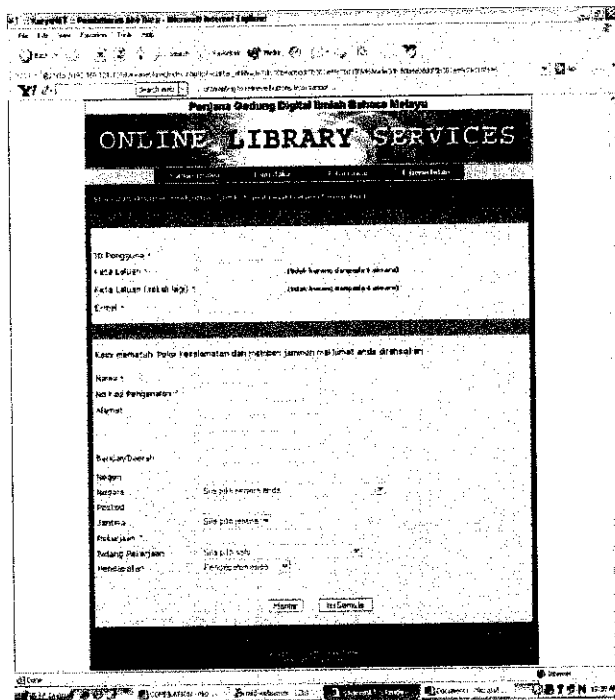
	MENU 1	MENU 2	MENU 3	MENU 4
JENIS-JENIS BUKU				
data <input type="text"/> <input type="button" value="CARI"/>	Sinopsis Buku <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="border: 1px solid black; padding: 5px; width: 100px; text-align: center;">BOOK COVER</div> <div style="border: 1px solid black; padding: 5px; width: 150px;">Book Detail</div> </div>			ID Pengguna <input type="text"/> Kata Laluan <input type="text"/> <input type="button" value="LOG MASUK"/> <input type="button" value="LUPA ID PENGGUNA"/> <input type="button" value="LUPA KATALALUAN"/>
Customer Support <input type="button" value="SUPPORT"/>	Sinopsis Buku <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>			Carian Perikatan Kamus Komputer Kamus Inggeris Melayu Dewan Istilah Administrator <input type="button" value="ADMIN"/>
JENIS-JENIS BUKU <small>Hak Cipta © 2004 Myhoney_Mehani. Hak Cipta Terpelihara.</small>				

5.0 Online Library Services Screen Shot

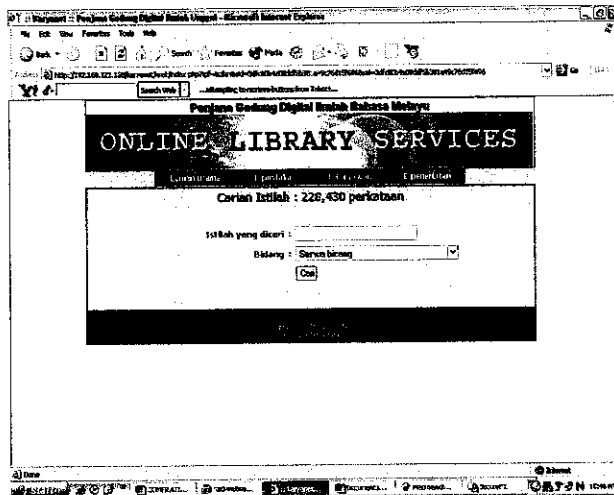
Main Page



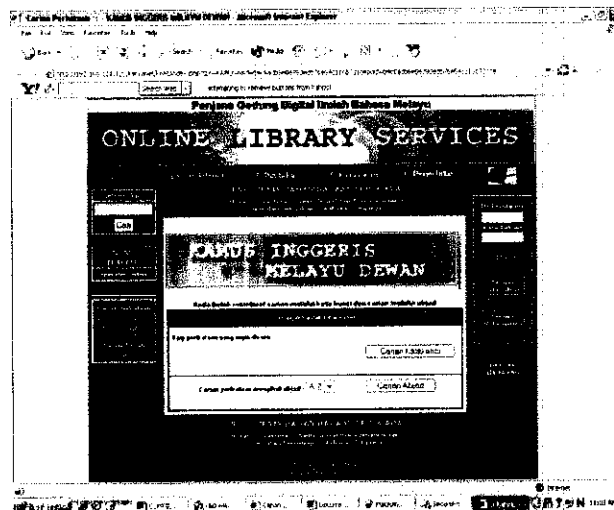
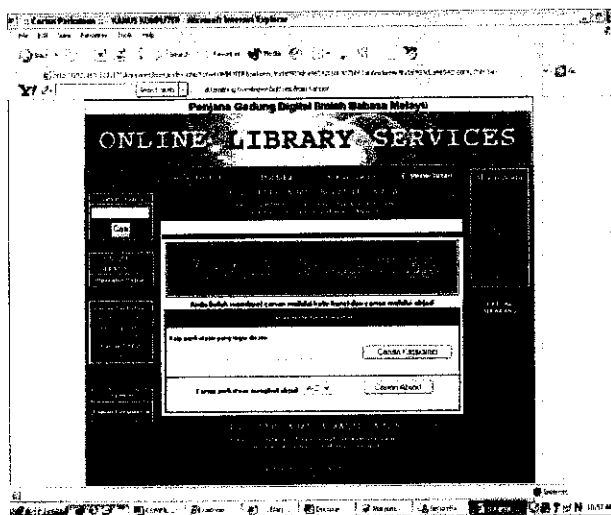
User Registration



Searching by Key word



Dictionary Searching



Dictionary Search Result

Portama Coding Digital Bahasa Malaysia

ONLINE LIBRARY SERVICES

Portama Coding Digital Bahasa Malaysia

1. **1. bahasa Inggeris** - Letak kata yang mana mana dan arti kata itu di dalam kamus bahasa Inggeris.

2. **2. bahasa Melayu** - Letak kata yang mana mana dan arti kata itu di dalam kamus bahasa Melayu.

3. **3. Melayu** - Letak kata yang mana mana dan arti kata itu di dalam kamus bahasa Melayu.

1. **1. bahasa Inggeris** - Letak kata yang mana mana dan arti kata itu di dalam kamus bahasa Inggeris.

2. **2. bahasa Melayu** - Letak kata yang mana mana dan arti kata itu di dalam kamus bahasa Melayu.

3. **3. Melayu** - Letak kata yang mana mana dan arti kata itu di dalam kamus bahasa Melayu.

1. **1. bahasa Inggeris** - Letak kata yang mana mana dan arti kata itu di dalam kamus bahasa Inggeris.

2. **2. bahasa Melayu** - Letak kata yang mana mana dan arti kata itu di dalam kamus bahasa Melayu.

3. **3. Melayu** - Letak kata yang mana mana dan arti kata itu di dalam kamus bahasa Melayu.

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2. **2. bahasa Melayu** - Letak kata yang mana mana dan arti kata itu di dalam kamus bahasa Melayu.

3. **3. Melayu** - Letak kata yang mana mana dan arti kata itu di dalam kamus bahasa Melayu.

Portama Coding Digital Bahasa Malaysia

ONLINE LIBRARY SERVICES

Portama Coding Digital Bahasa Malaysia

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3. **3. Melayu** - Letak kata yang mana mana dan arti kata itu di dalam kamus bahasa Melayu.

1. **1. bahasa Inggeris** - Letak kata yang mana mana dan arti kata itu di dalam kamus bahasa Inggeris.

2. **2. bahasa Melayu** - Letak kata yang mana mana dan arti kata itu di dalam kamus bahasa Melayu.

3. **3. Melayu** - Letak kata yang mana mana dan arti kata itu di dalam kamus bahasa Melayu.

1. **1. bahasa Inggeris** - Letak kata yang mana mana dan arti kata itu di dalam kamus bahasa Inggeris.

2. **2. bahasa Melayu** - Letak kata yang mana mana dan arti kata itu di dalam kamus bahasa Melayu.

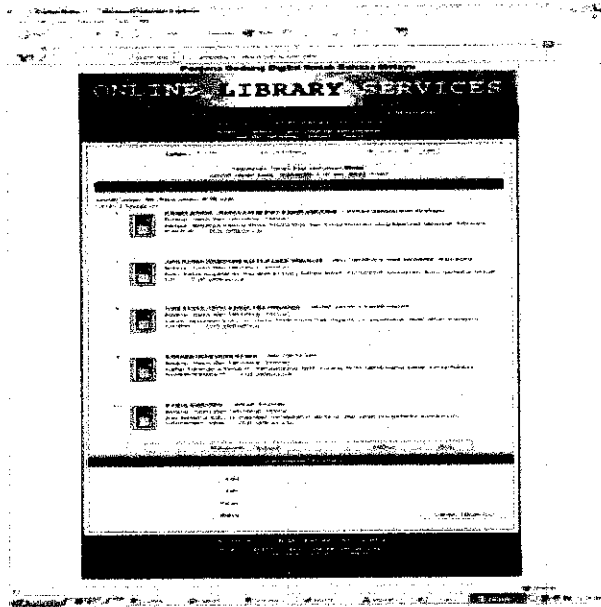
3. **3. Melayu** - Letak kata yang mana mana dan arti kata itu di dalam kamus bahasa Melayu.

1. **1. bahasa Inggeris** - Letak kata yang mana mana dan arti kata itu di dalam kamus bahasa Inggeris.

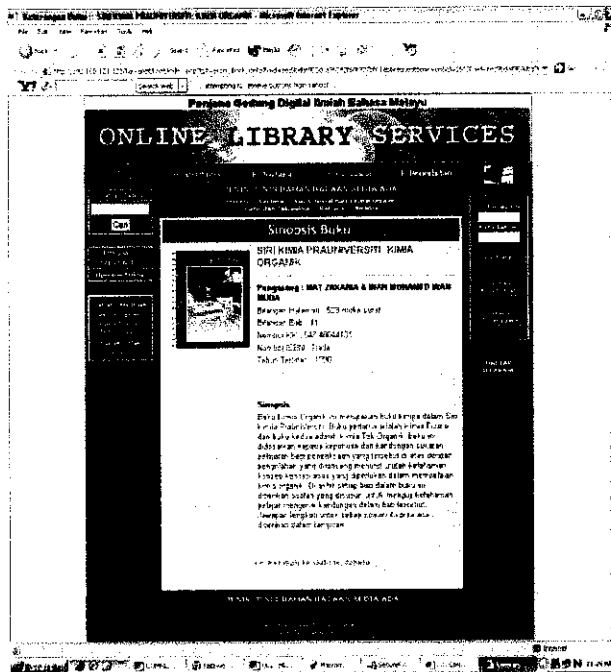
2. **2. bahasa Melayu** - Letak kata yang mana mana dan arti kata itu di dalam kamus bahasa Melayu.

3. **3. Melayu** - Letak kata yang mana mana dan arti kata itu di dalam kamus bahasa Melayu.

Search Result

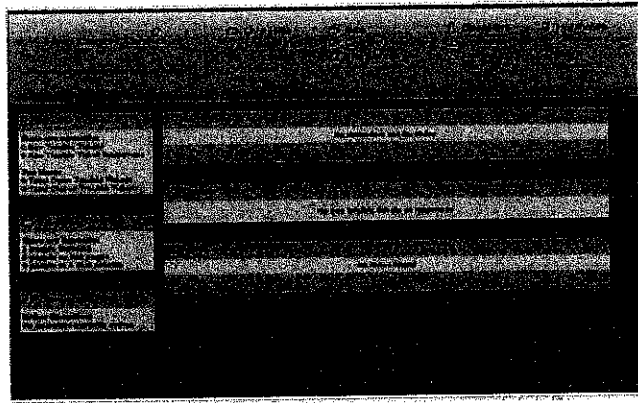


Search Result Details

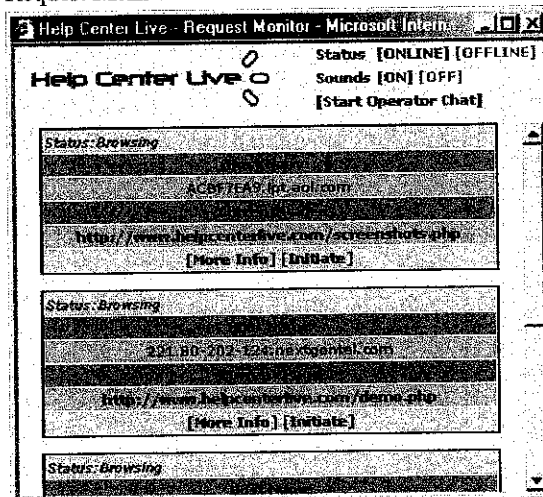


6.0 Live Customer Support Screen Shot

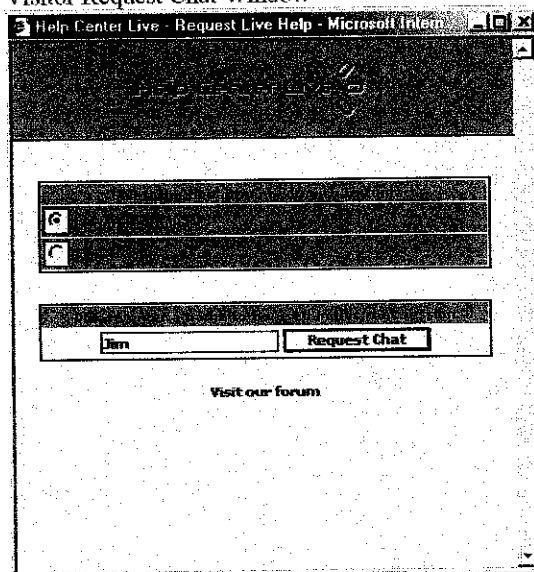
Control Panel



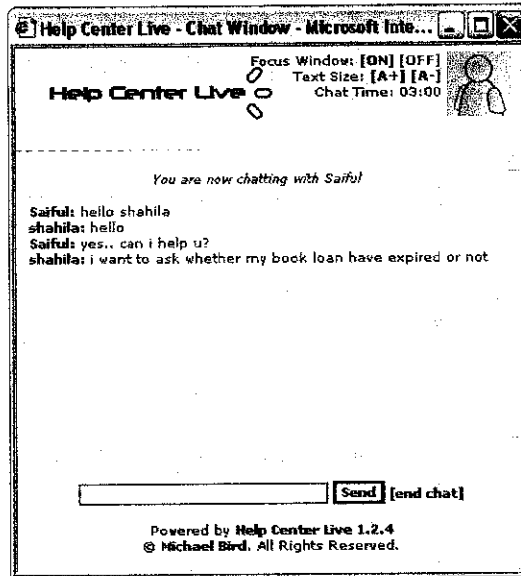
Request Monitor



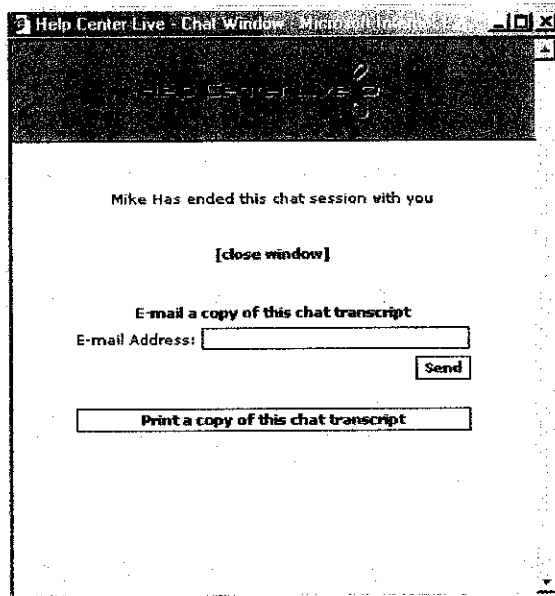
Visitor Request Chat Window



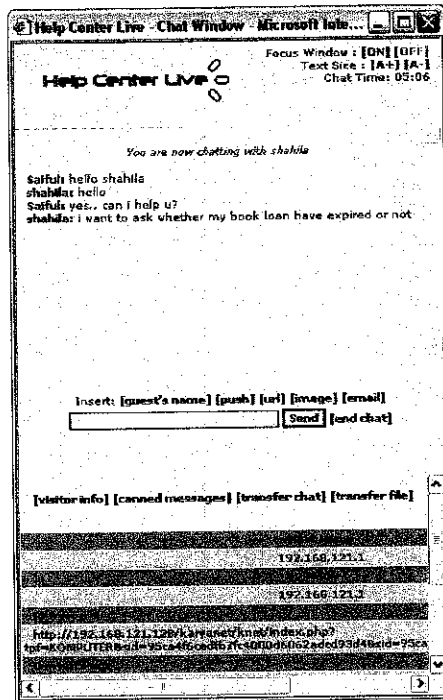
Visitor Chat Window



Visitor End Chat



Operator Chat Window



7.0 PORTAL SPECIFICATION

The general Specifications are as follows:

1. *Implemented as a web-enabled application running on the browser interface (Internet Explorer 5.5 and above).*
2. *Running on existing databases either Microsoft SQL SVR or Lotus Notes.*
3. *Developing using Microsoft Active Server Pages (ASP), Microsoft.net components or other development tool.*
4. *Deployment of the system should run on existing organization's Intranet.*
5. *Existing organization's server configuration. (for example)*
 - *Compaq Reliance for SQL server
Pentium III
256MB RAM, 3X9GB SCSI HDD
OS Name-----Mic. WINDOWS 2000 Server
Version 5.0.2195 Service Pack 3 builds 2195
System Name-----MIS2000
System manufacturer-----Compaq*
 - *Lotus Notes Server
Sun Microsystems
Sun 4U Ent, 450, (4 X ultra SPARC-II 400MHz)*
 - *Memory Size 2048MB*

The System should have following modules:

1. Administration Module

The Administration Module is catering to the general administration of the system, as well as serves as the Registration of various system variables.

The requirements below must be met:

- i. *Registration of users, including their access levels to other Modules and Sub-Modules.*
- ii. *System Log recording all actions by Users.*
- iii. *All registration must be able to be compiled into Excel Spreadsheets.*

2. User Module

The User Module server as access to the system by the various departments in the organization, and all problem reporting is executed here.

The requirements below must be met:

- i. *All Trouble Ticket Numbers are auto generated by the system.*
- ii. *Trouble Ticket must be able to specify types of problems, as well as select specific items from the inventory Module to be deemed as having problems.*
- iii. *Users of each Department will not be able to see other department's ticket.*

3. Helpdesk Module

The Helpdesk Module is where the problem tickets are compiled at HQ. The Helpdesk Users will be able to give first level support through usage of the Knowledge base Module, which contains History of past cases.

The requirements below must be met:

- i. Helpdesk will be able to resolve problem whenever possible.*
- ii. Helpdesk will be able to escalate and assign to multiple support departments.*
- iii. Helpdesk will be able to receive input from a support department, and re-escalate the case if resolution cannot be achieved from the first support department.*
- iv. Helpdesk will receive resolved status from a support department and assigned Case Closed Status.*

4. Support Department Module

The Support Department Module is for various support departments within the organization. This department is registered in the Administration Module, and can include Vendors or other outside parties.

The role Support Department is to receive assigned cases from Helpdesk, and to try to resolve the cases. All resolutions made, including steps taken to remedy the situations must be recorded in a formal structure in the system.

5. Knowledge Base Module

The Knowledge Base Module enables everyone in the System to view History of cases in order to fix a problem.

6. Inventory Module

The involved Module contains information of all ICT items within the organization. It must record each item along with such details as serial number, model and type, hardware configurations, date receive, as well as vendor and warranty period.

7. Report Generation Module

Report Generation Module must be able to dynamically compile various fields in the problem resolution cycle to present a User-specified report.

Extra Features

1. Personalization

The System shall be able for user personalized in terms of data viewing, data presentation and data search criteria.

2. Integration with Microsoft Office Suite.

The system must be able to churn out all kinds of data into Microsoft Office compliant format, especially for spreadsheet and word processing purposes.

3. *Deployment within organization infrastructure*

The system shall be deployed and shall conform to current organization data center infrastructure and specifications. The system shall also be flexible should there need be for any integration with current LAN-based applications deployed at an organization. Level of integration shall be determined.

Other issue

- i. *User License*
Unlimited Users can be registered into the system without additional licensing, or other fees.
- ii. *Ingenuity*
Although ingenuity is encouraged, interested vendors must adhere to the specifications outlined as minimal requirements must be verified as in accordance to the workings of the organization.
- iii. *User Training, Documentation & System Manual*
Training vendors shall provide a complete development and implementation package consisting of, among others:
 - a. *user and system administrator training;*
 - b. *complete system document, user manual and system administrator manual*
 - c. *support and further training plan*
- iv. *Demonstration of prototype of the system is mandatory for short listed vendors.*
- v. *Time frame-Define the key activities and their timeline in the system development stagiest.*
- vi. *It is highly recommended that this system shall be integrated with a new Stock Integrated which organization intends to have in the future.*