

Design and Implementation of a Web-Based E-Business System for Uganda Companies

CASE STUDY: Divine Masters Ltd

BY

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DECLARATION

I **Obuk Sarah** do hereby declare to best of my knowledge that the contents of this project report of “**Web-Based System for E-business of Divine Masters Limited**”, submitted to the School of Computer Studies, Kampala International University for the reward of Diploma in Computer Science for the graduation project, is my original work and that it has never been submitted to any University or any other institution. The literature and citations from other people’s work have been duly referenced and acknowledged in the text, footnotes and bibliography.

STUDENT:

Signed 

Date 24/08/2009

APPROVAL

This project report entitled "*Web-Based System for E-business of Divine Masters Ltd*" has been approval by the supervisor and has been submitted for examination for the partial fulfillment of Diploma in Computer Science

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Ms. Achola Anna Rose

Signed


Date


DEDICATION

I Miss **Obuk Sarah** dedicate this work to my dear parents Mr. and Mrs. Obuk Stephen and my lovely Husband Mr. Orisa Raphael Jawino Who has tirelessly supported me both morally and financially together with the entire family.

May almighty God bless them abundantly for their good work in my life.

ACKNOWLEDGEMENT

Glory is to GOD, who enabled us to complete this work and go through all my studies

My sincere thanks to Management and Staff of Divine Masters Ltd for all the support and information they provided to facilitate the formation of this project report.

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May the Almighty God Bless You All

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ABSTRACT

Due to the increase of development of infrastructure in Uganda, many Construction Companies have emerge which do not provide the right standard of construction on this infrastructure. As a result many buildings that are constructed are collapsing due to failure to get the good companies to offer them these services. For this reason the Web Based System for e-business especially Divine Masters Ltd, have been design to raise awareness to the market of the services that is offering along side with its expertise in the building and construction field. The website has being designed using PHP and the database using MySQL.

This web based project provides user information about the Company and the services it offers. This website is aimed at improving customer satisfaction, boosting sales and reduces costs by handling more transactions at a less time. To compete in the current business environment, management needs to cut down their distribution costs and adopt this system. Based on the literature review of the Internet users, adopting online marketing would look for fast, reliable and convenient system.

ABBREVIATIONS

In the course of this research project, the following Abbreviations have been considered:

PHP	Hypertext Preprocessor
JSP	Java Server Pages
DBMS	Database Management Systems
MB	Megabytes
GB	Gigabytes
GUIs	Graphical User Interfaces
SDLC	System Development Life Cycle
ASP	Active Server Pages
EA	East Africa
LTD	Limited

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CHAPTER ONE:

0.1 INTRODUCTION

The on-line application system for companies is an example of an e-business and database systems developed in form of a website to supplement marketing of the business and eventually replace ignorance of the people on the existing service which they could explore to their capacity around the world. According to research carried out by Jupiter Research, the number of people who uses the Internet is likely to double from 18.6 million in 2001 to 38.6 million by 2010. In response to this e-business opportunity, most companies have established their own websites to facilitate promotion and marketing on the web. Starkov and Price (2007) [9] predicted that at least one-third of all hotel bookings will be completed online in 2010 as online reservations is increasing.

1.1 Background of the case study

Divine Masters Ltd is a privately owned construction company with specialty in Real Estate Development and Management, Architectural Design, General Building Construction & Renovations, Civil Engineering Works, Road Construction, Rehabilitation/periodic Road maintenances, General Plumbing, Electrical & Carpentry Works, Supply and others. The company has provided services for both private and Government/public institutions and individuals.

Divine Masters Ltd Head offices are located at Buganda Road Flats, Block 667, Second Floor, suit E P.O Box 28741 Kampala and P.O Box 1180, Tororo Uganda.

The company was founded in January 2006 as a partnership and dully incorporated into a limited liability company on 30th May 2007; with an authorized share capital of 10,000,000/= as an attribute of professional work and full dedication of the staff. Under its able leadership, the company commands very good reputation in the line of business areas indicated above. To date, the company boasts of 2.9billion Ushs as its annual gross turnover and has been at the forefront of enriching and nourishing various institutional images as a fast expanding construction firm. However, despite of it great achievement with in Uganda, the company has not been able to expose itself to the external world due to use of traditional media of advertisement such as News paper and poster wish limit its exposes

1.5 Research Questions

Is it possible to promote market opportunities through a website?

What is the possibility of creating a website that can improve on the business scope in this Company?

Is it possible to change the current system of the company advert so as to make it recognized currently with the changing it world?

Significance of the project

This study will cause awareness among other businesses and make them develop interest in the internet as a fast, easy, and time saving means of marketing their services and that it can reach out to a vast number of people. For example:

- To enable Institutions, organizations and individual developers to own quality homes and other utilities (Schools, Health Centers) at affordable cost for improved livelihood.
- To provide timely technical quality services to the general public.
- To promote and increase entrepreneurship development, to enhance the economic growth of East Africa. Increase public - private investments and competitiveness to further rural regeneration for employment opportunities.
- To conserve and enhance rural development, spread social – economic opportunities for rural poor to enjoy rural community and share in its priceless assets.
- Develop life skills for improved entrepreneurship development among all employees to enhance rural employment and development.
- To give objective evidence based technical advice to government, private sector, civil society organizations, individuals and other institutions/players in rural areas to influence infrastructural development for all.

1.6 Justification of the study

This study is important because it helps people be aware of the internet and its benefits, making those who have not embraced information technology about the e-business to do so.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

Education level, age, income and occupation have been found to be significantly different among Internet users. Bonn *et al.* (1998)[4] study showed that those who use the internet as a travel information-gathering tool are likely to be more educated, younger, with higher household incomes. Weber and Roehl's (1999) [16] study shows similar results. It is demonstrated by past research findings that prior internet experiences have a direct impact on internet intentions (Weber and Roehl, 1999)[16]. There have been other studies that have supported internet as a key determinant of online services behavior (Bellman, Lohse, and Johnson, 1999[3] and Beldonan et al, 2004) [2]. Findings indicate that the greater the number of years the user spent online combined with higher frequency of Internet usage; the greater was the likelihood of someone to use the services over the internet (Bellman et al., 1999[3]; Weber and Roehl, 1999[16] and Beldona et al, 2004)[2]. Therefore we review on existing work done by various researchers on online booking design, usage, merits and demerits of web based hotel reservation system and how various requirement stage undergone to develop the design. This makes transformation easier from the old system to the new basing on the design and general effects to the user.

2.1 Web based System

A web based application is a software package that can be accessed over the internet through web browser. The software and database reside on a central server rather than being installed on the desktop system and is accessed over a network. A Website is a collection of Web pages, images, videos or other digital assets that is hosted on one or several Web server(s), usually accessible via the Internet, cell phone or a LAN (Kim and Kim, 2007) [12]. There are basically two types of websites pages that is static/non-dynamic websites pages which is a website that has web pages stored on the server in the same form as the user will view them and dynamic websites which is a website that has

frequently changing information or collates information on the hop each time a page is requested or information is fed or needed from a database. (Kim and Kim, 2007) [12].

Advantages of Web based System.

Much like a search engine, you can provide a directory of contacts or events on the Web that can be searched in a number of ways. The data is stored in a database and can be searched through a Web interface. (Gianni, 2002) [20] States that querying a database that sits behind a search engine is merely the tip of the iceberg when it comes to using a database to provide dynamic content for your website visitors. If you have a large number of documents that you want to make available to the public on the Web, you might consider developing a database-driven library of these documents that would allow people to search for certain documents or browse lists of categorized documents (Gianni, 2002) [20]. If your Website contains a large number of pages or you have a number of different people involved in updating and maintaining your site, you may consider using a content management system to maintain a consistent look and feel for all your pages. Rather than developing a number of static Web pages, you develop the content and plug it into a template for your Website. The information is stored in a database (Stefan, 2000) [19].

With the use of ASP model, you'll be freed from all the time-consuming and expensive tasks associated with maintaining your server such as hardware upgrades, configuration, bug fixes and enhancements. Everything is done for you. The POS vendor can even do custom software configurations, upgrades, and back up the data for you. The ASP model also allows you to run your POS software from any location with internet access. So you can work from home or on the road. Since all the processing is done at the server, your workstation requirements are very low. A 5-year-old computer with internet access can run just as fast as a brand new computer. The ASP model is even more beneficial. In fact, it allows you to share almost any type of information in real-time (assuming your POS software supports multi-store features).

Disadvantages of web based Systems

User experience on a web based system differs from that on the normal, everyday software. We have become accustomed to the user friendly MS Windows interface. This interface includes multiple windows displaying different information, instantly appearing drop down selection boxes, quick loading and printing reports. On the web, however, we see one page at a time, click on a link, load and view the next page, and so on. This slows down the interface significantly, taking staff time away from their maintenance responsibilities. While this method might be acceptable for an occasional purchase or annual vacation, it can be very tedious as a daily work experience. Monthly or annual subscriptions and user fees quickly add up, and over a relatively short time, can overtake any initial savings. You might lose your program and your data if your vendor is unable to continue supporting the system. A system is only successful if the staff uses it constantly and consistently. Internet response time, even with a "high speed" connection, is significantly slower than a local network. This can be frustrating for your staff during data entry or reporting tasks. The biggest problem with the ASP based model is its speed and reliability of the internet. If your internet goes down, then you can't access your POS software. In addition, the speed of your POS will be determined by the performance of your internet connection and it will take a little longer to switch screens and run the software.

2.2 Working of Web based systems

The Websites are written in, or dynamically converted to HTML (Hyper Text Markup Language) and are accessed using a software interface classified as a user agent. The site has Web pages (document which is always accessible via HTTP - a protocol that transfers information from the Web server to display in the user's Web browser.) can be viewed or otherwise accessed from a range of computer-based and Internet-enabled devices of various sizes, including desktop computers, laptop computers and cell phones. After each Web page is created, they are typically linked together using a navigation menu composed of hyperlinks (Lowery, 2006) [21].

Once a Website is completed, it is published or uploaded in order to be viewable to the public over the internet. This is done using an FTP client. All publicly accessible websites are seen collectively as constituting "(WWW)". The pages of websites can usually be accessed from a common root URL called the homepage, and usually reside on the same physical server. The URLs of the pages organize them into a hierarchy, although the hyperlinks between them control how the reader perceives the overall structure and how the traffic flows between the different parts of the sites. Some websites require a subscription to access some or all of their content. Websites are constrained by architectural limits e.g., the computing power dedicated to the website.

The first on-line website appeared in 1991. On 30 April 1993, CERN announced that the World Wide Web would be free to anyone (Cailliau, 2007) [22]. One of the most common types of dynamic web pages is the database driven type. This means that you have a database that gets information from a web page (the web page is connected to the database by programming,) and inserts that information into the database each time it is loaded. If the information stored in the database changes, the web page connected to the database will also change accordingly and automatically that is without human intervention (Stefan, 2000) [19]. Using a database in conjunction with your web pages allows you to deliver text, images and other web content based on specific requests for information from people viewing your site. So rather than static pages which always deliver same information, you can offer dynamically generated pages which could better serve your site's visitors (Gianni, 2002) [20]. In the database driven website all information is stored in table format of databases on the server. Usually database driven websites have admin panel with user-friendly interface where you can manage the site content, i.e. add, edit, or delete information by yourself, create new pages or delete old ones. You can update your site easily each time you need it.

2.3 Types of web based System

ASP

There are different types of "web-based" systems, so let's start with the ASP (Application Service Provider) model. With ASP based systems, your POS software is hosted and maintained by a remote organization, freeing you from the hassle and costs of maintaining your own server. This allows you connect to the server via the internet and run your POS system from almost any location. Most companies charge a monthly rental fee for this service.

JSP

According to Gareth Downes-Powell et al (2003) [9], Java Server Pages is available in various flavors. For many years, Java was touted as being the ultimate in platform-independent coding. This was the promise, and to a degree, that promise was delivered. The move from Java-based applications to its use as a method of dynamically creating web pages was a logical one. Certainly, the great thing about this architecture is that it can be run on any platform, on any machine, so it is a good candidate for portability and compatibility.

As there are a number of variations, at this point we clarify how JSP is structured. First of all JSP is what is called a 'reference implementation' of Sun Microsystems Java Server Pages. In essence, Sun Microsystems determine how JSP should be implemented, and have developed a standard by which all versions of JSP should comply, called the Java 2 Enterprise Edition (J2EE). There are various open-source and commercial implementations of JSP, including Macromedia JRun Server and Caucho Technology's Resin. Since there are various implementations, it can be difficult for the first time user to decide which version they should use. Different versions written by different software houses also bring a huge difference in quality, stability, and speed for each of these environments, as each has its own unique nuances.

2.4 Application areas of Web based E-Business System

The system provides two basic services: server-side services and client-side services. The client side services include Web-based interfaces that the administrator and travelers will use when they want to carry out their specific tasks. The administrator will access the system by using an assigned user id and password. The server-side services will allow the client-side services to access and modify the data in the database. They would also allow dynamic creation of the 'pages' the customers sees (except for the static pages for individual companies that provide information about the facilities they provide) while using the system based on this data. The database holds information in various tables related to company information. The system provides interfaces for two types of users, customers and the administrator. It allows customers to view the services offered over the Internet, obtain information about the company.

In this project the Web based E-Business system provides ease to online adverts and manages inventory. Customer are able to check available inventory and view the available services / process more efficient and less time consuming to both parties.

2.4.1 Other areas of application

Web-based reservation system is used in various ways on the internet to obtain information to do business. Starkov [14] suggested approaches for the hotels and construction industries towards solving typical computer problems. Turban et al. (2000, p.20) [15] can be viewed as a sub system of information systems. This include: Online banking sites; where you can log in (by entering your user name and password) and check out your bank account balance. Your bank account information is stored in a database and has been connected to the web page with programming thus enabling you to see your banking information. Commerce; database driven website is the key technology behind it. The online publishing, computerized library system, flight reservation systems, computerized parts inventory systems like Seattle mariners and Internet applications like electronic mail, browsing and participating in newsgroups and chat rooms are the common application.

2.5 Approaches of developing web based system

PHP Engine

According to Gareth Downes-Powell et al (2003) [9], it is used as a programming language to interpret the requests made from the World Wide Web, process these requests, interact with other programs on the server to fulfill the requests, and indicate to the web server exactly what to serve to the clients' browser. According to Gianni (2002) [20] three languages that are commonly used for interacting with databases on the Web are ColdFusion (a proprietary solution developed by Macromedia), Active Server Pages (also called ASP - a proprietary language developed by Microsoft) and PHP ((Hypertext Preprocessor) an open source solution not "owned" by any company). In this project PHP is used because it has a lot of advantages such as, fast, stable, secure (PHP offers many levels of security to prevent malicious attacks), easy to use, open source and it has connective abilities that it uses a modular system of extensions to interface with a variety of libraries such as graphics, XML, encryption. In addition, programmers can extend PHP by writing their own extensions and compiling them into the executable or they can create their own executable and load it using PHP dynamic loading mechanism.

It integrates well across many platforms and with various software programs. PHP In this respect does have the edge, for there is a single development base, with a group of individual developers supporting, maintaining, and improving PHP at each stage it is stable, reliable, and much easier to implement than its JSP counterparts. It also means that there is no confusion about which "type" to use, as there is only one PHP.

DBMS

According to Date (2000) [6], it is a software system which enables users to define, create and maintain database and which provides controlled access to the database. The database system allows two or more people to access a given record simultaneously, sharing of data, improves data integrity and incase of any updates, the changes are reinforced.

2.6 Development methodology in web based System.

2.6.1 System Development Life Cycle (SDLC)

According to Whitten et al (2000) [11], it involves phases through which a system goes through from the time of initiation to the time the system is put in operation.

Development of a system goes through the following stages

Investigation This is where the nature and scope of the problem are studied and alternative solutions to the problem are brought up

Analysis Involves gathering of data and writing of reports. Data analysis take place using tools such as data flow diagrams, data dictionary, decision tables and trees

Design, is done using preliminary tools, case tools, and project management software. Detailed designs are also made here, that is, the output design (what is produced by the system and whether the products are useful), input design (the analyst must determine what inputs are needed to produce these outputs), file design(the analyst decides how the data will be stored and accessed) and finally the system processing and general program design(the analyst decides how various parts of the system interact with one another to produce the outputs from the inputs using appropriate files). Whitten et al (2000) [11],

Implementation is the time from when the system has been formally approved to the time the system is ready for use. The activities may include writing of programs, testing of programs, training users. Whitten et al (2000) [11],

Testing, this phase the system is tested. Normally programs are written as a series of individual modules, these subjects to separate and detailed test. The system is then tested as a whole. The separate modules are brought together and tested as a complete system. The system is tested to ensure that interfaces between modules work (integration testing), the system works on the intended platform and with the expected volume of data (volume testing) and that the system does what the user requires (acceptance/beta testing). Whitten et al (2000) [11],

Maintenance. Inevitably the system will need maintenance. Software will definitely undergo change once it is delivered to the customer. There are many reasons for the change. Change could happen because of some unexpected input values into the system. In addition, the changes in the system could directly affect the software operations.

The software should be developed to accommodate changes that could happen during the post implementation period. Whitten et al (2000) [11],

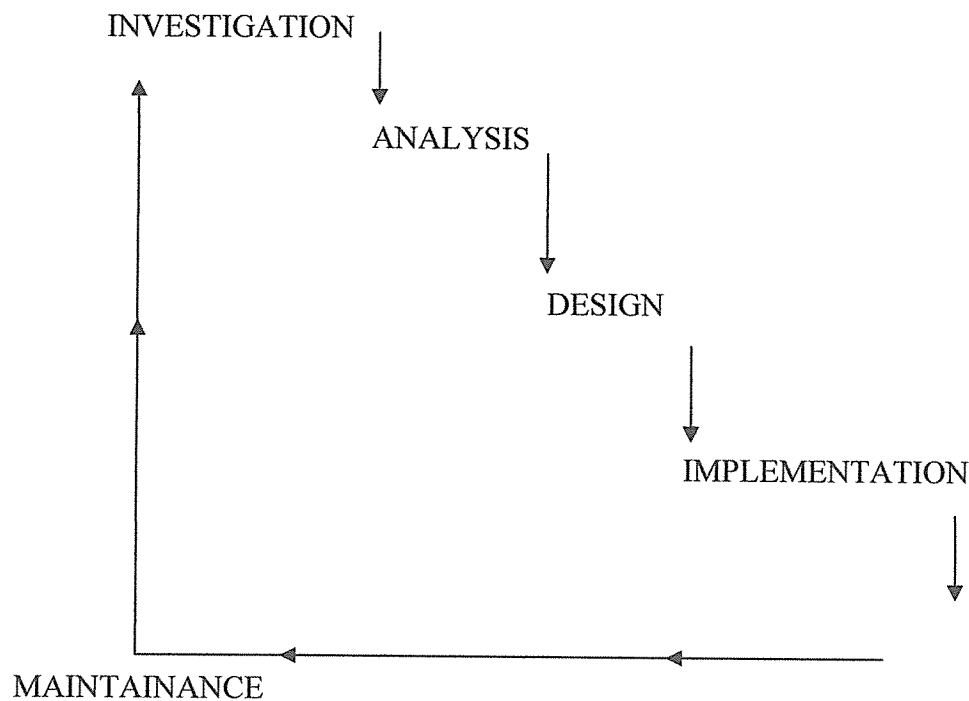


Fig 1. System Development Life Cycle

2.6.2 Prototyping

It is the process of quickly putting together a working model so as to test various aspects of a system design, illustrate features of the system and gather array user feedback and if it meets the functionality and other design goals then the system is put into operation. The advantage is that it is cost effective and it helps refine the potential risks associated with the delivery of the system being developed. It also increases system development speed. (Whitten et al, 2000)[11]

2.6.3 JAD (Joint Application Development)

It centers on a structured workshop session. It brings together business area people (users) and IT professionals in a highly focused workshop. The advantage of JAD include: a dramatic shortening of time it takes to complete a project and it also improves the quality of the final product by focusing on the upfront section. (Whitten et al, 2000)[11]

Therefore aggregating data from surveys can be a valuable way for you to evaluate programs or collect information from your members or people who care about your work.. Sending out paper surveys and doing the data entry to analyze your results can be frustrating and time consuming, so using the Web to collect that information is a great way to simplify the process (Gianni, 2002) [20].

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter described how specific objectives were achieved. The researcher has step by step investigate the existing literature concerning online booking drilling down to those designed for the Devine Masters Company Ltd. The Web based reservation system followed the following sub sections as illustrated below

Diagrammatic representation of steps taken in development of the system.

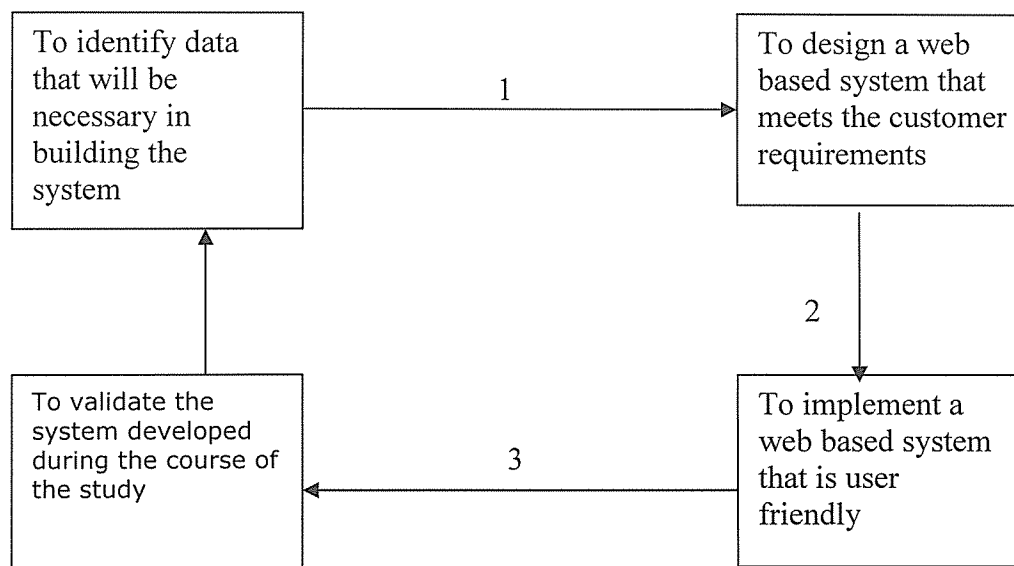


Fig2 shows steps taken in development of the system.

3.1 Data identification

Under the system study the researchers carried out a detailed investigation of the problem domain and establish that the problem really existed and found out ways of solving the real problem, its scope and how best it could be solved. To aid in the identification, the researcher used the following fact finding techniques.

3.1.1 Document Analysis

This was carried out by reviewing of previous study and existing literature and documentations. This helped the researcher to get a background of the problem which provided a good starting point and helped in obtaining the requirements for the system. By reviewing some of the documents, the researcher was familiar with the operations that are performed and the formed relations within the organization. The main advantage of this approach is that it takes less time and it is less expensive as compared to other forms of fact finding because it is reliable to the existing literature. This document analysis was inexpensive way of acquiring information since it was easily available which provided opportunity for study of historical trends of events over time which was seen impossible with other data collection methods. As a result data collected was highly qualified, valid, available and reliable making it a strong base to build a question such as a reference.

3.1.2 Observation

The researcher used the natural and participant method. Day to day activities in the Divine Masters Ltd

concerning the advert procedures that were being carried out. This helped to better understand the problem, its scope and to obtain the best solution to the problem.

3.1.3 Questionnaire

The researcher also carried out questionnaires, the sampling frame was based from the hotel customers' e-mail list server directory. A bilingual questionnaire of English (the country's national language) was constructed based on previous research by Jarvenpaa and Todd (1997) [10]. The researcher found out that questionnaires allowed individuals to maintain anonymity. Therefore individuals provided real facts.

3.1.4 Interview

This is a fact finding technique that allows the evaluation team to capture the perspective of the project participants, staff and others associated with the project. The researcher conducted both one-on-one and group interviews Although the approach was expensive and time consuming, the researcher was able to get a one-on-one chance with the

customers thus was able to better understand the problem, as shown in the sample table below for administrator.

3.2 System Design

It defines the structure and contents of the new system and the Specification of how the system will be implemented

Categories of what was designed

Application Architecture and Modeling (Physical Design)

It specifies the technologies to be used to implement one or more information systems in terms of Data, Process, Interface and how these components interact and communicate across a network. It serves as an outline for detailed design, construction and implementation.

Logical DFDs of the target system: these and their accompanying specifications were intended to represent the detailed non-technical requirements for the new system.

Physical DFDs of the target system: were intended to propose and model the technology choices and design decisions for all logical processes, data flows and data stores

User Interface Design

Input design- permits users to display or enter data. Data entry screens.

Output designs: reports for presenting data. The output is what is

Produced by the system after it has done some processing. This output is in form of reports and can be printed as hardcopy. The softcopy is displayed on the screen as required by the user include,

- i. Customer Report

Database Design

This is the process of translating logical data models into physical database schemas. A database is a collection of tables with logical pointers that relate records in one table to records in a different table. Database architecture is build around a database management system that provides the technology to define the database structure and then to crease, read, update and delete records in the tables that make up the structure. A DBMS

provides a data language to accomplish this. That language provides at least two components:

The data definition and language to create and maintain the database structure and rules.

The data manipulation language to create, read, use, update and delete records in the database.

3.3 System Implementation

This is very crucial stage of the software development process. It involves turning the requirements into technological terms. Implementation includes conducting of system tests, conversion from the old system to the new system, installation of databases and training of users. The interfaces were developed by the use of PHP while the database was realized by the use of MYSQL, Wamp server 2. In order to perfect the functionality of the system, the designers ensured every process flow of bookings has its own entity and corresponding user-friendly interfaces.

Coding:

This is the actual programming which involves writing codes using a selected programming language.

Testing:

It is the process that determines whether the system produces the desired results. Testing is done through out the system development life cycle. Testing is broken down into:

Unit testing: Testing individual component separately to remove errors. This is normally done by the programmer.

System testing: (Integrated testing) tests the functioning of the information system as a whole to determine if discrete modules will function together as planned usually done by an independent test team.

Acceptance Testing, is tested by users to provide final certification that it is ready to be used. Systems tests are evaluated by users and reviewed by management when all parties are satisfied, then the system can be installed

CHAPTER FOUR:

DATA PRESETATION ANALYSIS AND SYSTEM DESIGN

4.0 Introduction

This will involve creation of a design that will support the objectives of the required hotel reservation system to the benefit of our area of case study

4.1 System design

System design is the specification or construction of a technical, computer based solution for the business requirements identified in a system analysis. System design focuses on the technical implementation concerns of the system. It is driven by the technical concerns of system designer. System design is looked at from three perspectives:

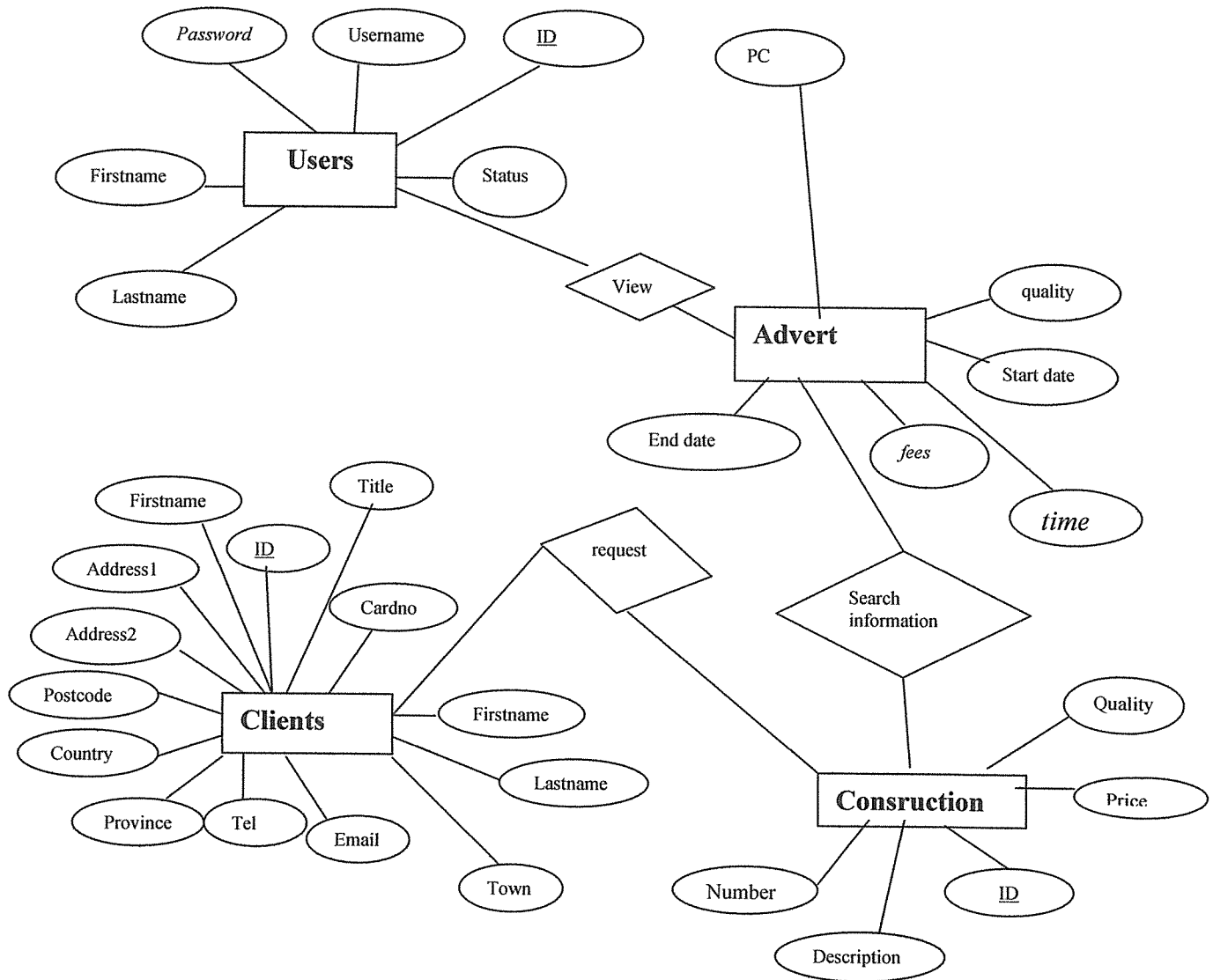
- i. Logical Design
- ii. Physical Design
- iii. Database Design

Logical design

Logical designs depict what a system is or what a system must do but not how the system will be implemented. They are implementation independent, that is, they depict the system independent of any technical implementation.

ER-diagram

Fig 3 ER Diagram of the Webbased Hotel Reservation system



Flow Charts

Using this information, the site searches the relevant database table (services and fees charged) to establish that it is possible to get the available services .If the services is not available the customer is given the opportunity to try else way.

Fig 4 Flowchart for E-business system

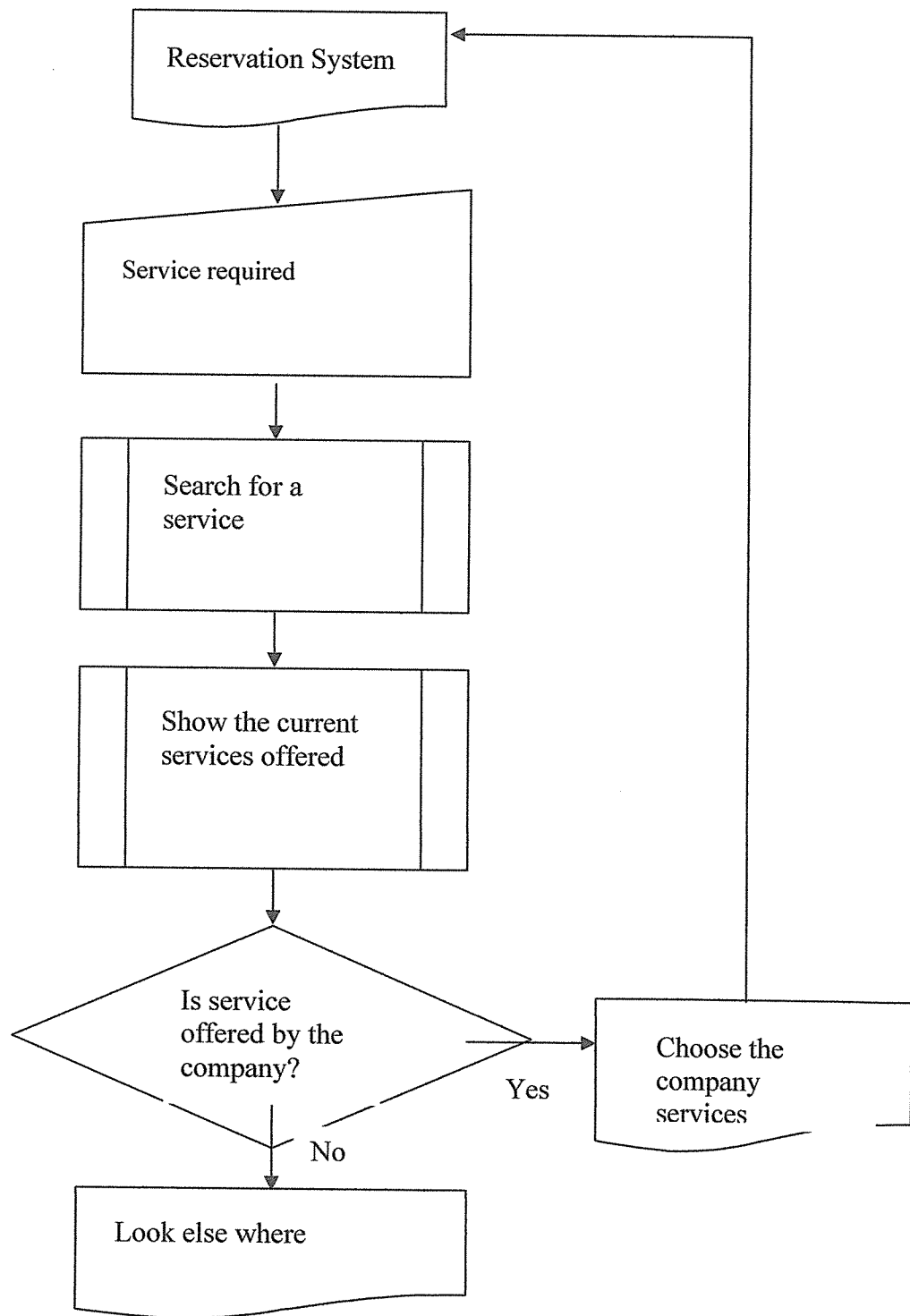
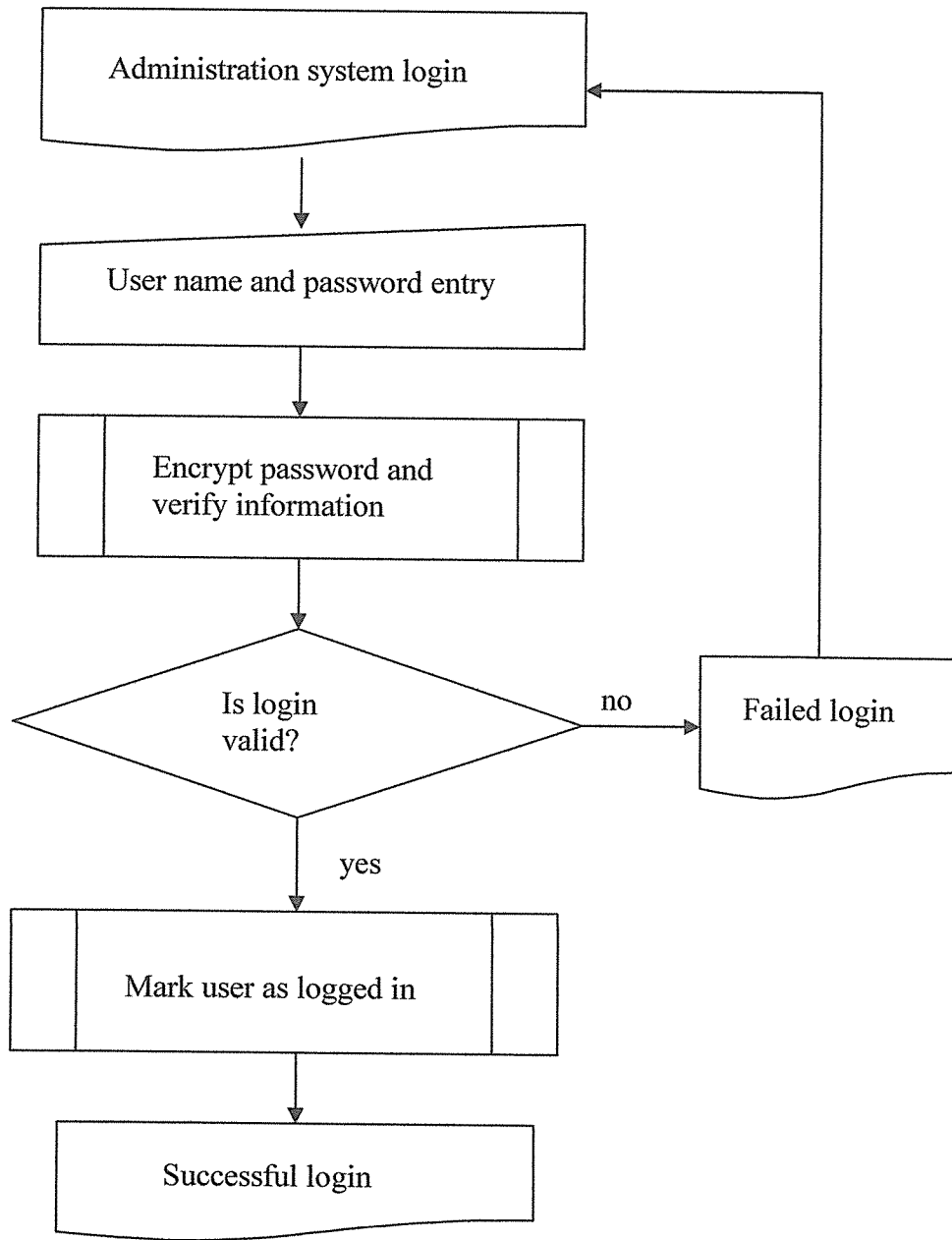


Fig5 Log in System



Physical Design

Conceptual design of database

Admin table

Field	Type	Collation	Attributes	Null	Default	Extra
ID	int(8)			No		auto_increment
Username	varchar(20)	latin1_swedish_ci		No		
Password	varchar(20)	latin1_swedish_ci		Yes	NULL	
Firstname	varchar(30)	latin1_swedish_ci		No		
Lastname	varchar(30)	latin1_swedish_ci		No		
Status	varchar(10)	latin1_swedish_ci		No		

4.2 Systems Security

Software

Use of passwords to allow only authorized users to gain access to the systems documents.

Install anti-virus software that will help detect and clear viruses.

Take regular backups in case of data loss.

Diskettes should be checked for viruses before being used.

Hardware

Lock all computer room doors to restrict any physical access.

Employ watch guards if need be to restrict any physical access.

Keep all hardware away from fire and water.

4.3 The current system

Devine Masters Ltd uses paper based manual process throughout all its daily booking transactions. These methods are very prone to errors in that some documents containing critical information about customers and other valuable information can easily be misplaced. The customer has to find the details from the adverts else where.

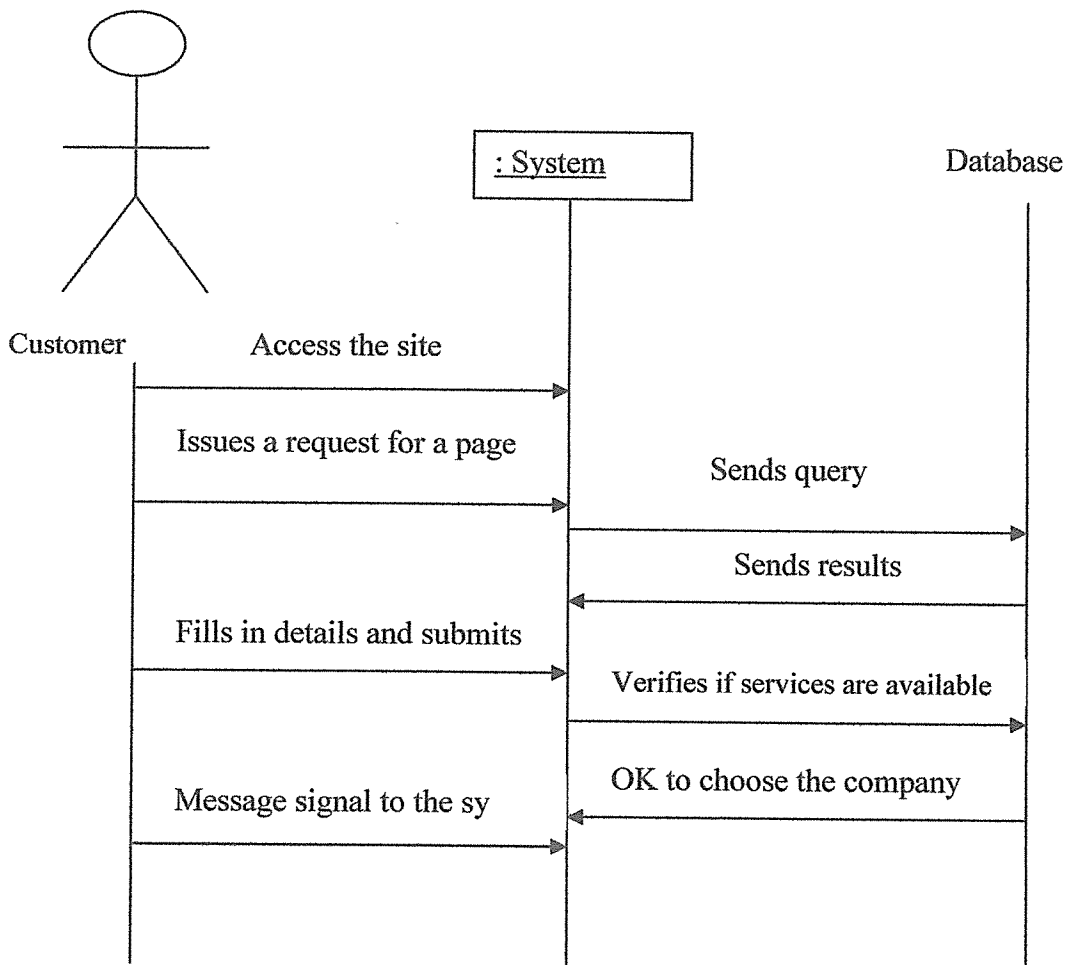
The person in charge of the service has to record customer's details in a book and sometimes may not even be sure whether the required service is available or not. This

creates a hustle of having to first check manually in the files for the information. Above all customer relationship management is very difficult to achieve when using such manual based processes.

4.4 Proposed System

After analyzing the current system and in order to improve the current situations caused by the current system, considerations should be made to implement a new Web based E-business System. This will increase the company efficiency by improving the quality of service, faster access to management information and reduction of expenditure because reservation requests won't have to be processed

Figure7 Sequence diagram for Room Reservation System



4.5 Requirements of the proposed system

Hardware requirements

The system will run on a Pentium III-IV., 2GHZ processor and above 20 GB hard drive, a resolution of 1024*768, bandwidth of 110MHZ. There should be a 52 speed CD drive for installation and for creating backup copies of the company's data. Any kind of a printer compatible with the organization's system can be used. A stabilizer or uninterruptible power supply of 220 – 240 volts and 4A for power stability and storage to keep PC working will be required, so that power losses do not lead to data loss.

Software requirements

The system will run on a windows platform 9x, 2000 or XP. and a Web browser software with Internet connection. In order for the database to run, MYSQL and WampServer should be installed in the system. A web server and web browser will also be used in line with Dreamweaver 8. Antivirus software and graphical browser installation is important.

4.6 Benefits of the Proposed System

The proposed system, led to the following benefits:

- It Saves time of processing orders especially in cases where there are many orders.

- It saves on the amount of storage space due to the electronic filing system.

- It proves easy backups for cases where records are damaged.

- It is a better method of record retrieval through special search program that prove Easy report generation.

- It proves better methods of calculating balances, sales and profits.

- It is a better and faster method of identifying and tracing customers' details.

- It provides generation of consistent and accurate information on demand.

- It is best for utilization of human resources and time

- It is good for proper maintenance of records for future reference.

- The system is not prone to manipulation and alterations.

Chapter Five

SYSTEM IMPLEMENTATION

5.0 Introduction

System construction involves the development, installation and testing of system components. It involves actual programming which involves writing and testing new programs using a selected programming language after which the system must be tested, and implementation can then take place.

5.1 System testing

In this process, we tested the system built objectives to remove errors and to verify whether it satisfies the user requirements of the hospital. From this we derived two testing techniques include Unit-testing and System-testing.

Unit-testing

Prior to our coded data and physical design model, we tested individual forms separately and debugged where required. We made sure all the command-buttons were functioning as required, attributes and entities in the required format and their programming syntax responded to their appropriate calls as needed.

System testing

We had to test the whole system with its actual data to determine if discrete modules in it will function together as planned. All the unit tested actual data was brought together to form one system.

5.2 System Implementation

This is very crucial stage of the software development process. It involves turning the requirements into technological terms. Implementation includes conducting of system tests, conversion from the old system to the new system, installation of databases and training of users. The interfaces were developed by the use of PHP while the database was realized by the use of MYSQL, Wampserver 2.1. In order to perfect the functionality of the system, the designers ensured every department and the process flow of business has its own entity and a corresponding a user-friendly interfaces.

User Interface



This is actually the first page the user sees when they log to Divine Masters Ltd from the Main. It provide the possible links that the customers what to find about. Either the services offered, click 'services' about the projects click 'Our project' and to see some frequently asked question you click 'divine Faq'



This page allows the user to enter their details, that is, it allows him to fill in the name, e-mail address references on what he what to find out and the message to pass to the company. The links to other related areas are also available.



This page is to allow the user to contact us. The contact address are viewed together with the location of the company.

5.3 System Conversion

Conversion is a process of changing from the old system to the new system. The existing data has transformed to the new database and the existing application which is to run the new database. The following conversion strategies was used

5.4 Parallel Strategy

Both the old and the new systems were run together for a time. The old one being file based system that the hotel used as means of record-keeping. The file-based system had draw-backs like time wastage and unclear hand written records but they helped in comparing records on paper-based with that of the new system designed. The comparison was also made to enable the availability of records on file-based in case the new system failed, hence avoiding total record disappearance.

Chapter Six

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

6.0 Introduction

This chapter has recommendations which the developers strongly feel should be put in place for effective use of the system and general running of the organization. It also talks about the general benefits or the strengths of the system once installed in the organization. Finally it has the conclusion of the entire project

6.1 Discussion

For proper functioning of the system, repair and maintenance of the system should be observed. This will be done after critical evaluation of the system. In addition user training is essential for proper use of the system. The Divine Masters Ltd requires a number of different elements. First of all, there is the client-facing site that allows a customer to check the availability services based on date criteria that they specify. If a service is available, then the visitor is given the opportunity to view and add his details as name and address. The second part to the site is the Administration section. This allows a designated company and manages staff for user names and passwords

6.2 Conclusion

The research has been successfully completed, with support being provided by all the concerned people. The system developed if implemented will help the organization improve its services. This is because the system will make Divine Masters Ltd reliable in terms of efficiency and also management given that the Web based System provides services providers with the ability to get services online and manage inventory. Guests are able to check available inventory and complete a request making the process more efficient and less time consuming to both parties. It also reduces cost, that is, guests get the advert real-time at the website. Valuable staff time is saved because adverts requests will no longer have to be processed. By automating your sales process, you will be able to handle the same amount of transactions, or more, at a much lower cost. Moreover you will also gain significant control over your margins and pricing strategy. Researchers worked hand in hand with the organization so that the validation from the user could help

come with the right system specifications. Then the system development lifecycle was followed step by step in realizing the system.

6.3 Recommendation

Divine Masters Ltd should adopt this system for efficient running of their operations. This is especially in the current age of technology where every activity in any organization should use computers. For it improve on its services and attract more clients, the following areas should be automated; payment, and general operation of the organization. The new system is able to do this and also provide periodic reports for management and decision making. For security purposes, editing and deleting should be secured by use of passwords, this has been realized by use of granting most user less privileges which involves changing data in anyway and instead administrator privileges given to the right person. This in other words means access to the database should be in such a way that each person should be availed only the section that he/she is concerned with, not the entire database. This will prevent people from tampering with information or even trying to access information without permission. Another way of ensuring data security is by:

Back Up: at least two copies of back up files should be kept in separate locations to avoid any calamities e.g. fire break out and theft, which destroys the files.

Physical Security: this can be done by placing security guards to watch over the computer rooms, installing alarm systems in the computer rooms so that any break-ins can be detected, store CD's and Diskettes in fire proof safes, scan all internal disks and don't allow any external diskettes into the computer rooms, each user (administrator) Should have a username and passwords so as to grant them access to the system

6.3.1 Areas of further research

A replication of this study is recommended using the general population. This will provide a test of reliability of this study's findings. Further research is also needed to differentiate the determinants of repeat internet users as compared to first time posters. These will help management to differentiate the concerns of first time advert as compared to internet that might request for special needs. The findings would definitely help company to more effectively retain these internet customers.

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APPENDIX 1

Questionnaire

The questionnaire below is to be filled basing on one's knowledge of the question. We please request you to fill in only what you know. It will be confidential, used for research purpose only.

1. What are the problems faced while using the current system?

2. What do you think should be done to address the problems mentioned above?

3. What are the possible measures put in place to cater for the unpredictable disasters that may damage the data in storage?

4. How do you ensure the confidentiality of the information in the advert?

.....
.....

5. What is the average time needed to process a transaction file before it is taken for storage?

.....
.....

6. How do you rate the performance of the existing system?

☐ Very good ☐ Good ☐ Fair ☐ Poor

☐ Very

Please explain why you rate it that way.

.....
.....
.....

7. What are the reports generated at the end of each process?

8. How often is the data entered into the system?

☐ Daily ☐ Weekly ☐ Monthly

Others

Explain.....
.....

9. Are customers' records re-viewed always?

☐ Yes

☐ No

APPENDIX 2

Sample codes

About us

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3c.org/TR/1999/REC-html401-19991224/loose.dtd">
```

```
<HTML xmlns="http://www.w3.org/1999/xhtml"><HEAD><TITLE>Divine Masters
Limited - About Us</TITLE>
```

```
<META
```

```
content="Divine Masters Limited, property sale in Uganda, Homes for Sale in Kampala,
Number one Real Estate in Uganda, Real Estate in Uganda, Buganda Road, Divine
Masters Limited, Home of Divine Masters Limited, Uganda's foremost housing
development company, housing finance, International, Commercial, Letting, Buying,
Architecture, Rentals, Homes for Sale"
```

```
name=keywords>
```

```
<META http-equiv=Content-Type content="text/html; charset=iso-8859-1">
```

```
<META
```

```
content=" Divine Masters Limited Uganda, property sale in Uganda, Homes for Sale in
Kampala, Number one Real Estate in Uganda, Real Estate in Uganda, Buganda Road,
Divine Masters Limited in Buganda Road, Home of Divine Masters Limited Uganda,
Uganda's foremost housing development company, housing finance Uganda, acquiring
properties in Uganda, Find your home in Uganda, Acquiring a home in Uganda, own a
house in Uganda, Residential Real Estate Property Uganda, Real Estates at Divine
Masters Limited, Residential Houses for Sale, Homes for sale in Uganda, Housing
Project"
```

```
name=description>
```

```
<SCRIPT type=text/javascript>
```

```
var googleSearchIframeName = "cse-search-results";
```

```
var googleSearchFormName = "cse-search-box";
```

```
var googleSearchFrameWidth = 800;
```

```
var googleSearchDomain = "www.google.co.ug";
```

```
var googleSearchPath = "/cse";
```

```
</SCRIPT>
```

```
<SCRIPT src="file:///F:/Divine Masters Limited - About Us_files/show_afs_search.js"
type=text/javascript></SCRIPT>
```

```
<SCRIPT language=javascript type=text/javascript>
```

```
function checkform ( form )
{
```

```
if (form.visitor.value == "") {
    alert( "Please Fill in your Name ." );
    form.visitor.focus();
```

```

    return false ;
}
else if (form.visitormail.value == "") {
    alert( "Please Fill in your Email." );
    form.visitormail.focus();
    return false ;
}

else if (form.notes.value == "") {
    alert( "Please Fill in your Request Message." );
    form.notes.focus();
    return false ;
}

if(!/^\\w+([\\.-]?\\w+)*@\\w+([\\.-]?\\w+)*\\.\\w{2,3}+$/i.test(form.visitormail.value))
{
    alert("Invalid E-mail Address! Please re-enter.");
    form.visitormail.focus();
    return false;
}

//
return true ;
}

var letters='
ABCÇDEFGHIJKLMNÑOPQRSTUVWXYZabcçdefghijklmnñopqrstuvwxyzàáÀÁèèÈ
ÉêËËÎîÍíÖöÓóÚúÛüÜÜ '
var numbers='1234567890'
var signs=',.:;@-\'
var mathsigns='+-=()*\'
var custom='<>#%&?¿'
function alpha(e,allow) {
    var k;
    k=document.all?parseInt(e.keyCode): parseInt(e.which);
    return (allow.indexOf(String.fromCharCode(k))!=-1);
}

function limitinput(evt, strList, bAllow)
{
    var charCode = evt.keyCode;
    if (charCode==0)
    {
        charCode = evt.which;
    }
    var strChar = String.fromCharCode(charCode);
    var controlArray = Array(0, 8, 9, 10, 13,76, 27);

```



```

var intOut = 0;

if (bAllow==true)
{
if (charCode==8 || charCode==9 || charCode==37 || charCode==39 || charCode==46 ||
charCode==116 || (strList.indexOf(strChar)!=-1))
{
return true;

}
else
{
alert("Invalid Character!");
return false;

}
}
else
{
if (charCode==8 || charCode==9 || charCode==37 || charCode==39 | charCode==46 ||
charCode==116 || (strList.indexOf(strChar)==-1))
{
return true;
}
else
{
alert("Invalid Character");
return false;

}
}

}

</SCRIPT>
<LINK href="file:///F:/Divine Masters Limited - About Us_files/div.css" type=text/css
rel=stylesheet>
<STYLE type=text/css>.style2 {
    FONT-WEIGHT: bold; COLOR: #2e86b6
}
.style3 {
    FONT-SIZE: 13px; COLOR: #990000
}
.style6 {
    FONT-SIZE: 11px; COLOR: #990000
}

```

```

.style13 {
    COLOR: #ffffff
}
.style15 {
    FONT-WEIGHT: bold; COLOR: #990000
}
.style17 {
    COLOR: #000000
}
.style18 {
    COLOR: #0000cc
}
.style19 {
    COLOR: #990000
}
</STYLE>

<SCRIPT type=text/javascript>
var message="Sorry, right-click has been disabled";
////////////////////////////////////
function clickIE() {if (document.all) {(message);return false;}}
function clickNS(e) {if
(document.layers||(document.getElementById&&!document.all)) {
if (e.which==2||e.which==3) {(message);return false;}}
if (document.layers)
{document.captureEvents(Event.MOUSEDOWN);document.onmousedown=clickNS;}
else{document.onmouseup=clickNS;document.oncontextmenu=clickIE;}
document.oncontextmenu=new Function("return false")
// -->
</SCRIPT>

<META content="MSHTML 6.00.2900.2180" name=GENERATOR></HEAD>
<BODY>
<DIV id=cse-search-results></DIV>
<TABLE cellSpacing=0 cellPadding=0 width=940 align=center>
<TBODY>
<TR>
<TD vAlign=top align=middle
background="file:///F:/Divine Masters Limited - About Us_files/bann.png" colSpan=2
height=183>
<TABLE cellSpacing=0 cellPadding=0 width=957>
<TBODY>
<TR>
<TD vAlign=center align=left colSpan=3 height=39><SPAN
class=style2><SPAN class=style17>Date :</SPAN><FONT color=#2e86b6>
<SCRIPT language=JavaScript type=text/javascript>

```

```
monthName = ["January","February","March","April","May","June","July",
    "August","September","October","November","December"];
```

```
now = new Date();
```

```
document.write(now.getDate() + " " +
    monthName[now.getMonth()+ " " + now.getFullYear());
```

```
</SCRIPT>
```

```
</FONT></SPAN></TD></TR>
```

```
<TR>
```

```
<TD vAlign=center align=left width=336 height=118
rowSpan=3></TD>
```

```
<TD vAlign=center align=left width=4 height=67>&nbsp;</TD>
```

```
<TD vAlign=center align=left width=615>&nbsp;</TD>
```

```
</TR>
```

```
<TR>
```

```
<TD vAlign=center align=left colSpan=2 height=35>&nbsp;</TD>
```

```
</TR>
```

```
<TR>
```

```
<TD vAlign=center align=left
colSpan=2>&nbsp;</TD></TR></TBODY></TABLE></TD></TR>
```

```
<TR>
```

```
<TD vAlign=center align=middle
background="file:///F:/Divine Masters Limited - About Us_files/background.gif"
colSpan=2 height=23><SPAN class=style13>
</TD></TR>
```

```
<TR>
```

```
<TD vAlign=center align=middle
background="file:///F:/Divine Masters Limited - About Us_files/b_cal.jpg" colSpan=2
height=27>
```

```
<TABLE cellSpacing=0 cellPadding=0 width=864 align=center>
```

```
<TBODY>
```

```
<TR>
```

```
<TD vAlign=center align=middle width=101 height=15><A
href="index.php">Home </A><SPAN
class=style15>| </SPAN></TD>
```

```
<TD vAlign=center align=left width=139><A
href="Services1.php">Services</A> <SPAN
class=style15>| </SPAN></TD>
```

```
<TD vAlign=center align=left width=92><A
href="BOG-Services2.php">BOD </A><SPAN
class=style15>| </SPAN> </TD>
```

```

<TD vAlign=center align=left width=112><A
href="Contact Us.php">Contact Us</A><SPAN
class=style15>|</SPAN></TD>
<TD vAlign=center align=left width=105><A
href="Staff.php">Our Staff</A><SPAN
class=style15>|</SPAN></TD>
<TD vAlign=center align=left width=94><A
href="About Us.php">About Us</A><SPAN
class=style15>|</SPAN></TD>
<TD vAlign=center align=left width=117><A
href="Ourproject.php">Our Projects</A>
<SPAN class=style15>|</SPAN></TD>
<TD vAlign=center align=left width=102><A
href="Faq.php">Divine Faq
</A></TD>
</TR></TBODY></TABLE></TD></TR>
<TR>
<TD vAlign=top align=middle colSpan=2>&nbsp;   </TD></TR>
<TR>
<TD vAlign=top align=middle colSpan=2 height=3><IMG height=3
src="images/bar.png" width=961></TD>
</TR>
<TR>
<TD vAlign=top align=left colSpan=2>About Us </TD></TR>
<TR>
<TD vAlign=top align=right colSpan=2></TD>
<TR>
<TD vAlign=top align=middle colSpan=2>
<TABLE height=296 cellSpacing=0 cellPadding=0 width=962>
<TBODY>
<TR>
<TD vAlign=top align=left width=251
background="file:///F:/Divine Masters Limited - About Us_files/navbg.gif"
rowSpan=4>
<TABLE height=256 cellSpacing=0 cellPadding=0 width=249
align=center>
<TBODY>
<TR>
<TD vAlign=center align=left
background="file:///F:/Divine Masters Limited - About
Us_files/background.gif"
colSpan=2 height=28><SPAN class=style13>Our Services - Top
Links </SPAN></TD></TR>
<TR>
<TD vAlign=center align=middle width=21 height=29><IMG
height=16

```

```

src="images/list-item.gif"
width=16></TD>
<TD vAlign=center align=left width=226><A
href="Architecture se.php">Construction
&amp; Civil Works </A></TD>
</TR>
<TR>
<TD vAlign=center align=middle height=29><IMG height=16
src="images/list-item.gif"
width=16></TD>
<TD vAlign=center align=left><A
href="infra dev.php">Infrastructual
Development </A></TD>
</TR>
<TR>
<TD vAlign=center align=middle height=27><IMG height=16
src="images/list-item.gif"
width=16></TD>
<TD vAlign=center align=left><A
href="Architecture se.php">Architectural
Services </A></TD>
</TR>
<TR>
<TD vAlign=center align=middle height=24><IMG height=16
src="images/list-item.gif"
width=16></TD>
<TD vAlign=center align=left><A
href="Buying-letting.php">Buying /
Letting </A></TD>
</TR>
<TR>
<TD vAlign=center align=middle height=30><IMG height=16
src="images/list-item.gif"
width=16></TD>
<TD vAlign=center align=left><A
href="site plan.php">Site plan
drawing and approval</A></TD>
</TR>
<TR>
<TD vAlign=center align=middle><IMG height=16
src="images/list-item.gif"
width=16></TD>
<TD vAlign=center align=left><A
href="About Us.php">Property
Consultancy </A></TD>
</TR>

```

```

<TR>
  <TD vAlign=center align=middle height=34><IMG height=16
    src="images/list-item.gif"
    width=16></TD>
  <TD vAlign=center align=left><A
    href="Fees.php">Professional
    Fees</A></TD>
</TR>
<TR>
  <TD vAlign=center align=middle>&nbsp;</TD>
  <TD vAlign=center
align=left>&nbsp;</TD></TR></TBODY></TABLE></TD>
<TD vAlign=top align=left width=413 rowSpan=4>
<TABLE cellSpacing=0 cellPadding=0 width=415 align=center>
<TBODY>
<TR>
  <TD vAlign=top align=middle
background="file:///F:/Divine Masters Limited - About Us_files/index_03.jpg"
bgColor=#dad0c6 height=152><IMG height=163
  src="images/back.png"
  width=346></TD>
</TR>
<TR>
  <TD vAlign=top align=left height=26><SPAN
class=style18>Company Over View</SPAN><BR><BR>Divine Masters
Ltd is a privately owned construction company with specialty
in Real Estate Development and Management, Architectural
Design, General Building Construction & Renovations, Civil
Engineering Works, Road Construction, Rehabilitation/periodic
Road maintenances, General Plumbing, Electrical &
Carpentry Works, Supply and others. The company has provided
services for both private and Government/public institutions
and individuals.</TD></TR></TBODY></TABLE></TD>
<TD vAlign=top align=right width=296>
  <FORM id=cse-search-box action=link-ug weblinks connected-business
directory,tours and travels,web designing,database systems,repair and maintenance and
many more__.php>
  <DIV><INPUT type=hidden
value=partner-pub-6208822373016277:w7hj3tdaha7 name=cx> <INPUT
type=hidden value=FORID:11 name=cof> <INPUT type=hidden
value=ISO-8859-1 name=ie> <INPUT class=masters
style="BACKGROUND-COLOR: #e2dcde" size=27 name=q> <INPUT
class=masters type=submit value=Search name=sa> </DIV></FORM>
  <SCRIPT src="file:///F:/Divine Masters Limited - About Us_files/brand.htm"
type=text/javascript></SCRIPT>
  Search the web.... &nbsp;</TD></TR>

```

```

<TR>
  <TD vAlign=top align=left><SPAN class=style3>Request an
    appraisal</SPAN></TD></TR>
<TR>
  <TD vAlign=top align=middle bgColor=#ede9e5>
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        </TR>
        <TR>

```


further rural regeneration for employment opportunities .
• To conserve and enhance rural development, spread social – economic opportunities for rural poor to enjoy rural community and share in its priceless assets.
• Develop life skills for improved entrepreneurship development among all employees to enhance rural employment and development .
• To give objective evidence based technical advice to government, private sector, civil society organizations, individuals and other institutions/players in rural areas to influence infrastructural development for all.

Business Development Strategies/Values
To effectively reach out to our customers and maintain a good working relationship, Divine Masters Ltd has adopted the following business values and development strategies.

• Good Client Contractual Relationship
• Project Identification, Development, Promotions and Marketing
• Good Business Ethics, Integrity, prompt service delivery
• Creativity, Team work, Precision and Conciseness
• Value for Money services and products
• Use of state of the art technology and professionalism for Excellency

</TD></TR>

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<TR>

<TD vAlign=top align=left colSpan=2>Copyright © Divine Masters Ltd 2009.

All rights reserved. Privacy

Policy | Terms

& Conditions | Contact Us

Divine

Masters Limited. Buganda Road Flats, Block 667, 2nd Floor, Suite E. P.O

box 28741 kampala (U).Email

:divinemasters@divinemasters.com</TD></TR>

</TBODY>

</TABLE>

</BODY>

</HTML>

Search codes

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name=Description>

```

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maintenance and many more___files/linkug.css"
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#ffffff
}
.style4 {
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}
.style5 {
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}
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////////////////////////////////////
function clickIE() {if (document.all) {(message);return false;}}
function clickNS(e) {if
(document.layers||(document.getElementById&&!document.all)) {
if (e.which==2||e.which==3) {(message);return false;}}}
if (document.layers)
{document.captureEvents(Event.MOUSEDOWN);document.onmousedown=clickNS;}
else{document.onmouseup=clickNS;document.oncontextmenu=clickIE;}
document.oncontextmenu=new Function("return false")
// -->
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    of any copy <BR>Designed and hosted by<A href="http://www.ughosting.com/"
    target=_blank>ughosting.com
</A>&nbsp;</SPAN></TD></TR></TBODY></TABLE><MAP
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