Southern Luzon State University

College of Engineering

Lucban, Quezon

King and I Catering Services Web System

Design Project (CPE521)

by:

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Chapter I

THE PROJECT AND ITS SETTING

This chapter provides an overview of the project. It first introduces the project context and then discusses the motivations that drove the developers to conduct the researches and implement a software solution. The project's objective was also stated and finally, it briefly describes an overview of the system.

Introduction

The continually growing market for food and beverages have been observed these past few years. Several businesses have used several marketing strategies to compete among their competitors. Some of the strategies used was advertising through printed materials, TV and even with the use of websites.

Catering businesses have played a big role in making once in a life time events happen. They became part of different social gatherings, weddings and even birthdays. As the number of catering businesses increases, the number of demand for each businesses decreases, however there are different ways to somehow address this dilemma. Through advertising campaigns, we can manage to overcome this problem, but the cost for an advertisement is not cheap, it requires investment and patience.

By having a web system or a website, we can minimize the cost of advertisement. It's a one-time investment but will benefit the company as time passes by. The results may not be visible immediately but with patience, one can see the fruit of his investments in the future.

Background of the Project

King and I Catering Services is one of the pioneer catering business in Quezon. It was founded in Lucban, by Mr. Francisco and Mrs. Meguilita Zeta. During its establishment in 1980, it gained the trust of the town by providing quality service. Thirty-seven years may have passed but the service they provide are continuously growing and reaching out, not only in town but also in their neighboring places. Through the years, the couple have been hands-on in their work but as time pass by the growing trend for development has made them decide to pass the business to their kin.

Mrs. Ma. Lourdes Zeta Malaborbor, was the one who inherited the business. She was the youngest of the couple's children whom inherited the interests of her parents. She graduated college at the Holy Spirit in Manila, with a degree in Bachelor of Science in Hotel and Restaurant Management. Through her knowledge and help of her husband, she managed to bring innovations in their business.

Though the business has catered several occasions and have devised several marketing strategies, the developers found out that they are not ready for a bigger market. They still lack a platform where users or possible customers can view their services and job opportunities, make a reservation and possible recommendations for an occasion. In relation with this, the developers come up with a plan to market their business using a web information system.

The Special Project

The general and specific objectives was discussed in this section. It also discusses the scopes and limitation of the project.

Objectives

The general objective of this project is to create a web information system for the King and I Catering Services.

It specifically aims to:

1. To design a web information system for King and I Catering Services.

2. To evaluate the design based on different criteria, such as user acceptability, navigability and other constraints necessary for identifying a good web information system.

3. To document the stages of design and make necessary recommendations for the system.

Scope and Delimitations

The project is primarily concerned in creating a web information system for the King and I Catering Services. Some of the features that the project has are online reservation system and online job application. The web information system also comes with other features similar to existing catering websites. The manager or the web administrator can access a admin page where they can manage the system.

The system design does not cover the actual confirmation of the reservations made by the customers on the web system. Also, it is not responsible for the payment process involved in the customer's confirmation, though it can ask for customer's modes of payment, it does not necessarily mean that there will be an online payment system.

Chapter II

THEORETICAL FRAMEWORK

This chapter presents different literatures necessary in conducting this design project. The first literature covers materials in making a website for a catering service. It also covers Web Information System and some of the relevant ideas in how the system will be built. Meanwhile, the second literature, discusses some of the previous studies conducted that is somehow similar to the system or design project that will be built.

Review of Conceptual Literature

Catering Services

Catering is the activity of providing beverage and food for events. Caterers are either independent vendors or persons within a specific department of a facility, such as a restaurant or a hotel.

Catering is delivered at a different event which include weddings, exhibitions, business meetings, conferences, special events, and other social occasions. Besides responsibilities for food and beverage, many caterers also handle event decor, Audio Visuals and other parts of the program. The catering manager manages the staffing of chefs, servers and others. As an example, the event manager planned a fundraising event at a local hotel, then the catering department controlled all logistics associated with food, beverage, decor and entertainment for the program.

Why your catering business needs a website?

In a business like catering services, most of the marketing ways comes from word of mouth. When a caterer provides outstanding food and services, people tend to tell their friends, then they

and their friends remembers the caterer, in case they needed a catering service. The business' financials are solid, even strong, is it necessary for a website at all?

Most people in the world dive onto the web and many people devote most of their time in there. The Pew Internet & American Life Project found out, in late 2009, that 74% of American adults use the Internet. The people's means of connections are wireless, either they use their broadband at home, or their laptops or handheld devices like smartphones. Most people don't just look for things online when they're at home. They search the web while going to work, answering a question during social gatherings, privately checking emails and football scores when in work meetings and other reasons to get on the information highway.

Due to the number of internet users, where current and prospective customers are, it's rare to find a business without a website. Former catering, food writing and hospitality entrepreneur, Rita Skojec answered that, "I wouldn't have any business today without a web presence," when asked if a catering business needs a website.

Benefits of having a Website for Small Businesses

Creating a website may mean a loss on a business profit but considering the different benefits of having one, one might consider this as one of their greatest asset in the long run. Some of the benefits of having a website are lesser cost and broader area in advertising, customer satisfaction, increase in customer and sales, more accessible and most especially, one can build a better relationship to their customer.

Different forms of advertising are present in the marketing world today. For example, through radio, television and printed forms. All of these advertising platform are effective and efficient, but they are expensive and sometimes doesn't reach your target customers. Having a

small business means investing in advertising, when a business has a website, promoting one's business would cost less expensive. Another thing a website can do is that it can reach different customers with just a click of a button, making one's business easy to reach and be viewed in different locations swiftly.

Another thing a website can add to one's business is customer satisfaction. A well-structured website brings convenience to your customer's or client. Instead of going physically to the business location and browse to your products, they would rather be spending it browsing through web pages and search for things they are looking for.

Increasing a business audience through a website increases customer. A business already has its popularity locally but taking a leap and building a website can reach neighboring cities too. In some cases, it can even reach worldwide. With a website one can also increase their sales by providing informative contents. A website can help a business grow from nothing to something, more visitors lead to more potential sales.

An online site can be visited 24/7, one doesn't have to turn down customer because they are close for the day because a website is active any time to cater some customer queries. It can be accessed via the Internet, and doesn't require a person to be physically there. Certain information can be gained easily just by visiting the site and instead of posting announcements in printed form, one can just post it in their site, which can save time and money.

Through a website, one can build a better relationship to their clients. They can send messages instantly through email. They can also review a business product online and leave a feedback for the business. Though, there aren't evident physical contact, one can be hands-on to their business by using a web platform.

System

What is a System?

A system is “an orderly grouping of interdependent components linked together according to a plan to achieve a specific goal.” It is derived from the Greek word ‘Systema’, which means ‘an organized relationship between any set of components to achieve some common cause or objective.’

There are several types of system depending on their structure and how they are implemented. The first type of system can be classified as either physical or abstract. Physical Systems can be static or dynamic in nature, they are tangible entities, which means we can touch and feel them. Meanwhile abstract systems are conceptual or non-physical entities that can be formulas, representation or model of a real system.

Systems can also be classified as open or closed. An open system, interacts with its external environment, it receives inputs from and delivers output to the outside of the system. However, a closed system does not interact with its external environment, it is isolated from environmental influences.

Another type of systems is adaptive and non-adaptive system. An adaptive system reacts to the change in its environment in a way to improve their performance and to survive. A non-adaptive system does not respond to the environment.

Lastly, Man–Made Information Systems which is an interrelated set of information resources to manage data for a particular organization. It includes hardware, software, communication, data and application for producing information according to the need of an organization. Man-made Information Systems can be further divided into three types:

(1) Formal Information System is based on the flow of information in the form of memos, instructions and others, from the top level to lower levels of management.

(2) Informal Information System is an employee based system which solves day to day work related problems.

(3) Computer Based System is a system which is directly dependent on computers for managing business applications.

Web Info system

Web Information System (WIS) is an information system that can be accessed via the world-wide-web. On a high level concept, it can be described as a storyboard, which may specify who will use the system, in which way and for which goals. A storyboard contains three parts:

– a story space, which consists of a hierarchy of labelled directed graphs called scenarios, one for the main scenario, and the others define the details of scenes, and a plot which is identified by an assignment free process, by which the basic actions relates to the labels of edges in the scenarios,

– a set of actors, which are the user profiles that determine user preferences, and user groups that are defined by roles that determine their rights and obligations,

– and lastly, a set of tasks associated with the goals, the users may have.

There are six characteristics of WISs that can be mapped to conceptual structures and are used for storyboard specifications:

1. First is characteristics used for the strategic layer. Intention and mission, are the main specification elements that are used. They are mapped to general goals, metaphors, rhetorical figures, and patterns and grids of web pages.

2. The scenarios reflect the operation of actors, for which we visualize a number of stories that correspond to real use. These scenarios might be captured through observation of reality.

3. Content specification is the basis for the media types, data types and their functions. It combines user requirements with data specification and is reflected in the content portfolio.

4. Functionality is provided by media types as required by the storyboard. The standard functions are search, navigation, support functions, and feedback facilities.

5. Context is based on history, tasks, and environment. We use the specification of context for restructuring and functionality enhancement, which will form the basis of XSL transformations and the onion approach.

6. Presentation depends on the provider, the intention, the technical environment available and the target users of the WIS. Presentation results playout and layout of the WIS. Layout involves the development of multimedia presentations for each page. Meanwhile, playout requires the development of functionality which supports visits of users depending on the story that they are currently following to achieve their goals. Layout and playout incorporate the chosen metaphors; they depend on chosen page grids and patterns as well as on quality requirements.

Existing Web Systems

Some of the web systems that the developers have come across with are listed below to serve as a primary guideline in developing the system.

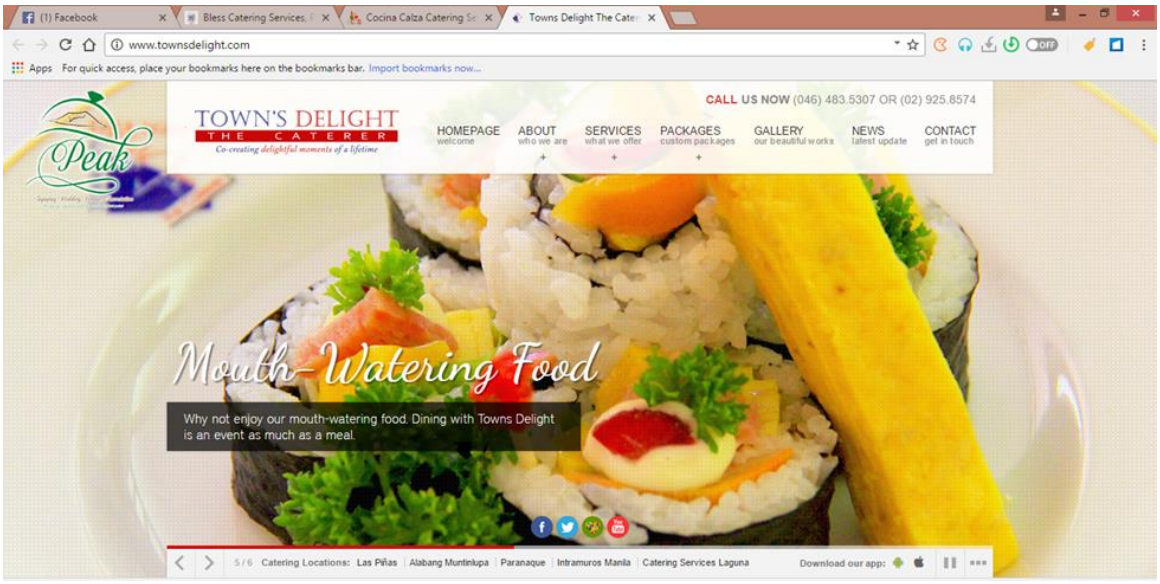

Figure 1 : Screenshot of "Town's Delight: The Caterer" homepage

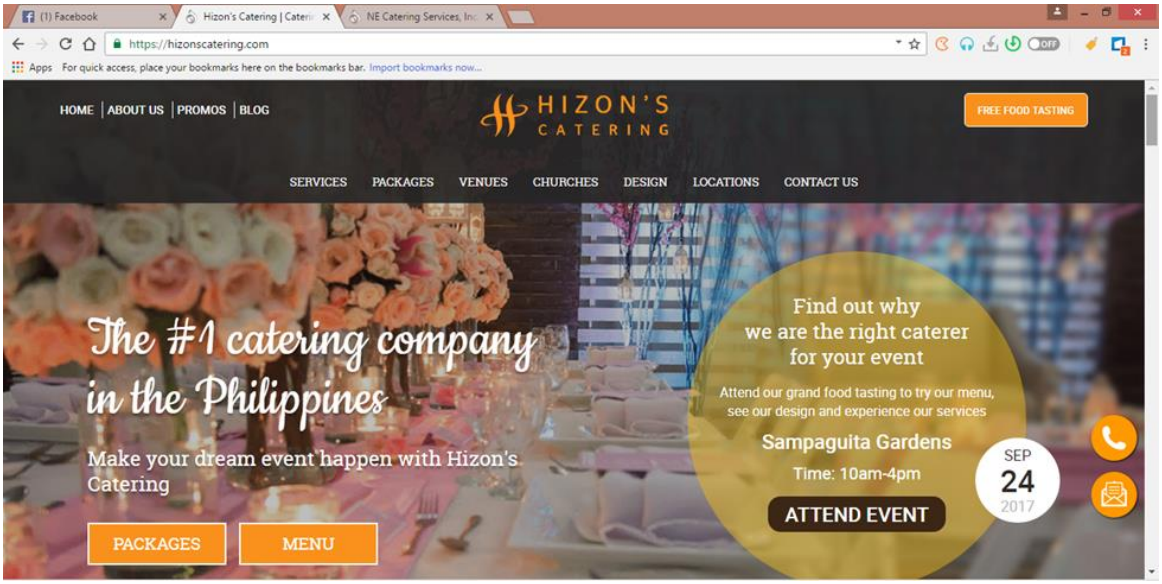

Figure 2 : Screenshot of "Hizon's Catering" homepage

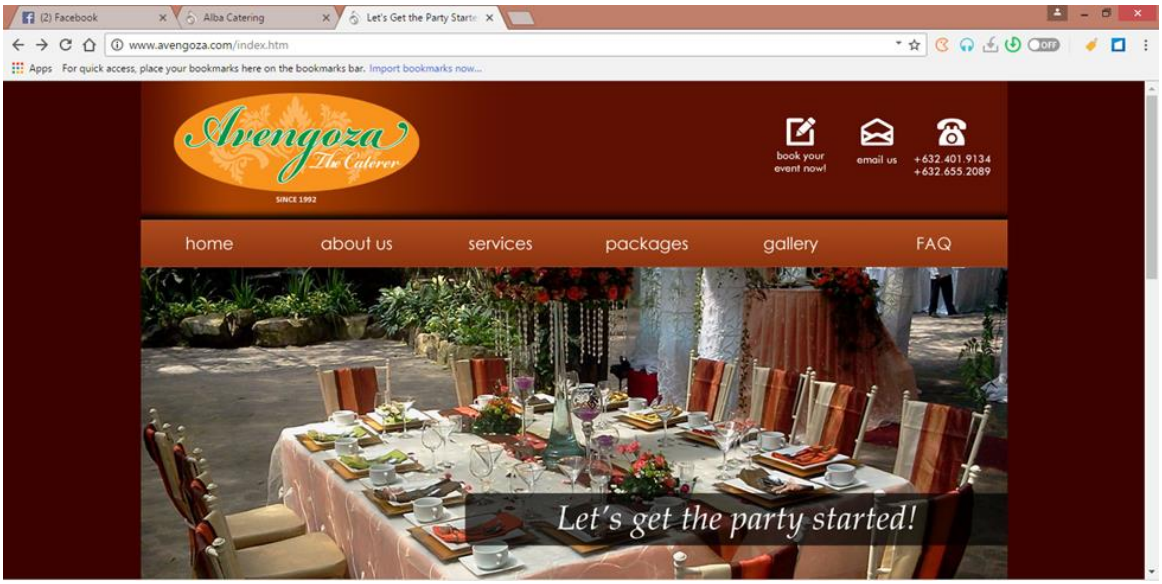

Figure 3: Screenshot of "Avegonza: The Caterer" homepage

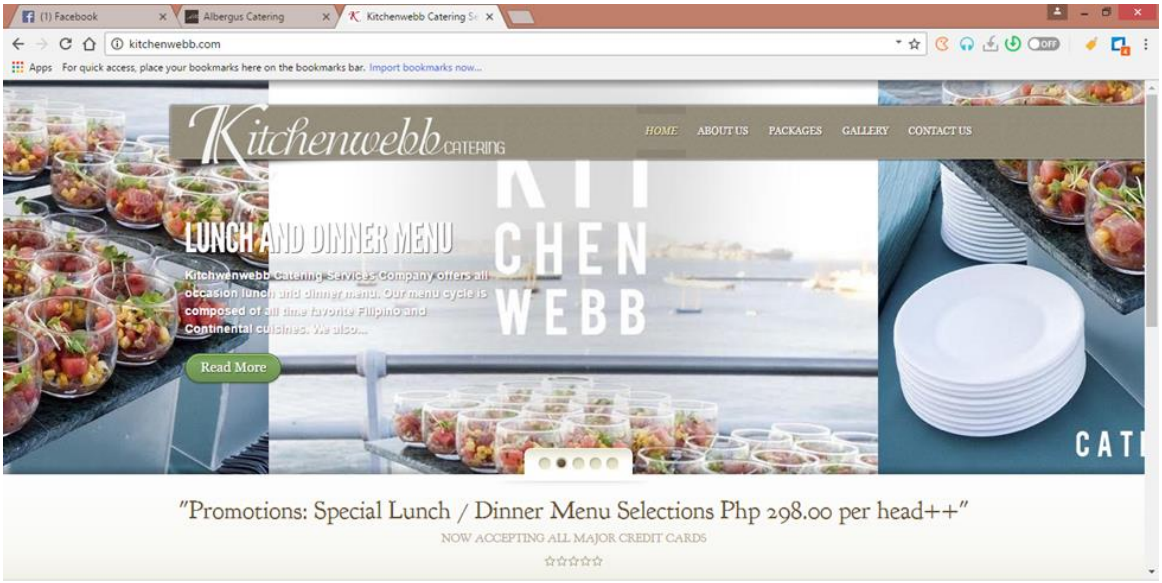

Figure 4: Screenshot of "KitchenWebb Catering" homepage

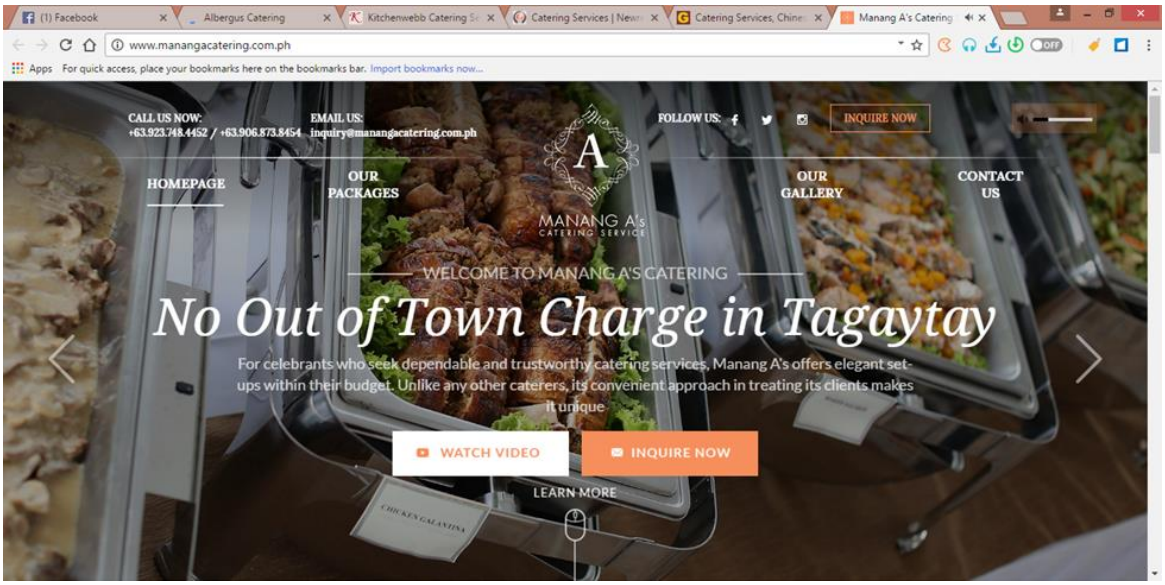

Figure 5: Screenshot of "Manang A's Catering Service" homepage

The websites above are just a few of too many catering web systems. They all feature their packages and services. Some of them provide blogs and newsletter. These features can be adapted in developing a web system for the King and I Catering services. Though there are some considerations to make, the website may look the same or even better.

Programming Language

According to Rebelsky (1999), programming language is a representation for expressing algorithms so that they can be understood by humans and processed by machines. Another definition from Rebelsky's note came from Stansifer, that says "... Programming languages are used to communicate with literal-minded machines."

Computer programming languages has played a vital role in every major technological development. They are also used to create function and form to everything we use, like smartphones, electronics and websites. As programmers become clever and more skilled at writing

programs, the intelligence and quality of the technological devices we engage with will continue to advance ("The Languages of Computer Science", 2015).

APIs

Application program interface (API) is a set of tools, routines, and protocols for building software applications. It specifies how software components should work together. They are also used when programming graphical user interface (GUI) components. Developing a program becomes easier with the use of a good API, by providing all the building blocks.

There are different types of APIs for websites, applications, or operating systems. For example, Windows has many API sets that are used by system applications and hardware — when one copy and paste text from one application to the other, it is the API that allows that to work. Most operating environments provide APIs, letting programmers write applications consistent with the operating environment. APIs are also specified by websites. An example is Amazon API that allow developers to use existing retail infrastructure to create dedicated web stores. Web APIs are also used by third-party software developers to create software solutions for users.

Web Development Framework

Web development framework is a set of tools and resources for software developers to build and manage websites, web applications and web services.

Frameworks includes template capable of giving information within a browser, programming environment for scripting the flow of information and application programming interfaces (APIs) for accessing underlying data resources. It also provides the foundations and system-level services for software developers to construct a content management system (CMS)

for managing digital information on the Web. Developers can use framework to define the 'out-of-the-box' content management capabilities, user authentication features, and administrative tools.

Review of Research Literature

The study entitled, “Online Hotel Reservation and Management System for The College of International Tourism and Hospitality Management (CITHM),” designed and developed an online hotel reservation and management system for the College of International Tourism and Hospitality Management of the Lyceum of the Philippines University, Batangas Campus. It has user-friendly features that helps CITHM students be familiarize with an online hotel reservation system. The System Development Life Cycle and Microsoft Web Developer 2008 are used by the researchers to develop the system. The developed software become an effective aid for instructors in teaching the basic operations of hotel reservation system to their students. It also provided online security to protect privacy and financial information of customers. (Delizo, G.A., Esguerra, M.A., 2013)

In the study “Improving the Current Restaurant Booking System,” they created a new user interface for online restaurant booking. It will help restaurants address some customer complaints. Their design would be unique for every restaurant and also one can book a schedule in advance. It also comes with pre-selection of food, where one can schedule when the food arrives. User reviews are also available in the website. (Aston, K., Carter, D., Coxshall, A., 2014)

The “Room Reservation System,” developed an online platform called DCS Room Reservation Service (RRS) for reserving rooms in the Department of Computer Science (DCS). It aims to provide a convenient and efficient way of reserving rooms. The service is hosted online allowing the entire flow of the reservation system to run smoothly even with the absence of

important individuals, like a supervisor on a vacation, responsible for approving room reservation requests. It also aims to prevent issues caused by human error and can easily be avoided by the RRS, like preventing conflicting reservations. (R2E2 Team of Developers, 2015)

The, “Study of China’s online catering market”, analyzes the feasibility of U.S. online catering business model applied in China’s market. It examines the Chinese catering dining reservation market, inspect the Chinese consumer’s behavior, and analyze the business models of U.S. online catering companies. It also studies the current Chinese online catering Web sites and Chinese online group purchasing market. Based on this information, the paper finds out how to apply the well-developed U.S. online business model to the immature Chinese online catering market. (Fei, Ben, 2010)

Conceptual Framework

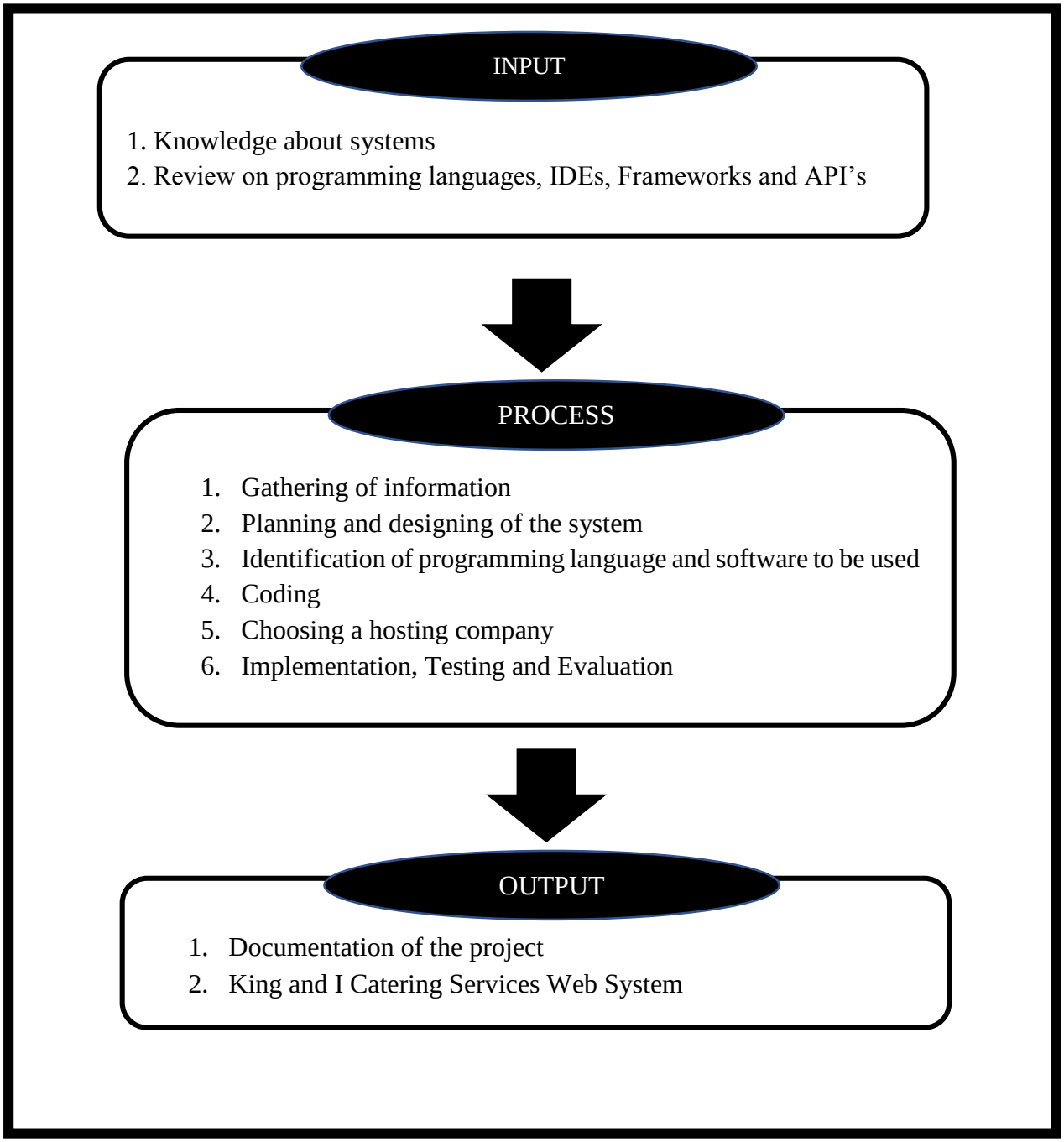

Figure 6: King and I Catering Services Web System Conceptual Framework

The figure above shows the conceptual framework of the project. It shows the IPO model that will be used in conducting the design project. It will serve as the researchers' guide to complete the study. The inputs, knowledge about system and review on programming languages, IDEs, Frameworks and APIs are necessary in the research because we are going to create a web system for the King and I Catering Services. The following processes are to be carried out in order to finish the system.

Definition of Terms

Application program interface (API) is a set of tools, routines, and protocols for building software applications.

Catering is the activity of providing beverage and food for events. Caterers are either independent vendors or persons within a specific department of a facility, such as a restaurant or a hotel.

Web Development Framework is a set of tools and resources for software developers to build and manage websites, web applications and web services.

Web Information System (WIS) is an information system that can be accessed via the world-wide-web.

Chapter III

OPERATIONAL FRAMEWORK

This chapter presents the system's design, development, evaluation and validation criteria and its research instrument.

Project Design

In this project, the developers choose to use Rapid Application Development and Reuse Software Engineering techniques in creating the Web Information System. In Rapid Agile Development, the researchers chose this method because it is flexible and the client's response to the system's design will be in great consideration. The Reuse Software Engineering technique will also be used in creating this project because, they will be using different frameworks, APIs and reusable codes in making the system. They will also modify existing programs, resources and templates that they have and will acquire in the duration of the system's development.

Some of the applications and methods that the developers will use are the following:

1. Visual Studio – will be use to implement the web information system's design and database.
2. HTML, C#, JavaScript – HTML and JavaScript will be used in designing the system and C# will be used for connecting the system to the database
3. MS SQL – will be used for data storage and retrieval of the system.

Project Development

The System Development Life Cycle (SDLC) will be used by the project team. It is the process of determining how an information system (IS) can support business needs, designing the

system, building it, and delivering it to users. There are four major phases in the SDLC process, planning analysis, design and implementation.

Planning is the primary process of understanding why the Information system should be built and how the project team will build it. There are two major steps in this phase, first is the presentation of system request and feasibility study in the approval committee. After the request has been approved the project management will create a project plan that will serve as their guide in developing the system.

The analysis phase involves the development of analysis strategy, requirements gathering and presentation of system proposal. An analysis strategy is developed to guide the project team. Requirements gathering techniques are used to develop a system concept for the requirements to be easily understandable. A system proposal is a document that provides analyses, system model and concepts presented to the project sponsor and decision makers.

In the design phase, it describes how the system will be constructed. It determines the software, hardware and network infrastructure of the system. It has four major steps which involves making a design strategy, development of a basic architecture design, development of database and file specifications and the design team develops a program design. Designing a strategy clarifies whether the system will be developed by the company programmers, an outsourced firm or just simply buy an existing software. By developing the basic architecture design, the hardware, software and network infrastructure are determined. In database design and file specification, it determines what data will be stored and where it can be accessed. Program design defines the program that are needed to be written and what each program will do.

Implementation phase involves the process of constructing the system, its installation and maintenance. In system construction, the system is built and tested to ensure that it performs as

designed. During the installation, the old system is turned off and the new one is turned on, it also covers the development of a training plan. And lastly, the analyst team devised a support plan in order to maintain the system.

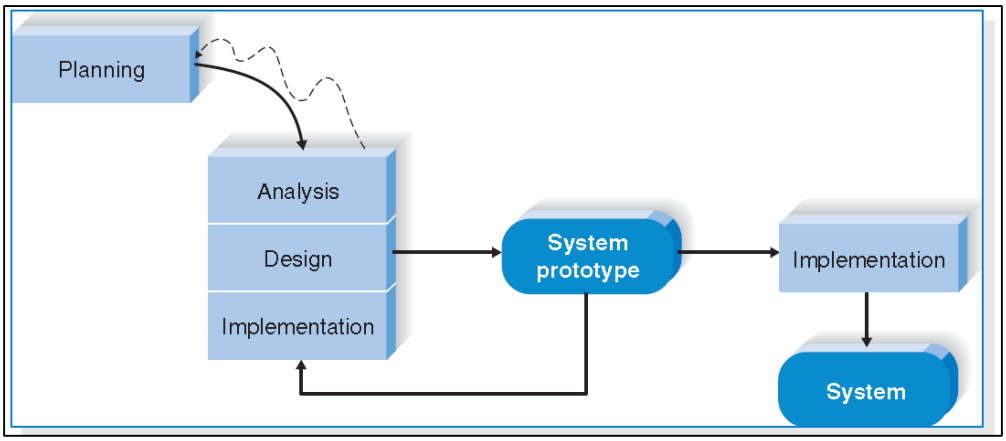

Figure 7: System Prototyping Model for King and I Catering Services Web System

The figure above shows the model that we will use in developing the Web System. It will serve as the developer's guide in creating the system. First, the team will construct a prototype to validate and evaluate if the system does as it was designed. After validating the system, if there are any errors or bugs found in the system, it will go back to the analysis, design and implementation phase. If the system has no found errors or bugs, it will be implemented for the catering business.

Project Design Evaluation/Validation

Users want interactive products to be easy to learn, efficient, effective, safe, and satisfying to use. Being attractive, entertaining, challenging, and enjoyable is also important for the success of websites and other consumer products. In order to achieve this, it requires the product to be

evaluated, and effective evaluations involves understanding not only why evaluation is important but also what aspects to evaluate, when to evaluate, and where evaluation should take place.

Evaluation is needed in order to verify that users can use the product and that they love it, especially if the design concept is new. Furthermore, users, nowadays, look for much more than just a usable system, they look for a pleasing and engaging experience.

From a business and marketing standpoint there are also good reasons for investing in evaluation, these include: designers get feedback about their early design ideas, major problems are fixed before the product goes on sale; designers focus on real problems rather than debating what each other likes or dislikes about the product.

The wide diversity of interactive products gives rise to a variety of features that evaluators must be able to evaluate. For example, developers of a creativity support tool for teaching story-writing may ask if students develop more engaging, emotionally satisfying stories, whereas developers of a new web browser may want to know whether users find items faster with their product. A company that develops personal, digital music players may want to know whether the size, color, and shape of the casing is liked by people from different age groups living in different countries.

From those examples, one can see that the success of interactive products depends on much more than usability. Aesthetic, engaging, emotional, and motivating are important qualities too.

Evaluation/Validation Criteria

In order to evaluate and validate the system, the developers formulate different questions from different categories that will test and evaluate the functionality, design, content, originality,

security and professionalism and effectiveness of the web system. The sample questionnaire is given below:

Direction: Check the field that describes your answer. The questions are answerable by 'Yes' or 'No' only.

Criteria	Yes	No
A. Functionality		
1. Does it load quickly?		
2. Is it viewable in different browsers?		
3. Is it easy to navigate through the web pages?		
4. Is there a clear statement of purpose of the site?		
5. Can it be understood by people with various levels of education and/or from different cultural backgrounds?		
B. Design		
6. Is there an over-all integration of design throughout the website?		
7. Is the page design overwhelming or confusing?		
8. Is the font readable?		
9. Does the design allow for easy navigation?		
10. Is there a unified feel to the site?		
C. Content		
11. Does it contain the business' mission, vision and goals?		
12. Does it contain an index, site map or FAQ?		
13. Is it clearly stated why the page was written and for whom?		
14. Can the information be viewed properly?		
15. Is the page dated?		
D. Originality		
16. Is the Web site unique?		
17. Is it distinguishable from other similar sites?		
18. Is the site distinct and memorable?		
19. Does the site offer things not found elsewhere?		
E. Security		
20. Are private directories such as password, protected?		
21. Are public non-document directories (cgi-bin, images, etc) indexable or are blank index.html pages or appropriate permission settings in place to block access?		
22. Are information/page modifications done solely by the administrator?		
F. Professionalism and Effectiveness		
23. Is the site technologically impressive?		
24. Does it use interactive map and other active media?		
25. Does the way in which technologies are used fit with the purpose of the site?		

Design Instruments and Techniques

In conducting the project, there are several materials used by the developers in order to plan and design the system. Resources like books, online articles, thesis and journals are used to devise an initial plan for the system. Books are used to gather information about programming languages. Online articles served as reference to the meaning of catering services, web information system, APIs and Frameworks. Research literatures were gathered by reading thesis and journals.

In determining the requirements needed by the system, the project team used the Interview method in Requirement discovery. The team personally meet their clients in order to gather some specific requirements that they want to be implemented in the system. Another method is through observation, the team observed and reviewed different websites on how they provide reservation on the web and the content of their site.