

Implementation Of An Online Event Brokering System

Ekpezu, Akon O.

Dept of Computer Science, Cross River University of Technology, Nigeria

Abstract: Purpose: This paper describes a web-based events management brokerage platform whose purpose is to simplify the processes involved in finding, negotiating, planning, and executing events between participating business entities while greatly reducing the risk of transacting with fraudsters.

Methodology: A four-phased Rapid Application Development (RAD) model was employed. The system was developed, deployed, tested and evaluated. The evaluation of the system design was done using the criteria-based approach which is a quantitative assessment.

Findings: Evaluation questionnaires were administered on 50 test users. The results indicate that the users were satisfied with the platform. In general, the system creates a competitive environment for the event managers to deliver excellent and prompt services directly to the clients.

Practical Implications: Using an Internet-based brokerage system for events management provides clients with a wider variety of business options with respect to event management, allowing clients to pick a service provider who provides the best service in relation to their needs.

Keywords: Online brokering, business-to-business, automated brokerage system, Events Management.

I. INTRODUCTION

Electronic commerce (also known as e-commerce) has automated the conduct of business among enterprises, their customers, suppliers and employees. These business transactions are conducted over an electronic network, primarily the Internet (with a variety of applications such as email, fax, online catalogues and shopping carts, File Transfer Protocol, and Web services) and can be classified as business-to-business (b2b), business-to-consumer (b2c), consumer-to-consumer (c2c) or consumer-to-business (c2b).

An online brokerage system is a form of e-commerce that arranges a contract/meeting/transaction between two parties using the web as a meeting place. This approach to brokerage enables levels of convenience and speed that many clients would find impossible in a traditional brokerage system (Albuquerque, 2003). The online brokerage system is a business model that utilizes the e-marketplace and aggregates products from a wide array of providers, giving the customers a wider selection, while offering higher availability and competitive prices. In the conventional brokerage system for event management, a customer is faced with some challenges

which include paying commissions to brokers, travelling long distances for meetings, spending long hours on meetings and in some cases, falling into the hands of fraudsters who either claim to be event brokers or event managers (Albuquerque, 2003). This raises the question, what if a platform can be created where these individuals or organizations could still have their events planned and organized from the comfort of their offices, with speed, without having to travel or have series of meetings with the service providers (in this case the event manager or planner)?

This paper discusses a web-based brokerage system for event management targeted at the Nigerian event management Industry. The aim of the research is to create an online platform where clients and service providers can meet and carry out transactions with respect to event management without the need for middlemen, and possibly at a controlled price rate.

A. PURPOSE OF STUDY

The research achieved the following objectives:

- ✓ To provide a business to business (b2b) platform (a web-based application) which will offer clients a larger selection of service providers and service options without the bias of a middleman.
- ✓ To describe the process of developing the system with UML (Unified Modelling Language) diagrams
- ✓ To establish an online event management market place that is organized and easily accessible by both clients and service providers.

II. THEORETICAL BACKGROUND

A. THE BROKERAGE MODEL

The brokerage model consists of third parties known as brokers, who bring buyers and sellers of products and services together to engage in transactions. While many brokers are involved in connecting consumers with businesses, they also may connect businesses with other businesses or consumers with other consumers. A wide variety of different scenarios or business configurations fall under the umbrella of a brokerage model; these includes everything from websites posting simple online classified ads and Internet shopping malls to online marketplaces, online auctions, aggregators, and shopping bots.

Rappa (2010) describes the brokerage model thus: brokers are market-makers. They bring buyers and sellers together and facilitate transactions. Brokers play a frequent role in business-to-business (B2B), business-to-consumer (B2C), or consumer-to-consumer (C2C) markets. Usually a broker charges a fee or commission for each transaction it enables.

A brokerage model is characterized as follows:

- ✓ It is a meeting point for sellers and buyers
- ✓ It encompasses all types of organizations.

When brokerage takes place on the Internet, it is considered as an online or e-commerce market place. An online market place is a type of e-commerce site where product or service information is provided by multiple third parties, whereas transactions are processed by the marketplace operator. Unlike the traditional market in which the meeting place is a physical location, an electronic marketplace refers to a virtual space on an electronic network (Alrubaiee, et al., 1997).

The unique feature of an e-marketplace is that it brings multiple buyers and sellers together (in a “virtual” sense) in one central market space (Grieger, 2003). In an online marketplace, consumer transactions are processed by the marketplace operator and then delivered and fulfilled by the participating retailers or wholesalers (often called drop shipping). In general, e-marketplaces proposed to increase the efficiency and effectiveness of procurement activities by replacing traditional manual processes with automated electronic procedures and by expanding the number of available trading partners (Koch, 2003).

B. ONLINE BROKERAGE SYSTEM FOR EVENT MANAGEMENT

The online brokerage system for event management enhances the traditional event management operation by

making use of computers and the Internet, making brokerage transactions faster and relatively cheaper.

The advantages of an online brokerage system include improved customer experience, accurate, real time reporting and information management – all contributing to significantly reduced costs. So it is no surprise that individuals and organizations are increasingly looking to leverage the advantages of online brokerage systems by extending its use throughout the entire event process.

An Event management brokerage delivers instant client information and alerts to the event managers to maintain close client contacts. This results in the improvement of service quality and client relationships. An event management brokerage system facilitates the event managers to trade their portfolios online through the Internet. It allows clients to keep track of progress made, execute their transactions, and alerts them to changes made (if any), without the use of any middlemen.

C. THE PROPOSED SYSTEM

Online marketplaces have become abundant as organized marketplaces are sought after. Some are generic and cater for almost all the needs of the consumers; however, some are consumer specific and cater to a particular segment only. Not only is the platform for selling online, but the user interface and user experience matters. People tend to log on to marketplaces that are organized and products and services are much more accessible to them. Examples of popular online marketplaces are amazon.com, Alibaba (Rashad and Merveen, 2014), and eBay (Joseph and Jared, 2009). Other event management-specific platforms include B2Match and Converge.

In the context of the Nigerian event management industry and to the best of our knowledge, the researchers found no existing traditional online brokerage platforms. The brokerage platform proposed in this paper seeks to fill this gap. The web application developed in this research will not only be used to aid planners of events but it will also bridge the divide between the planners and those who need to have their events planned. Basically, the proposed software utilizes a marketplace approach, whereby service providers advertise their presence and potential clients can network and set up meetings with the providers of their choice. The economic impact of this application is substantive as the monetary value accrued from avoiding fraudsters and reducing the rigour of unnecessary travels that bedevil our traditional event planning cannot be quantified.

The proposed software differs from the above mentioned products in a number of ways:

- ✓ B2Match and the Converge software provide both web-based meetings and face-to-face meetings between clients and service providers. The proposed platform is a web only platform. Participants only meet on the web platform. Subsequent meetings, if any, are organized by the participants without input from the system.
- ✓ The other platforms still play a large middleman role by allowing the platform owners to be involved in the organizing of events, setting up the meeting schedules, etc. the proposed platform eliminates the middleman, as

much as possible by allowing a client and service provider to handle such planning among themselves without the platform owners.

III. METHODOLOGY

The systems development model adopted for this project was the 4-phased Rapid Application Development (RAD) model (Riffat and Khan, 2015). The particular RAD model used was the James Martin RAD methodology. This development approach consists of four phases:

- ✓ Requirements planning phase: information was solicited from existing event management service providers and potential customers. The information obtained from these persons was used to define the system requirements. In this research, UML diagrams were used to model the use cases.
- ✓ Design phase – Models and prototypes of the system were developed and built. The design prototype was continuously refined based on user feedback till an acceptable model was obtained.
- ✓ Construction phase – the design models and prototype were fine-tuned into the final working application.
- ✓ Unit and integration tests were also conducted.
- ✓ Cutover phase – the system was deployed and users were trained on its workings and a user acceptance test was carried out to evaluate the system.

A. SYSTEM DESIGN

In designing the system, some design tools were used. Some tools were the use case diagrams

a. USE CASE DIAGRAM

The use case diagram highlights the functionalities available to the users of a system and serves as a blueprint for describing user interactions on the portal.

As shown in the use case diagram of figure 1, the system consists of three categories of users, the system administrator, the service provider and the client. The system administrator handles the administrative tasks which include the approval of service provider requests, addition of new event categories and the generation of reports.

The client can browse through the system for available service providers, place requests to selected service providers, and compare the prices offered by competing service providers.

The service provider can register on the portal, view client requests and respond to client requests.

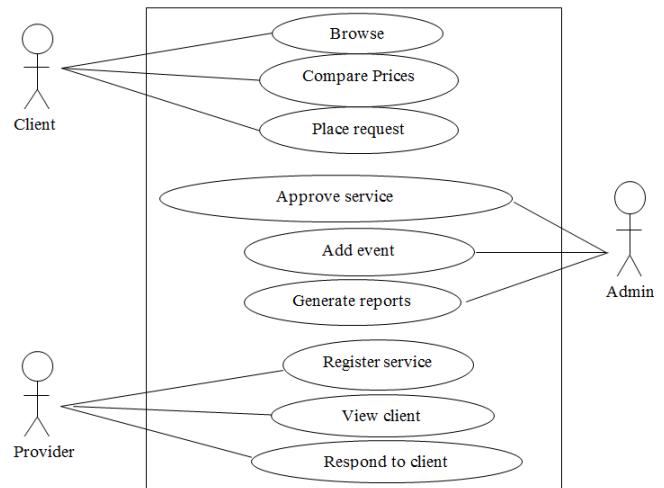


Figure 1: Use Case Diagram

IV. SYSTEM TESTING/RESULTS

A. TESTS

A few tests were carried out in validating this system. The tests are described below.

a. UNIT TESTING

Different unit tests were conducted on the various modules of the brokerage system. The unit tests conducted Included:

- ✓ Database unit tests: tests were carried out to ensure that the application scripts were able to connect properly with the MySQL database server.
- ✓ User Interface unit tests: tests were carried out on all user interfaces with the intent of ensuring that all elements of the user interface displayed properly at their expected positions.
- ✓ Data input unit tests: tests were conducted to ensure that the various data entry modules were able to receive data in the correct and expected formats.

b. INTEGRATION TESTING

The brokerage application was tested incrementally to ensure that all units and modules interfaced properly. All modules from the user login module to the registration and report modules were tested to ensure that they all worked together as expected.

B. SAMPLE IMPLEMENTATION OUTPUT

The following are the sample output screens from the system tests.

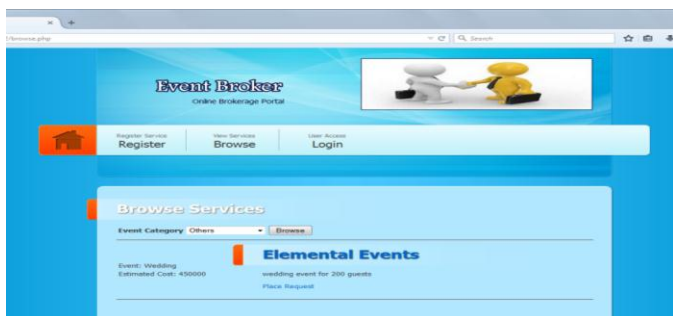


Figure 2: Browse Services Page



Figure 3: Client Request Report

C. SYSTEM EVALUATION

The evaluation of the system design was done using the criteria-based approach which is a quantitative assessment of the software in terms of usability and maintainability.

A set of randomly picked persons within the Calabar metropolis were asked to evaluate the software. For the evaluation, users were asked to test the software based on each of the user categories: Client, Service Provider and System Administrator.

A post-test questionnaire was then given to each user to answer based on their observations during the execution of the test. The aim of the questionnaire was to measure the degree of usability and user satisfaction with the application.

The set of questions that were given to the client test users is given in table 1 below.

S/n	Evaluation Question
1	The organization of the site is logical and clear.
2	The information is sufficient for the intended audience.
3	The user can easily move through the site to a desired location.
4	The style is consistent throughout the site.
5	The user can clearly see where s/he is on the site.
6	Visuals enhance rather than detract from the message of the site.
7	Overall, I am satisfied with the service provided by the site

Table 1: Client Evaluation questions

D. RESULTS EVALUATION

The design evaluation questions were administered on a total of 50 participants; 10 participants in the “Admin” test category, 20 participants in the “Client” test category and 20

participants in the “Service Provider” test category. Each user was asked to respond to a question by selecting an option based on their assessment of the system. Tables 1 and 2 show the responses.

The responses are coded using a positively rated Likert scale in the following form:

Strongly Disagree (SD)	Disagree (D)	Undecided (U)	Agree (A)	Strongly Agree (SA)
1	2	3	4	5

Table 2: Likert Response Scale

The response obtained from the analysis of the client test is represented graphically in chart 1

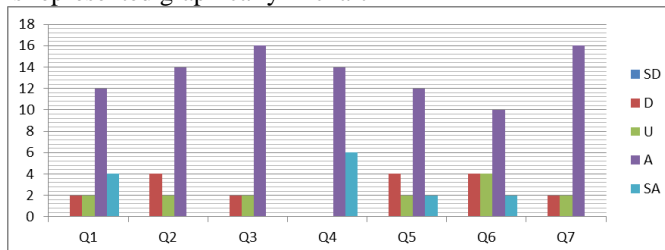


Chart 1: Summary of Client User Evaluation Results

Similar evaluation tests were conducted by the service providers and the administrators as well.

Based on the responses obtained from the three categories of respondents and the analysis of the evaluation results, we deduced that the users are satisfied with the system.

V. PRACTICAL IMPLICATIONS

The Practical implication of having a system of this nature extends into about three domains:

- ✓ For the client (one who has an event), it takes off the burden of fruitless and sometimes time wasting and money spending search for an appropriate events manager.
- ✓ For the events manager, it is a tidier approach to having clients locate him/her.
- ✓ For the hospitality industry is a step in the direction as this solution could be expanded to meet certain other similar needs.

VI. CONCLUSION AND FUTURE WORK

Event management is a challenging process that requires careful planning and active participation by the client as well as the service provider (event manager). It even becomes more tasking and at times risky when the client does not know any service provider and has to depend on information provided by the broker. To tackle some of these challenges, this paper described a created platform where a client seeking an event manager can find and interact with the service provider without the necessity of a middleman.

The implementation of an automated brokerage system for event management provides tremendous benefits to individuals and organizations that are willing to adopt and use it.

The benefits include provision of a secure and efficient system, timely access, and the delivery of cost-effective event management service providers.

A. FURTHER WORK

Although the implemented platform serves its intended purposes, the user experience could be enhanced by the addition of the following improvements;

- ✓ Clients should be able to cancel any requests they have previously made. This may require clients having to register on the portal in order to provide record tracking information.
- ✓ An online chat medium could be incorporated to allow conversation between clients and service providers.

REFERENCES

- [1] Albuquerque, P. C. (2003). The traditional brokers: what are their chances in the forex? *Journal of Applied Economics*, Vol. VI, No. 2.
- [2] Fu, H., Chao, P. and Chang, T. (2006). The impact of market freedom on the adoption of 3rd party Electronic market places.
- [3] Grieger, M. (2003). Electronic market places: A literature review and a call for supply Chain mgt. research *European Journal of Operational Research*, Vol 144, pp 280-294
- [4] Joseph E. and Jared W. (2009). EBay's proxy bidding: A license to shill. Elsevier: *Journal of Economic Behavior & Organization*, Vol 72, pp 509-526
- [5] Koch, H. (2003). B-2-B electronic market places: membership and use drivers. Doctoral dissertation, Texas A & M University.
- [6] Laith A., Hameed A. and Yasir A. (1997). Relationship between B2B E-Commerce, Benefits, E-Market-place Usage and Supply Chain Management. *Global Journal of Management and Business Research*, Volume 12, Issue 9, version 1.0
- [7] Rappa, M. (2010). Business models on the web institute for advanced analytics, North Carolina State University.
- [8] Rashad Y. and Merveen T. (2014). The Review of Alibaba's Online Business Marketing Strategies Which navigate them to Present Success. *Global Journal of Management and Business Research: E Marketing* Volume 14, Issue 7, Version 1.0.
- [9] Riffat N. and Khan N. (2015). Rapid Applications Development Techniques: A Critical Review. *International Journal of Software Engineering and Its Applications*, Vol. 9, No. 11, pp 163-176