Prospectus

Online Reservation System for Restaurants in Ghana
(Technical Topic)

Analysis of the Failure of the similar project caused by the network, network builders, and actors

(STS Topic)

By

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On my honor as a University student, I have neither given nor received unauthorized aid on this

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Introduction

Efficiency and effectiveness are the main concerns of every business including restaurants. Restaurant managers and diners go through a lot of stress in terms of food ordering and table reservation leading to errors in the processes hence, affecting the whole performance of the restaurant business. There is the need to come up with an application that would enable people to either order food or reserve a table at a restaurant efficiently and conveniently. I came up with the idea to design and implement an online restaurant reservation system to enable restaurants to manage their food orders and table reservation so that people will not join very long queues before being served their meal at the restaurant.

The application will require an internet connection which is quite expensive to afford for the majority of people and also the user must be computer literate. The restaurant has to incur debt in hosting their site online so that people can browse the site and place orders. The setback of the system is that the customers targeted are adults with access to computer systems and mobile phones with internet capabilities. People who cannot afford these resources cannot engage in food orders and reservations. Despite all the setbacks, the proposed application is worth developing for the reasons that, it will help restaurant businesses to manage operational costs because management will be well informed and can predict the demands ahead of time to schedule the right number of workers to deliver excellent services. The application will lead to an improvement in cancellation notifications. Customers hesitate to call the restaurants to cancel orders or reservations made because of the frustrations of waiting on the phone for a longer period in trying to cancel an order. The reservation application will enable customers to carry this action with a simple click on a button which will automatically update the system informing

the staff about vacant tables making them available for booking in the future. The reservation system is a way for restaurant businesses to acquire customers' details at no cost and can be used to market deals and promotions through SMS or emails as well as rewarding loyal customers to boost sales.

While technological advancement aims to increase efficiency and effectiveness in the restaurant industries, that can't be possible without important network builders, social and technical actors that shape the development and implementation. I will use the actor-network theory (ANT) framework which includes the network, network builders, social and technical actors which has contributed to the failures of some related projects in my analysis bring to light how the proposed project can be successful. After the implementation of the proposed system, the application will be responsive enough to be used on mobile devices aside from personal computers. The new reservation application will have functionalities that will enable customers to select a menu, place orders, settle bills, and more (Wickramasinghe, 2011, p. ii). The proposed system will be optimized to be responsive on multiple devices and have functionalities such as a payment system to enable customers to pay before their orders are placed successfully and track the status of their order from start to end. It will also include features to preview and update the menu, automated text and email reminders, a waitlist to fill last-minute cancellations, advertisement of coupons on deals, and a cancellation button.

Technical Problem

The challenges encountered by the restaurant businesses in Ghana with a few or no existing system serve as a major drawback to the realization of efficiency and customer satisfaction. The experience of ordering in most fast-food restaurants is not pleasant for the

customers due to long queues and not knowing the availability of foods. Customers are dissatisfied when they have to join long queues, especially during busy hours or holidays before they get served. There is no system to update the customers on the availability of the menu before their turn to order (Wickramasinghe, 2011, p. 8).

The traditional takeaway and dine-in services as well as placing and making reservations via calls are still the major drives in the restaurant industries in Ghana. The current trends according to Ohene-Ntow (2018), "the self-service technology describes how restaurants display their services and menus and allows customers to place their orders themselves and pick up orders, without having a waiter or waitress to serve them" (p. 16). The current technologies used are a good start but need an improvement to make more sales while satisfying the customer needs. Despite the use of Information Technology (IT) and Point of Sales (POS) systems at the restaurants, the orders have to be handwritten and entered into the POS system because there are no tools to take the records of customers' orders (Akoto-Lamptey, 2012, p. 2), but the setback of the self-service system is that customers who cannot read, write and use any form of a technological device cannot engage in the food ordering.

However, if the current method by restaurants persists, then some likely problems may include; the cost that most restaurants incur as a result of some diners not showing up to take their ordered meals or reserved tables since they have not paid. These diners do not lose anything for not coming for their orders and the frustrations that diners go through in joining long queues to place an order and to be served their meal at restaurants. Restaurants of high quality are so competitive that it compels customers to make their reservations months ahead only to not show

up or cancel their reservations (Tse & Poon, 2016, p. 128). These inconveniences in the restaurant industry call for a new system which will address the issues listed.

Implementing an online reservation system will increase customer satisfaction by speeding up the food ordering processes which will reduce or eliminate long queues. The restaurants will be able to stand out from competitors by automating daily operations which will allow food service providers to increase sales and will help reduce restaurants' food waste and increase the efficiency of the restaurants' staff by enabling them to know what food orders the customers want in advance. Food reservations and ordering in advance help to reduce wait time, level demands, and boost capacity to improve customer experience and sales (Thompson & Kwortnik, 2008, p.3).

The overall aim of this project is to design and implement an online restaurant reservation system that would enable diners to order food and reserve tables at restaurants to optimize food ordering and table reservation. This design will reduce and eliminate all forms of delays at the restaurant side (i.e food not ready on time) and customer side (i.e long queues). The project will involve the development of a purely web-based online application whose main programming language will be Hypertext Preprocessor (PHP) and it will include a server-side that enables a restaurant administrator to create an account and customize the software to the needs of the business. The administrator will then be able to perform basic managerial functions such as daily scheduling, approving orders, deleting menus, generating reports, etc.

The client-side of this software will enable customers after creating an account with the restaurant to log in and order food or reserve a table. The software will include a payment system to enable customers to pay before their orders are placed successfully. In this way, the restaurant

will not run at a loss when a diner fails to show up. This software application is not going to be a mobile application but then it will be optimized to be responsive on multiple displays such as a mobile device with internet access. Thus, customers can order or reserve tables on their phones just like using the laptop or personal computer on the web.

Technology touches every facet of our lives as it always has but with the emergence of mobile devices and cloud computing making more of an impact than ever, you'd be hard-pressed to go anywhere and not find a high-technology piece of hardware or software around. These advances have made an impact everywhere, and one of the places we are seeing more and more technology is in the food and restaurant industry. This is the reason for the online food ordering and reservation system which will be of great benefit to both the restaurant businesses and customers. As technology keeps advancing in all aspects of our lives, the current generation's lifestyle heavily depends on technological products leading to an addiction to them. People spend long hours on mobile devices surfing the internet which is reducing the rate at which people are likely to call restaurants to make reservations. Customers prefer to make reservations and place their order online or use artificial intelligence-assisted devices to place the order to call the restaurant repeatedly or to be on hold before it gets to the person's turn. The convenience of online services is unmatched and preferred as compared to the stress and frustrations a customer is likely to face with restaurant services via a phone call (Crooks, 2019, p. 1).

<h2 style="text-align:center">STS Problem</h2>

A similar project (i.e network) was unsuccessful and various faults were attributed to the network builders (i.e technological artifact producers or software companies and online payment systems), technical actors (i.e restaurant owners), and social actors (i.e customers). Eric

Blinderman, the restaurant owner of Almanac and Mas Farmhouse in New York finds not canceling orders and customers not showing up for their reservations to be a disaster since the accruals of daily losses gradually lead the business to bankruptcy (Schrager, 2015, p.1); the profit margins of the majority of restaurants are thin, and that the accumulations of no-shows by customers threaten the survival of the business because losses can lead the restaurants to go bankrupt.

The service of the network builders to create the restaurant reservation application is capital intensive due to the constant maintenance activities and other related features the application should have. OpenTable is one of the network builders specialized in the creation of reservation applications for restaurants and according to Kindelsperger (2018), 'Kokonas says OpenTable "has erroneously charged restaurants as a matter of business practice, locks restaurants into contracts, and penalizes a restaurant's success by incrementally charging $1 for every diner that books using their system"' (p. 3); this cost for acquiring the reservation system application for new restaurant businesses is likely to cause their failures since it will be too expensive for business starters to afford.

The main form of trading in Ghana is mostly the "cash and carry" system. There are a few credit cards and online payments, but the banks and providers charge a significant amount of fee per transaction. The charges per purchase make paperless transactions to customers unattractive. The majority of the Ghanaian population has trust issues when it comes to using digital transactions because of the high fees charged on usage by the providers of digital payment. This reason and limited use of POS devices in most businesses contribute to about 98.72% of the transactions being carried out in cash (World Bank Group, 2019, p. 19).

During occasions, festive seasons, and holidays, there is often increased demand for food reservations which puts a lot of pressure on restaurant employees to meet the demands which makes them not able to meet customers' expectations. This occurs as a result of inefficient reservation systems at the restaurants. They stated, "examples of this group include loss of motivation by owners; management or owner burnout as a result of stress arising from operational problems; …and legal, technological, and environmental changes that demand operational modifications" (Parsa et al., 2005, p. 305). Some behaviors of social actors (customers) are likely to cause the restaurant businesses to go bankrupt. Customers may refuse to show up after making reservations without notifying the restaurant because they did not make any commitment and so, have nothing to lose. Despite the advantages of the reservation system, some customers may decide not to show up or simply change their minds since there is no commitment in a form of payment to the restaurant reserved (Wharton School, 2013, p. 1).

Actor-Network theory seeks to associate or bring together different kinds of actors in a network or stable system through a network builder to solve a problem or accomplish a goal (Cressman, 2009). The network in this project is the technological artifact called the restaurant reservation system which seeks to increase efficiency and productivity in the restaurant industry and the network builders of this system are the programmers or software companies and payment systems. The social and technical actors in the network of this project are the customers and restaurant owners respectively. I supported my analysis with evidence and data from academic articles and research papers from various educational institutions, news journals, and world bank research reports.

Conclusion

The technical problem discussed introduces us to the proposed system I wish to develop for the restaurants' industry in Ghana. I have looked at the general objective as well as the specific objectives expected to be accomplished at the end of the project. I have also looked at the scope which talked about the inclusions and exclusions of the proposed system especially in its functionalities which makes it unique. In the STS project, I applied the actor-network theory framework which includes the network, network builders, social and technical actors to accomplish efficiency and effectiveness in the restaurant industry. Despite the differences in the technical problem and STS project scope, they work hand in hand to achieve efficiency and effectiveness in the restaurant industry. The technical problem reviewed some existing implementations, benefits, and challenges of the implementations and the trends in the industry which helped to predict the directions for future online restaurant reservation systems. On the other hand, the STS project accessed reports from similar failed projects and some mistakes and actions that the entities in ANT played that made past projects unsuccessful. This approach will help yield positive results stated in this technical report by addressing some past challenges faced by restaurants regarding the implementation of the restaurant reservation from a socio-technical perspective.

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