



DEVELOPMENT OF A COMMERCIALLY VIABLE E-BUSINESS FOR MANAGING THE NIGERIAN ROAD TRANSPORT SYSTEM BASED ON THE INFORMATION TECHNOLOGY (IT) BUSINESS MODEL.

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Abstract

There is a gap in the market between the travellers and the transport companies in the Nigerian road transportation sector. This research aims to develop a business idea which will provide a service by developing a website (technical solution) that people will be prepared to buy (market need) in preference to existing services or competitors' services by utilizing Information Technology (IT) in creating an enabling and a suitable business environment in form of a website which would bridge the gap between the transport companies and independent travelers and also, meet real business needs. It involves developing a website based on an investigation of user needs by gaining an insight to the issues the citizens currently face with the road transportation system.

Subsequently, an IT based solution which effectively meets the needs whilst evading most of the problems was suggested. In principle, this research can be viewed as the creation of a business enterprise that harnesses the power of IT to effectively meet the demands of the major stakeholders, and as a consequence gain competitive edge over the current methods of managing Road Transportation in Nigeria. Having said that, this cannot be successfully achieved without considering how the business enterprise would generate revenue or exactly what value is being proposed to the citizens. For these reasons, the business model which effectively captures the value created was taken into consideration.

Keywords: e-business, Business Model, Nigerian road transportation, Information Technology.

INTRODUCTION

The role of transportation in National development cannot be over emphasized. The integration of web-based and wireless communication technologies in the transport system of advanced countries like the USA and Germany has resulted to the provision of travel information services directly to users (Zografos et al., 2008). According to Zografos et al. (2008), most of these existing systems provide one or more travel plans for either single-mode interurban trips or multimodal trips. However in developing countries like Nigeria where the transportation system is facing a lot of problems, there is significant room for improvement which will be of benefit to all the stakeholders. This is because the current trend in the

Nigerian road transportation sector indicates that there is a wide gap between what the travelers want/need and what the transport companies are providing. For example, travelers still need to physically visit the transport companies just to get the basic travel information they need such as departure times, ticket prices, and route information. This has also affected the business processes of transport companies in Nigerian as there is lack of coordination. In a similar study of the travel industry in developing countries, Stockdale and Borovicka (2006) suggested that the travel industry players need to be more flexible in their approach with both trading partners and customers and also find new ways of interacting with them.



An efficient transportation system can enhance the quality of life and productivity of a community (Rodrigue, 1998). The integration and unification of travel using Information Technology (IT) in the UK has been beneficial in solving problems such as traffic congestion, road accidents, air and noise pollution etc. Atos Origin in partnership with the Department for Transport UK built and developed the first and only website that offers door-to door travel information for both public transport and car journeys around the UK (Transport Direct, 2010). Similarly, the travel industry in Germany in an attempt to satisfy the need for physical mobility of people in the most efficient way expanded the transport infrastructure and integrated travel services using ICT to provide faster services (Schiefelbusch et al., 2007). According to Schiefelbusch et al. (2007), this led to an increase in the travel volume and also had sustainable impacts on the natural environment and the humans. The situation is however different in Nigerian where the road transportation system is highly unstructured and fragmented. The National Bureau of Statistics (2010) described the road transport system as the most fragmented sector of the Nigerian travel industry. The fragmented nature of the industry was attributed to the absence of any government agency coordinating road transportation activities as in the case of the Nigerian Railway Corporation, Nigerian Ports Authority and the Federal Airports Authority.

The Nigerian road transportation system would benefit from having a more unified and structured road transportation system which can be provided by the adoption of Information and Communications Technology (ICT). Nigerians would also benefit from having a functional and efficient transport system as it would stimulate national development and enhance the quality of life of the people. From discussions so far, it apparent that there are issues in the Nigerian road transport sector of the travel industry which call for immediate attention and an optimal solution. Therefore, looking at the ICT trends in Nigeria coupled with the existing travel provisions an opportunity to develop an online solution that would impact the Nigeria road transportation sector positively has been spotted.

OPPORTUNITY SPOTTING

Opportunities are about creating value, not necessarily lowering cost (Birley and Muzyka, 2000).

The opportunity spotted here is a gap in the market between the travellers and the transport companies. The idea is to introduce an improved service that will offer new ways of managing relationships between and within the transport companies. We propose to an IT based solution which involves developing a website that would enable travelers to plan and organize their journeys easily and efficiently from the comfort of their homes and offices. For the transport companies, it would enable them to carry out business transactions on a single platform in a comfortable and secure manner. The traveller and transport companies will pay for this service if they perceive the opportunity to be of value to them and if the opportunity helps to increase efficiency and effectiveness.

For the transport companies, their businesses will be transformed if certain business needs are addressed as follows:

- The need to have a web presence as very few transport companies have websites of their own.
- The need to reach out to more customers.
- The need for a secured way of doing business where transactions will be electronic and efficient.
- The need for less cash-based transactions for better accountability.
- The need to interact with customers directly without intermediaries or agents.
- The need to provide the basic information needed by travelers in an efficient/effective manner.

It is important to note that this constitutes best practice the developed worlds, thus, the Nigerian road transportation system stands to benefit by catching up with the trend. The proposed website would bridge the gap between the transport companies and the travelers. The proposed website features will help in overcoming some of the outlined issues and make the transport companies more efficient.

OPPORTUNITY ASSESMENT AND ELABORATION

A good business opportunity is a potentially profitable combination of a market need and a technical solution. This business idea would be providing a technical solution (i.e. the website) that people will be prepared to buy as there is a market need in preference to existing services or



competitor's services. The transport companies should subscribe for the services of the website because the website will be meeting real business needs. Very few of them have websites of their own, therefore this will offer most of them the opportunity of having a web presence.

Secondly, it will afford them the opportunity to reach out to more customers. Thirdly, it will afford them a secured way of doing business as all transactions will be electronic and so they will have to handle less cash-based transactions which is in line with the cashless policy of the Central Bank of Nigeria. Fourth, it will eliminate the need for travel agents as it would afford them the opportunity to interact with their customers directly. Fifth, the website will afford them a means of providing the basic information needed by travelers efficiently and effectively.

For the travelers, they would embrace this service because they need to get to the bus stations to travel, so why go twice. It's dangerous to go out so why risk it when there is an alternative means of getting the job done. More so, with the recent wave of ICT adoption in the country, the business idea would be a welcomed idea. Some travelers are very busy people with a busy work life so it would afford them the opportunity to efficiently plan their journeys themselves. The website will also provide travelers with the basic information they require from transport companies. A feature that distinguishes the website from other existing solution is the ability to afford travelers the opportunity to compare offerings from different transport companies plying the same route. The travelers will be able to book/buy their tickets online in a secured manner. Additionally, the Web 2.0 features will enable travelers to collaborate with each other by the means of a forum which could be quite helpful for other travelers.

THE VALUE PROPOSITION

For transport companies who need to have an online presence and to sell tickets online in order to improve their business processes, the proposed website service is unique and efficient. The website would enable transport companies to upload their schedule for prospective travelers to view, search and book for their tickets online unlike the existing system which is inefficient and problematic.

For travelers who need to search for basic travel information online and purchase their tickets online,

the proposed website's service is unique and easy to use. The website provides an integrated platform to search for travel information, compare offerings and book for tickets online unlike the existing system which is stressful and inconvenient.

For advertisers, who cannot afford the high cost of advertising on print media; the proposed website is easy to use and affordable. Being an online solution it cuts across all boundaries, it is flexible and also has the potential to reach millions of people unlike the alternative expensive means of advertising on print and digital media.

According to O'Connor and Galvin (1998), every entrepreneurial venture in e-commerce should take note of the importance of value creation towards the business and the society at large. This business would be creating value to the Nigerian road transport sector, the e-commerce industry and the society at large. This is apparent because Nigeria stands to benefit from the services of the proposed website if properly implemented. For this reason, the business model was well thought through in order to capture the value being proposed.

THE BUSINESS MODEL

A business model typifies the method of doing business by which a company can generate revenue. The business model spells-out how companies make money by specifying where they are positioned in the value chain (Rappa, 2010). Internet commerce which is the primary area of this research has given rise to new kinds of business models (Bain, 2007). There are a number of business models that are applicable to the transport sector and the web each one with its pros and cons. However the IT business model for the Nigerian road transportation system is a combination of three of the conventional business models as follow.

1. **The Advertising model:** The web advertising model can be viewed as an extension of the traditional media broadcast model (Rappa, 2010). The proposed website will be the broadcaster to provide contents and services e.g. forums, emails, etc. which would be mixed with advert messages in form of banner ads on the homepage.
2. **The manufacturer / direct model:** The manufacturer model also known as the direct



model, enables a company that provides a service or creates a product to reach its consumers/buyers directly without any mediator or middle man. The model tends to compress the distribution channel; hence it is based on efficiency and improved customer services and also a better understanding of customer preferences (Rappa, 2010). This model particularly suits the proposed website to be designed.

3. **The virtual community model:** The virtual

community constitutes both a business model and a facility which can be incorporated into any other business model (Timmers, 2000). The virtual community model concept gathers people with a common interest, and also aids them in contributing to the information base, thereby motivating them to make public their experiences. According to Timmers (2000) the business model is most times based on membership fee and advertising revenues.

Key Partners Web hosting company Inter switch Nigeria Ltd for the online payment Transport Companies with existing websites that have booking and payment functionalities	Key Activities Website development and implementation. Maintenance of the website to provide reliable services	Value Propositions For transport companies who need to have an online presence and to sell tickets online in order to improve their business processes, the proposed website service is unique and efficient. The website would enable transport companies to upload their schedule for prospective travellers to search and book for their tickets online unlike the existing travel framework.	Customer Relations Transport companies: Short term contracts renewable annually. Travellers: Transaction based contracts. Advertisers: Long or short term contracts	Customer Segments Transport Companies Travellers Advertisers
	Key Resources Software and tools for building the web application. Unique service combination offering		Channels Business plan Direct to customers The Internet: 3rd party sites, social networking sites e.g. Facebook	
Cost Structure Fixed: Initial cost of hosting the website and payment for the domain name which is renewable annually or upon expiration of the initial contract		Revenue Structure Transport Companies: Initial Registration fee, Annual subscription fee Traveller: Commission from bookings Advertiser: Advertising revenue		

Figure 1: The IT Business Model for the Nigerian road transportation system



A combination of the direct model, the advertising model and the virtual community model will be adapted to form the IT business model as depicted in Figure 1 for the proposed website for managing the Nigerian road transportation system. The proposed website to be developed will be the broadcaster; the content to be provided will be for both the travelers and the transport companies. In addition to this, web 2.0 services in form of forums would be provided. Banner ads for transport companies and other businesses would also be incorporated as an additional source of revenue. This model will yield maximum benefit when the volume of traffic on the website becomes very large.

REVENUE MODEL

The website would be linked to a database which will contain all the information uploaded by the transport companies that are registered on the website. The transport companies will be required to pay an initial registration fee to get registered on the website. This will grant them access on the website for a year and also enable them to be able to upload their schedules and other relevant information. An annual renewal fee would be charged for subsequent years. Furthermore, a commission will be received from all customers (travelers) that use the website to book tickets. This fee would be added to the ticket fares while booking.

As an alternative strategy depending on the initial performance of the website, the revenue from the initial registration fee might be sacrificed in order to get more transport companies registered on the platform. They would however be charged the annual fee for subsequent years when the business must have been stabilised and well established. Finally, donations may be received from the government at various levels since Nigerians stand to benefit from the services of the business. Provision would be made for banner advertisement on some of the page of the website. Additional revenues from banner advertisement on the website would be another way of making money on the website.

MARKETING STRATEGY

A target market segmentation process was carried out in order to define a clear marketing strategy. It is important to communicate and share the vision of the business idea in order to convince the stakeholders

about the feasibility of the opportunity spotted. This would be done by the means of a business plan which will explain what the resulting business (website) would look like and how it would work. The business plan would describe what would be possible on the website once it is up and running.

Porter (1985) suggests that for a business to achieve and maintain competitive advantage, it needs to decide about a strategy to adopt. The offerings of the website are well focused and innovative. Therefore, the persuasive approach would also be used to communicate to the transport companies on an emotional level. The vision and mission statements of the business would be specified as a critical part of the marketing strategy. The implemented functionalities would be demonstrated for the transport companies to have a basic idea of how the website would work. The transport companies would also be enlightened and encouraged to register with the website.

As a part of the communication strategy, word would be spread on social networking sites such as Facebook and Twitter and on third party application websites in Nigeria once the final prototype is ready. This would get other stakeholders (i.e. travellers and advertisers) interested. In a recent study conducted by Nielson (2008) it was found that 78% of consumers globally believe and trust recommendations by peers for goods and services. This is indicative of the importance of word-of-mouth communication. Thus, word-of-mouth could be used to contribute to the success of the business by targeting and motivating customers to use the service and recommend to friends and peers in general. For the advertising strategy, Google AdWords would be used as an advertising tool. This is because it would advertise the website on advertising networks with millions of websites in addition to the Google's search pages.

According to Amit and Zott (2001), "the value-creating potential of an e-business is enhanced by the extent to which customers are motivated to engage in repeat transactions". Therefore, it is important to make every customer's experience a hitch free and memorable one in order to guarantee a repeat transaction. The forum for discussion would contribute to the lock in strategy and also help to maintain the traffic flow on the website which is needed to justify the value created for the advertisers.



POTENTIALS OF THE BUSINESS IDEA

This section discusses the potentials of the business idea with respect to the Market Demand; Market Structure and also the balance of power for the business situation.

In order to ascertain whether the business idea has real potentials, the viability of the opportunity was assessed by drawing valid inferences from various research materials consulted.

Market Demand

The market demand will be long lasting because people will continue to have the need to travel for either business or leisure. The customer base is huge as there are very many transport companies in Nigeria. Also looking at the demographic statistics of Nigeria, we could infer that there is no risk of the customers outgrowing the need for the services. Over 40% of the population is in the target group (CIA World fact book, 2011). The online nature of the service might make it more attractive and suitable to an age group that constitutes active web users. The service is also likely to attract sufficient customers judging from the increase in the number of Internet and Internet services users. The market demand is not projected to disappear anytime soon so the likelihood of recovering the investment is very high. The market demands should grow because statistics has shown an increase in population as well as an increase in the number of Internet users in Nigeria. Therefore, we could infer that the number of people that need to travel is also on the increase.

The way customers perceive the state of development of the technology behind the service will determine the acceptance. The success of a similar service in the airline industry will be a motivating factor. More so, potential customers will be able to identify the benefits of the service and be receptive to the new services as the technology utilization has been on the increase in other industries and sectors. The customer payback time for travelers is very short. This will help in building awareness of the service which will in turn impact on the customer payback time for the transport companies making it short as well.

Market Structure

The major competitors for this business idea are the travel agencies and transport companies with existing travel sites which have a booking and payment system. However, the businesses of the travel agencies are not very large. They are just small businesses offering some of the services this business idea propose at a fee. Their main target customers are the travelers and not the transport companies and they act like the middlemen between the two. Most of their services are targeted at the air transportation sector. Therefore, the market can be penetrated without suffering a high competitive reaction. The chance of this competitor undercutting this business in a price war is very unlikely as the services will be provided to the travelers for a token fee.

The second major competitors are transport companies which already have their own website. There are very few of them for now and they are not offering value-adding services such as price comparison between two transport companies plying the same route. This value adding service will give the business an edge above these other companies. Furthermore, the transport companies with an existing booking and payment site also stand to benefit from the services of the proposed website as it could afford them the opportunity of reaching a wider audience considering the proposed websites potential for generating a lot of web traffic. They could also be approached and encouraged to partner with the proposed website as it could still be linked to their booking and ticketing system seamlessly.

Balance of Power in the Business Situation

In order to understand where the power lies in this business situation, the Porter's 5 tool was used. This also helped in determining if the business (proposed website) has potentials to be profitable.

Supplier power: The main supplier to be considered here is the web hosting company. The strength and control of the web hosting company over the business is very minimal as web hosting fee is normally for a fixed period of time depending on the contract. There are also a lot of web hosting companies and the switching cost from one company to another is low. Their help is however needed as the website needs to be up and running 24/7.

Buyer Power: The transport companies and travelers can be considered as the buyers. It is a bit difficult to assess how the travelers could drive the price down, however the transport companies can drive down the initial registration fee through negotiation. The number of transport companies targeted is high likewise the number of travelers. More so each individual transport company is important because the higher the number of transport companies registered on the website, the more robust the website would be for the travelers' usage. Thus, the buyers would be considered as powerful.

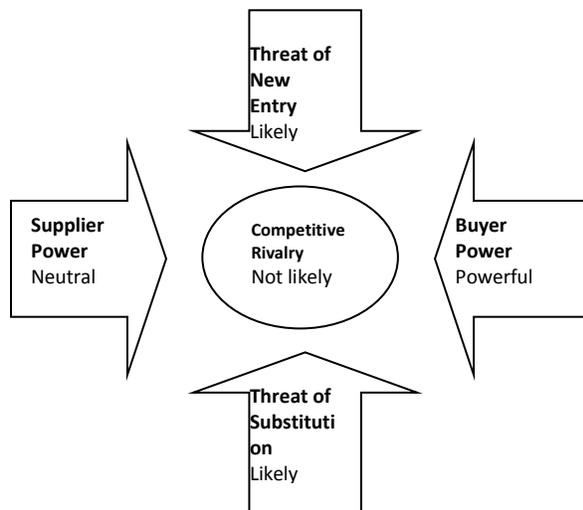


Figure 2: Porter's 5 forces

Competitive Rivalry: The number of competitors is low and their offering is not as attractive and innovative as the business idea. The capability of the competition to undercut this business in a price war is low. No competitor is offering all the features of proposed website for now; therefore, the business has a lot of strength here.

Threat of substitution: The different ways of doing what this business idea proposes is to continue with the existing system in the road transport sector of the travel industry or using the websites of the few transport companies that already have a website. This is easy for the customers if the proposed website does not meet their expectations. This factor would be taken into consideration while implementing the functional requirements in order to meet the basic needs of the customers that would be value adding.

Threat of new entry: There is little protection for the key technologies for the website as the software used can be easily acquired. This exposes the business to new competitors who can quickly enter the market. The barrier to entry can however be raised by protecting this business idea with a copyright.

POTENTIAL BARRIERS

Different transport companies may have their own ways of creating content and schedules. The proposed website would need to be adaptable enough to deal with these different formats, yet still be usable and efficient. The operational risk identified relates to the user interface of the proposed website. Internet users are generally accustomed to websites with a simple and easy-to-understand user interface. The proposed website's user interface needs to be easy to understand and navigate through for the users. The risk here is that they might not use the proposed website if the interface is too complex. This would also have a severe impact and the likelihood is also high if this factor is not considered while designing the user interface. In other to avoid this special attention would be given to the design of the user interface to ensure that it is simple to use and also suits the needs of the end users.

SWOT ANALYSIS

Strengths

- The website will be offering a variety of innovative services that have not been offered by any other business in Nigeria as of today. Features such as online travel schedules, online booking and forum will distinguish the proposed website from other existing websites. Therefore, the business would have the first-mover advantage for its unique features.
- There is no operating cost or initial capital involved in running the business apart from the web hosting cost.
- The business will not be facing a direct competition from the transport companies or travel agencies because it would be operating in a specialised sub-market.
- Considering the fact that the business can create a market niche, the business has the ability of generating a high web traffic which could impact the revenue stream as more advertisers subscribe to the services of



the website.

Weaknesses

- Being a new e-business, the website database would be empty at the beginning. This is because the database will only get populated after transport companies must have registered and uploaded their schedules on the website. The transport companies would however be motivated and encouraged to register with the website as soon as it has been launched. This would also be communicated to them in the business plan.

Opportunities

- The government could decide to fund the business in order to support the activities in the Nigerian road transportation sector.
- A similar service could be provided to other industries in Nigeria or other African countries.
- The proposed website can aid interaction between the transport companies. This could lead to developing a platform for managing relationship between and within the transport companies (Business to Business Relationship).

Threats

- The new business idea might trigger a competing technology development. For example, a mobile application that proposes the same kind of services.
- The unique services of the proposed website that differentiates it from the competitors could be copied.

CONCLUSION

Based on the business model adopted and the revenue model, the offering will be provided to the customers at a profit. The three main customers are the transport companies, the advertisers and the independent travelers. The transport companies will pay to get registered on the portal and there will also be an annual subscription fee. The independent travelers will be charged a token only when they use the services of the web portal to book/buy their tickets. Advertising by the means of banner ads on the website will also be another source of revenue. The business is potentially profitable because there is a

gap in the market and both the travelers and transport companies will appreciate the services of the proposed website.

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