A Study of Marketing Information System (MIS) As a Contributory Factor in the Performance of Selected Transport Companies in Calabar Metropolis

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The research paper focused on the study of Marketing Information System (MIS) as a contributory factor in the performance of selected transport companies in Calabar Metropolis. The study aimed at determining the effect of Internal Record (IR) keeping as a contributory factor to decision making. Also, to evaluate the extent at which Marketing Intelligence (MI) has imparted on the performance of selected public road transport companies in Calabar. Further it also investigated the influence of Marketing Research (MR) on the performance of selected public road transport companies in Calabar. Data were collected using questionnaire. The study adopted exploratory and survey research designs. Data were analyzed using Ordinary Least Square (OLS) method. The results from the test of hypotheses revealed that Internal Record, Marketing Intelligence, Marketing Research are contributory factors to the performance of public road transport companies in Calabar, Cross River State, Nigeria. The study recommended that the marketing information system should be used as the bases for analyzing Segmentation – Targeting – Positioning (STP) and Competitor analysis.

Key Words: Marketing intelligence, marketing research, internal records, organizational performance, road transport, distinctive advantage and competitors

Introduction

Today's world of business is characterized by the wave of information technology. Seeking information about your environment and competitors is vital for business survival. No one single variable can guarantee success, but rather will contribute to overall organization performance. Information leads to better decision making especially in this era of fast changing consumer preference, for this reason management need to do a lot to acquired, process and transmit accurate and timely marketing information for better decision making which will make them gain distinctive advantage, thereby contributing to their organizational performance.

Harmon (2003) defined marketing information system as a computerized system that is designed to provide an organized flow of information to enable and support the marketing activities of an organization. Marketing information system prepares data and makes them available when the need for such data arises for better decision (making better alternative course of action). Companies employ professional who handles their information need and reports the available data to help managers make better decision that is tailored toward business growth (Perreault & McCarthy, 1993). Marketing information system harnesses data from a set method and procedures designed by organization in looking at critical information need of the organization like: information on market trend and sizes, information on

the changing need of customers, information from competitors and the information on government policies that affect business operations. These information is basic in identifying , measuring, forecasting and analyzing various market segment as regard to any economic state be it boom or recession. Road transport is the most commonly used mode of transportation in Nigeria and accounts for more than 90% of the sub-sector's contribution to the Gross Domestic Product (GDP)(National Bureau of Statistics, 2012).This is imperative because the transport sector in Nigerian today, is fast embracing information technology system similar to that of the aviation sector. There have been innovations in their services rendered. Most of Transport Company have car tracking system that dictates speed limit and direction of their buses, e –booking, services promotion, fixed time departure and on board entertainment, passengers suggestion box, help lines and fully developed web site for customers inquires. Most of these innovations could be in response to the competition and setting distinctive advantage over competitors. This was not the case in the past years, when these need of passengers were secondary to transporters.

The component of marketing information system includes internal records, marketing intelligence and marketing research. Basically the internal records comprises of suggestion box, manifest, daily booking schedule, tickets, etc. Marketing intelligence is primarily external data (route coverage, government

policy, competitors) collected and analyzed by a business about markets that it anticipates participating in with the intention of using it in making decisions. Marketing intelligence can be used to assess market entry opportunities and to formulate market development plans and penetration strategies(Business dictionary, 2013). Marketing research involve information obtain from observation, interview to enhance effective decision making and performance.

The study will take a closer look at the relevance of marketing information system in improving the performance of transport companies in Calabar.

The financial performance of ABC Transport Plc in both top and bottom line has not been encouraging in recent time as revealed in the analysis of the company's financial data for the year ended December 30 2011. The company recorded a loss after tax of N68 million compared with a profit of N57.51 million. The results also showed a downward trend in liquidity, profitability and capital adequacy ratios. (Nigeria Mirror, 2011).This problem may not be said to be particular to ABC transport company but other public road transport companies. It could be partly due to the application of marketing information system owing in mind the changing need of passengers.

The public road transport sector is fast acquainting itself with the wind of Information and computer technology. It could be said that customer data and other operational data are not given increased attention by management, but the question still remains that could their performance be dependent on a large extend on the usage of marketing information system? The paper seeks to ascertain the extent of the application of marketing information system has aided the performance of transport sector in better decision making.

Also it has been observed that little or no research work have being conducted in Nigeria as it relate to Marketing Information System (MIS) as a contributory factor in the performance of selected transport companies. It is the backdrop that has lead to this research work.

Literature Review

Marketing information needed in transport industry

The alternative approach of carrying out research (special surveys), which would obviously involve additional expense in road transport sector, consideration should be given to using existing data to estimate important road transport company performance characteristics in at least two different ways and cross-checking the results. For example, vehicle output can be estimated by (a) estimating the product of number of vehicles and the estimated utilization in vehicle-km (or tonne/passenger-km), and (b) estimating vehicle-km (or tonne/passenger-km) from the length of road network and its average

traffic flow and loads. Vehicle resources expended per unit of output of transport services can be estimated by (a) estimating vehicle operating costs for each component (fuel, oil, tires, staff, depreciation etc.), and (b) average charges paid by customers for services (per tonne/passenger-km). In this context, knowledge of total fuel consumed in transport is useful to know, although this is far from easy to determine. (World Bank, 2012). These are basic information that is need by transport operators to measure their performance per unit of vehicle. The information can be of great importance when there is an adequate and efficient internal record keeping system which will measure performance for effective decision making which will contribute to growth of a company.

Basically, on the part of passengers marketing information system need to the operator is suppose to keep record of Passenger travel times, including walking and waiting time, predictability of departure and the rate of bus breakdowns (typically about 0.1 per thousand km, resulting in less than about 0.1% of scheduled distance not operated) Availability of timetable information. These aspects can be assessed using survey techniques designed to reveal how passengers make choices, or rank in importance one aspect of service from another.

Marketing research in the road transport industry

Kotler & Armstrong (2005) defined marketing research as ―the function that links the consumer, customer, and public to the marketer through information-information used to identify and define marketing opportunities and problems; to generate, refine, and evaluate marketing actions; to monitor marketing performance; and to improve understanding of the marketing process. Marketing information system is designed properly to solve many information problems facing the Administration, like the wrong kind of information, in the wrong location, at the wrong time, and the insufficient correct type of information, in the correct location, at the right time (Terrence et.al 1995).

The collection of the standardised London Underground Customer Satisfaction Index was started in 1990 (Miller, 1995). In the tube and bus stations each month about 2.000 interviews are collected by independent research agencies. Interviews take place after the completion of the journeys. About 20 questions about personnel, ticket systems, keeping schedules etc are asked. The questions refer directly to the quality of the station where the journey started and the bus or tube connection that was used last.

Another type of customer satisfaction measurement is used by the public transportation authority (Hovedstadstrafikken) in Copenhagen. The services are studied directly on the buses and trams in the city. Subjective data about service quality is combined with objective measurements of whether

the buses are clean, on time, with the ticket system working, the right information etc. Data collection is carried out by controllers employed by the transport authority. Based on information about what qualities are the most important for the customer an index is calculated. In the index, the customers' views weigh 80% and the objective measurements 20%. The data is collected all year around and the measurements are linked to individual operators of the transportation services. The companies that do not meet expected levels of service quality are fined a certain amount and companies with good results can get a bonus of up to 3-4% of the total annual contract sum (World Bank, 2012). The model is shown in Figure (1).
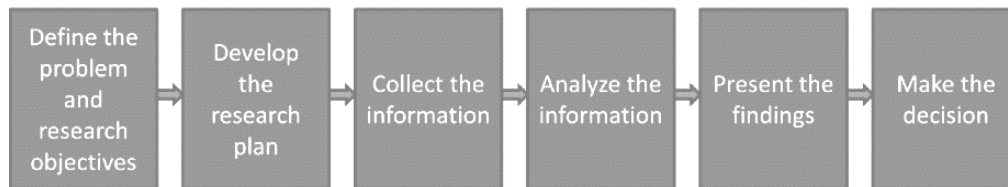

Figure 1. Kotler Marketing Research Process. Source: Kotler and Keller, (2012).

Marketing intelligence

Marketing intelligence is a component of marketing information system that supplies happenings data to organizations. Marketing intelligence system is a set of procedures and sources managers use to obtain everyday information about developments in the marketing environment (Kotler & Keller, 2009). Marketing intelligence are gathered through talking to customers (passengers), monitoring social groups, e-mailing list, facebooks, Youtubes, twitters, etc. Information gathered from these sources can assist public road transport companies to make vital marketing decisions and improve their performance.

Market intelligence (MI) is the process of acquiring and analyzing information in order to understand the market (both existing and potential customers); to determine the current and future needs and preferences, attitudes and behavior of the market; and to assess changes in the business environment that may affect the size and nature of the market in future (Cornish, 1997). Market Intelligence is the process of acquiring, formatting and maintaining key information about customers and prospective customers (leads source article, 2013). Kotler and Keller (2009) identified several steps to improve the quality of Marketing Intelligence Activities:
1. Train and motivate the sales force to spot and report new development.
2. Motivate distributors, retailers and other intermediaries to pass along important intelligence
3. Step up a customer advisory panel.
4. Purchase information from outside suppliers.
5. Use online customer feedback systems to collect competitive intelligence.

Internal record

Internal record is a component of marketing information that supplies results data (Kotler & Keller, 2009). Management of public transport companies need to maintain and analyze internal record such as suggestion box, tickets, receipts, manifests, etc, to catch in on opportunities, and with problems. Information generated from these sources can inform marketing decision and improve organization performance.

Research Objectives

1. To determine the effect of internal record keeping as a contributory factor to performance of selected public road transport companies in Calabar
2. To evaluate the extent at which marketing intelligence has imparted on the performance of selected public road transport companies in Calabar
3. To investigate the influence of marketing research on the performance of selected public road transport companies in Calabar.

Research Hypotheses

HO: There is no significant relationship between internal records keeping as a contributory factor to performance of selected public road transport companies in Calabar.
HO: There is no significant relationship between marketing intelligence as a contributory factor to the performance of selected public road transport companies in Calabar.
HO: There is no significant relationship between marketing research as a contributory factor to performance of selected public road transport companies in Calabar.

The Study Area

The study was conducted in Calabar, the state capital of Cross River State which was the first Nigerian capital city. Calabar also known as 'Canaan City' is a city in Cross River State, coastal southeastern Nigeria. It shares boundaries with Benue State to the

north, Ebonyi, Abia and Akwa Ibom States to the west, to the east by Cameroon Republic and to the south by Akwa Ibom and the Atlantic Ocean. Calabar is occupied with people from different part of the country. The major occupational activities in Calabar include – tourism, trading, civil services, agriculture. Calabar carnival is the biggest street party in West Africa. Calabar has an area of 406 km² and a population of 371,022 at the 2006 census.

Materials and Methods

Research design: The study adopted exploratory and survey research designs.

Population and sampling design: The study considered all management staff of public road transport companies in Calabar metropolis. Judgemental and Simple Random Sampling techniques were adopted in selecting sample size based on organizations that practice Management Information System in their operations. Companies adopted for the study included: Calculux, Young Shall Grow, Enarit, ABC, Nyanya, Cross links, Transitfavour transport companies.

The road transport companies mentioned above has been registered with the Corporate Affair Commission (CAC) of Nigeria with various degree of registration either as Business Name which implies sole proprietorship or as a limited companies with atleast two director and a share capital. They have similar managerial structure which is dependent route spread, particular the Young Shall Grow Ltd and ABC transport company extend their routes to most West Africa countries like Ghana, Togo and others. While others route like Abuja, Uyo capital city of Akwa Ibom State Nigeria, Port-Harcourt capital of River State amongst others.

Instrumentation: The instrument used for data collection is the questionnaire instrument developed to assess marketing information system in transport companies in Calabar. Marketing information system was operationalised using basic sources of MIS which included : internal records , marketing intelligence and marketing research, A five point scale of strongly agreed (5), agreed (4), undecided (3), disagreed (2) strongly disagreed (1) were used to measure the responses for the respondents.

Data analysis: Data were analysed using the Ordinary Least Square (OLS) method.

Reliability: The reliability was tested using Cronbach's Alpha. The Cronbach's Alpha coefficient of 0.873 indicated a high reliability of the instrument.

Presentation of result and interpretation

Table 1: Marketing information system as a contributory factor on performance

Model	Unstandardized coefficients		Standardized coefficients	t	Sig.
	B	Std. Error	Beta		
t (Constant)	43.7445	5.890		7.427	.000
MI	.238	.106	.277	2.245	.030
MR	.359	.094	.478	3.819	.001
IR	.282	.109	.499	2.587	.021

a. Dependent Variable: PERF

R = .971 ; R2 = .943 ; Adjusted R2 = .902 ; F- statistics = 19.363 ; Durbin Watson = 2.367

The result in the above table shows the regression result of marketing information system as a contributory factor on performance. From the table, it could be seen that the coefficient for Marketing Intelligence (MI) is positive. This shows a positive relationship existing between Marketing Intelligence (MI) and Performance (PERF). Specifically, the result indicates that if all other explanatory variables are held constant, a 1 percent increase in gathering more Marketing Intelligence (MI) will lead to .238 percent increase in the performance of transportation companies. This result is in order with our a-priori criteria and statistically significant at 0.05 level of significance.

The second variable in table is Marketing research (MR). The coefficient here is positive and consistent with our a-priori criteria. This result shows that when there is intense marketing research, the performance of transportation companies will increase. The result is statistically significant at 5% level of significance.

The coefficient of the third variable Internal Record (IR) is positive. It implies that there exist a direct relationship between Internal Record and performance. This means that when there is a good Internal Record (IR) system the performance of transportation companies will increase. The result is consistent with our a-priori criteria. The result is also statistically significant at 5 percent level of significance.

The R^2 value of 0.943 indicates that 94.3 percent changes in the dependent variable Performance (PERF) is caused by the changes in the independent variables (MI, MR, and IR) while 5.7 percent is caused by other factors indicated in the error term.

Testing the statistical significant of the overall model, the F-statistics was used. The model is said to be statistically significant at 5% level because the F-statistics computed of 19.363 is greater than the F-statistics table value of 4.76 at df1=3 and df2=6.

The test of autocorrelation using D.W test shows that the D.W value of 2.367 falls within the

inconclusive region of D.W partition curve. Hence, we can clearly say that there exists no degree of autocorrelation.

Discussion

Marketing intelligence

This research finding agrees with Wady (2009) study, which concluded that Marketing Intelligence improve the Marketing information system efficiency in the working banks in Gaza; moreover, Nasri (2011) study concluded that Tunisian managers are aware of competitive intelligence effects on the firms' performance. In addition, Li (1995) study also agrees with the finding and concluded that Marketing Intelligence is considered a good source of daily information about competitors. Moreover, Ismail (2011) study reveals that there is a positive relationship between utilizing and adopting marketing intelligence and the right decision making, which also agrees with these research findings. Hashim (2006) study is in tandem with these research findings that shows there is a correlation between marketing intelligence and setting the strategic goals of the organization.

Marketing research

Marketing research findings from this study agree with Wady's finding (2009) that effective marketing research reflects positively on the marketing performance of the employees in banking sector in Gaza through predicting, allocating and tracing potential problem.

Internal record

In support of this research findings, Wady (2009) in his study concluded that marketing managers believe that Internal records has great effects on employees' marketing performance and decision making. In addition, Wood (2011), study found that MkIS used in small to medium companies is based on Internal Data Records. Nasri (2011) study also agreed with the research findings where he concluded that managers consider Internal Marketing as the most reliable source of information and has effects on the decision making. Hashim (2006) concluded that Internal Records are the most dependent on source of information.

Conclusion

The following conclusion can be derived from the study:

- Marketing intelligence is a contributory factor to the performance of public road transport companies in Calabar.
- Marketing research improves the performance of public road transport companies in Calabar.
- Internal record increases the performance of public road transport companies in Calabar.

Implication of Findings

The marketing information system should be used as the bases for analyzing Segmentation – Targeting – Positioning (STP) and Competitor analysis. Primarily the MIS has been used by calculux transport service to segment their buses on the basis of demographic (income) and route on public roads. The company has been divided into subsidiary with a wing with low cost buses. The implication has also found credence in the managerial operations of the YOUNG SHALL TRANSPORT LTD. There are customized buses called "OTOKAR" there are applied in special route to meet the sub unit of their entire passengers preferably, the West Africa sub – region. For best decision making owing to ever growing competition in road transport business (passengers), the need for marketing information system has become imperative, this have move marketing from the seller's market to the buyer's market- where customers (passengers) determined what to offer.

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