

TECHNOLOGICAL FORECASTING AND SERVICE DELIVERY OF TELECOMMUNICATION FORMS IN RIVERS STATE

¹Dr. (Mrs) Nna-Emmanuel, Sarah W. and Chimezie Nwogu (Ph.D)
Department of Office Tech. & Mgt., School of Mgt. Sciences,
Ken-Saro Wiwa Polytechnic Bori, Rivers State, Nigeria, ²Pipeline Road off
Boskel Road, Km 16, Aba Expressway, Port Harcourt

E-mail - sarahnna01@gmail.com, chimezie.nwogu@synergyglobalexpert.com

ABSTRACT

This study sought to analyze technological forecasting and service delivery in Telecommunication Firms in Rivers State. A Correlative study design was used. The methodology adopted was Correlative study design to collect both primary and secondary data was used, a structured questionnaire with open and close-ended questions were used to gather information. The population of the study consists of four telecommunication firms operating in Port Harcourt. The sampling technique used was the census sampling techniques to select 24 managers' four telecommunication firms in Rivers State. Secondary and Primary data was utilized in this study. Secondary data was obtained from reviewing text books, publications. Primary data was gathered with the aid of questionnaires. A total of 24 copies questionnaire were distributed with 17 being answered correctly and fully. Data was analyzed using percentage, tables and Spearman Rank Order Correlation techniques and with Statistical Package for Social Science (SPSS) was used to test the nine hypotheses. The findings revealed technological forecasting has positive relationship between service delivery in Telecommunication Firms in Rivers State. It was therefore recommended that Telecommunication firms in Rivers State should emphasize on building a positive technological forecasting to meet customer's expectation and offer more benefits to customer.

Keywords: Technological Forecasting, Service Delivery Organizational, Performance

INTRODUCTION

Employees contribute immensely to the good fortunes of organizations. These contributions have led to significant successes that organizations have recorded over the years (Collis & Montgomery, 2015). It will therefore not be out of place to state that the fulcrum of organizational performance and success lies on the employees of that organization. And for organizations to continue in their winning streak and accomplish goals they have set, they must constantly put their employees in the front burner, motivating them, training them and seeking the best ways for them to contribute in the organization's quest for a competitive advantage (Brewster, Carey, Dowling, Grobler, Holland, & Warnich, 2013). Freeman (2012) observes that every organization must operate a system of setting goals for its employees and marrying those goals with the organization's goals to produce results that can set the organization apart.

Since the main goal of telecommunication firms is to satisfy the needs of customers which will lead to increased profit. This indicates that without the existence of customers business activities will be futile. Business owners often concentrate on the improvement of their

products, this is one of the basic features of the production concept. Often they ignore their customer care and relationship; as a result, many of their customers move their purchasing interests to organizations who can serve them better. The problem here is that they fail to understand that customers' value, care and concern is far above the product quality. The most obvious problems of telecommunication firms in Port Harcourt is how to provide effective services to the nation, which has been yearning for an improved telecommunication services for a long period of time. In response to that, the Federal Government provided for the creation of a company that will function purely on commercial basis (Asare, 2008). It is on this premise that this study tends to examine the impact of Technology Intelligence and Organizational Performance.

Research Hypotheses

The hypotheses of this study were stated as follows:

- Ho₁: There is no significant relationship between Technology Forecasting and Innovativeness in telecommunication firms in Rivers State.
- Ho₂: There is no significant relationship between Technology Forecasting and Customer Acquisition in telecommunication firms in Rivers State.
- Ho₃: There is no significant relationship between Technology Forecasting and Service Delivery in telecommunication firms in Rivers State.

Technology forecasting

Technology can be defined as the application of scientific knowledge for the satisfaction of human needs, Grupp H₁ and Linstone, 2011. The role of the individual technologist is to ensure that his expertise makes its maximum contribution to the organisation that employs him, but that organisation itself only prospers by satisfying the market that it serves. Thus, any consideration of the corporate role of technology must focus on the needs of both the organization and the market.

Forecasting is not a panacea. There are too many unknowns surrounding the future for us to ever hope to forecast it with certainty. The forecasts will inevitably contain errors, but this cannot be avoided. The decisions must be taken in the present using the best information available at the time, but it behoves us to use the information in the most effective way. That is objective of forecasting, for although it cannot eliminate uncertainty, it can assist in reducing it, thereby a better view of the future and its evolution are obtained, leading to better decisions. Forecasting identifies the rate and direction of change as well as the implications of that change, Kayal, 2012. It can be easily said that forecasting is an important tool for marketing as it helps in technical decision making and reduction of uncertainty whilst accepting that it can never be eliminated totally. As a result, the business risk, the possibility of financial loss through taking a poor decision, is considerably reduced. Technology forecasting is the method to predict the future especially for R&D for financial planning and investment to develop the new product or innovation. It is also used for decision making for company or government strategies. Methods for technology forecasting are broadly classified into two main categories: qualitative or judgmental forecasting methods and quantitative or normative forecasting methods (Cheng, AChen and Chen, 2008).

Technology Forecasting (TF) is a planning tool to be at use in dynamic environments which undergo rapid changes, Box and Jenkins 2016. The technological backwardness of developing countries is primarily due to lack of planned attention to the maintenance,

development of technology capabilities and utilising resources efficiently. Rapid technology progress and the increased rate of obsolescence of technologies necessitate technology forecasting for any planning process. Since technologies play a major role in planning of business, industry, government and society's growth, it becomes essential to determine its direction and magnitude by systematic analysis and study.

Technology Forecasting can be defined as a probabilistic prediction of technological changes in terms of future characteristics of useful machines, systems or procedures. In other words, technology forecasting attempts to predict rate of technology advance, Coates 2006. Primarily TF attempts to bring potential future technology into focus. Decision-makers are concerned about the desirable and undesirable effects of fast growing technologies. Anticipation of such technologies serve as early warning signals before a particular technology is imported or manufactured indigenously.

Service Delivery as a measure of Organizational Performance

Service can be defined as the performance of work or duty by an official or an act of helping others, or power to control or make use of resources, or an organisation or system providing the public with something useful or necessary (The Universal Dictionary 2011). The act of delivery can be defined as producing or performing, handing over, taking goods to the intended recipient, or producing results as promised or expected (The Universal Dictionary 2011). These definitions are adopted by Riekert (2011: 90), arriving at a combined definition which reads as follows: 'Service delivery is concerned with the provision of a product or service, by a government or government body to a community that it was promised to, or which is expected by that community'. Service delivery which is an essential tool for development is at its lowest rates in most developing countries across the globe. However, service delivery is the easiest activity which can be worked on if there is a clear and steady attention towards its implementation. Service delivery has to be taken vital and primarily of every state's purpose for existence. Therefore, every country should manifest its existence through services it delivers to its citizens.

Service delivery refers to the actual delivery of a service and products to the customer or clients (Lovelock & Wright, 2002). Service delivery indicates 'where', 'when' and 'how' the service product is delivered to the customer (Lovelock and Wirtz, 2014). The service delivery process can be broken down into service encounters that comprise the main part of the whole process (Danaher and Mattsson, 2014) and, as noted by Chowdhary and Prakash (2007), some generalization within service types is possible for different services and service providers, and managers may have to consider this in its design. Thus, the power to deliver optimal service quality will get the service firms competitive advantages among others in the same industry (Turel, Serenko & Bontis, 2007). According Iash (2009) to work life balance helps to enhance service delivery among the employees. Service delivery is a component of business that defines the interaction between providers and clients where the provider offers a service, and it could be an information or task. In the banking sector different types of services are being offered. The heads of the banks are located at one place. However, their branches are scattered and located across the country. The jobs of offering the services are assigned to employees and the performance on the job matters a lot. This is because it affects the customers' satisfaction, getting and retaining existing customers, complaints handling, targets achieved, sales turnover, profits, market shares and good will of the company. The performance of employees is important, not only in banking but other service sectors. Better performance gives satisfaction to the customers.

Services are to be provided with minimum processing and waiting time, proper response, promptness and the desire to handle many customers as the demand arises. Service delivery can be regarded as the paramount function of any government. Citizens elect representatives to ensure that the services they need are provided. If a government fails to meet the needs of the community then the elected representatives and councillors must accept responsibility for such failure. Members of the public can and should demand explanations from their elected representatives if the demanded standard of service is not met (Riekert 2011).

Technology forecasting and organizational Performance

Technology" can be regarded as a quite specific physical entity. In some sense, it does not include tacit knowledge embodied in human beings by definition. However, Quinn explains more precisely technology as "not a single immutable piece of hardware or bit of chemistry, but also knowledge of physical relationships – systematically applied to the useful arts, Ralph Charles Lenz, 2012. "Forecast" is to predict how something will develop. Forecasting normally ends with the identification of the possible futures. The definitions of technology forecasting vary to a certain extent. Technology forecasting is continuously recognized as influences in the transformation of individual behavior, organization, economy, society and culture in such a turbulent world. Forecasting is used to predict the future using data on hand or the formation of opinions. The frequent involvement of individuals in forecast implementation can influence how forecasts are employed (Berinato, 2001; Fildes and Hastings, 2014). According to Winklhofer et al. (1996), while research questions concerning the utilization of forecasting methods have attracted a lot of studies, issues such as the role and practical level of forecasting in firms have been relatively unexplored. Bails and Peppers (2012) and Adebajo and Dotun (2010) state that demand forecasts are necessary since the basic operations processes take time. Firms must anticipate and plan for future demand so that they can react immediately to customer orders as they occur since most customers are not willing to wait the time it would take to process their order. The ability to accurately forecast demand enables the firm to control costs through leveling its production quantities, rationalizing its transportation and planning for efficient logistics operations. Accurate demand forecasts lead to efficient operations and high levels of customer service (Adam and Ebert, 2011). Technology Forecasting is categorized as an explorative and a normative technique. Technology forecasting consists of subset elements such as a certain future time span, technological change, continuous range of characteristics in applications, and a statement of the probability associated with the technology. Technology forecasting do not necessarily need to predict the exact form of technology dominating in a given application at some specific future date, since technology forecasting aims to provide the evaluation of the probability and significance of various possible future developments in order for managers to make better decisions. In most cases, technology forecasting is wrong. Technology forecasting, however, is valuable to give guidance for the direction of promising technology development. The value of technology forecasting lies in its usefulness for making better decisions, not in its coming true, Martino, 2013. Technology forecasting, in other words, typically partially correct and cannot include all exact future forms. Technology forecasting strives not only to identify research and knowledge gaps to find the right path to reach goals, but to search ranges of environment that will be encountered in the future. The growing importance of the forecasting function within companies is reflected in the increased level of commitment in terms of money, hiring of operational researchers and

statisticians, and purchasing computer software. In addition, the increasing complexity of organizations and their environments have made it more difficult for decision makers to take all factors regarding future development of organizations into account. Organizations have also moved towards more systematic decision making that involves explicit justifications for individual actions - formalized forecasting is one way in which actions can be supported (Wheelright and Clarke, 2006; Fildes and Hastings, 2014; Makridakis et al, 2013). According to Khandwalla (2007), organizational performance is enhanced when there is a good „fit“ between management style and various contextual factors.

Research Design

The research design is survey method.

Population of the Study

Population of a study represents the total groups of items which a researcher desire to study and about which he plans to generalize his findings (Baridam, 2001). The target population of the study was made up of four telecommunication firms operating in Port Harcourt, Rivers State. They include MTN nig, 9Mobile, Airtel and Globacom.

Sample Size Determination

Since the population of the study comprises of four telecommunication firms operating in Port Harcourt. However six senior managers of General manager, Advertising Manager and marketing managers and three Supervisors were drawn from each of this firms of the sample frame. Therefore the sample Size be $6 \times 4 = 24$

Sample Distribution

Name of company	Manager
MTN	6
AIRTEL	6
9 mobile	6
Globacom	6
TOTAL	24

Methods of Data Analysis

The responses gathered from the questionnaire were collected and scored for analysis using frequency counts and then analyzed with the mean to answer the research questions. While hypothesis test were Spearman Ranking Order Correlation were used for the hypotheses testing. The formula for the test statistics is given as:

$$r = 1 - \frac{6 \sum d^2}{(n^3 - n)}$$

where,

Where $\sum d$ = sum of the squared differences in the ranking of the n = number of subject being ranked.

Relationship between Technology Forecasting and the measures of Organizational Performance

Test of Hypotheses Four to Six

Table 1 Technology Forecasting and the measures of Organizational Performance

			Technology Forecasting	Innovativeness	Customer Acquisition	Service Delivery
Spearman's rho	Technology Forecasting	Correlation Coefficient	1.000	.580**	.790**	.680**
		Sig. (2-tailed)	.	.000	.000	.000
		N	17	17	17	17
	Innovativeness	Correlation Coefficient	.580**	1.000	.865**	1.000
		Sig. (2-tailed)	.000	.	.000	.
		N	17	17	17	17
	Customer Acquisition	Correlation Coefficient	.790**	.865**	1.000	.665**
		Sig. (2-tailed)	.000	.000	.	.000
		N	17	17	17	17
	Service Delivery	Correlation Coefficient	.690**	.865**	1.000	.665**
		Sig. (2-tailed)	.000	.000	.	.000
		N	17	17	17	17

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Research Data 2021, (SPSS output version 21.0)

Ho₁: There is no significant relationship between Technology Forecasting and Innovativeness of telecommunication firms in Port Harcourt.

From the result in the table above, the correlation coefficient shows that there is a positive relationship between Technology Forecasting and Innovativeness. The *correlation coefficient* 0.580 confirms the magnitude and strength of this relationship and it is statistically significant at $p\ 0.000 < 0.05$. The correlation coefficient represents a high correlation between the variables. Therefore, based on empirical findings the null hypothesis earlier stated is hereby rejected and the alternate accepted. Thus, there is a significant relationship between Technology Forecasting and Innovativeness of telecommunication firms in Port Harcourt.

Ho₂: There is no significant relationship between Technology Forecasting and Customer Acquisition of telecommunication firms in Port Harcourt.

From the result in the table above, the correlation coefficient shows that there is a positive relationship between Technology Forecasting and Customer Acquisition. The *correlation coefficient* 0.813 confirms the magnitude and strength of this relationship and it is statistically significant at $p\ 0.000 < 0.05$. The correlation coefficient represents a high correlation between the variables. Therefore, based on empirical findings the null hypothesis earlier stated is hereby rejected and the alternate accepted. Thus, there is a significant

relationship between Technology Forecasting and Customer Acquisition of telecommunication firms in Port Harcourt.

Ho₃: There is no significant relationship between Technology Forecasting and Service Delivery of telecommunication firms in Port Harcourt.

From the result in the table above, the correlation coefficient shows that there is a positive relationship between Technology Forecasting and ***Service Delivery***. The *correlation coefficient* 0.690 confirms the magnitude and strength of this relationship and it is statistically significant at $p\ 0.000 < 0.05$. The correlation coefficient represents a high correlation between the variables. Therefore, based on empirical findings the null hypothesis earlier stated is hereby rejected and the alternate accepted. Thus, there is a significant relationship between Technology Forecasting and Service Delivery of telecommunication firms in Port Harcourt.

CONCLUSION

This research concluded that businesses operating in an intensely price based competitive environment, dependent on high economies of scale and with low levels of staff-customer interaction are bound to suffer shocks in their market positions and profitability unless huge investments are made in more relational strategy like Strategic Technology Forecasting.

The study concluded that since highly satisfied customers are expected to make future purchases and recommend the source to other customers, high levels of customer satisfaction are likely to lead to Organizational Performance.

RECOMMENDATIONS

1. Managers and supporting organizations should not only focus exclusively on either technological intelligence or process innovation, but should give due emphasis on the combined and synergetic approach to get the maximum firm performances benefits from these capabilities.
2. Telecommunication firms need to be more innovative in the use of refined telecommunication know-how in new product development.
3. Firms should endeavor to focus on identify their customers expressed needs that guide them in developing products and services.

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