

# MARKET PENETRATION STRATEGY AND COMPETITIVENESS OF MOBILE TELECOMMUNICATION SERVICE PROVIDERS IN KENYA

<sup>1</sup>P. Ooga Gecheo, <sup>2</sup>J. Kuria Thuo, <sup>3</sup>J.Byaruhanga

<sup>1</sup> Country Coordinator-ESAMI Kenya <sup>2</sup> Vice Chancellor, Gretsa University, Thika, Kenya <sup>3</sup> Professor, Department of Social Science Education, Masinde Muliro University of Science and Technology, Kakamega, Kenya

One of the most important questions faced by business leaders in the strategic management process is a choice of how to adopt a market penetration strategy whereby a firm gains more usage from existing customers and also seeks to attract customers from existing competitors. The mobile service industry has recently experienced a quick succession of mobile service innovations, in deciding on the optimal timing of each service launch, carriers need to consider a complex array of technological, regulatory, and strategic factors. In spite of wide-ranging research on market penetration strategy, very little empirical research has observed the relationship between the market penetration strategies and competitiveness in mobile telecommunication sector. Based on this background, this study sought to investigate market penetration strategy and competitiveness of mobile telecommunication service providers in Kenya. The study population consists of all the mobile Service providers in Kenya which according to a list obtained from Communications Commission of Kenya as at July 2010 are four. Given the small number of firms a census study was conducted. The data for this study was collected from primary sources using a semi-structured questionnaire. The findings of the study revealed market penetration strategy also correlates positively with organizational competitiveness. This study is significant since it is hoped that findings and recommendation of the study will provides a greater understanding of appropriate market penetration strategy implementation framework as well as how market penetration strategies influences organizational competitiveness. In this sense, the study will contributes to knowledge in terms of effective strategy implementation and its contribution to organizational performance.

Key words: Customer Relationship Management, Marketing Productivity, Commercial Banks

# Introduction



Developing a market strategy allows an organization to align resources to greatest opportunities with a goal of increasing revenue and market share and achieving a sustainable competitive advantage. A marketing strategy is a plan, which combines product development, promotion, distribution, and pricing. It essentially identifies the organization's goals, and explains how they will be achieved within a specific timeframe.

The central argument of this research is that the organizational competitiveness of a telecommunications service provider emanates from strategy implementation. There is considerable support for this argument; competitive advantage is realized based on three factors (Sudarshan D, 1995): the firm's marketing strategy, implementation of this strategy and the industry context (Porter's Model, 1979). The purpose of competitive strategy is to achieve a sustainable competitive advantage (SCA) and thereby enhance a business performance (Bharadwaj, et al 1993). One of the major objectives of marketing strategy is to enhance the long-term financial performance of a firm.

According to Ansoff (1957), a firm may choose one of four product-market growth strategies, including market penetration, market development, product development, or diversification. Ansoff suggests the safest growth option is to adopt a market penetration strategy whereby a firm gains more usage from existing customers and also seeks to attract new customers in their existing market. A slightly riskier option may be to adopt the market development strategy of attracting new types of customers for the current products of the firm from either new channels of distribution, or new geographic areas. Alternately, a firm may engage in product development by producing entirely new products, different versions of existing products, or different quality levels



of existing products to be sold in its current markets. The riskiest strategy overall is suggested to be a diversified approach where new products are developed for new markets. Ansoff's product-market expansion grid provides a useful though not exhaustive framework for looking at possible strategies to cope with the problem of strategic windows and finding way of creating overlapping strategic windows.

Mobile phone services in Kenya have operated as a duopoly with Safaricom and airtel Kenya (formerly Kencell, Celtel and Zain) taking the lead since 2000. The original intention of the Kenya Communications Act (KCA 1998) —to liberalize telecommunications in Kenya—has largely been met. Growth was tremendous: from 17,000 mobile subscribers in 1999 to 29.7 million by June 2012. In December 2007, France Telecom acquired 50% of Telkom Kenya and proceeded to launch its Orange brand in Kenya in September 2008. Now called Telkom Orange, In November 2008 Econet was launched, bringing to four the total number of operators.

A price war has characterized Kenya's mobile communications market in 2008 and 2009, following the market entry of the third and fourth network, Econet Wireless Kenya (EWK, in which India's Essar acquired a stake), and Telkom Kenya under the Orange brand with its new majority shareholder, France Telecom. Subscriber growth is now forecast to slow over the coming years, and rapidly falling ARPU(average revenue per user) levels have driven one of the incumbents, Airtel, deeper into negative earnings, leaving only the market leader, Safaricom, with a net profit, although reduced. The operators are developing new revenue streams from third generation broadband and mobile banking services. With market penetration rates in Kenya's broadband and traditional banking sector still extremely low, the mobile networks have an



opportunity to relive the phenomenal growth rates seen in the voice sector in recent years.

#### Statement of the Research Problem

Confronted with the fierce competition in today telecommunication marketplace, there have been many marketing strategies for service providers to plan and implement with evidence that shows consumers tend towards other competitors when they cannot be satisfied with the service quality. However, Safaricom Ltd has maintained its dominance in defiance of the price war championed by airtel, Yu and Orange has captured in the CCK report (June 2012) Safaricom had subscription market share of 64%, airtel 16.5%, Orange 10% and Yu 9%.

In view of the above the challenge for telecommunication service providers is to attract more customers, focus on building good quality relationship with customers, make customers satisfied, build trust, and step by step obtain organizational competitiveness, through customer experience. The current study therefore endeavour's to establish the relationship between market penetration strategies and organizational competitiveness in the mobile telecommunication service providers in Kenya.

#### **Research Focus**

This study is significant since it is hoped that findings and recommendation of the study will benefit different stakeholders as explained herein. Firstly, this study will provides a greater understanding of appropriate market penetration strategy implementation framework as well as how market penetration strategies influences organizational competitiveness. In this sense, it contributes to and extends knowledge in terms of effective strategy implementation and its contribution to organizational performance.



Finally, this research will add value to management practice by offering invaluable insights on

marketing penetration strategies decisions to managers to bolster the competitiveness of their organizations. In particular, this study will provide managers with greater understanding of the levels of commitment necessary to achieve sufficient market penetration strategies and the influence this would have on their customer experience management and organizational competitiveness. Further, the study will provide elaborate framework on market penetration strategies and organizational competitiveness that serve as appropriate evaluation metrics on the effectiveness of strategic implementation by an organization. This will make significant contribution to marketing practice since previous research has proved that competitive advantage is realized based on three factors (Sudarshan, 1995): the firm's marketing strategy, implementation of this strategy and the industry context (Porter's model, 1979). Mangers will be enlightened on the various contextual factors that may facilitate or inhibit effective market penetration strategy and thereby affect customer experience management and organizational competitiveness.

#### **Theoretical Framework**

Organizations have to choose between the options that are available to them, and in the simplest form, organizations make the choice between for example, taking an option and not taking it. Choice is at the heart of the strategy formulation process for if there were no choices, there will be little need to think about strategy. According to Macmillan et al (2000), choice and strategic choice refer to the process of selecting one option for implementation. Organizations in their usual course exercise the option relating to which products or services they may offer in which markets (Macmillan et al, 2000).



The researcher is guided by Ansoff matrix which provides a useful framework for looking at possible strategies to reduce the gap between where the company may be without a change in strategy and where the company aspires to be (Proctor, 1997). It is important to note that the market penetration strategy begins with the existing customers of the organization. This strategy is used by companies in order to increase sales without drifting from the original product-market strategy (Ansoff, 1957). Companies often penetrate markets in one of three ways: by gaining competitors customers, improving the product quality or level of service, attracting non-users of the products or convincing current customers to use more of the company's product, with the use of marketing communications tools like advertising etc. (Ansoff, 1989, Lynch, 2003).

According to Porter (1998), the firm is competitive when it is able to obtain a competitive advantage over its rivals in a particular industry. Porter asserted that a firm gains a competitive advantage when (a) it is able to generate and sustain profits that are greater than the average for its industry; (b) it manages to deliver the same benefits as its rivals but at a lower cost; and (c) it delivers benefits that exceed those of competing products by differentiating itself in the industry

Wallsten (2001) suggested that higher penetration rates imply better performance. On the other hand, in more mature markets market performance is typically measured by the intensity of competitive conduct. Implying that more advanced sectors will be more efficient, yielding lower price-cost margins. Kotler (2005) argued that setting a low initial price indicates that the company wants to penetrate the market fast and gain high volume quickly. The company wants to capture a large market share with minimal economic efforts for the customer. The companies which are



using this kind of strategy set the price as low as possible to attract as many customers as possible. After winning a large volume they can decrease their falling costs which will lead to a higher long run profit. The company uses price as a competitive weapon to win a market position and market shares from the other competitors, which will help them to establish a market brand in the industry. They enter the market with the strategy to get a lot of customers, which will help the company

decrease their cost and therefore way become a cost leader in the market.

The purpose for this kind of approach is that the company with a low price could attract many customers while keeping the competitors out. But this will only work if the company sticks to the low price position, otherwise the advantage will only last for a little while and then the competitors will catch up. That is why this kind of strategy is a bit risky. The company has to be sure that none of the competitors are going to set the price lower than them, otherwise the concept fails. Consequently, we propose that, a firm's market penetration strategy will impact on organizational competitiveness.

# **Conceptual Framework and Hypothesis**

Organizations have to choose between the options that are available to them, and in the simplest form, organizations make the choice between for example, taking an option and not taking it. Choice is at the heart of the strategy formulation process for if there were no choices, there will be little need to think about strategy. According to Macmillan et al (2000), choice and strategic choice refer to the process of selecting one option for implementation. Organizations in their usual course exercise the option relating to which products or services they may offer in which markets (Macmillan et al, 2000). According to Porter (1998), the firm is competitive when it is able to



obtain a competitive advantage over its rivals in a particular industry. Porter asserted that a firm gains a competitive advantage when (a) it is able to generate and sustain profits that are greater then the average for its industry; (b) it manages to deliver the same benefits as its rivals but at a lower cost; and (c) it delivers benefits that exceed those of competing products by differentiating itself in the industry.

Wallsten (2001) suggested that higher penetration rates imply better performance. On the other hand, in more mature markets market performance is typically measured by the intensity of competitive conduct. Implying that more advanced sectors will be more efficient, yielding lower price-cost margins. Kotler (2005) argued that setting a low initial price indicates that the company wants to penetrate the market fast and gain high volume quickly. The company wants to capture a large market share with minimal economic efforts for the customer. The companies which are using this kind of strategy set the price as low as possible to attract as many customers as possible. After winning a large volume they can decrease their falling costs which will lead to a higher long run profit. The company uses price as a competitive weapon to win a market position and market shares from the other competitors, which will help them to establish a market brand in the industry. They enter the market with the strategy to get a lot of customers, which will help the company decrease their cost and therefore way become a cost leader in the market.

The reason for this kind of approach is that the company with a low price could attract many customers while keeping the competitors out. But this will only work if the company sticks to the low price position, otherwise the advantage will only last for a little while and then the competitors will catch up. That is why this kind of strategy is a bit risky. The company has to be sure that none

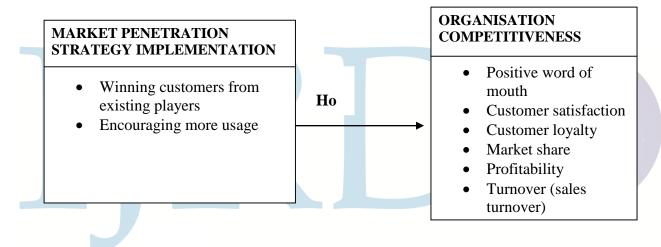


of the competitors are going to set the price lower than them, otherwise the concept fails. Consequently, we propose that, a firm's market penetration strategy will impact on organizational competitiveness. The relevant null hypothesis is stated as

**Ho**: There is no significant relationship of market penetration strategies on organizational competitiveness.

Figure 1 shows the conceptual framework and hypothesis of the study.

Figure 1 Conceptual Framework of market penetration strategy implementation on organizational competitiveness



# **Research Methodology**

# **Research Design**

The study used descriptive and correlational census research design as it sought to generate quality information regarding how market penetration strategy influences organisational competitiveness. This study design was cross-sectional in nature as the research respondents were interviewed once. Cross-sectional studies have been found to be robust for effects of relationship studies (Coltman, 2007; O'Sullivan and Abela 2007; and Raman and Kumar, 2008).

# **Population of the Study**



This is a census study of all mobile telecommunication service providers in Kenya as at January 2011 and still in existence by the anticipated time of data collection in the year 2011 were studied. A complete list of the mobile service providers obtained from Communication commission of Kenya indicates that there are four firms namely Safaricom Ltd, Airtel, Telkom/Orange and Essar Telkom (yu).

# Sample Size

In order to produce statistically valid results through the utilization of multivariate analytical techniques, a large sample size is required. (Hair, Anderson, Talham and Black, 1995). For the purposes of this research the sample consisted of Marketing Managers and customers. The choice of the Marketing Manager was purposive. Purposive sampling technique also called judgment sampling is the deliberate choice of an informant due to the qualities the informant possesses. The researcher decides what need to be known and sets out to find who can and willing to provide the information by virtue of knowledge or experience (Bernard 2002, Lewis et al 2006).

# **Data Collection and instrument**

Data collection is the process of collecting information related to the study from the respondents using data collection instrument. Data collection also requires that the study identifies the procedure adopted in collecting information related to the study. The following subsections describe data collection instrument and data collection procedure adopted for purposes of the study.

In order to achieve the stated objectives data collection instrument was used. That is, questionnaire. This instrument was ideal for the study as it helped to elicit or collect primary data. Quite often, the questionnaire is considered as the heart of a survey operation (Hair, et al, 1995). The questionnaire was designed based on five point Likert-type scales. The questions were constructed to generate data in answer to specific target research questions and help to achieve the



objectives of the study. Closed-ended questions were used to save time and to motivate the respondent to answer. Conscious effort was made to select only literate subscribers as respondents because of the use of self-administered questionnaires as data collection instrument.

#### **Measurement of Variables**

The key variables of this study are independent variables and dependent variables. The independent variables in this study were itemised as market penetration strategy and organisational competitiveness. The study used Likert-type scale to assess the effects of market penetration strategy implementation namely; winning customers from existing player and encouraging more usage. An aggregate measure of market penetration strategy implementation was obtained by aggregating the mean score measures of market penetration strategy implementation in the particular organization.

In this study, the dependent variables are itemised as organizational competitiveness. Reviews of the literature provide a broad perspective of business performance measures that will guide the operationalization of organizational competitiveness. According to O'Sullivan and Abela (2007) common market and financial measures of output in firm-level marketing performance studies have been profit, sales growth and market share. However, Eccles (1998) suggests that the leading indicators of business performance cannot be found in financial data alone. For instance, customer satisfaction often reflects a company's economic condition and growth prospects better than its reported earnings do. According to Rauen et al (2009) they lamented that the ability to deliver a customer experience consistently aligned around customer needs and intentions has a significant impact on a company's ability to create customer loyalty. In turn, loyal customers have a demonstrable impact on the top line, by buying more or buying more frequently and referring other



customers to the company. Consequently, this study operationalized organizational competitiveness in terms of customer behaviour outcomes and, market and financial outcome.

This study was guided by Jayachandran et al (2005) who suggest that the performance of an organizational action designed to obtain competitiveness is more meaningful when it is assessed in relation to the competition since firm gain competitiveness over their rivals. At the same time, Ambler (2000) points out that the performance output metrics adopted as competitive measures are only relevant if the company understands their score relative to that of competitors. Coltman (2007) also argues that to develop some sense of comparativeness, it is important for respondents to assess performance relative to that enjoyed by competitors. This is useful because, taken in isolation, an organization's performance, whether strong or weak, contains only limited meaning. A summary schedule of measurement scales operationalizing the study variables, namely market penetration strategy implementation, customer experience management, organizational competitiveness and contextual factors are depicted in Table 3. These items constitute the measures used in formulating the research instrument in appendix 1 and II.

# Validity and Reliability of Measures

An extensive review of the relevant existing conceptual and empirical literature on market penetration strategy and organizational competitiveness produced measures for each variable. These measures were used to construct the questionnaire. Therefore, the measurement scale which was used in the questionnaire are deemed to have fact and construct validity because they reflect the key components of market penetration strategy and organizational competitiveness as described in the extent literature and also since they are validated measure previously applied in related studies. In order to ensure content validity, the preliminary questionnaire was pre-tested on



a pilot to a set of customer for comprehension, logic and relevance. Respondents in the pre-test were drawn from customer internet service providers, which are similar to those in the actual survey in terms of background characteristics, familiarity with the topic of research and attitudes and behaviour of interest. The pre-tested internet service providers were not part of the target population of the study so as to avoid biasness in the assessment biases. As recommended by Malhotra (2007), the questionnaire pre-test was prepared through personal interview in order to observe the respondents reactions and attitudes. All aspects of the questionnaire were tested including question contents, wording, sequence, form and layout, question difficulty and instructions. The feedback obtained was used to revise the questionnaire before administering it to the respondents.

Reliability is defined as be fundamentally concerned with issues of consistency of measures (Bryman and Bell, 2003). There are three prominent factors related to considering whether a measure is reliability: stability, internal reliability and inter-observer consistency. In this study, internal reliability was considered. Bryman and Bell (2003) suggested that a multiple-item measure in which each answers to each questions are aggregated to form an overall score, the researcher ensured that all the indicators are related to each other.

The questionnaire was tested for reliability by using Cronbach coefficient alpha to determine the internal consistency of the items. This is a method of estimating reliability of test scores by the use of a single administration of a test ((Patterson and Sharma 2004). For the purpose of this study,



the items were considered reliable when they yielded a reliability coefficient of 0.70 and above. This figure is usually considered desirable for consistency levels (Bryman and Bell, 2003)). However, the Cronbach's coefficient alpha that is less than 0.70 implied that the research instruments was not dependable and the researcher make necessary adjustment before using the instruments to collect data

#### **Results and Discussion**

# The implementation of market penetration strategy implementation on organizational competitiveness

As shown in table 4.11, there were positive correlations between market penetration strategy implementation on the one hand, and customer experience management (r=0.680, p<0.005), and organizational competitiveness (r=0.579, p<0.005) on the other. These results indicate that market penetration strategy implementation influences customer experience management directly whereby an increase in market penetration strategy implementation leads to an increase in customer experience management and consequently in organizational competitiveness.

Table 4.12: Regression Results of organizational competitiveness function.

|       |  | Unstandardized Coefficients |            | Standardized<br>Coefficients |       |      |
|-------|--|-----------------------------|------------|------------------------------|-------|------|
| Model |  | В                           | Std. Error | Beta                         | t     | Sig. |
| 1     | (Constant)                                 | 2.520                       | .438       |                              | 5.750 | .000 |
|       | Market penetration strategy implementation | .578                        | .127       | .358                         | 4.539 | .000 |
|       | Customer Experience<br>Management          | .361                        | .150       | .195                         | 2.399 | .017 |
|       | contextual factors aggregate               | .170                        | .057       | .198                         | 3.002 | .003 |

Multiple R= 0.828 F- Value = 40.399  $R^2 = 0.686$ 

Adjusted  $R^2 = 0.657$ 

Standard error (S.E) = 0.474



Multiple correlation R coefficient indicate the degree of linear relationship of the dependent variable with all the independent variables, whereas the coefficient of multiple determination  $R^2$ shows the proportion of the total variation in the dependent variable explained by the

independent variables in the regression equation.

The results gave an  $R^2$ = 0.686, which means that 68.6% of the total variation in organizational competitiveness was explained by the variables considered. The F-test provides an overall test of significance of the fitted regression model. The F-value of 40.399 indicates that all the variables in the equation are important hence the overall regression is highly significant.

The standardized beta value show the percentage change in the dependent variable when an independent variable is changed. The result shows that a 1% increase in market penetration strategy implementation holding other variables constant would lead to a 0.358 percent increase in organizational competitiveness; a 1% increase in customer experience management would lead to a 0.195% increase in organizational competitiveness; while a 1% increase in aggregate contextual factors would lead to a 0.198% increase in organizational competitiveness.

The results further showed that at the 5% level of significance, the coefficients' of market penetration strategy implementation, customer experience management, and contextual factors were significantly different from zero implying an influence on organizational competitiveness.

# **Conclusions**



The finding from this study that market penetration strategy had a direct bearing on organizational competitiveness is consistent with the suggestions of Wallsten (2001) that higher penetration rates imply better performance. Market penetration places a firm into better perspectives to compete with others. As observed by Porter (1998), the firm is competitive when it is able to obtain a competitive advantage over its rivals in a particular industry, through (a) generating and sustaining profits that are greater the average for that industry (b) delivers similar benefits as its rivals but at lower costs and (c) delivers superior benefits than its competitors so as to differentiate itself in the industry.

The study established that Safaricom and Airtel have high levels of marketing penetration strategy implementation. It was established that the two firms were winning customers from competitors to a great extent. There was also extensive encouragement of more usage by the two firms. This possibly explains why there is a lot of organizational competitiveness among the two firms.

# **Limitations of the Study and Directions for Future Research**

Despite the fact that this study produced important results, it also faced certain limitations which in turn offer opportunities for further research. First, the selection of factors included in the conceptual framework is not exhaustive. Certainly, other factors could provide additional knowledge into the effect of market penetration strategy on organization competitiveness.

The study variables namely market penetration strategy, customer experience management; contextual factors and organization competitiveness are not optimal. Future researchers may still establish other relevant measures of these variables and even change the conceptual framework to

IJRD

set out different interrelations between these variables in order to bring more knowledge in the

field of market dynamics.

Second, like most empirical research, the findings of this study are based on information generated

from customers and managers of the mobile service providers which is self-reported data. The

information that an organization generates is not the only source of information about its market

penetration strategy and organizational competitiveness. It may be prudent to combine internal

information with those collected from external sources namely competitors, current and potential

customers, relevant government agencies and private sector. To address this limitation, future

researchers can combine the viewpoints of all stakeholders in the industry in order to generate

more valid conclusions.

Finally, the research did not explore the sensitive issues of pricing in the mobile service providers.

Studies can be conducted in future on the pricing policy in mobile telephony.

References

Ansoff, I. (1989), Corporate Strategy, rev. edn, Penguin, Harmondsworth

Ansoff, H. I. (1957): 'Strategy for Diversification', Harvard Business

Review, September-October, pp. 113-24.

Bitner, M. J., & Zeithaml, V. A. (2003). Service marketing, third edition. New Delhi:

Volume-2 | Issue-12 | December, 2016 | Paper-8

118



Tata McGraw Hill.

- Bharadwaj, Sundar G., P.R. Varadarajan and J. Fahy (1993), "Sustainable competitive advantage in service industries: aconceptual model and research propositions", Journal of Marketing, 57 (Oct.), 83-99.
- Bryman, A and Bell, E (2003) Business Research Methods Oxford University Press
- Bernard, H.R. 2002. Research Methods in Anthropology: Qualitative and quantitative methods. 3rd edition. AltaMira Press ,Walnut Creek, California.
- Coltman,T(2007):Can superior CRM Capaboilities Improve Performance in Banking? Journal of finacial services Marketing.Vol.12, 2, pp 102-114.
- Eccles, R.G (1998): "The Performance Measurement Manifesto" in Harvard Business reviews on Measuring Corporate Performance, pp. 25-45. HarvardBusiness School press, Boston, Massachusetts
- Hair, J., Anderson, R., Talham, R. and Black, W. (1995). *Multivariate data analysis with readings*. 4ed Prentice Hall International, USA
- Jayachandran S et al (2005): The role of Information Relational Process and Technology Use in Customer Relationship Management.journal of marketing.69, October,PP 177-192
- Kotler, p. Keller, L.(2005). Marketing Management. New Jersey: Prentice Hall
- Lynch, R. (2003), Corporate Strategy, 3rd ed., Prentice Hall Financial Times
- Lewis, S. et al. 2006. Determinants of quality in a long-lived colonial species. J. Anim. col. 75: 13041312.
- Malhorta, N.K. (2007): Marketing Research. An applied Orientation, 5th ed. New Delhi: Prentice-Hall of India Private Limited.
- Macmillan, H. & Tampoe, M. (2000), Strategic Management, Oxford University Press.
- O'Sullivan, D, and Abela, V.A (2007): Marketing performance measurement Ability and Firms Performance. Journal of Marketing. Vol. 71, April 2007, pp79-93.
- Patterson, P.G. and Sharma, N. (2004): "Switching costs, alternative attractiveness and experience as moderators of relationship commitment in professional consumer services",



International Journal of Service Industry Management, Vol. 11 No. 5, pp. 470-90

Proctor, T. (1997), Establishing a strategic direction: a review, Management Decision,

Porter, M.E. (1979) How Competitive Forces Shape Strategy, Harvard Business Review.

Ramani,G and Kumar,V.(2008):Interaction orientation and Firms Performance. journal of marketing.Vol.72 (January ) 27-45

Rauen H, Sawczuk and Renaud .(2009):Customer Acquisition and Retention:
Using Customer Experience for Competitive Advantage in Uncertain
TimesAccenture.www.accenture.com

Sudarshan D (1995): 'Marketing strategy: Relationships, offerings, timing and resource allocation'. Prentice Hall, New Jersey

Wallsten, Scott. 2001 "An Econometric Analysis of Telecom Competition, Privatization, and Regulation in Africa and Latin America." *Journal of Industrial Economics*, 49: 1, pp. 1-20.