

MOBILE NUMBER PORTABILITY AND ITS IMPACT ON SERVICE QUALITY IN GHANA TELECOMMUNICATION INDUSTRY

Benjamin Kojo Otoo
Department of Marketing,
School of Business
Cape Coast Polytechnic,
Ghana

ABSTRACT

Service quality has become a significant differentiator and the most powerful competitor weapon, which all the service organizations want to possess. The telecommunication sector is one of the competitive sectors which need the attention of the telecommunication service providers on the quality of the service they offering to their customers. The research sought to find whether the service quality rendered to subscribers after the introduction of the mobile number portability (MNP) has improved and whether it is having any effect on consumers (subscribers) in Ghana. The research utilized a survey from 150 respondents from the University of Cape Coast, Cape Coast Polytechnic and Nursing and Midwifery Training College. The study used the simple random sampling. The findings of the research show that, there is no correlation between MNP and quality of service. Also the quality of service after the introduction of MNP has not improved. However lower porting rates were recorded because subscribers perceived that there was homogeneity of services on offer by the various network providers in Ghana i.e. Vodafone, MTN, Tigo, Airtel, Glo and Expresso. Contrary to literature, this research concluded that, MNP service cannot be considered a success. In that, if the threat of porting leads to improved competition among operators, and hence, lower tariffs and better services then the result shows otherwise.

Keywords: Mobile Number Portability, Service Quality, Telecommunication, Ghana

INTRODUCTION

The spread of mobile technology has varied significantly between countries with majority of mobile subscribers in the developing countries, (ITU, 2013). In 2013, statistics from the International Telecommunication Union revealed that the penetration rate of mobile phone subscribers is 96.2 per 100 inhabitants globally and the report also suggests that there are now more mobile phone users in the developing world than in the developed world (ITU, 2013) cited in Adjei and Denanyah (2014)

Mobile telecommunications have become one of the most vibrant service sectors in the country with its growing network coverage. Rapid growth in the mobile industry has brought in a number of foreign operators to start business in Ghana and the resultant competition in the sector had witnessed steady reduction in call charges. The telecommunication industry has experienced tremendous growth. At present, six mobile phone companies are operating in Ghana. About 25 million subscribers have come under the coverage of mobile network as of December 2012 NCA report cited in Otoo (2013).

Mobile Number Portability (MNP) refers to the ability of mobile subscribers to switch between service providers while retaining their original mobile phone numbers (Smura, 2004). The right to retain the number lowers the switching cost for a consumer. As a result, customers face switching costs associated with informing people about changing their number, printing new business cards, missing valuable calls from people that do not have the new number, etc. Based on these considerations, many regulatory authorities have imposed mandatory MNP or are about to require its introduction so as to reduce customers switching costs, attempting to make mobile telecommunications more competitive (Buehler and Haucap, 2004). Thus, the purpose of

the policy is to induce more competition and facilitate the growth of new or small service providers.

The introduction of MNP is based on the fact that it is expected to bring about considerable benefits to consumers of mobile services including quality service. Customers are able to easily move from one network to the other as and when they feel they are not having value for their money existing literature have looked at the composition of switching costs of mobile subscribers and most suggest that it consists of the time and money spent in migrating to a different operator, including having to inform contacts of a number change (Dick & Basu, 1994) and the loss of one's phone number, which has become a unique identifier of people (Buehler, Dewenter & Haucap, 2006). In Ghana, various governments have adopted policies and measures aimed at making telecommunication services accessible to all the people in the country.

Poor quality service has dogged the operations of local mobile telecommunication companies, leading to customer complaints and dissatisfaction with the service. Call dropping, cost to business and social relationships and call delays are some of the complaints that have been raised by some mobile phone users. Responses such as "the number does not exist and the number you are calling is outside coverage area" have become the refrain of some of the mobile operators. (Daily Graphic March 25, 2013) More so, mobile network operators in the country have been found to have violated the quality service standards prescribed by the National Communication Authority. The five telecommunications companies in the country have been summarily fined an amount of GH¢ 900,000 by the NCA to make them sit up. According to NCA, all the operators have been found liable on several counts. (Daily Guide, May 6, 2013)

Although there have been many studies looking at the effect of number portability on competition at the industry level, little attention has been shown on the individual level such as subscribers' behavior or perception. To the best of my knowledge, not a single experimental research has methodically examined the implementation of Mobile Number Portability (MNP) and its effect on quality of service to the subscribers and companies in Ghana. This would partly be blamed on the fact that MNP is relatively new in Ghana.

The aim of this research is to find out whether the introduction of mobile number portability has made any impact on the quality of service enjoyed by the customers of these operators after three years of its introduction in Ghana.

REVIEW OF LITERATURE

Quality of Services:

Quality has been defined differently as "fitness for use", "conformance to customer requirements" and "zero defects". More recently Kotler (2000) defined quality as: "the totality of features and characteristics of product or services that bear on its ability to satisfy stated or implied customer's needs". Quality is thus the key to value creation and customer satisfaction. (Matloub Hussain, Loukas Tsironis, Mian M. Ajmal, (2011)) Quality is generally regarded as being a key factor in the creation of worth and in influencing customer satisfaction. Hence, the telecommunication industry in Ghana has to be strategically positioned to provide quality services to satisfy customers.

Service quality is a comparison of expectations with performance. A business with high service quality will meet customer needs whilst remaining economically competitive. Improved service quality may increase economic competitiveness. The customers are loyal and satisfied from those companies which provide the excellent services and products according to the expectation of the customers. In the telecommunication sector the quality of service means services that company provide customers for day to day use to the user of services. They expect the high quality of services like packages (Hardy, 2001). According to another research service is intangible, produce and consume at the same time and it is a benefit or activity that producers offer to consumers (Baker, 2003).

To provide improved quality service, telecommunication companies need to investigate degree of customers' sensitivity and expectations toward service quality. Armed with such information, telecommunication outfits are then able to strategically focus service quality objectives and procedures to fit the Ghanaian market.

Mobile Number Portability in Ghana

Ghana's Mobile Number Portability (MNP) has marked three years since its inception. MNP is a permanent system which allows mobile telephony customers to move from one service provider to another whilst retaining their old mobile number. In its third year, 838,202 requests had been completed, showing an increase of 87% over the second year. From the launch date of July 7, 2011 until the end of the third year 1,655,404 porting requests have been completed. The number of completed ports represents about 6% of the total active mobile subscription base. This far exceeds any other implementation of MNP in sub-Saharan Africa, the markets which are most directly comparable to Ghana. The milestone of one million successful ports was achieved on October 12, 2013, and was celebrated by three of the mobile networks each giving one of their customers who ported at that time 1,000 Ghana Cedi credit per month for one year. (NCA, 2014)

Note that due to duplication in the methodology for counting total active mobile numbers and the fact that many Ghanaian customers have more than one account and number, the percentage of actual individuals who have taken advantage of the porting process is likely much higher than 6%. Direct comparison of different countries' porting rates can be problematic, as the statistics are reported inconsistently, and porting rates are affected by many market factors, such as speed, cost, and ease of porting, number of mobile networks, and the competitive landscape. However, MNP in Ghana is remarkably more successful than efforts in the three other sub-Saharan Africa countries (South Africa, Nigeria and Kenya) with MNP, which record annual porting rates of 0.5%, 0.07%, and 0.004%. Ghana's annual porting rate was 1.6% in its first year, and 2.9% in its third year. (NCA, 2014)

Perspectives on Mobile Number Portability

Stakeholders in the mobile telecoms fraternity consider MNP as a relevant policy framework crucial to ensuring healthy competition (Lyons, 2006), even though it is the considered understanding of Shin (2006) that MNP does not readily signal competition in the mobile market. This notwithstanding, it has been observed elsewhere that the practice of MNP heralds, for instance, better quality of service and reduced prices in the cost of calls (Park, 2010).

It is appropriate to link the situation of moving from one network to another as switching intention (Lin, 2010; Shin & Kim, 2008) which inherently possesses an attitudinal factor shrouded in the desire on the part of the switcher (customer) to derive benefit from this activity (Horrocks & Lewin, 2000). Issues about the evolution of MNP over a certain period of time have also been explored elsewhere, (Anjum & Dua, 2012) just as the extent to which promotional offers and service affordability influence subscriber portability has been adequately addressed (Kumaresh & Sekar, 2012).

MNP is viewed as a means of promoting competition and enhancing service innovation in the telecommunication industry (Buehler & Haucap, 2004; Durukan, Bozaci, & Dogan, 2011). Accordingly, Shin (2006) advances the argument that MNP aids to create an equal playing field and encourages the entry of new mobile operators. Thus with MNP new firms are assured of a stay in the telecommunication industry once they provide attractively competitive services. In a radical point of departure, informed by the concept of property rights, Buehler, Dewenter and Haucap (2005), suggest the idea of MNP takes away property rights away from networks operators to the subscriber. This property rights notion, logically, gives subscribers quite a

significant ability in the way they shift the balance of mobile network power among the telecoms operators cited in Boateng and Owusu (2013).

RESEARCH METHODOLOGY

Study Population

The populations of relevance for the study were all students on the campuses of the University of Cape Coast, Cape Coast Polytechnic and Midwifery and Nursing Training College and each of the Mobile Telephone service providers; (MTN, Airtel, Vodafone, Tigo, Espresso, and Glo.) Towards the goals of Mobile Number Portability and its impacts on service quality on companies, the research was conducted in line with Dix, Finlay, Abowd and Beale (1998), who suggested that the best way to find out how a system meets users requirements and expectations is to ask the user. According to Kearney (2004) the usage of mobile phones is high among the generation of 35 years and below. Therefore seeking the views of those within that age group (18 – 35 years) regarding the mobile number portability and its impacts on service quality on companies is most relevant. Again, the usage of age range as a prequalification instrument for the selection for the respondents decreases the variations in the population data (Saunders, 2000). The age bracket of 18-35 is largely found in the tertiary institutions hence the selection of the three institutions; University of Cape Coast, Cape Coast Polytechnic and Nursing and Midwifery training school.

Sample Design and Sample Size

To collect data, to test the research questions, a survey was conducted after a pilot study had identified and refined measurement items used in this study. Primary data have been collected from customers of different telecom users in some tertiary institutions in the regional capital of Central Region of Ghana.

The sampling was done taking into consideration the type of telecom provider. The final sample consisted of 150 individuals who stated that they were customers of one of the service providers. Data were collected using the “Personal contact” after approaching the respondents personally and explaining in detail about the survey objectives and purpose of the study.

Data Analysis Used

The analysis for the survey data was done by collating, grouping and manually counting of the survey. Data on service quality dimensions, were analyzed using correlations, multiple linear regressions and descriptive analysis. The Statistical Package for Social Sciences (SPSS) was used to process the data set. Assessment was based on a five point Likert scale. The time period of conducting this study was 6 months i.e. from June to December 2014. The analyzed results are presented in tabular form.

Reliability Statistics of Expectation and Perception scales

| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
|------------------|--|------------|
| .839 | .844 | 26 |

Source: SPSS Analysis, 2014

Internal reliability of Expectation and Perception scale was examined using the Cronbach alpha coefficients. The results indicate that the service quality scale is a reliable instrument, returning an overall Cronbach alpha of 0.839. According to thumb rule Alpha, the instrument reliability is excellent.

DISCUSSION OF THE FINDINGS

Profile of the Respondents taken for the Study

The success of telecom companies in formulating effective marketing strategies largely depends on maintaining up-to-date profile information of the customer in the form of customer-based data. The availability of such a comprehensive profile provides the telecom companies with a strong basis for designing effective plans and programs regarding the marketing of products and services. The questionnaires included a section on customers' profile. It included customer's age, education level, and other socio demographic information.

Tables 1 to 4 present a comprehensive profile of the telecom customers who had participated in this research study. A total of 150 questionnaires were sent out. After editing all returned questionnaires a total of 144 questionnaires were usable for analysis representing 96% of the respondents.

Table 1 – A table showing the gender of the respondents

| Gender | Frequency | Percent |
|--------|-----------|---------|
| MALE | 83 | 57.6 |
| FEMALE | 61 | 42.4 |
| Total | 144 | 100.0 |

Source: SPSS Analysis, 2014

Table 1 shows the gender dispositions of the respondents used for this study. From the table out of the total respondents of 144, 83(57.6%) were males and 61 (42.4%) were females. Majority of the customers sampled for the study were thus males. This is due to the fact the male population outnumber the females in the tertiary education institutions in Ghana.

Table 2 – A table showing the age of the respondents

| Age | Frequency | Percent |
|-------|-----------|---------|
| 18-27 | 116 | 80.6 |
| 28-37 | 24 | 16.7 |
| 38-47 | 4 | 2.8 |
| Total | 144 | 100.0 |

Source: SPSS Analysis, 2014

The age distribution of respondents surveyed for the study is presented in table 2. Out of the 144 respondents, 116 (80.6%) were between 18 to 27 years, 24 (16.7%) were between 28 to 37 years, 4 (2.8%) were between 38 to 47 years. Majority of the respondents surveyed for the study were people below 38 years of age and the distribution appears negatively skewed.

Table 3- A table showing the level of education of the respondents

| Educational level | Frequency | Percent |
|-------------------|-----------|---------|
| Polytechnic | 46 | 31.9 |
| University | 50 | 34.7 |
| College | 48 | 33.3 |
| Total | 144 | 100.0 |

Source: SPSS Analysis, 2014

Customers with diverse educational background were sampled for the study. Out of 150 questionnaires administered, 144 were constituting 96%. Out of the 144 responses, customers with university education constitute (34.7%); followed by customers of College education (33.3%), while (31.9%) have Polytechnic educational qualification.

Table 4 – A table showing the various mobile networks used by the respondents

| Mobile operators | Frequency | Percent |
|------------------|-----------|---------|
| MTN | 66 | 45.8 |
| TIGO | 36 | 25.0 |
| VODAFONE | 27 | 18.8 |
| AIRTEL | 10 | 6.9 |
| EXPRESSO | 2 | 2.1 |
| GLO | 3 | 1.4 |
| Total | 144 | 100.0 |

Source: SPSS Analysis, 2014

Furthermore, Out of the 144 respondent, 66 (45.8%) indicated that they were connected to MTN, 36 (25.0%) were connected to Tigo, 27 (18.8%) were connected to Vodafone, 10 (6.9%) were connected to Airtel 3 (2.1%) were connected to Glo while 2 (1.4%) were on the Espresso network. The distribution of the data is a fair representation of the client base of Mobile telecommunication operators in Ghana, which is dominated by MTN.

Table 5 – A table showing whether respondents have ported or not

| Mobile numbers porters | Frequency | Percent |
|------------------------|-----------|---------|
| YES | 53 | 36.8 |
| NO | 91 | 63.2 |
| Total | 144 | 100.0 |

Source: SPSS Analysis, 2014

Respondents who were aware of Mobile Number Portability and have ported to a different network were 53 (36.8%) out of the 144 response, and 91 (63.2%) have not ported, this signifies that majority of the respondents have not ported their mobile number to a different operator. However, this is far in excess of the national average of 2.9% as reported by NCA 2014. The research established that in terms of numbers, majority of the respondents have not ported their numbers. A reason for low porting rates is because subscribers perceive there is no need to switch networks because of the homogeneity of services on offer by the various network providers in Ghana i.e. Vodafone, MTN, Tigo, Airtel, Glo and Espresso. That is why most of the respondents agreed that MNP is all hype and that not much benefit would be accrued to consumers because all the operators provide the same kinds of services.

Table 6 Correlation between Service Quality and Mobile Number Portability

| Correlation | | serv qual | MNP |
|-------------|---------------------|-----------|------|
| servqual | Pearson Correlation | 1 | .075 |
| | Sig. (2-tailed) | | .372 |
| | N | 144 | 144 |
| MNP | Pearson Correlation | .075 | 1 |
| | Sig. (2-tailed) | .372 | |
| | N | 144 | 144 |

Source: SPSS Analysis, 2014

The relationship between service quality (servqual) and Mobile Number Portability (moport) was investigated using Pearson Correlation, findings were performed to ensure no valuation of the assumption of normality. There was a weak positive correlation between the two variables $r = 0.075$, $N = 144$, $P > 0.05$.

Table 7. ANOVA^a

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|-------|------------|----------------|-----|-------------|------|-------------------|
| 1 | Regression | .387 | 1 | .387 | .801 | .372 ^b |
| | Residual | 68.538 | 142 | .483 | | |
| | Total | 68.924 | 143 | | | |

Source: SPSS Analysis, 2014

Further investigation was performed to find the relationship between the service quality and Mobile Number Portability using regression. Comparing $F = 0.801$ and the significance value = 0.372 . Since the $0.801 > 0.372$. It can be concluded that there is no relationship between service quality and Mobile Number Portability.

Table 8. What was the quality of service of your mobile operator after porting

| What is the quality of service of your current mobile operator | Mean | N | Std. Deviation | Kurtosis | Skewness |
|--|-------------|------------|----------------|--------------|---------------|
| Better than previous | 2.81 | 21 | 1.504 | -.668 | .747 |
| Same as previous | 3.46 | 28 | 1.774 | -1.455 | -.173 |
| Poorer than previous | 5.00 | 4 | 2.000 | 4.000 | -2.000 |
| None | 6.82 | 91 | .961 | 27.955 | -5.390 |
| Total | 5.53 | 144 | 2.138 | -.450 | -1.086 |

Source: SPSS Analysis, 2014

The results in table 8 reveal that the quality of service prior to the introduction of MNP has not improved. Even those who have ported their numbers confirmed that. Since the mean values for those who thought the service quality was poorer than the previous one was higher, followed by same service as the previous one and only few people thought otherwise, thus having their service quality improved or better than the previous one.

Table 9 – A table showing factors that motivated respondents from porting to a different network

| Motivational Factors | N | Percent |
|------------------------------------|------------|--------------|
| low call cost | 15 | 14.7 |
| low internet cost | 13 | 12.7 |
| low call and internet cost | 21 | 20.6 |
| for better promo offers | 10 | 9.8 |
| quick response to customer request | 25 | 24.5 |
| family influence | 10 | 9.8 |
| bandwagon effect | 2 | 2.0 |
| no specific reason | 6 | 5.9 |
| Total | 102 | 100.0 |

Source: SPSS Analysis, 2014

From the above table which shows factors that motivated respondents from porting to a different operator, out of the 102 respondents which was due to multiple responses 15 ported because of low call cost which represent (14.7%), 13 representing (12.7%) also ported because of the low internet cost, 21 respondents representing (20.6%) went for low call and internet cost, 10 ported to a different operator for better promo offers representing (9.8%), 25 representing (24.5%) also ported to a different operator for quick response to customers request, 10 respondents representing (9.8%) ported based on family influence, 2 respondents constituting to (2.0%) went for bandwagon effect because they think people do what they believe, 6 (5.9%) respondents ported for no specific reason. However, majority of the customers sampled for the study ported for quick response to customer request and low cost this is in line with the findings of Boateng and Owusu (2013)

CONCLUSION

Based on the research, data analysis and findings obtained, it can be concluded that there is no correlation between service quality and mobile number portability (MNP). It is not surprising to realise that most people who have ported their numbers thought that the service quality has not improved or it is poorer than before porting. The majority who had not ported thought that the services provided by the operators were the same. Thus the overall service quality of the industry has not improved even after the introduction of mobile number portability (MNP).

The findings contradict the NCA report of 2014, which sought to suggest that people who have ported think that the new service providers are doing better than the previous ones. However, their research did not consider the overall service quality but limited it to those who have ported their numbers.

REFERENCES

Anjum, N., and Dua, R. L. (2012). Evolution of mobile number portability. International Journal of Engineering Research & Technology, Vol.1 No.5 pp 1-4.

Boateng, K.A. and Owusu, O.O. (2013) "Mobile Number Portability: On the Switching Trends among Subscribers within the Telecommunication Industry in a Ghanaian City," Communications of the IIMA: Vol. 13: Iss. 4, retrieved from: <http://scholarworks.lib.csusb.edu/ciima/vol13/iss4/6>

Buehler, S., Dewenter, R., Haucap, J., (2006). Mobile Number Portability in Europe. Telecommunications Policy. Vol. 30, Iss. 7, pp. 385-399.

Buehler, S and Haucap, J, (2004) Mobile Number Portability. Journal of Industry, Competition and Trade, Vol. 4, No. 3, pp. 223-238.

Daily Guide, (2013) "NCA imposed a total fine of GH 1.2 million on five telecom operators for providing poor service" May6. P 3

Daily Graphic, (2013) "Poor Quality Service has dogged the operations of local Mobile Telecommunication Companies" March, 25, p 18

Dick A.S. and Basu K., 1994, Customer Loyalty: Toward an Integrated Conceptual Framework, "Journal of the Academy of Marketing Science", Winter, pp 99-113

Dix .A, Finlay J, Abowd .G and R. Beale (1998). Human-Computer Interaction, second edition. Prentice Hall.

Horrocks, J., and Lewin, D. (2000). Mobile numbering and number portability in Ireland: A report to the ODTR (No. JCD50). Dublin, Ireland: Office of the Director of Telecommunications Regulation. Retrieved from http://www.comreg.ie/_fileupload/Publications/jcd50.pdf

Kumaresh, K., and Sekar, C. (2012). Mobile number portability in Coimbatore: An empirical analysis of consumer switching behavior. International Journal of Research in IT & Management 2, pg 1119-1138. Retrieved from <http://www.euroasiapub.org/IJRIM/405.pdf>

Lin, W. B. (2010). Service failure and consumer switching behaviors: Evidence from the insurance industry. Expert Systems with Applications, Vol. 37, pp 3209-3218.

Lyons, S. (2006). Measuring the benefits of mobile number portability (Trinity Economics Papers). Dublin, Ireland: Trinity College Dublin.

Matloub Hussain, Loukas Tsironis, Mian M. and Ajmal, (2011), "A QFD strategy for improving customer satisfaction: case study of telecom companies of Pakistan", Asian Journal on Quality, Vol. 12 Iss: 3 pp. 282 - 295

National Communications Authority (2014) Mobile Number Portability in Ghana Third Year Report retrieved from <http://www.nca.org.gh/40/125/Make-a-Complaint.html>

National Communications Authority. (2011). Mobile number portability statistics as of September 2011. Retrieved <http://www.nca.org.gh/72/93/Mobile-Number-Portability.html>

Otoo, B.K (2013), "The Effect of Mobile Number Portability on the Market Share of Telecommunication Operators in Ghana", Interdisciplinary Journal of Contemporary Research in Business Vol. 5 No. 2

Park, M. (2010). The economic impact of wireless number portability. Berkeley, CA: University of California at Berkeley, Haas School of Business.

ITU World Communication (2013) The World in 2013, ICT facts and figures [online], retrieved from (<http://www.itu.int/ITU>)

Saunders, M., Lewis, P. and Thornhill, A. (2000) Research methods for business students. 2nd edition. Harlow: Pearson Education.

Shin, D. H. (2006). A study of mobile number portability effects in the United States. Telematics and Informatics, Vol.24 No.1, pp 1–14.

Shin, D. H., & Kim, W. Y. (2008). Forecasting customer switching intention in mobile service: An exploratory study of predictive factors in mobile number portability. Technological Forecasting & Social Change, Vol.75, pp 854–874.

Smura, T., (2004), Mobile Number Portability – Case Finland, Mimeo, Networking Laboratory, Helsinki University of Technology