

Full Length Research Paper

Factors Affecting the Pricing of Telecommunication Products and Services in Uganda

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Abstract

Improving universal access to telecommunications has become a very critical area of concern in both developed and developing countries in the recent past due to the huge contribution of the sub-sector to socio-economic and political lives of the populace world over. However, the prices of these products and services still remain high and unstable (Afedraru, 2010). Many factors that influence the prices of these products and services are largely unknown. Using quantitative approaches, we studied the factors affecting prices of telecommunication products and services in Uganda and made a number of recommendations that we hope can help in setting and stabilizing prices for telecommunications products and services in Uganda and other developing countries.

Keywords: Telecommunications, Prices, Developing Countries, Uganda

INTRODUCTION

Universal access to telecommunications services has become a very critical area of concern in both developed and developing countries in the recent past due to the huge contribution of the sub-sector to socio-economic and political lives of the populace world over (Nasasira, 2003). Benefits such as job creation, improved taxation base for governments among others have all accrued from telecommunications. Further more, the DSTI (2008) argues that telecommunications have made international communication cheaper as the ability of developing countries to communicate globally has consistently improved while at the same time enhancing political and social-economic relations across borders. To this effect, the International Telecommunications Union (ITU) has urged national governments to put in place strategies and policies for improving telecommunication penetration, quality of service (QoS), affordability, and above all universality (ITU, 2008).

In Uganda, a regulatory body in the name of Uganda

Communications Commission was set up to champion the proliferation of telecommunications in the country. These developments, including liberalization of the sector have increased investor confidence and attracted many international players in the local telecommunications sector in Uganda. Although sector liberalization has ushered in competition and in a way helped reduce prices, a number of challenges in the Uganda's telecommunications sector exist. For example, telecommunication prices in Uganda are very high and volatile (Afedraru, 2010). The (ITU) has since setup a group (Study group 3) of experts to study and advise the body on telecommunication tariff structures and accounting principles to be used for better pricing of telecoms (ITU, 2008). However, little success has been registered because other than costs, the factors affecting the pricing decisions made by telecom firms and other stakeholders in Uganda are not well known and documented. The World Telecommunication

Standardization Assembly (WTSA) held a meeting in October 2008 to discuss and make recommendations for a harmonized pricing strategy based on (ITU-T D.1566). Subsequently, they recommended that developing countries examine and charge tariffs based on telecommunication costs. This resolution did not go well with some members as 28 ITU member states openly expressed dissatisfaction with this recommendation and stated that they would not apply it.

The 1990s telecommunications reforms introduced by the ITU propagated cost-based pricing as the most appropriate pricing method for telecoms. The method emerged as the internationally accepted pricing approach, in which prices were determined basing on the fixed and average costs (Kelly, 1999; Craig, 2002). The Cost-based pricing model has also found favor in the eyes of many national regulatory bodies around the globe who have actively promoted it. Apart from recommending the cost-based pricing approach however, the ITU has made little effort to establish the factors affecting telecoms and regulate pricing in its member states (OECD, 2008). Prices for telecommunication products and services in Uganda have never been stable. This is in addition to being one of the highest rates in the East African region (Afedraru, 2010). The Uganda Communications Commission (UCC) was set up by an ACT of parliament of Uganda in the late 1990s to help regulate pricing among other roles such as promoting the growth and use of Information Communication Technologies (ICTs) in the country, most of which is telecommunications. However, the efforts of UCC to ensure fair prices for telecommunication services have always undermined and sometimes sabotaged by “powerful” operators in the sector. For example in January 2010, the UCC was taken to court by one of the operators for trying to reduce interconnection rates between the incumbent operator and other operators (RoU, 1998). The UCC opted to settle the matter out of court. Subsequently, the interconnection rate was raised in favor of the incumbent operator instead (Mugabe, 2010). This study therefore aimed at identifying and examining the factors that affect the prices of telecommunication services and products in Uganda and give some useful recommendations for better pricing.

The study specifically aimed at examining (i) the approaches used to set prices for telecommunication products and services in Uganda and (ii) the factors affecting telecommunication prices in Uganda

Research Design

This study adapted a quantitative research approach in trying to answer the above listed objectives. A self-administered questionnaire was used to collect data from

Table 1. Study Sample

Source	Number of respondents	Sampling method
MTN	10	Purposive sampling
UTL	10	
ZAIN	10	
WARID	10	
UCC	10	
Total	50	

50 respondents, who comprised of employees of telecommunication service providers (WARID, MTN, UTL and ZAIN) and employees of the regulatory institution (UCC). Purposive sampling was used to select managers, heads of departments, marketers and regulators directly involved in setting telecommunication prices. This sample is in line with Roscos’s 1970 rule of thumb that any sample between 30 and 500 is adequate. Table 1 shows the study sample.

Out of the above sample size, 45 questionnaires were returned but only 41 that did not have incomplete and inconsistent responses were coded into SPSS and analyzed.

Pretesting of research instrument and data analysis methods

Content Validity Index (CVI) was used to test for validity of the questionnaire (CVI > 0.50 for both experts) and Cronbach Alpha Coefficient (CAC) was used to test for reliability (CAC >0.60) for all variables as seen in table 2 was achieved. Descriptive statistics and Factor analysis with principal component methods were used to extract the most important factors influencing the pricing of products and services in the telecommunications sector.

Findings

This section presents a statistical analysis of the findings from primary data. The findings are presented under the following themes: 1) characteristics, 2) pricing approaches 3) and factors affecting telecom prices.

Sample characteristics

Descriptive statistics were used to extract the respondents attributes necessary for understanding the respondents’ characteristics. Information on gender, age, marital status, level of education, job title, level in the organization hierarchy, work experience and involvement

Table 2. Pretest results for validity and reliability

Variable	N of items	Anchor	CAC	CVI
Telecommunications pricing approaches	3	5 point	0.621	0.673
Factors affecting telecommunication prices in Uganda	7	5 point	0.682	0.712
Telecommunications Pricing Goals	5	5 point	0.633	0.713

Table 3. Descriptive Statistics for Approaches

	Mean	Std. Deviation	Analysis N
Cost-Based Pricing	3.0732	.51915	41
Demand-based pricing	2.6579	.56019	41
Market-based pricing	3.1579	.79140	41
Average	2.963	0.62358	

Source: Primary data

Table 4. Component Matrix for Approaches

	Component
Demand-based pricing	.947
Market-based pricing	.947
Eigen value	1.792
% of variance	59.748

Source: Primary data

Table 5. The factors that affect telecom prices in Uganda

	Mean	Std. Deviation	Analysis N
The availability and cost of equity financing in the country	3.7842	.72381	41
The prevailing inflationary situations in the economy	2.7341	.77445	41
The cost of using another operator's network infrastructure	3.3365	.76652	41
The level and nature of competition in the sector	3.4575	.75582	41
The prevailing forces of demand and supply in the sector	3.2342	.31118	41
The level and stability of foreign exchange rates in the country	3.3123	.44612	41
The level of operating costs	3.4429	.45455	41
Average	3.3288		

Source: Primary Data

in setting of telecommunication prices in their respective organizations were helpful in understanding the reliability of data collected from the respondents.

Respondents' Gender

Descriptive statistics were used to examine the respondents' gender as shown in figure 1

Results in figure 1 show that majority of the respondents were female constituting 22. Male respondents were 19, hence a total of 41.

Respondents' Age

Descriptive statistics were used to determine the age

Table 6.Factor analysis for the factors that affect telecommunications prices in Uganda

	Component	Rank
The level of operating costs	.882	1
The prevailing forces of demand and supply in the sector	.834	2
The level and stability of foreign exchange rates in the country	.822	3
The prevailing inflationary situations in the economy	.752	4
The level and nature of competition in the sector	.533	5
Eigen value	3.602	
% of variance	53.532	

Source: Primary data

Table 7. Descriptive Statistics for Pricing Goals

	Mean	Std. Deviation	Analysis N
Setting prices with the goal of maximizing profits for the company	3.1842	1.22179	41
Setting prices with the goal of maximizing wealth for shareholders	2.0833	.83417	41
Setting prices with the goal of expanding our market base	3.6316	.47016	41
Setting prices with the goal of beating competition in the market	3.7561	.43477	41
Setting prices with the goal of breaking-even	2.8333	.53229	41

Source: Primary data

Table 8. Component Matrix for Pricing Goals

	Component	Rank
Setting prices with the goal of expanding our market base	.954	1
Setting prices with the goal of maximizing profits for the company	.840	2
Setting prices with the goal of beating competition in the market	.800	3
Eigen Values	2.624	
% of variance	52.485	

Source: Primary data

bracket of respondents based on seven age brackets as seen in figure 2.

Results in figure 2 show that age bracket 18-25 had 18 respondents, age bracket 26-30, 5 respondents, age bracket 31-35, 9 respondents, age bracket 36-40, 7 respondents, age bracket 41-45, 6 respondents, age bracket 46-50 had 5 respondents, while those above 50 years of age were 1 respondent.

Respondents' level of education

Descriptive statistics were also used to determine the respondents' level of education as seen in figure 3: Results in figure 3 show that most of the respondents had

one degree (freq=20). This was followed by those respondents with a matser's degree who totaled to 16. Respondents with a diploma were 3 while only 2 resdents had other qualifications.

Respondents' job title

Descriptive statistics were again used to determine the respondents' job title in their current place of work. Figure 4 shows respondents' job titles:

Results in figure 4 show that most of the respondents were operations managers (freq=11). This was followed by administrators who were 9. Customer relations officers and economists tallied at 5 each, while IT managers were

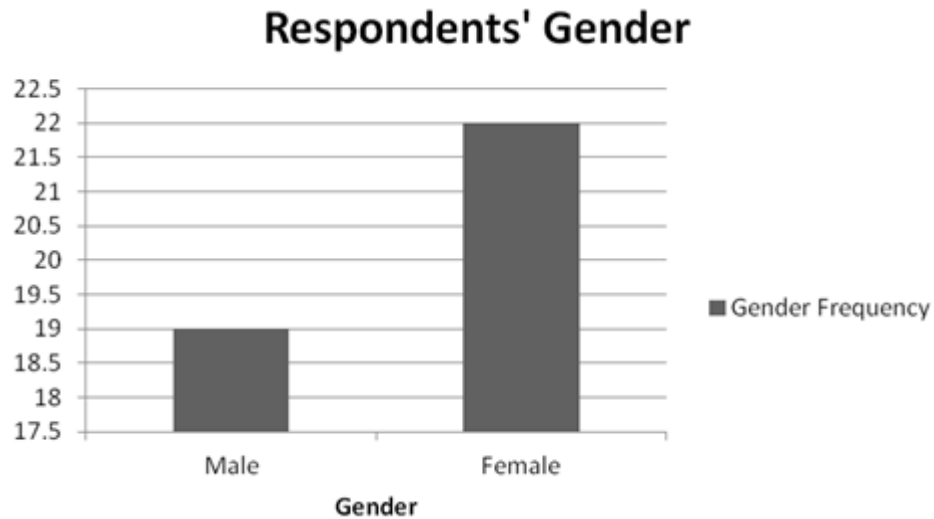


Figure 1. Respondents' Age

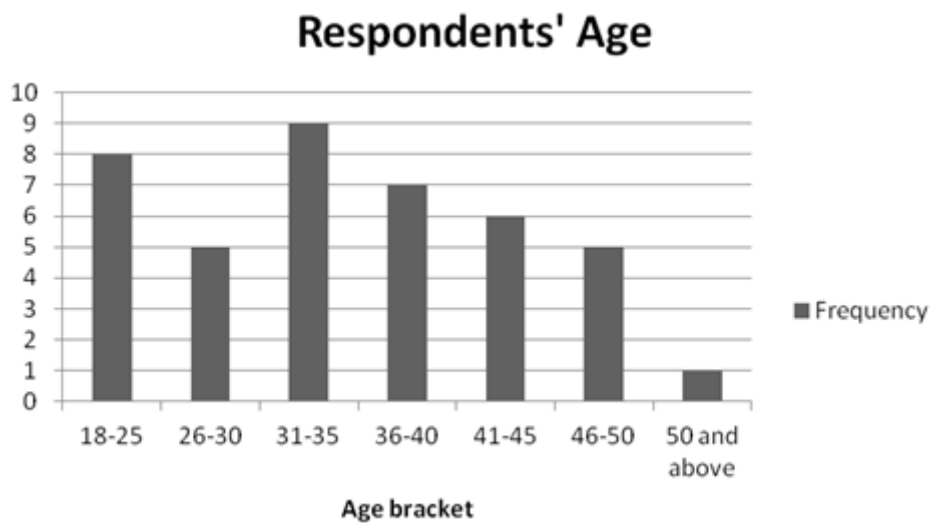


Figure 2. Respondes' Age Bracket

4. Accountants and programme officers were 2 each. Other respondents were ICT Technician (freq=1), Marketing Officer (freq=1) and PRO (freq=1).

Level in the organization hierarchy

Descriptive statistics were also used to determine the respondents' level in their organizations as seen in figure 5:

Results in figure 5 show that most of the respondents were at the middle level (freq=26). This was followed by

operational level respondents (freq=10) and lastly those at strategic level in the organization's hierarchy (freq=5).

Respondents' Length of service in the organization

Descriptive statistics were used to determine the respondents' length of service in their current job positions. Results were analyzed and presented on a chart. Figure 6 shows respondents length of service: Results in figure 6 show that most respondents had stayed on their current job positions for years ranging

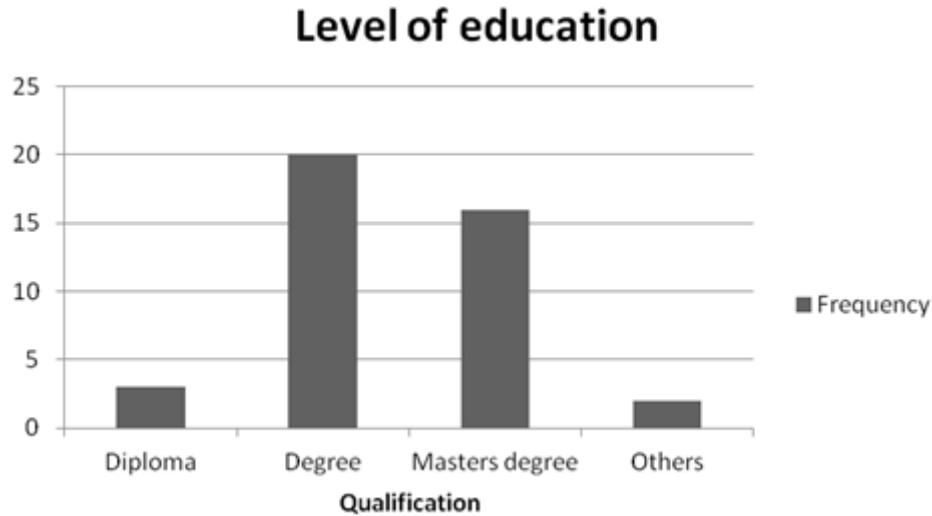


Figure 3. Respondents' level of education

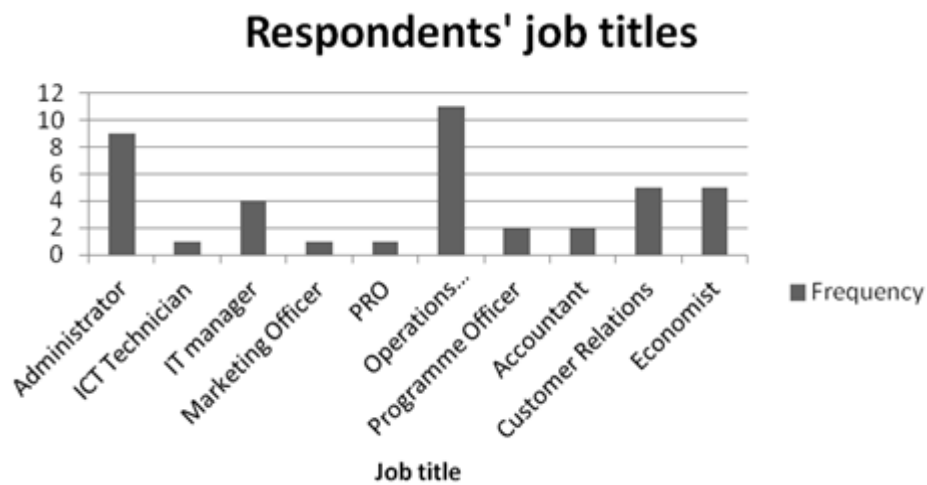


Figure 4. Respondents' level job title

from 4 to 6 (freq=26). 8 respondents had stayed in their current job positions for years ranging from 7 to 10 while 6 respondents had stayed in their current job positions for years ranging from 1 to 3. Only 1 respondent had stayed on the current job position for years ranging from 10 and above.

Participation in setting telecoms prices

Descriptive statistics were also used to determine the respondents who had ever participated on setting of prices for telecommunication services and products.

Results were analyzed and presented on a chart as shown in figure 7.

Results in figure 7 show that most respondents (freq=38) had ever participated in setting of prices for telecommunication products and services. Only 3 respondents had never participated in setting of prices for telecommunication products and services.

Pricing Approaches

Descriptive statistics and factor analysis were used to examine and extract the most important approaches used

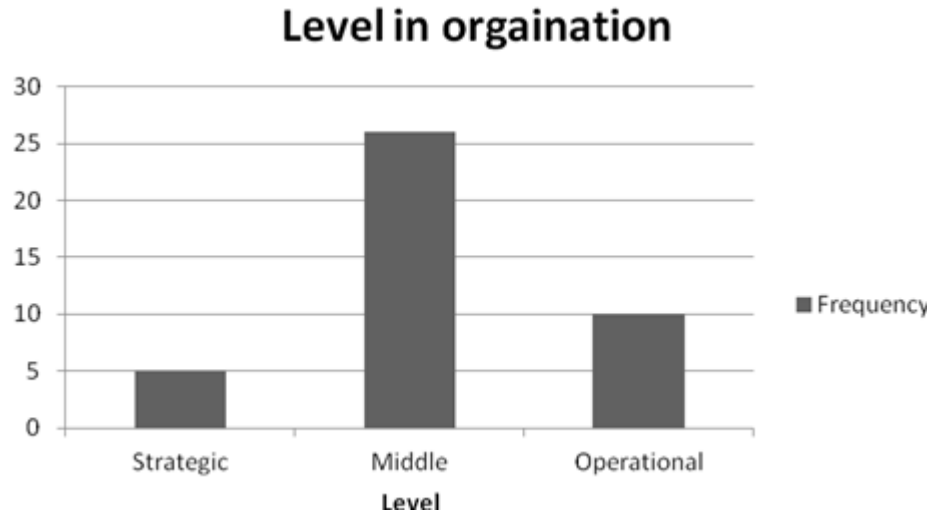


Figure 5. Respondents' level in the organization

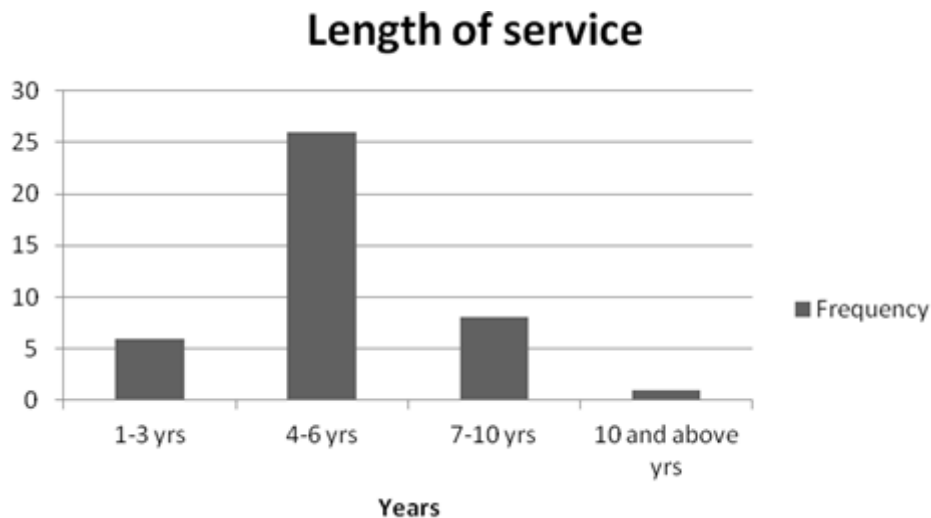


Figure 6. Respondents' length of service

to set prices for telecommunication products and services in Uganda as shown in tables 3 and 4

Results in table 3 indicate that most of the respondents on average (mean= 2.963 Approx = 3, Agree) indicated that cost based pricing (mean= 3.0732), market based pricing (mean = 3.1579) and demand based pricing (mean = 2.6579) are used to set prices for telecommunication products and services in Uganda.

However, factor analysis in table 4 shows that only demand and market based pricing approaches significantly explain 60%. Cost based pricing had factor loading of less than 0.1 indicating very insignificant contribution to pricing.

Factors affecting telecommunication prices

Descriptive statistics and factor analysis were used to examine and extract the most important factors affecting the prices of telecommunication products and services as shown in tables 5 and 6:

Results in table 5 show that most of the means for the factors are above average (3.3288, Agree), indicating that the availability and cost of equity financing in the country (mean=3.7842), the prevailing inflationary situations in the economy (mean=2.7341), the cost of using another operator's network infrastructure (mean=3.3365), the level and nature of competition in the



Figure 7.Partition in pricing decisions

sector (mean=3.4575), the prevailing forces of demand and supply in the sector (mean=3.2342), the level and stability of foreign exchange rates in the country (mean=3.3123) and the level of operating costs (mean=3.4429) are the factors affect the pricing of telecommunication products and services in Uganda.

Results in table 6 show that 53.532% of the pricing of telecommunication products and services in Uganda is positively influenced by the level of operating costs, the prevailing forces of demand and supply in the sector, the level and stability of foreign exchange rates in the country, the prevailing inflationary situations in the economy and the level and nature of competition in the sector.

On the other hand, the availability and cost of equity financing in the country and the cost of using another operator's network infrastructure influenced negatively. The level of operating costs ranked 1 as the most influential factor affecting telecommunication prices in Uganda. This was followed by the prevailing forces of demand and supply in the sector, ranked 2, the level and stability of foreign exchange rates in the country ranked 3, the prevailing inflationary situations in the economy ranked 4 and the level and nature of competition in the sector ranked 5.

Telecommunications Pricing Goals

Descriptive statistics and factor analysis were used to examine and extract the most important goals of pricing for pricing of telecommunication products and services prices in Uganda as shown in tables 7 and 8:

Results in table 7 show that beating competition in the market (mean=3.7561), expanding the market base

(mean=3.6316), maximizing profits (mean=3.1842), breaking-even (mean=2.8333) were the goals used in setting prices for telecommunication products and services in Uganda. While wealth maximization (mean=2.0833) was not the appropriate goal used in setting prices for telecommunication products and services in Uganda.

Results in table 8 show that market expansion ranked 1, profit maximization ranked 2 and beating competition ranked 3 positively explained 52% of the goals applicable in the setting of prices for telecommunication products and services in Uganda.

Discussion of Findings

This section presents a discussion of findings from primary data in comparison with findings from literature. We summarize by giving recommendations basing on the research findings.

Telecom Pricing Approaches

Factor analysis results in the previous section showed that only demand and market based pricing approaches significantly explained approaches used to set prices for telecommunication products and services. This implies that telecommunication firms in Uganda that is MTN, UTL, Orange, Zain (Airtel) and Warid set their prices depending on the number of consumers in need of their products in terms of mobile handsets, airtime, and internet bundles among others. While on market based pricing approach, the firms based their prices on geographical network coverage. Those firms with higher

network coverage charged higher prices than those with limited network coverage. The cost based approach was not applicable in the Ugandan setting. This is not in line with literature where the cost based approach was stated as the most commonly used approach for setting prices for telecommunication products and services (see French and Craig, 2002; Kelly 1999; ITU, 2008).

Factors Affecting Telecommunication Prices in Uganda

Results from primary data indicated that pricing is positively influenced by the level of operating costs in terms of energy to power systems; labour, maintenance of equipments, installation costs and tax; with the prevailing forces of demand and supply in the sector in terms of number of consumers in need of their services *visa vi* the available products and services; with the level and stability of foreign exchange rates in the country in terms of cost of foreign currency in Uganda shillings; the prevailing inflationary situations in the economy in terms of general price index by Central Bank and the level and nature of competition in the sector as a result of supplying similar products and services to the same consumers. These factors are in line with literature as had been suggested by (Gans and King, 2009; Alleman *at, el.* 2009; Bank of Uganda, 2008; Wray, 2002). While the availability and cost of equity financing in the country and the cost of using another operator's network infrastructure influenced negatively in contradiction with the literature (Tusubira *at, el.* 2002).

Conclusion and Recommendation

The level of operating costs; the prevailing forces of demand and supply in the sector; the level and stability of foreign exchange rates in the country; the prevailing inflationary situations in the economy; the level and nature of competition in the sector are the most important factors that affect pricing of telecommunication products and services in Uganda.

Based on these findings, we recommend that governments apply monetary policies to check inflation and foreign exchange rates since they significantly affect telecommunication prices. Through regulatory institutions, governments should also ensure a health competition among service providers to eliminate price instability which is mainly caused by excessive competition. We also recommend that governments put in place policies such as investment incentives to encourage more investment, especially those that promote supply of telecommunication products and services.

On the other hand, demand should be re-engineered through promotion and advertising of new products and services. Telecommunication firms should not use prices as a means of out-competing their rival firms but rather use quality of service/products. This will help improve on customer satisfaction and at the same time increase sells turnover/revenue, but without necessarily destabilizing prices.

Limitations of the Study and Areas for Further Research

This study was carried out in Uganda, which is a developing country and where communication is not a necessity but rather a need. To some Ugandans, owning a phone is actually a luxury! Because of these and many other discrepancies between nations, we can not affirm that the identified factors universally apply across borders. In some countries such as the newly created South Sudan, liberalization is not yet. In others interconnection rates, inflation and other factors identified in this study are so prevalent. Based on these, we recommend that studies be carried out in different countries so that they can identify their unique challenges and design appropriate policies. We also recommend studies that can design new pricing models, frameworks and/or theories targeting the telecommunications sector.

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