SPEKTRUM MANAJEMEN DI NIGERIA (SEBUAH STUDI KASUS HARGA SPEKTRUM)

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Abstrak

For any resource, including radio spectrum, the primary economic objective is to maximize the net benefits to society that can be generated from that resource such that there is an efficient distribution of resources resulting in maximum benefits to society. Prices are used as an important mechanism to ensure the spectrum resources are used efficiently by users.

Spectrum pricing refers to a range of spectrum management activities and tools including administrative fees, spectrum usage, and spectrum prices determined by way of market mechanisms. Developing spectrum pricing strategies invariably involves alignment with the government's and regulator's revenue goals and objectives, setting targets, and discussion with key stakeholders such as the Ministry of Finance and key sector groups – telecommunications service providers. Revenue targets and strategies relate directly back to the primary objectives; spectrum users pay for spectrum use, covering management costs, spectrum efficiency, and policy achieving economic and social development goals.

The price to be charged for spectrum will be proportional to the derivable benefits and level of usage based on the following parameters :
a. Size of spectrum assigned
b. Coverage area of license such as national, state or regional coverage
c. Proportion of time for which usage is desired e.g Number of Hours, days or months per year (duration)
d. Number of users sharing the frequency
e. Administrative overhead cost associated with monitoring and frequency management
f. Level of competition and demand-supply equilibrium
g. Incentive or disincentive factor

Therefore ,the objective of this research thesis is to design a formula for the strategic review of spectrum pricing and the comprehensive analysis it includes.

Kata Kunci : radio spectrum, Spectrum pricing

Abstract

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Keywords : radio spectrum, Spectrum pricing

CHAPTER ONE : INTRODUCTION

1.1. BACKGROUND :

The research focus on the new approach to management of the radio spectrum, which is intended to promote innovation and competition in the provision of wireless services across the Country. It committed to continue the implementation of a more dynamic and market oriented approach, through the inter-related projects of spectrum pricing, spectrum trading and liberalisation.

My decisions in respect of the interest I have for suggesting fees for licences granted under the Wireless Telegraphy Act 2003, ("wireless telegraphy licences") by exercising its powers under sections 1 and 2(2) of the Wireless Telegraphy Act 1998 (the "1998 Act"). It follows an earlier consultation on Spectrum Pricing. In that consultation, I proposed to continue the use of AIP where appropriate in setting annual fees for wireless telegraphy licences as well as for amending the methodology for determining AIP. In particular, proposed to update the level of fees for certain licence classes (including those where AIP is not appropriate and for also new types of radio use). In addition, the consultation held a broader discussion on longer term applications of pricing to some licence classes (primarily for broadcasting and business radio).

As explained in paragraph above, NCC has powers under section 1 of the 2003 Act to prescribe by regulations

fees payable for wireless telegraphy licences on their issue, or subsequently at such times during the term of the licences as may be prescribed therein. Those powers also enable NCC to prescribe in regulations that licensees shall pay to NCC such fees (whether on the issue of the licence or subsequently) as NCC may in the particular case determine.

Current regulations therefore contain provisions both as to specific fees for certain wireless telegraphy licence classes and as to other licence charges that may be decided in the particular case.

1.2. PROBLEM :

a. Economic approach to using Administered Incentive Price (AIP)

As mentioned above,NCC has the general duty to promote the efficient use of spectrum under the 2003 Act. AIP is an important mechanism for fulfilling this duty. This is because AIP signals to spectrum users the value of the spectrum resource that they are currently using or could potentially make use of. Ensuring that users pay AIP for their spectrum creates the proper incentive for users to only use spectrum that they value as highly as any other potential user. This implies that those users to whom spectrum is worth less than AIP will not have the incentive to use this spectrum. Hence, AIP can promote the efficient use of spectrum by

creating incentives that ultimately lead to the allocation of spectrum to those who value it the most.

b. Implementation issues

Two general implementation issues were identified in the Spectrum Pricing in relation to the introduction of spectrum trading. The first concerns payment dates, whereby licensees can adjust their payment dates in line with other licences, and whereby payments may be spread over the year for certain large licences (where the fee is over #100,000). The second concerns mechanisms for facilitating partitioning of tradable licences, and the calculation of fees for licences that have been partitioned in geography, frequency or time.

c. Imbalance of spectrum valuations

An imbalance between spectrum valuations for public wireless networks and other competing mobile radio services, such as PAMR and CBS. That business radio fees are set too high, affecting the ability of these services to compete with the public wireless network sector. According to these respondents, it would be unfair to raise the fees for competing mobile radio services whilst maintaining licence fees for cellular networks.

d. Removal of fee modifiers

There was strong support for the phased removal of the fee modifiers “choice and diversity” factor and the “step-in”

arrangements applying to Common Base Station and Public Access Mobile Radio licences. Such a removal is considered appropriate in a market which some correspondents now believe to be mature. It was also felt that the removal of these modifiers, when the grounds for them no longer exist, would support the proposed simplification of the PBR and PAMR sectors.

e. Sharing factor

Many termed the sharing factor as ‘unpredictable’. The factor lacks transparency as it depends on licence details of other operators at sharing sites – information most operators do not have access to. Equally, assgnment methods would need to be updated to enable operators to make an informed decision on whether they wish their new links to share spectrum or not.

1.3. OBJECTIVES :

The broad goals and objectives associated with spectrum pricing are:

- Covering the costs of spectrum management activity borne by the spectrum management authority or regulators;

- Ensuring the efficient use of the spectrum management resource by ensuring sufficient incentives are in place;
- Maximizing the economic benefits to the country obtained from use of the spectrum resource;
- Ensuring that users benefiting from the use of the spectrum resource pay for the cost of using spectrum;
- Providing revenue to the government or to the spectrum regulator.
- The unit price and rate applicable to the pricing formula as stated in the second schedule is subject to review by the Commission from time to time. All such charges regarding unit price and rate will affect only new requests for Frequency Spectrum and renewal of expired Licences, or reinstatement of revoked licences.

1.4. METHODOLOGY :

Obtain data from 2 (two) countries one develop and the other least develop having similar problem with Nigeria, with regard to frequency spectrum pricing. There after the analisys would be conducted which at the end of the day will give possible solution to Nigerian Situation.

1.5. THESIS STRUCTURE :

Chapter 1: Introduction

Chapter 2 : Theoretical Basis

Chapter 3 : System Design

CHAPTER V
CLOSING

5.1 Conclusion

From the research that has been done regarding the renewal formula Frequency FUP that prevail in Nigeria it can be taken several conclusions, among others:

1. Based on the nature and form of the general formula FUP could further analysis of the formula-forming parameters are obtained several parameters that contribute to the formula FUP as follows :
   a. Base Price Frequency (FBP), deals with the basic price is worth the same frequency for all kinds of frequencies.
   b. Bandwidth (B), associated with a greater use of frequencies by the operator. The greater the bandwidth, then FUP will be greater.
   c. Area coverage (P), describes the existing population within the service area. The more the population will experience an increase FUP.
   d. Frequency Index (1), shows the economic value of the frequency band. Frequency spectrum that a lot of interest will have a higher value.
   e. Index frequency range (R), related to the scarcity of low-frequency and high frequency availability more
   f. Adjustment (A) is an adjustment for a particular case, so the formula is more effective FUP.

2. From the identification of parameters is proposed models FUP calculation formula as follows:

   FUP = FBP x B x P x R x I x A.....(2.17)

   Where :

   FBP = Price Basis Frequency

   B = Band Width

   P = Population Coverage

   R = Range Frequency Index (R)

   I = Index Frequency

   A = Adjustment

   A = I for national coverage

   A = 0.05 for local coverage

3. From the calculation based FUP bandwidth proposal indicates that the greater the bandwidth, the value the greater the FUP.
4. In the calculation FUP local area, in addition to bandwidth, coverage parameters have a very important role.
5. Changes in the amount of gross revenue FUP affect operators. For those operators which increased the percentage of gross revenue FUP against FUP will increase, and vice versa.
6. Based on the calculation formula FUP with this proposal either in transition and the next phase, acceptance, the state of the sector FUP stay awake (an increase).

5.2 Suggestions

From research conducted in, the process of making this thesis, the authors noted several things, such as:

1. With the changes that must be paid the amount FUP operator because the use of the formula proposed for the implementation of this formula is divided into 2 phases, namely the transition period (phase 1) and after the end of the transition period (phase 11).
2. In this study the proposed transitional period of 5 years, within the rise and decline FUP done gradually until towards FUP the calculation. With the existence of this transition operators are given the opportunity to develop a wider network.
3. To calculate FUP after the end of the transitional period, should be added to the constant growth parameter values (K) in order to anticipate changes in the economy such as inflation.
4. This research can be developed by increasing the ratio calculation FUP and local radio broadcasting services, existing against FUP proposals in order to get the value of a more precise parameter adjustment.
5. This research can be developed by adding data gross revenue (gross revenue) the other

operator to know the percentage increase or decrease during the transition FUP.

6. The Commission should start penalising operators for poor service as soon as the guidelines and draft regulations that will guide the conduct of the operators are ratified by its Board.
7. Also, with the new regulation, operators who offer service below the accepted quality thresholds will be penalised and pay a fine of N5 million in the first instance and N500, 000 for every day that poor service quality subsists until it is rectified.
8. The power holing company of Nigeria (PHCN),should make adequate power supply in the country at large not only for telecoms servces.In fact, investigation has revealed that mobile telecoms companies generate power by themselves,which cost them about #3.62 bn monthly on diessel to fuel their 20,000 generators. The generators are installed in 15,000 cell sites across the nation.
9. Considering the present population of Nigeria about 150,000,000 million people's and landmass of 923,768 square kilometres depend on less than 20,000 Base Stations compare with the U.K. population of 62,000,000 million

people's and landmass of 243,610 square kilometres served with 77,000 Base Station is unjustifiable and at the same time surprising.

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