2.3 GHz SPECTRUM AUCTION – THE NIGERIAN EXPERIENCE

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Introduction

- The advent of Privatization and Liberalization
- Increased consumer demands driven
- Growth in wireless technologies
- Since 2000, mobile technology has moved from 2G to 3G and now transiting to 4G
- More service providers in the mobile industry space
- Increase in demand for Spectrum Resources

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Introduction *contd…*

- Efficient allocation of spectrum is **critical** to stimulate investment in infrastructure and innovations
- Beside Beauty Contest, Auctions is a better approach for government and regulators to allocate spectrum to operators.
- Especially where there is competition for scarce spectrum resources and demand is expected to exceed supply.
- However, auctions of spectrum could lead to collusion and Roll-out constraint if the license fees is too high.

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Critical Success Factors in Spectrum Auction

- Consultation with Operators and Stakeholders
- Auction Rules
- Spectrum Availability
- Regulatory Capacity to support the allocation process

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Types of Auctions

- **Types of Auctions:**

Often times, the Regulator will choose the auction format that most suits a particular spectrum allocation.

The following are a number of major types of spectrum auctions used:

- **Ascending Clock Auction(ACA)**
- **Simultaneous Multiple Round Ascending Auctions(SMRAA)**
- **Combinatorial Clock Auctions(CCA)**

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Ascending Clock Auction(ACA)

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Types of Auctions Contd…

- **CHARACTERISTICS OF ASCENDING CLOCK AUCTION(ACA)**
  - The price goes up each round with bidders indicating how many of each type of lot they would like until demand equals supply
  - The rising price may cause demand to fall leaving unsold lots
- **Advantages of Ascending Clock Auction(ACA)**
  - Simple & Supports Price discovery
  - Mitigates aggregation risk
- **Disadvantages of Ascending Clock Auction(ACA)**
  - Bid shading
- **Unsold lots**

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Simultaneous Multiple Round Ascending Auctions(SMRAA)

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Types of Auctions Contd…

- **Characteristics of Simultaneous Multiple Round Ascending Auctions(SMRAA)**
  - First price auction – the winner pays the highest offered price for each item.
  - Participants can bid on several items (multiple lots) in each round,
  - Each item is specifically defined and not generic e.g. slot A of 800 MHz band
  - The lots are sold individually with the price increasing with each round
  - Whoever has bid the most is the standing high bidder (SHB) and they will win the lot unless someone makes a higher bid in the next round.
  - Bidding rounds continue for the lots until the price war on the last item is concluded
  - Stops when no further bids are received.
  - Because the auction could close at any time, any bid is a legal commitment to buy the lot at the price offered
  - Ties broken with random selection or date stamp
  - Introduced eligibility rule to prevents "sniping"
  - Adopting Anonymous bidding would stop retaliatory bidding, demand reduction and other signalling associated with transparency

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Types of Auctions Contd…

- **Advantages of Simultaneous Multiple Round Ascending Auctions(SMRAA)**
  - Supports Price discovery
  - Simple format
- **Disadvantages of Simultaneous Multiple Round Ascending Auctions(SMRAA)**
  - Subject to Aggregation risk
  - Subject to the winner's curse being a first price auction
  - The risk of collusion since all participants know the specific spectrum

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Combinatorial Clock Auction (CCA)

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Types of Auctions Contd…

- **Characteristics of Combinatorial Clock Auction (CCA)**
  - The Assignment Stage- the auctioneer establishes what combination of bids will produce the highest revenue and so announces the winners
  - The clock stage produces price discovery by giving an indication of what others would be prepared to bid
  - The supplementary stage encourages expression of preference and also aims to prevent unsold lots.
  - If no supplementary bids needed, Final assignment = clock assignment
  - If unsold lots then need supplementary bids
  - Ties during optimization broken with random selection
  - Anonymous bidding should be adopted to stop retaliatory bidding, demand reduction and other signalling associated with transparency

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Types of Auctions Contd…

- **Advantages of Combinatorial Clock Auction (CCA)**
  - Supports Price discovery
  - Avoids aggregation risk
  - Suitable for auction of multiple bands
  - Adaptable and Discourages Collusive behaviours
- **Disadvantages of Combinatorial Clock Auction (CCA)**
  - Bidding is difficult because of complex pricing, activity rules and Combinations
  - Not so easy for the public and bidders to understand
  - Price determination of price and winner involves very advanced maths and optimisation algorithm
  - Could be unpredictable
  - Package bidding may favour big players with fund
  - For all auction types, once the auction has identified the winners and how many lots they have purchased in each category, the assignment stage determines which lots each winning bidder will obtain.

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Reserve Price

- The Reserve Price for an auction is generally fixed with the purpose of ensuring the Spectrum on offer is sold at the minimum price
- The Reserve Price helps to recover the costs of running the auction.
- It also serve as a barrier to deter trivial bidders.
- It will ensure that at least the minimum price is raised and the spectrum value is realized.

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2.3 GHz Spectrum Auction- Nigerian Experience on Spectrum Auction

- The Nigerian Communications Commission (NCC) recently concluded on the sale of the 2.3GHz spectrum through competitive auction on February 19, 2014.
  - Was held at the Transcorps Hilton Hotel, Maitama, Abuja.
  - To ensure transparency of the Auction, the auction was witnessed by:
    - Ministry of Communications Technology
    - Association Licensed Telecom Operators of Nigeria (ALTON),
    - Different interest groups
    - Journalists and representatives of the participants
    - A Multimedia Observatory Room was in place to monitor the auction process.

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2.3 GHz Spectrum Auction- Nigerian Experience on Spectrum Auction

1. The Auction Process

- **Stakeholders' Consultation**

  The NCC held a Stakeholders' Consultative Forum to announce its intention to auction the one slot of 30MHz in the 2.3GHz spectrum band

  To discuss the modalities for the auction, Timing, Licensing options, Tenures and Roll out obligations.

  ➢ ***Outcome:***

  - During the Forum, some stakeholders argued in favour of Regionalization of the licensing in order to boost chances of local companies' participation
  - Others wanted the NCC to grant the spectrum to existing players in order to drive efficient use of the scare resources and ensure national coverage

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2.3 GHz Spectrum Auction- Nigerian Experience on Spectrum Auction

2. Development of the Information Memorandum

The NCC incorporated the different views of the stakeholders

- Developed the **Information Memorandum** (IM) about the 2.3GHz Auction.
  - To ensure Serious Bidders participation and not SPECULATORS who may want to distort the auction.
  - The IM provides a caveat for the intending Bidders to conduct individual valuations and requirements for bidding at the auction.
  - The IM provides for rules on representations by companies, collusion, and communications during the auction.

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2.3 GHz Spectrum Auction- Nigerian Experience on Spectrum Auction

3. **Expression of Interest Stage**

- To identify the No. of Companies interested in the 2.3 GHz Spectrum
- This gives an idea of the level of demand for the 2.3GHz spectrum on sale.
- In order to guide the NCC for purpose of infrastructure planning and other requirements needed for the auction process.

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4. The Question and Answer Stage

After the publication of the Information Memorandum,

- Intending Participants at the auction comments or seek clarifications on the IM.
- The answers to questions on the IM are also published and forms an integral part of the Final Information Memorandum for the auction.

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5. The Prequalification Stage and Intention to Bid

At the Prequalification Stage,

- All intending Participants are expected to pay and show evidence of Bid Deposit
- The Bid Deposit was 10% of the Reserve Price
- As Evidence of Intention to Bid for the one lot of 30MHz in the 2.3GHz Spectrum Band

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6. The Auction Rules

- The Auction Rules were properly articulated in the Information Memorandum published for the Auction to guide the process.
- This was again further explained during the **Mock Auction** stage that preceded the Main Auction Stage.
- At the end of the bid rounds, **if the bidders tied,** they would start again until a preferred bid is received even if it entails **rolling a dice** for a winner to emerge.

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2.3 GHz SPECTRUM AUCTION - NIGERIAN EXPERIENCE ON SPECTRUM AUCTION Contd…

7. The Auction Format

The Ascending Clock Auction Format with Exit Bids was adopted

- The bidders were kept in separate rooms to avoid interference and without any communication gadgets such as phones, Ipads or personal computers to avoid collusion and undue influence.
- The journalists and guests monitored the auction process from another room. The reserve price for the 2.3 GHz spectrum was fixed at Twenty Three million US Dollars (USD$23, 000,000.00).

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2.3 GHz SPECTRUM AUCTION - NIGERIAN EXPERIENCE ON SPECTRUM AUCTION Contd…

7. The Auction Format (Cont'd)

Only one slot of 30 MHz was auctioned and the Auction was planned for four stages:

- ***Invitation Stage-*** Public Notice was issued highlighting the spectrum license that is being made available at Auction. Information memorandum also published.
- ***Pre-qualification Stage -*** Applicants must be independent, Registered with CAC, paid Intention-to-bid of 10% reserve price of $23 Million and fulfil all obligations to NCC to qualify for auction. 2 companies qualified.

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2.3 GHz SPECTRUM AUCTION - NIGERIAN EXPERIENCE ON SPECTRUM AUCTION Contd…

7. The Auction Format (Cont'd)

- ***Auction Stage*** **-** in 2 rounds & same day the winner emerged.
- ***Grant Stage*** **-** provisional offer was granted to the winner on payment of the outstanding bid amount and N155Million for Operating license called Wholesale Wireless Access Service (WWASL)

- Won by Bitflux Communications Limited
- Auctioned on Feb 19, 2014
- Winning Bid sum- $23,251,000
- Ten years tenure

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3.0: Lessons Learnt from 2.3GHz Spectrum Auction

After the 2.3GHz Spectrum Auction in February, 2014, the Commission the Auction and all the processes leading to, during and after the auction and noted the following comments:

- There was low participation in the auction with only two companies bidding at the auction.
- Low participation because some understood that other operators can equally provide the service that would be provided by the 2.3 GHz Wholesale license during the Open access model presentation by the Commission.
- Some GSM operators evaluated their business plan and felt the 2.3 GHz might not impact on their plan, as they are planning for progression from 2G to 3G and then 4G evolution which did not fit in with the 2.3 GHz band.

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3.0: Lessons Learnt from 2.3GHz Spectrum Auction

- There is a need for spectrum auction releases to be known to the public well ahead of time to enable planning by potential participants and businesses. At the time of this auction, information on an impending auction of the 2.6 GHz band should have been known to enhance business plan.
- ICT journalist were not adequately informed on the auction modalities and are requesting for a special briefing on modalities in the future.
- The band was designated for Wholesale License only.
- The auction ended at the first round as the two participating companies declined to bid at the new bid price of Reserve Price + Bid Increment opting for Exit Bids.
- This was according to the design of the auction and the auction rules. The Information Memo random of any auction details the auction process and the auction rules for that particular auction.

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Conclusion

- Auctions are typically designed to meet a number of societal, market and economic objectives and should not be focused on short term revenue maximization by the Regulator. The greatest value to governments is through the effective use of the spectrum to enable mobile and mobile broadband services.
- With a well-designed auction, resources are allocated efficiently to the parties that value them the most, the government securing revenue in the process.
- The auction process and the auction was adjudged to be free, fair, transparent and in line with the guiding principles of the Nigerian Communications Commission.

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