

Strategies for Handling Number Scarcity, Hoarding, and Demand: Ghana's Regulatory Interventions

Workshop on Experiences and Challenges in Charging for Telecommunication Numbers

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**NATIONAL
COMMUNICATIONS
AUTHORITY**



Presentation Overview



Introduction,
Ghana's Number
Scarcity Challenge
(2015),
Investigation,
DNAS
Implementation,
Outcomes



Part 2: Bi-Annual
Audits, Findings
from Audit Reports



Part 3: Creation of
a Separate 12-
Digit Numbering
Range for M2M



Part 4: New Billing
Regime,
Preventing
Hoarding, Lessons
Learned



Part 5: Alignment
with Workshop
Themes,
Conclusion, Q&A



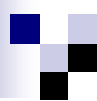
Introduction

Growing telecom sectors demand efficient numbering resource management.

Balancing fair pricing, equitable access, and efficient allocation is essential.

Ghana's strategies provide insights into preventing scarcity and hoarding.

- Mobile Voice Penetration: 125.10%
- Fixed Penetration: 1.04%
- Mobile Data Subscribers: 22,756,215 (Penetration: 71.51%)
- Fixed Data Subscribers: 103,767 (Penetration: 0.33%)
- BWA Subscribers: 35,796 (Penetration: 0.11%)



Ghana's Number Scarcity Challenge (2015)

- MTN held large allocations but still requested more numbers.
- Suspicion of inefficient utilization resulting in artificial scarcity.
- Challenge: Ensure full exhaustion of existing resources before granting new ones.

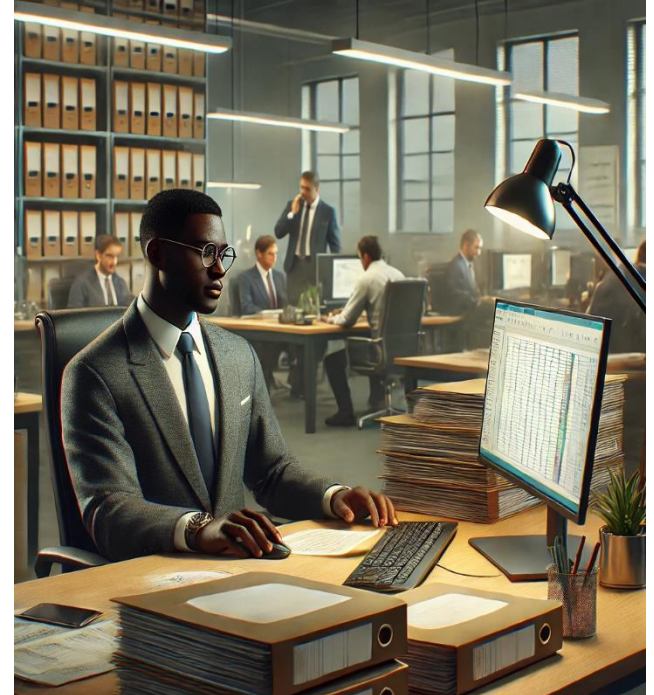
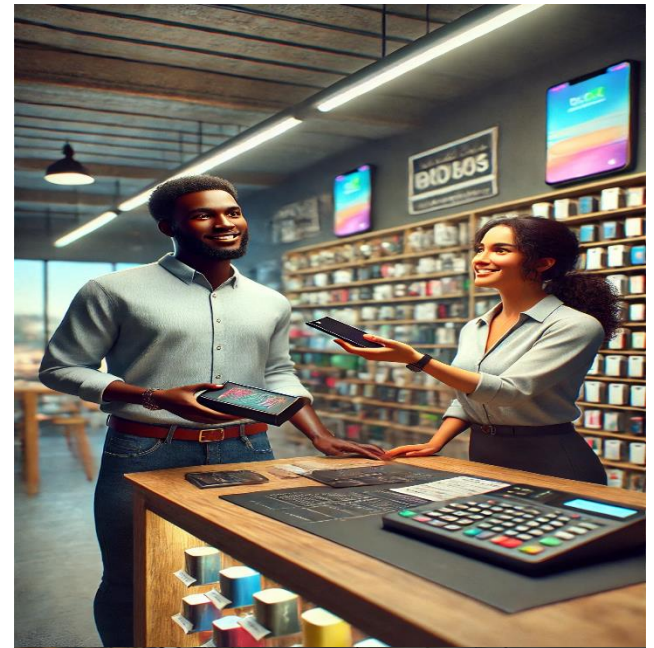
Investigation into MTN's Practices



NCA's market surveillance revealed static, pre-assigned SIM numbers.



Valuable numbers remained unsold, locked away from subscribers.



Regulatory Intervention: Implementation of DNAS

- Dynamic Number Assignment System: numbers assigned at purchase.
- Contiguous allocation eased management and recovery.
- Result: Improved availability, reduced hoarding, better oversight.



Outcomes and Impact

- 01** Reduced frequency of new range requests.
- 02** Operators used allocated resources effectively.
- 03** Hoarding of resources was minimized.

**Efficiency and
Resource
Optimization**

Bi-Annual Numbering Audits (2016 Onwards)



Challenge: Ensuring continuous compliance and transparency.



Regular audits track allocation, utilization, and discrepancies.



Methodology

Provides a standardized approach to evaluate and compare operators' numbering resource management.

- **Porting Data Analysis:**
- **Performance Metrics:**
 - **Utilization Rate**
 - **Inactive Subscriptions:**
 - **Scoring (1–10 Scale):**
- **Overall Performance Score**

The three scores (Utilization, Porting Balance, Inactive Subscribers)
are averaged to provide a single, comprehensive performance rating.

Key Findings from Audits

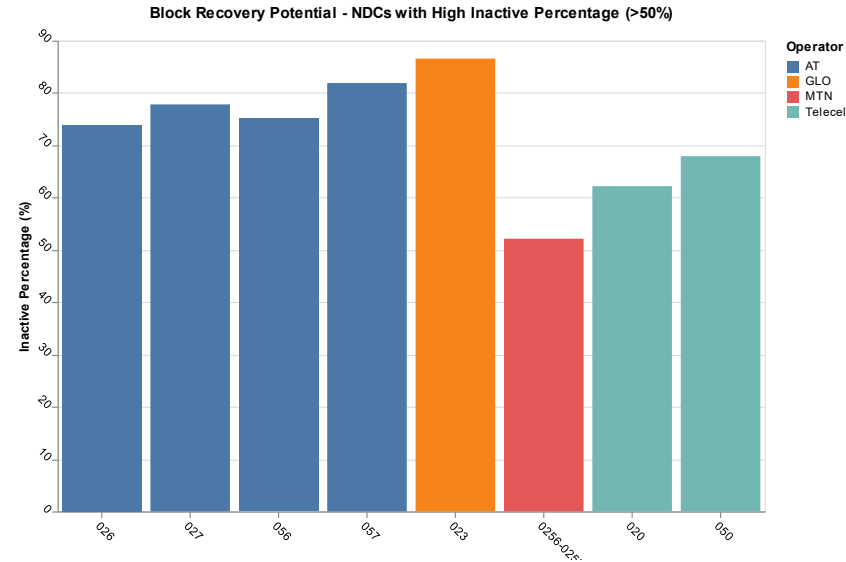
Discrepancies
between
subscriber counts
and assigned
numbers.

High number of
inactive numbers

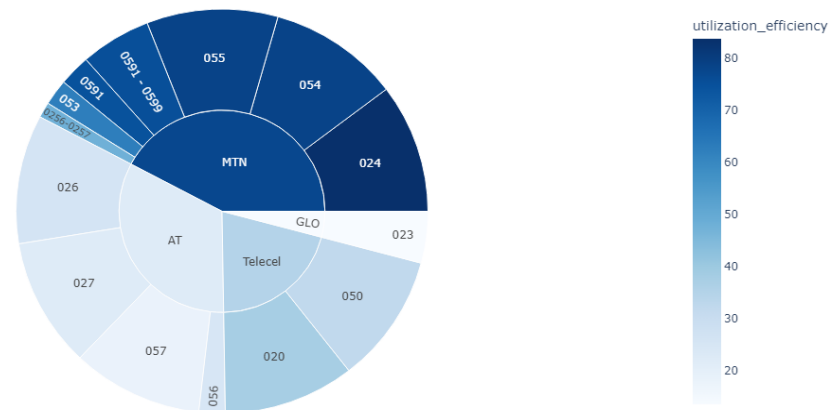
M2M devices
significantly
contributed to
usage.

Impact of Audit

- Insight into block occupancy
- General improvement utilization efficiency
- Insight into where improvements we needed.



Number Utilization Efficiency by Operator and NDC (Sunburst)



Addressing M2M Growth (Challenge & Solution)



Challenge: IoT/M2M demand threatened standard ranges.



Solution: Introduced a separate 12-digit numbering range for M2M.



Ensured long-term sustainability and protected 10-digit pools.

New Billing Regime (2020)

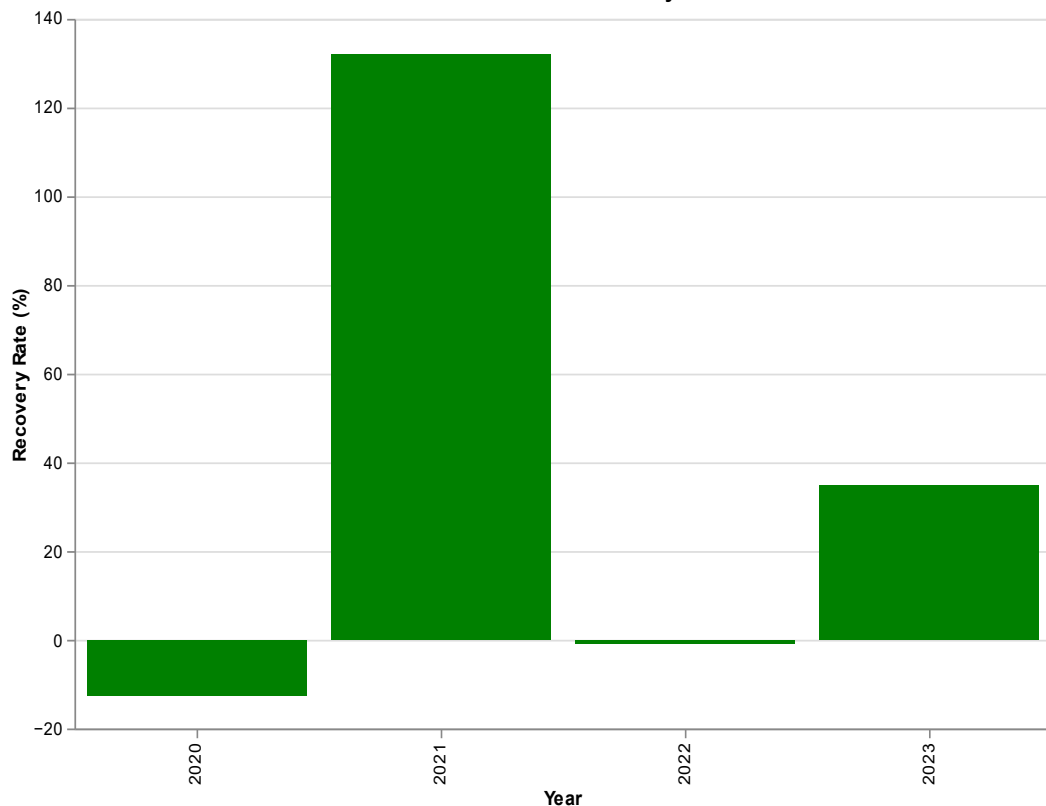
Challenge: Annual payment for unused numbers contributed to a struggling industry.

Solution: Differentiated billing for active vs. inactive numbers.

Aligned costs with usage,
discouraging
hoarding.

Preventing Number Hoarding

Inactive Numbers Recovery Rate



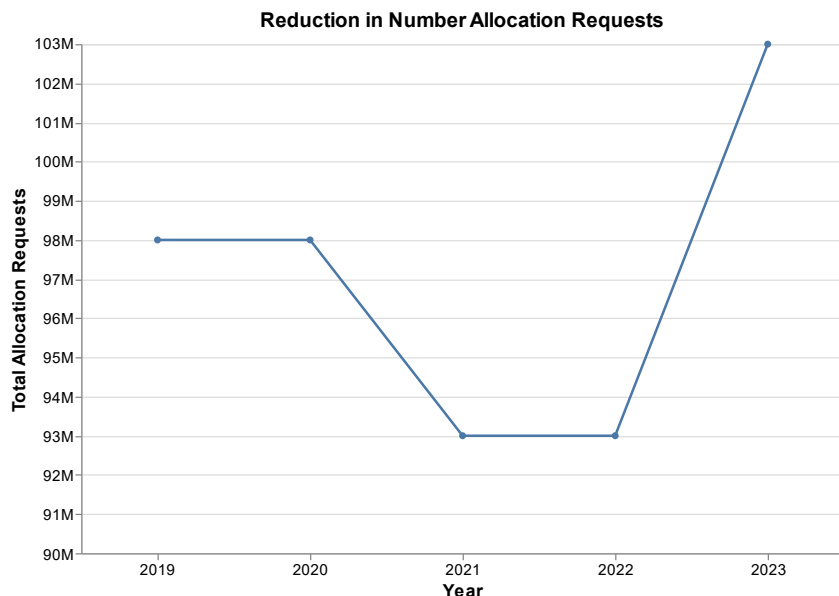
Risk: Mislabeling numbers as inactive.



Traffic Monitoring & Revenue Assurance Teams verify data accuracy.

Benefits of the New Billing Regime

Reduction in Number allocations



- Operators: Fair costs, no overpayment.
- NCA: Reduction in number allocations.
- Consumers: Effectively lower cost and better service availability.

Challenges & Solutions



DNAS Oversight: No recent follow-up to confirm current effectiveness

Manual Spreadsheet Audits: Operators modify forms, complicating data validation.



Frequent Monitoring: Implement regular checks to ensure DNAS compliance

Digital Platform for Audits: Web-based form validation and real-time reports to prevent tampering and streamline analysis.

Outcomes, Future Projections & Best Practices



Increased transparency guiding future numbering needs.



Prepared for IoT and M2M growth.



Lessons: Dynamic assignment, data integrity, stakeholder collaboration, fair billing.

Alignment with Workshop Themes



Data-driven
regulatory
frameworks.



Innovative solutions
to number scarcity.



Effective audits and
transparent billing.



Conclusion & Recommendations



NRAs: Regular audits, differentiated billing, robust monitoring systems.



Operators: Transparency, collaboration, proactive resource management.



Industry: Recognize numbering as a critical asset requiring sustainable stewardship.



Thank you for your attention!

Q&A SESSION