



ITU Workshop on “Telecommunication Service Quality”

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Session: Deep dive on quality assessment of Digital Financial Services (DFS) – Regulatory perspective for Sierra Leone

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Executive Summary and Background

Digital financial services (DFS) are financial products and services delivered and utilized through digital platforms like mobile phones and the internet. They encompass a wide range of offerings including mobile money, digital wallets, online banking, and digital payments, etc. DFS aims to enhance financial inclusion by providing convenient, accessible, and secure financial solutions, particularly for those previously excluded from traditional banking. While offering numerous benefits, DFS also introduces new challenges related to data security, cybersecurity, risk management and Service Quality.

Considering the growing importance and benefits of Digital Financial Services, and the transaction risks posed by poor Quality of Service (QoS) in mobile networks partnering with DFS providers, there is a pressing need to institute a robust Quality Assessment framework for DFS providers.

Recommendations ITU-T G.1033 highlights important aspects related to QoS & QoE that require consideration in the context of Digital Financial Services.

This presentation aims at demonstrating Sierra Leone's Regulatory perspective of Quality of Service Assessment for Digital Financial Services.

Cont. Executive Summary and Background

- ▶ This presentation also outlines NatCA's Regulatory Framework for Digital Financial Services (DFS), covering key elements such as the applicable regulatory instruments in Sierra Leone, the monitored Quality of Service (QoS) Key Performance Indicators (KPIs), and the methodologies used for their measurement. The regulated QoS KPIs for DFS are informed by the ITU-T Focus Group's recommendations, as detailed in its report on QoS and Quality of Experience (QoE) for Digital Financial Services.
- ▶ The Regulatory Framework, KPI and methodology described in this presentation fully aligns with recommendations in the ITU-T G.1030 & P1502 document which are the approved documents by ITU Study Group 12 - **Performance, Quality of Service and Quality of Experience.**

The Sierra Leone Regulatory Framework for Digital Financial Services

- ❖ Digital Financial Service companies in Sierra Leone are to be jointly regulated by the Communication Regulator (NatCA) and the Central Bank (Bank of Sierra Leone).
- ❖ NatCA continues to regulate the technical aspects of the telecommunications sector, including Telecommunications Key Performance Indicators (KPIs) as stipulated in Mobile Network Operators' licenses. This regulatory oversight is guided by the legal framework governing ICT providers, which comprises both Primary Law—specifically Sections 116 and 194 of the Communications Act of 2022—and relevant Secondary Legislation, such as the Draft Non-Bank Led Mobile Money Regulation of 2024.
- ❖ Bank of Sierra Leone (BSL): Regulates the financial activities of Mobile Money Operators based on the license given to them and the regulatory framework that covers Digital Financial Services (Section 53 of the Other Financial Services Act, 2001 and Section 2 of the National Payment Systems Act 2022).
- ❖ There is also a draft MOU between the Bank of Sierra Leone and the National Communications Authority, which was signed in 2024.

Reasons & Justification for a Joint Regulatory Framework for Digital Financial Services

Overall, DFS performance is the result of two subsystems: Mobile Network and DFS infrastructure.

Both Subsystems need to have good performance for all good results.

Poor performance in one system may be hard to detect if the other system does not perform well (risk of “evasive finger pointing”).

Overall, good quality can be achieved easier when respective regulators collaborate.

| | POOR DFS SPECIFIC INFRASTRUCTURE PERFORMANCE | GOOD DFS SPECIFIC INFRASTRUCTURE PERFORMANCE |
|------------------------------------|---|---|
| POOR MOBILE NETWORK PERFORMANCE | POOR DFS QOS | POOR DFS QOS |
| GOOD MOBILE NETWORK PERFORMANCE | POOR DFS QOS | GOOD DFS QOS |

Aligning NatCA's DFS QoS Regulatory Framework with ITU-T Study Group 12 DFS QoS Guidelines in ITU G.1033

| QoS Area | ITU-T G.1033 KPI | ITU Target | Proposed NatCA Target | NatCA Alignment Strategy |
|---------------------------|--|---|--|---|
| Service Availability | % of time DFS service is operational | ≥ 99.5% monthly uptime | ≥ 99.5% | Enforce real-time service monitoring and SLA compliance. |
| Accessibility Rate | % of successful logins or sessions | ≥ 98% success rate | ≥ 98% | Require reporting on session success per channel (USSD, app, etc.). |
| Transaction Success Rate | % of completed DFS transactions | ≥ 97% | ≥ 97% | Mandate minimum threshold for all transaction types; publish results quarterly. |
| Transaction Latency | Time to complete a transaction (sec) | ≤ 10 seconds (for 95% of transactions) | ≤ 10 seconds | Set latency benchmarks by channel (USSD, app, API). |
| Complaint Resolution Time | Avg. time to resolve complaints | ≤ 48 hours | ≤ 48 hours (standard); ≤ 24 hrs (priority) | Require DFS providers to report complaint metrics and establish escalation paths. |
| Customer Support Access | % of calls/chats responded within 30 sec | ≥ 90% | ≥ 90% | Monitor customer support responsiveness through secret shopper programs. |
| Service Continuity | # of unexpected outages/month | ≤ 2 incidents/month | ≤ 2 | Implement incident reporting and root-cause analysis requirements. |
| Dispute Resolution Rate | % of resolved user disputes | ≥ 95% resolved within regulatory time frame | ≥ 95% within 15 working days | Enforce customer protection guidelines and timelines. |

DFS KPIs from ITU Focus Groups - DFS Reports

| KPI | Target |
|------------------------------|-------------------|
| Completion Rate | $\geq 98\%$ |
| Completion Time | ≤ 10 seconds |
| False Positive/Negative Rate | $\leq 1\%$ |
| Account Reconciliation Time | ≤ 60 seconds |
| Duplication Rate | $\leq 0.1\%$ |

ITU QoS Categories for DFS

| QoS Dimension | Indicators |
|-----------------|--|
| Accessibility | Service accessibility rate, availability, call setup success |
| Retainability | Drop rate, session retention |
| Integrity | Throughput, latency, jitter, packet loss |
| Mobility | Handover success, location update success |
| User Experience | Mean Opinion Score (MOS), satisfaction index, complaint rate |

DFS QoS Framework – Sierra Leone 2025

| Parameter | Target |
|---------------------------------|-------------------|
| Service Accessibility Rate | $\geq 99\%$ |
| Money Transfer Success Rate | 100% |
| Transfer Success Time | ≤ 10 seconds |
| Failed Transfer Resolution Time | ≤ 24 hours |

Proposed Enforcement & Sanctions for DFS QoS Failures

- Fines vary by zone:
Urban – 100%, Suburban – 85%, Rural – 70%
- Daily cumulative fines at 10% for persistent failure
- Corrective plan required within 24 hours of notification

NatCA Measurement & Audit Approach

- ▶ Test transactions will be done using feature phones and smart phones(Real-time and sampling audits))
 1. With transaction done btw feature phones
 2. Transaction done btw smartphones
 3. transaction done btw feature phones and smart phones
 4. lastly when inter-operator transaction will be activated test transaction will be between networks using feature phones and smart phones.
- ▶ Repeated test transaction will be done in different locations.
- ▶ Mixed strategy: Drive tests, system logs, and QoE surveys
- ▶ Regulator validation & third-party audits
- ▶ Proxy metrics: signal strength, latency, RAT mapping
- ▶ Measurements will be done using different scenarios;

Consumer Protection Provisions

- ▶ Transparent SLAs and entitlement disclosures
- ▶ Complaint resolution within specified timeframes
- ▶ No-cost opt-out from unsolicited communications

Summary & Conclusion

- ▶ NatCA as an ITU member state in Region 1 continues to Regulate the ICT sector considering all players.
- ▶ Performance, Quality of Service (QoS), and Quality of Experience (QoE) have consistently been top priorities within NatCA's regulatory mandate.
- ▶ The Authority continues to follow the trend and recommendations for ICT services referencing Best Practice in the Region and benchmarking with similar markets.
- ▶ The National Communications Authority (NatCA) and the Bank of Sierra Leone (BSL) continue to support the growth of DFS in Sierra Leone.
- ▶ In light of the potential risks associated with poor Quality of Service (QoS) in Digital Financial Services (DFS), NatCA continues to monitor Mobile Network Operators (MNOs) and their affiliated Mobile Money Operators (MMOs) to ensure reliable network platforms for secure and efficient transactions.
- ▶ Research and studies have confirmed that good quality can be achieved easier when respective regulators collaborate and regulate both aspects of DFS operations.



The End



Any Comments and Questions!!

The Presenter can be reached using the details below for the slides and any other documents referenced in this presentation.

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