



QoS and QoE for Digital Financial Services



**Autorité de Régulation des
Télécommunications et des Postes**

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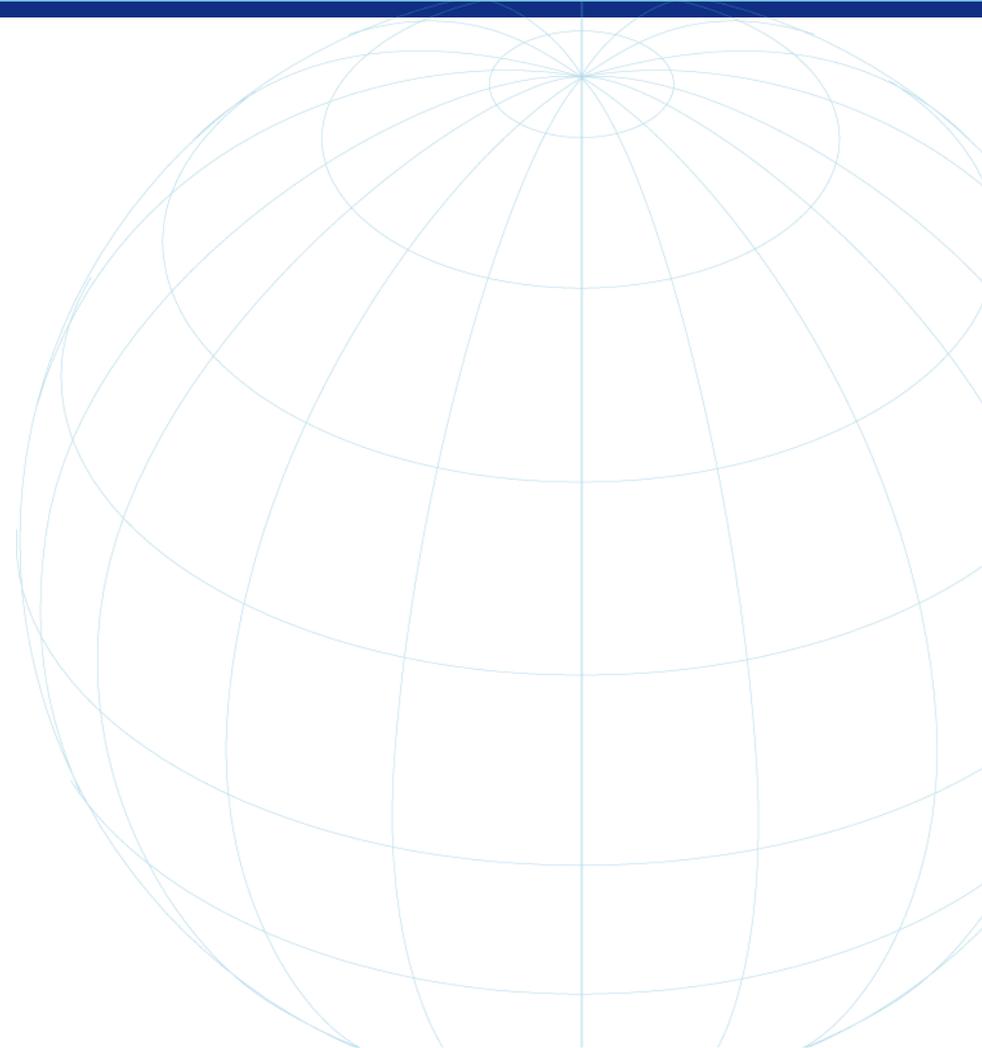
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SENEGAL**

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Ensemble, comblons le gap numérique



- *The State of DFS in Senegal*
- *QoS and QoE issues of DFS*
- *Perspectives*





The State of DFS in Senegal (1/4)

- Hosting the headquarter of the BCEAO (Central Bank of the States of western Africa) and having strong telecommunication infrastructures, Senegal has big variety within its ecosystem of DFS.
- The country was the entry point of numerous digital financial service providers in the region.
- This sector is still having difficulty in taking off in terms of regulatory aspects.



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The State of DFS in Senegal (2/4)





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The State of DFS in Senegal (3/4)

STATE OF FINICIAL SERVICES VIA MOBILE PHONE IN WAEMU ZONE

	December2015	December 2016	Variation
Number of Financial services via mobile phone	32	33	3%
Volume of transactions (In million)	259	347	34%
Amounts of transactions (In billion, FCFA)	3760	5121	36%
Transactions average per day (In billion, FCFA)	10,3	18,96	84%
Number of accomplished transaction per day	710242	1260575	77%
Service point number in the area	93621	132658	42%
Subscribers number (in millions)	18,2	21,9	20%
Rate of subscribers without activities	40%	69%	73%

Source: BCEAO



The State of DFS in Senegal (4/4)

- According to the central bank, 34,5% are using the bank services and if we include people using mobile money we will reach 61,7%;
- Second generation products like savings, insurances, credits are not often used in this channel;
- There is almost no dedicated approaches or tools to monitor the DFS in the most of WAEMU countries;
- Customers are facing numerous and various issues;
- Orange is leader in this segment and is having 38% of the market shares.



QoS and QoE issues (1/3)

Many issues are harming the DFS growth:

- Network reliability

1. *Software Failure;*
2. *Hardware Failure;*
3. *Network Connectivity Failure;*
4. *Transaction Delays;*
5. *Loss of Data*

- Network security and consumer protection

1. *Cyber attacks;*
2. *Data privacy*





- Consumer education

- 1. Increase Literacy rate;*
- 2. Improve agent education;*
- 3. Work on KYC*

- Interoperability

- 1. Lack of network interoperability prevents customer from transaction with the desired party;*
- 2. Interoperability increases churn*

- SMB payments acceptance

- 1. Provider loses customer funds due to failure of trustee bank;*
- 2. Asset – liability matching;*
- 3. Credit risk of agents and merchants*

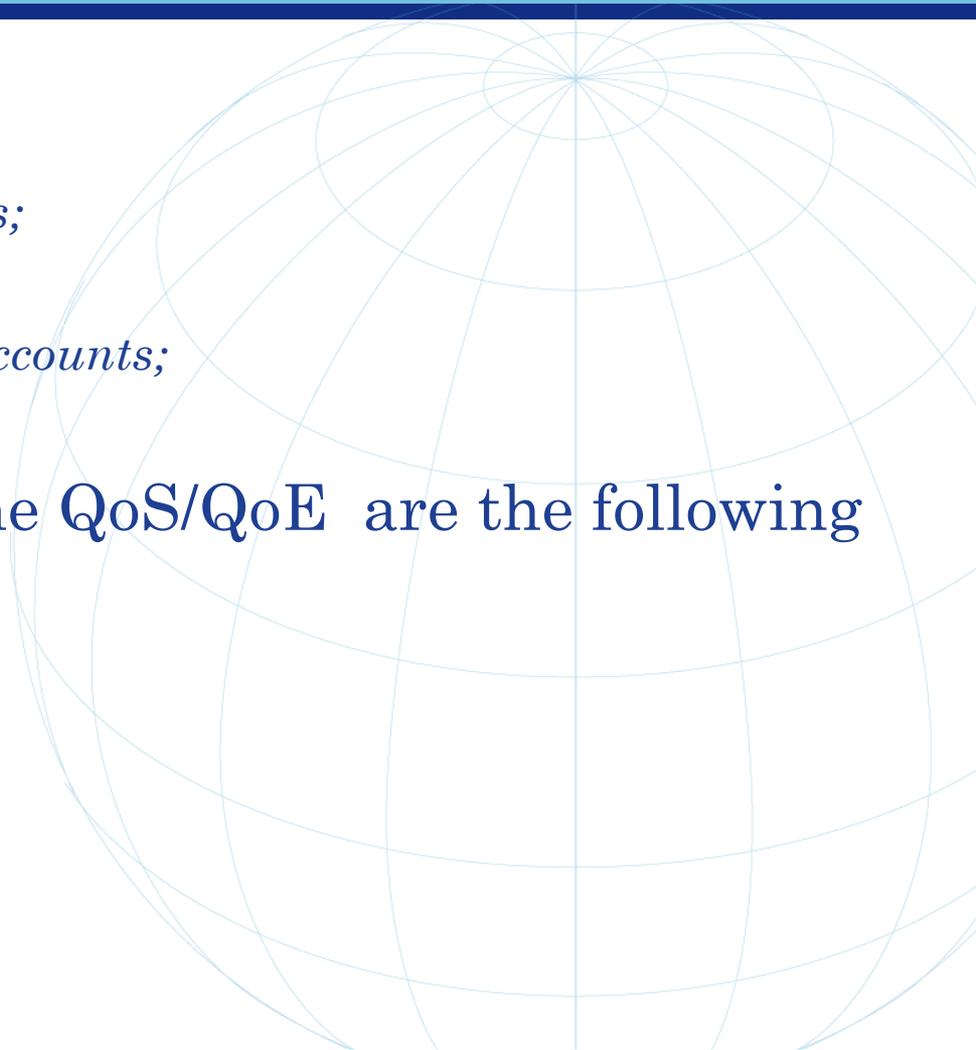


- Account Functionality

1. *Trust accounts;*
2. *Minimum capital requirements;*
3. *Lack of agent liquidity;*
4. *Illegal transfers from mobile accounts;*
5. *Lack of agent availability*

- The key points of improving the QoS/QoE are the following

1. *Network availability;*
2. *Network accessibility;*
3. *Service accessibility;*
4. *Service integrity;*
5. *Service retainability*
6. *Service delivery on time*





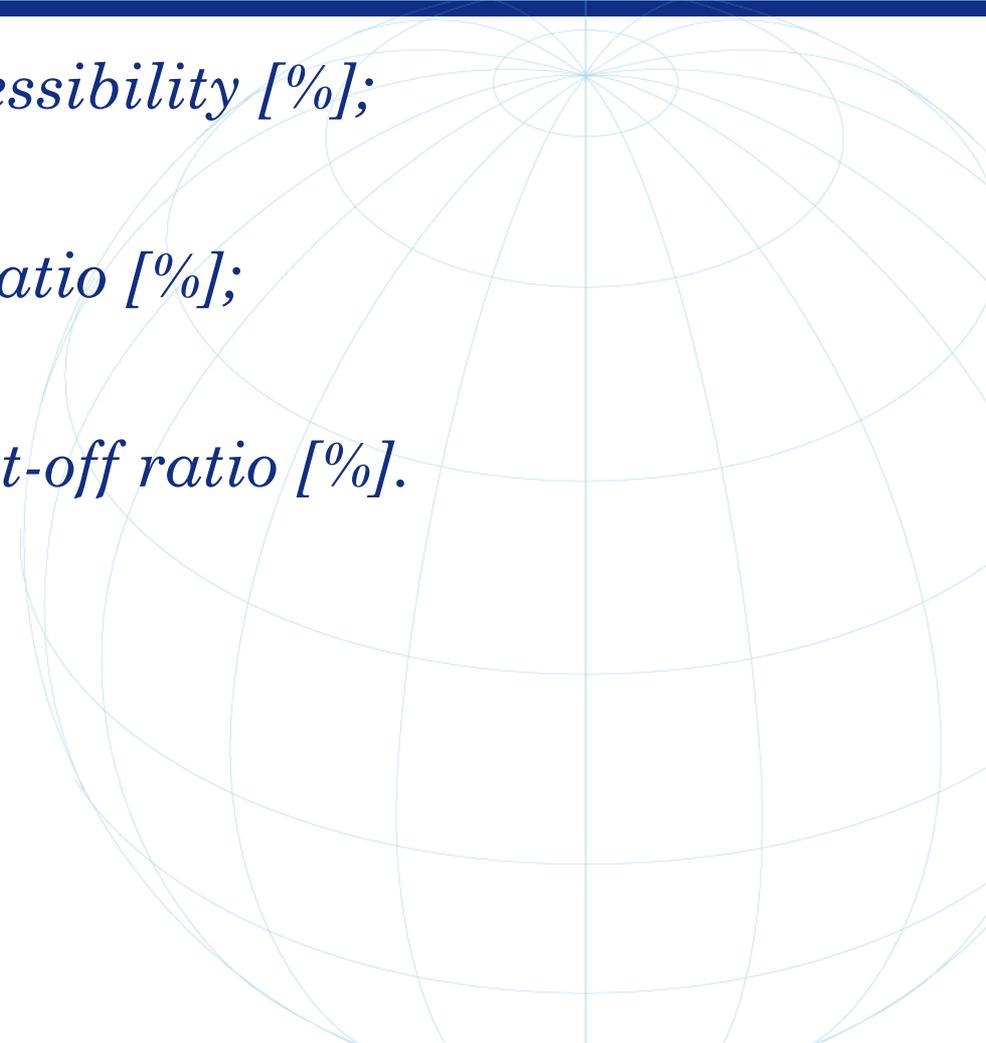
KPIs for SMS (DFS_FG)

- *SMS service non-accessibility [%];*
- *SMS completion failure ratio [%];*
- *SMS end-to-end delivery time [s];*
- *SMS receive confirmation failure ratio [%].*



KPIs for HTTPS(DFS_FG)

- *HTTPS Service non accessibility [%];*
- *HTTPS set-up time [s];*
- *HTTPS session failure ratio [%];*
- *HTTPS session time [s];*
- *HTTPS data transfer cut-off ratio [%].*





Derived KPIs (DFS_FG)

- *Money Transfer completion rate;*
- *Money Transfer completion time;*
- *Money Transfer False Positive Rate;*
- *Money Transfer False Negative Rate;*
- *Money Transfer Failed Transaction Resolution Rate;*
- *Money Transfer Account Stabilization Success Rate;*
- *Money Transfer Account Stabilization Time.*



The DFS has a bright future if these actions will be taken:

- set a clear national vision and strategy;
- set a strong legal framework;
- define clear roles for each Regulation authority (Bank, Telecommunications);
- set up fair governance in term of security;
- set up a strong business and economic aspects.

Thanks you



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