



Central Bank of Liberia

Real Time Gross Settlement (RTGS)

&

Automated Clearing House (ACH)

Key Elements and Policy on Cost of Sustaining

and Maintaining the System

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1. Foreword

This document sets out various issues and possible policies for the pricing of the various services performed by the Payments System being implemented in Liberia. These include RTGS, SSSS, and ACH.

Before looking at the details and analysis, two fundamental points need to be made and borne in mind. They are:

- (i) The pricing will be set on policy grounds. Put simply this means what the CBL thinks is appropriate for the market in terms of current development and what the CBL wants to achieve in terms of usage of the RTGS, ACP-ACH in Liberia.
- (ii) The basic principle adopted around the world is that the Central Bank should seek to recover its costs of operating the systems, this will ensure sustainability and avoid subsidy. Although the project received substantial funding from donor (i.e. AfDB), the CBL would need to replace these equipment and hence measures must be put in place to pay for replacement, upgrades and repairs and etc. Whatever the decision made on the initial pricing, it is recommended that the CBL should not give up its intention to follow this principle in the future and to avoid a permanent subsidy.

In combination, these two points mean that there are two issues:

- (i) what to charge to each participants
- (ii) How to explain the basis of the charge. This covers both the direct cost (amount paid by the bank in acquiring the equipment include licences and maintenance) and the extent of the costs which will not be recovered. The latter is, of course a subsidy which can be justified as a 'public good'.

2. Introduction

The principles behind RTGS and ACP-ACH pricing are set out on the basis of the following:



1. The introduction of Real-Time Gross Settlement and Automated Check Processing and Clearing House systems incurs significant capital and current costs for both central and commercial banks.
2. There is no standard agreed model for the way in which National Payment Communities should deal with these costs, as RTGS & ACP-ACH are to some extent public goods but also private benefits.
3. Given the considerable benefit that commercial banks derive from the systems, they should be expected to pay for the advantages that they bring them.
4. The most commonly adopted approach is that the initial costs of the systems are borne by the parties that incur them: the Central Bank pays for the cost of acquiring the systems and modifying its own internal systems and the commercial banks cover their own costs in adapting to RTGS and ACP-ACH
5. In operating the systems, the Central Bank aims to operate to service on a not-for-profit basis but with full cost recovery.
6. In calculating these costs, central banks seek to include full direct costs (i.e. purchase cost and running cost)
7. The precise method through which these costs are recovered can vary but a membership fee and maintenance fee are the appropriate approach to adopt
8. Routine system upgrades are normally recovered over time through the tariff or the membership charge
9. Further development of the system will incur additional costs. The way in which these costs are recovered, and the period over which they are recovered, will vary depending on the nature of the developments.



3. General Principles

There is a substantial consensus among central banks over the way in which costs should be recovered once an RTGS and ACP-ACH systems have begun live operations.

Existing best practice can be summarised by the following principles. The Central Bank will:

- provide the RTGS and ACP-ACH services on a not-for-profit basis
- seek to recover the full cost of providing the services
- aim to do so over the existing period of the systems agreed with the banks

4. RTGS, ACP-ACH cost elements at the CBL

Provision by a Central Bank of each RTGS, ACP-ACH services will typically require two service elements. These are:

- A highly secure and resilient RTGS, ACP-ACH services, based on a secure technical infrastructure which is backed by robust business continuity arrangements. These arrangements reflect the importance of fully resilient high-value or time-critical payment service for the national financial sector.
- Support costs for the necessary technical infrastructure by operational and management teams specialising in business and process analysis, system operation, liquidity provision and IT development and support.

In addition, a Central Bank has central overhead costs which must be borne or recovered in some manner. In common with other functions and departments of a Central Bank, an RTGS, ACP-ACH services rely on a number of centrally provided services, such as financial accounting, internal and external audit, recruitment, project and risk management resources and centrally provided IT infrastructure.

These are the costs that arise from those functions and duties which reflect the role of the Central Bank as a public institution. Here in the **CBL**, those costs



should be excluded for simplicity in order to avoid exaggerating the cost of RTGS, ACP-ACH to the participants.

5. RTGS, ACP-ACH costs in practice

Typically, a Central Bank will seek to recover the following elements of its costs:

- Direct expenditure on RTGS, ACP-ACH operations
- Capital cost agreed to be recoverable

The Central Bank should be in a position to define and measure these costs accurately and thus be able to demonstrate to the RTGS, ACP-ACH participant banks that the tariff charged is based on genuine costs. This does not, of course, prejudice the proportion of the costs that the Central Bank decides to recover as a matter of policy, but it does provide the necessary transparency for the tariff.

5.1 Direct expenditure on RTGS, ACP-ACH operations

This essentially covers the costs maintaining the system itself and any fees or charges paid to third parties for the use of their products or services which are not otherwise recovered directly from the users. This will include:

- IT and communication systems support charges,
- Any other payments to suppliers for current services.
- Payments for license

5.2 Capital cost agreed to be recoverable

The capital charges referred to here are typically the purchase cost of the equipment including major upgrades to equipment.



6. Summary of the RTGS, ACH and MAN Cost in CBL

Cost Items	Total cost per year in USD
Capital costs	
RTGS DEPO/X (33.33% of \$469,385.01) computer equipment)	156,446.02
ACH (33.33% of 246,880.00) computer equipment	82,285.10
Metropolitan Area Network (33.33% of 284,680.00) equipment	94,883.84
Total Capital Expenditure	333,614.96
Running cost1: Annual support cost	
RTGS & DEPO/X	63,320.00
ACH	44371.00
MAN	<u>6,500.00</u>
Total running cost	114,191.00
Running cost2: Annual Licenses	
RTGS & DEPO/X	88,000.00
ACH	-0-
MAN	-0-
Total Licenses costs	88,000.00
Total direct expenditure	<u>\$535,805.96</u>
Future net annual cost per bank	<u>\$53,580.60</u>



6.1. Analysis of Annual Cost to be borne by each participant

	Annual Support Service Costs		2017
a	• RTGS and DEPO/X		\$63,320.00
b	• ACH		44,371.00
c	• MAN		6,500.00
	Costs of Annual Licenses		
a	• RTGS and DEPO/X		88,000.00
b	• ACH		-0-
c	• MAN		-0-
	Total Annual Support Services & License Cost		<u>\$202,191.00</u>
	Equipment Costs (servers, routers, switches, etc)		
a	• RTGS and DEPO/X	\$469,385.01	
b	• ACH	246,880.00	
c	• Metropolitan Area Network (MAN)	<u>284,680.00</u>	
	Total Cost	<u>\$1,000,945.00</u>	
	Annual Membership per bank = Total Replacement cost/# of participants/three years = $(\$1,000,945.00/10)/3 = 33,364.83$ **		\$33,346.83
	Annual Maintenance cost per bank = (Annual Support Service fees + Annual Recurring Licenses)/ Number of Participants. Eg. $(\$63,320.00 + \$88,000.00)/10 = \$15,132.00$ per participant ***		<u>15,132.00</u>
^	Net Annual Cost per bank		<u>\$48,478.83</u>

** The annual payment of \$33,346.83 for replacement cost for Systems' equipment will be paid after every three (3) years.

*** The annual support service fees and annual recurring licenses of \$15,132.00 is to be paid annually per participant until commencement of paying BFI annual maintenance cost

7. Change in the membership structure

If new participant joined the RTGS, ACP-ACH services or participants split or participant withdrawal or participant's merger happened during current financial year, no charges will occur during the year with respect to membership fee or annual maintenance fee, but the charges structure should be revisited next financial year in light of actual cost of previous year. Taken into consideration that the tariff will be revised regularly in the light of actual cost regardless of participant status



8. Conclusion

As noted at the beginning of this paper, this is an area where very little information is published by central banks, beyond a general statement by many central banks that the bank is committed to full cost recovery in respect of RTGS, ACP-ACH operations.

Nor would comparative information generally be of much help in determining the cost structures that the **CBL** wishes as a matter of policy to associate with its RTGS & ACH operations. The methodology by which a central bank should measure its costs is subject to broad accounting standards, but the manner in which it chooses to allocate those costs to one activity or another is a matter of a policy decision.

What is required is a clear system for assessing and allocating costs within the central bank, based on an organisational structure that reflects the way in which RTGS & ACH will be operated and managed and developed in the **CBL**. Only then can a sensible view on costs be taken and on the ways in which the Bank will seek to recover them from the user community.



CHARGES AND FEES

Basis of charging

1. By charging for the use of the system, the Central Bank of Liberia aims to recover the operational cost of the system and NOT for profit making.
2. Charging will be on a per transaction basis.
3. Not all transactions will necessarily be charged initially.
4. Checks will be charged to the banks on which they are drawn.
5. RTGS charges will be levied only on the sender of the message
6. Charges will be invoiced monthly to participants and automatically debited against participants' current account held at the CBL upon due date.
7. The initial e-token delivered upon commissioning the systems were issued free of charge. However, e-token issued after two years of go-live will be charged to participants.
8. Charges will also be levied for violation for the system rules.

Proposed fees and charges

1. Transaction fees: (ACP/ACH)

Check	US0.10 per transaction
Direct debit	US0.05
Direct credit	US0.05 ¹
Cancellation	US2.5 per transaction
Regulatory rejection	US2.5 per transaction
2. **Transaction fees: (RTGS)**

Multiparty (102)	US1.25
Single beneficiary (103)	US1.25
Participant to participant (202)	US1.25
Intra-day liquidity (ILF)	US2.50



3. Charges:

E-TOKEN (after 2 years of go-live, renewal)	US50.00
Desk service (per day)	US50.00
Failure to implement STP	US1, 000.00
Violation of D+1 settlement	US500.00
Failure to generate ADT key on time	US500.00

Note: Participants will be notified if and when they violate any of the above and will be dully advised upon debiting their accounts. This will be backed by statistics from the system to substantiate any claim

ⁱ The number of DCs & DDs is difficult to forecast at present as it will depend on the speed with which banks switch to using DCs for payroll and other current bulk payment types. We expect other DCs to start at a small volume and ramp up.

Approved: _____
EXECUTIVE GOVERNOR