World Bank Fast Payments Toolkit

Case Study: Kenya

PesaLink | 2017

Payment Instruments

- Credit Transfer

Use Cases/Services

- Bulk Payment
- Bill Payment (government payments)
How to read this report

- This **deep dive report** relates to **PesaLink in Kenya**
- It has been developed based on **primary interviews** with key stakeholders such as **owner, operator** and **participants** in the system as well as by leveraging **secondary sources**
- Key secondary sources include Central Bank of Kenya and IPSL website
- The table below presents a legend to assist readers as they navigate through different sections of the report

### Legend

- The first slide of every section includes a chapter summary to provide readers with an overview of the section contents
- The green box with the adjacent icon indicates **section/sub-section summary across** the report. Reader may choose to read through this for a **high level overview on the selected topic**
## Glossary of terms

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GDP</td>
<td>Gross Domestic Product at current price</td>
</tr>
<tr>
<td>2</td>
<td>Income Category</td>
<td>Classification as per World Bank based on Gross National Income (GNI) per capita</td>
</tr>
<tr>
<td>3</td>
<td>CPMI</td>
<td>Committee on Payments and Market Infrastructure</td>
</tr>
<tr>
<td>4</td>
<td>FPS</td>
<td>As per CPMI, fast payment System is defined as payments in which the transmission of the payment message and the availability of final funds to the payee occur in real time or near-real time and on as near to a 24-hour and 7-day (24/7) basis as possible</td>
</tr>
<tr>
<td>5</td>
<td>Oversight</td>
<td>Regulating or governing body supervising the payments system</td>
</tr>
<tr>
<td>6</td>
<td>Operator</td>
<td>Institutions responsible for the operation of the payment system</td>
</tr>
<tr>
<td>7</td>
<td>Alias</td>
<td>Alternative to bank account numbers for increased convenience of the customer. For e.g., mobile number, national identification number</td>
</tr>
<tr>
<td>8</td>
<td>Access Channels</td>
<td>Modes used by customer to initiate transaction on FPS. For e.g., branch, internet, mobile</td>
</tr>
<tr>
<td>9</td>
<td>Individual Payment Type</td>
<td>Person to person (P2P) – Payment between individuals for non-business purposes</td>
</tr>
</tbody>
</table>
| 10     | Business Payment Type | Person to Business (P2B) – Payment from an individual to a business entity  
Business to Person (B2P) – Payment from a business entity to an individual  
Business to Business (B2B) – Payment between two business entities |
| 11     | Government Payment Type | Person/Business to Government (P/B2G) – Payment from person/Business to a government institution  
Government to Person/Business (G2P/B) – Payment from government institution to a person or business entity |
| 12     | Credit transfers | Credit transfers are payment instruments based on payment orders or possibly sequences of payment orders made for the purpose of placing funds at the disposal of the payee |
| 13     | Direct Debits    | Direct debits are payment instruments in which the transaction is pre-authorized, and funds are blocked in account for a debit to be initiated at a future date. In direct debits, payer’s account is debited on execution of mandate by merchant or payee |
| 14     | E-Money          | E-money is a prepaid value stored electronically, which represents a liability of the e-money issuer (a bank, an e-money institution or any other entity authorized or allowed to issue e-money in the local jurisdiction) and which is denominated in a currency backed by an authority |
Select parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP</td>
<td>USD 95.5 billion</td>
</tr>
<tr>
<td>Income Category</td>
<td>Lower middle</td>
</tr>
<tr>
<td>Population</td>
<td>52.6 million</td>
</tr>
<tr>
<td>Access to mobile phone*</td>
<td>86.06%</td>
</tr>
<tr>
<td>Access to internet*</td>
<td>48.95%</td>
</tr>
<tr>
<td>Bank account*</td>
<td>81.56%</td>
</tr>
<tr>
<td>Branches per 100,000 adult</td>
<td>Information not available</td>
</tr>
<tr>
<td>Made or received digital payment in last 1 year*</td>
<td>78.96%</td>
</tr>
<tr>
<td>Received government wages or transfer in account*</td>
<td>29.90%</td>
</tr>
</tbody>
</table>

Currency Exchange Rate USD 1 = Ksh 101.99 <2018 Average, World Bank>
Other parameters – World Bank 2017
* For age >15 years
<table>
<thead>
<tr>
<th>S.No.</th>
<th>Term</th>
<th>Expanded form</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FSD</td>
<td>Financial Sector Deepening</td>
</tr>
<tr>
<td>2</td>
<td>IPSL</td>
<td>Integrated Payment Services Limited</td>
</tr>
<tr>
<td>3</td>
<td>KBA</td>
<td>Kenya Bankers Association</td>
</tr>
<tr>
<td>4</td>
<td>Ksh</td>
<td>Kenya Shilling</td>
</tr>
<tr>
<td>5</td>
<td>NPS</td>
<td>National Payments System</td>
</tr>
<tr>
<td>6</td>
<td>PSA</td>
<td>Payment System Aggregator</td>
</tr>
</tbody>
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<td>Risk Management</td>
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<td>6</td>
<td>Annexure</td>
<td></td>
</tr>
<tr>
<td>6.1</td>
<td>Key Features</td>
<td></td>
</tr>
</tbody>
</table>
A. Executive Summary
Faster Payment System | Kenya PesaLink

- PesaLink was launched in 2017 to provide real time P2P payments solution to customers in Kenya.
- It was launched to reduce the payment cycle from 2 days (Electronic Fund Transfer) to instant. The objective of PesaLink was to digitize the Payment landscape and was market driven.
- Banks and microfinance banks associated with Kenya Bankers Association can become direct participant of PesaLink, while Payment Service Aggregators (PSA) are indirect participants and require sponsor bank for settlement.
- PesaLink supports multiple channels such as branch, mobile banking, internet banking, USSD and agent network while mobile number is used as an alias.
- Transactions are settled through Deferred Net settlement mechanism in 2 cycles at the RTGS system of Central Bank of Kenya.

<table>
<thead>
<tr>
<th>Features</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real time payments</td>
<td>ISO8583 messaging standard, Deferred Net settlement</td>
</tr>
<tr>
<td>Mobile number as alias</td>
<td>Operates 24x7x365</td>
</tr>
</tbody>
</table>

- PesaLink currently supports ISO 8583 messaging standard, built on the existing card infrastructure. There are plans to upgrade it to ISO20022 by early next year.

Source: Primary Interviews, IPSL website
Key Highlights and Takeaways

Key Differentiators of Kenya’s PesaLink

- **Banks as owner**
  - PesaLink is owned by Banks, who are members of Kenya Banking association.
  - All the investment to set up PesaLink was made by Banks only.

- **Constant Innovation**
  - Presently, PesaLink is upgrading its switch to support enhanced features such as request to pay and also allow non-banks to connect directly to the system.

- **Inward Remittance**
  - Banks have integrated with International Money Transfer Operator (IMTO) to facilitate inward remittance through PesaLink. It does not support outward remittance.

Learnings from PesaLink Journey

- **Viewpoint of all the stakeholders**
  - Workshops were held for all member banks, with discussions on the platform to serve all banks equally. There were concerns raised by small banks, who felt threatened by the larger banks, that had better technology platforms and would take away their client base, hence there were sessions held to address concerns by these tiers.

- **Buy-in from stakeholder**
  - Regulator and operator needs to conduct a strong feasibility test and get buy-in from all the stakeholder during conceptualization of FPS.

- **Banks should initiate upgrading their legacy system**
  - Banks should upgrade their legacy system and update their backend during conceptualization of FPS. Additionally, Regulator needs to have a strong strategy during implementation of Fast Payment System.

- **Stakeholders should develop a strong business case before the implementation**
  - Countries should first develop a business case and get viewpoint from stakeholders before initiating the development of the system. This will help in visualizing the end product.

Source: Primary Interviews, IPSL website
B. Detailed Report
1. Overview

Chapter sections:

1.1. Background and Objectives
1.2. System Development & Key Timelines

Chapter Summary:

• PesaLink was conceptualized in 2012, when the idea was adopted by the Governing Council.

• Financial Sector Deepening Trust Kenya (FSD-K) joined the project as a partner and paid for a consultancy to study the Retail Payments landscape in Kenya and presented options for the integrating bank Payments in Kenya. The governing council adopted the report and chose the single switch option for implementation. FSD-K engaged the same consultant to develop a business case for the selected integration option and presented to Kenya Bankers Association (KBA) member banks for the approval. After adoption and multiple consultations with stakeholders the system went live in 2017.

• The time frame to develop the system was only one and half year so FSD and KBA leveraged the existing infrastructure such as use of ISO 8583 messaging standard, which banks were using for their operation.

• One of the major challenge during implementation of the project was to get buy-in from all the banks and to enhance their existing infrastructure to support real time transactions.

• PesaLink is upgrading its switch, the new switch would enable indirect participants to connect directly to the system and migrate to ISO 20022.

Source: Primary Interviews, IPSL website
1.1. Background & Objectives

- PesaLink enables real time **P2P transfers** through **customer account number or mobile number**. It is owned by Kenya Banking Association and is operated by IPSL.

  - Electronic Funds transfer are processed in the Automated clearing House (ACH) which operated on a T+1 basis, effectively meaning a two-day transaction cycle. The other option was the Real Time Gross Settlement System (RTGS) run by the Central Bank, but it handled transactions above Kshs 1 Million and typically settlement took 4 Hours.
  
  - At the same time, there was a wallet service **M-Pesa** which enabled **real time P2P transactions** within a limit of **Ksh 1,50,000** (as of March 2020). Customers had to transfer money from their bank account to its M-Pesa wallet and send it to the beneficiary wallet, who would transfer to its bank account.
  
  - Thus, there were discussions within the banking community to develop their own system capable of **real time P2P transfers**.

  **How the system was conceptualized**

  PesaLink was conceptualized by the Kenya Bankers Association (KBA) and supported by the Financial Sector Deepening (FSD) with the desire to integrate digital payments, financial inclusion and reduce the overall cost of transactions.

  - Financial Sector Deepening and Kenya Bankers Association realized the need to integrate and leverage on the banking system infrastructure to drive the digital payments agenda. Several factors led to these developments, some of them being digitization of payment landscape, sharing of infrastructure to drive down the unit cost and facilitate faster movement of money through the real time bank to bank transfer system.

  - Initially, Financial Sector Deepening facilitated the Study to identify the best way to integrate and develop Kenya’s Retail Payments infrastructure, led by the banking system. Result from the feasibility study was shared with KBA and it requested FSD to engage the same consultant to prepare a business case by analyzing bank’s data. Following determination of the case as viable, the KBA created an implementation Project team led by Project manager to support the development of PesaLink.
2. Business and Operating Model

**Chapter sections:**
- 2.1. FPS Structure
- 2.2. Participants
- 2.3. Scheme Pricing and Fee Structure
- 2.4. Payment Instruments, Transaction Types, Aliases and Use Cases/Services
- 2.5. Channels and Agent Network

**Chapter Summary:**
- PesaLink allows **Banks and microfinance bank institutes** as direct participant while Payment System aggregators are the indirect participants and require sponsor banks for settlement of transactions.

- Maximum and minimum transaction limit for PesaLink has been capped at **Ksh 1 million** and **Ksh 10** respectively.

- Banks are charged **Ksh 11.6** as transaction charge while there is no cap on end users charges, and it is up to the bank to decide the **cost of transaction for end users**.

- PesaLink supports multiple channels like **Mobile, Branch, Internet, USSD, ATM and agent banking** while mobile number is used as an **alias**.

- Currently, PesaLink supports **bill payments and bulk payment** as use case, with the upgradation of the switch it will support new use case like **request to pay**, etc.

**Source:** Primary Interviews, IPSL website
2.1. FPS Structure

Kenya Bankers Association (KBA) is the owner and IPSL is the operator of the PesaLink system. Settlement occurs in the RTGS system of the Central Bank of Kenya.

Key entities

<table>
<thead>
<tr>
<th>Central Bank of Kenya (Regulator and overseer)</th>
<th>IPSL (Operator)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Oversight of payment and settlement systems is defined as a central bank function whereby the objectives of safety and efficiency are promoted by monitoring existing and planned systems, assessing them against the objectives</td>
<td>• IPSL was established by the Kenya Bankers Association as a PSP to address the challenges of retail payments system under the National Payments System (NPS) Act</td>
</tr>
</tbody>
</table>

Source: Primary Interviews, IPSL website, CBK website
2.2. Participants

Members of Kenya Bankers Association can become direct participants of PesaLink, while payment service aggregators can participate as indirect participants through sponsorship arrangement with participating banks.

<table>
<thead>
<tr>
<th>Membership in PesaLink</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Direct Membership</strong></td>
</tr>
<tr>
<td>Banks</td>
</tr>
<tr>
<td>Micro-Finance Companies</td>
</tr>
<tr>
<td><strong>Indirect Membership</strong></td>
</tr>
<tr>
<td>Payment service aggregators</td>
</tr>
</tbody>
</table>

### Adoption Statistics (as on May-2020)

- Currently, more than **30 banks** are participating in PesaLink
- Additionally, there are **3 payment service aggregators** participating as indirect member

### Regulatory requirements for participants

**Banks** and **micro-finance banks** that are members **Kenya Bankers Association** can become a **direct participant** of PesaLink. Participants also need to have a **settlement account** at Central Bank.

Payment service aggregators such as **FinTech** participate as Indirect member. They need to have an agreement with a **sponsor bank** to settle transactions on their behalf at Central Bank RTGS.

### Onboarding Process

Participants have to follow IPSL standards along with a rigorous testing process. An external auditor conducts an audit of the participant before go-live.

**Source:** Primary Interviews, IPSL website
2.4. Payment Instruments, Transaction Types, and Scheme pricing

PesaLink enables payments via **banks account** up to Ksh 1 million. It allows transactions in Kenya Shilling.

### Payment Instruments Supported
- **Credit Transfer**
- **Direct Debit**
- **Mobile Wallets**

### Interoperability
- PesaLink allows transfer between bank **account of individuals**

### Payment Type, Limit and Currency

<table>
<thead>
<tr>
<th>Transaction Type</th>
<th>Transaction Limit</th>
<th>Transaction Currency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual</td>
<td>Minimum transaction: Ksh 10</td>
<td>Kenya Shilling</td>
</tr>
<tr>
<td></td>
<td>Maximum transaction: Ksh 1 Million</td>
<td></td>
</tr>
<tr>
<td>Business</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Fee charged for end users
- User charges are dependent on banks. Charges depend on the number of transactions processed. For example, KCB charges **Ksh 0-500** for transactions.
- During the Covid situation Central Bank mandated participants not to charge customers for transactions for **3 months**

### Fee charged for participants
- Banks pay joining fee to PesaLink.
- Additionally, part of end user charges are paid to IPSL by banks which is **Ksh 11.6**

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Source: Primary Interviews

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2.4. Access channels, agent network, Use Cases/Services and Aliases

PesaLink supports **multiple channels** like USSD, mobile, internet banking, etc. while **mobile number is used as an alias**. Bulk payment is the only use case supported currently, while there are plans to launch bill payments and merchant payments as use case.

**Access channels and Agent networks**

- **Mobile**
- **Internet**
- **Agent**
- **USSD**
- **ATM**
- **Branch**

**Aliases**

- PesaLink allows transactions across mobile banking, e-banking, ATMs, Agents and USSD code.

**Use cases/Services**

- PesaLink currently supports **bill payments and bulk payment** as the use case. It is used to process salaries, etc. Additionally, PesaLink can also be used as a mode of payment for Visa processing at government portal.
- There are discussions within the bank to support **request to pay as use cases in future**.

*Source: Primary Interviews, IPSL website*
3. User Adoption

**Chapter Summary:**
- Volume and value growth for PesaLink has seen a steady increase since its launch
- **Central Bank of Kenya** mandated all the banks to waive transaction charge for PesaLink transactions since March 2020 due to Covid-19
3. User Adoption

- PesaLink has shown steady growth since its launch, with Compounded Annual Growth Rate (CAGR) for volume and value being 36.2% and 35.5% respectively. The system is capable of handling millions of transactions daily.
- During the launch of PesaLink, additional marketing activities were carried out to increase adoption.
- Additionally, during Covid-19, the Central bank has mandated all the participants to waive off end user charges since March 2020 leading to a surge in transactions.
- KBA has also been involved in promotional activities through radio jingles and social media campaigns. Banks have made direct communication with end users to increase uptake of PesaLink.

Source: Primary Interviews
4. Technical Details and Payment Process

Chapter sections:
4.1. Technical Details | Messaging Format & APIs and Customer Authentication
4.2. Payment Process (Customer Registration, Transaction Fulfilment, Liquidity Management and Settlement)

Chapter Summary:
• PesaLink currently supports ISO 8583 messaging standards. With the upgradation of existing switch, there are plans for migration to ISO20022
• Currently, non-banks can use limited APIs to connect to switch, with its upgradation even banks can utilize limited APIs to connect to the system
4.1. Technical Details | Messaging Format, APIs and Customer Authentication

Below are the technical details of PesaLink covering the **messaging format & use of open APIs**. The messaging standard is extremely important in terms of connectivity and interoperability.

### Messaging Format

- **ISO 8583**
  - ISO 8583 messaging standard is used for PesaLink. The rationale for adopting the messaging format was to utilize the card’s messaging format which supports ISO 8583 rather than upgrading to a new messaging format.
  - There are plans to upgrade the messaging standard to ISO 20022.

### APIs

- **Limited Purpose APIs**
  - Currently, **Limited Purpose API** is being used by non banks to connect to PesaLink switch. The existing switch is undergoing upgradation, after the development of new switch, Banks can also use APIs to connect to PesaLink.

### Customer Authentication

- Each bank has its own **customer authentication standards**.
- Additionally, there are **security keys** between PesaLink and Banks.

**Source:** Primary Interviews

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Steps in the payment process include one-time customer registration, payer-payee transaction fulfilment and inter-participant settlement. Subsequently, various aspects related to these areas are covered.

1. **Customer Registration**
   - One-time
     - Customer registration
     - Creation of alias as applicable

2. **Transaction Fulfilment**
   - **Transaction Basis**
     - Transaction Flow
     - Connectivity between participants

3. **Inter-Participant (PSP) Settlement**
   - **Defined Intervals**
     - Approach for settlement and liquidity management
## 4.2. Payment Process | Customer Registration

PesaLink has an inbuilt feature with the mobile banking application of customers

<table>
<thead>
<tr>
<th>Process for users to transact through PesaLink</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1: User logs into this bank's mobile application</td>
</tr>
<tr>
<td>Step 2: User selects PesaLink from the main menu; has an option to pay to a mobile number or account number</td>
</tr>
<tr>
<td>Step 3: User provides mobile number or bank details of the recipient</td>
</tr>
<tr>
<td>Step 4: User selected the account from which the money has to be transferred</td>
</tr>
<tr>
<td>Step 5: User enters the amount to be paid</td>
</tr>
<tr>
<td>Step 6: User provides the purpose of transaction (for e.g. rent)</td>
</tr>
<tr>
<td>Step 7: User confirms details and enters PIN to complete transaction</td>
</tr>
<tr>
<td>Step 8: User receives a confirmation message from the bank</td>
</tr>
</tbody>
</table>

Source: IPSL website
4.2. Payment Process | Transaction Fulfilment

PesaLink facilitates customer transaction using the bank account details and mobile number. The typical transaction fulfilment cycle is depicted below:

1. **Payer** enters beneficiary details and confirms payment.
2. **Payer Bank** checks for adequate balance to process transactions.
3. **Receiving bank** confirms the account details of the receiving customer.
4. **Receiving bank** receives payment request.
5. **Receiving bank** authorizes the bank account.
6. **Account Verification**.
7. **Credit confirmation**.
8. **Debit confirmation**.
9. **The amount is credited to the payee’s account**.

The transaction process is completed within few seconds from payment initiation to credit confirmation.

**Source:** Primary Interviews

**World Bank Fast Payments Toolkit**
4.2. Payment Process | Liquidity Management and Settlement

PesaLink transactions are settled through net settlement in 2 cycles at the RTGS of the central bank and

<table>
<thead>
<tr>
<th>Direct Member Settlement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Approach</strong></td>
</tr>
<tr>
<td><strong>Hub</strong></td>
</tr>
<tr>
<td>**Type</td>
</tr>
<tr>
<td>Deferred Net settlement</td>
</tr>
<tr>
<td>2 cycles daily</td>
</tr>
</tbody>
</table>

- PesaLink transactions are settled in Central Bank RTGS in **2 cycles daily**.
- During the conceptualization, it was envisaged to provide settlement frequently to minimize settlement risk. It is expected that the settlement cycle would be increased to **5 cycles** as transactions pick up.
- Transactions limit has been capped to Kenya Shilling **1 million** and banks are required to maintain collaterals at the Central Bank RTGS to reduce liquidity risk.
- Transactions during off-work and week ends are settled in the **first working cycle** of next working day.
- The average uptime for PesaLink **>99%** to avoid any **operational risk**.

<table>
<thead>
<tr>
<th>Sponsored (Indirect) Member Settlement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Indirect</strong></td>
</tr>
<tr>
<td><strong>Members</strong></td>
</tr>
<tr>
<td>• Indirect members such as payment service aggregators require <strong>sponsor bank</strong> to settle transactions on their behalf.</td>
</tr>
<tr>
<td>• These transactions are also settled through <strong>deferred net settlement</strong> mechanism.</td>
</tr>
</tbody>
</table>
5. Governance Framework

Chapter sections:
5.1. Legal and Regulatory Aspects
5.2. Risk Management

Chapter Summary:
• The National Payments System Act, CBK Act, Banking Act and NPS regulations provide the legal framework to payments system in Kenya. Central Bank of Kenya is the regulator of the National Payments System. IPSL is a wholly owned subsidiary of the Kenya Bankers Association (KBA) to operate Pesalink

• The Central Bank has put in measures to minimize liquidity and credit risk; while transactions limit has been capped to **Ksh 1 million**, additional measures like **collateral requirement** has also been put in to minimize liquidity and credit risk

• There are plans to increase the settlement cycle from **2 times to 5 times daily** to reduce settlement risk

• Central Bank has also issued **BCP guidelines for cyber security** (for banking sector). There are cyber security compliances that are evaluated annually
5.1 Legal, Regulatory and Governance Aspects

The National Payments System Act, CBK Act, Banking Act and NPS regulations provides the legal framework for payment system in Kenya

### Institutional and Governance Framework

#### Legal Framework:
- National Payments System Act, CBK Act, Banking Act and NPS regulations

#### Regulator and Overseer:
- Central Bank of Kenya

#### Operator:
- IPSL

As per Central Bank of Kenya website

- The **National Payment System Act 2011** was enacted providing a new legal framework for NPS in Kenya. This act makes provision for the regulation and supervision of payment systems and payment service providers, and for connected purposes.

- Further to this, the **National Payment System Regulations 2014** was enacted to operationalize the NPS Act 2011 and provides for the authorization and oversight of payment service providers, designation of payment systems, designation of payment instruments and Anti-Money Laundering measures.

- The oversight responsibilities of the Bank are carried out within these legislations and the Central Bank of Kenya Act 2004, Chapter 491 Section 4(A) (2) in subsection (1) (d), which provides the Bank the mandate to exercise the oversight powers of promoting financial stability through cohesion in financial market infrastructure.

#### Objectives of Oversight

In performing its duties, the Bank aspires to:

- **Promote Safety and Efficiency** of Kenya’s Payments System to ensure the soundness of the National Payment System and hence financial system stability.

- Ensure **conditions of fairness, equity and transparency in payment systems** – the rights and obligations of parties to funds transfers are allocated in an equitable manner to ensure level field for all payment system participants.

- Promote extension of **payment services nationally, regionally** and **internationally**

- Monitor the exposures in the National Payment Systems

Source: Central Bank of Kenya
5.1 Legal, Regulatory and Governance Aspects

Central Bank of Kenya is the regulator and overseer of PesaLink and aims to promote efficiency and soundness in the payment system.

As per Central Bank of Kenya website
• The Central Bank's overall objective as provided under Section 4 A (i)d of the Central Bank of Kenya Act is to formulate and implement such policies as to best promote the establishment, regulation and supervision of efficient, effective payment, clearing and settlement systems.

In this regard, the Central Bank seeks to ensure that payment systems
• Do not generate high level of risks to participants and users of financial services
• Continue to operate without major disruptions
• Offer efficient, reliable and safe payment services to customers
• Have the necessary and regulatory legal framework

The Central Bank participates in the payment system as a:
• Facilitator of settlement: By providing settlement accounts at the Central Bank to enable Commercial banks exchange obligations.
• Provider of payment systems: It operates and owns the KEPSS system which is used to facilitate real time transactions.
• Supervisor: Supervises the operations of the Nairobi Automated Clearing House on behalf of Kenya Bankers Association in order to maintain integrity and confidence.
• Provider of liquidity: The bank provides liquidity to the system to facilitate efficient operation of the settlement system.
• Overseer of the payment system: To promote efficiency and soundness in the payment system.
• Catalyst/collaborator: as a catalyst the Bank spurs change in the payment landscape through policy guidelines and as a collaborator provides a platform for open dialogue with all stakeholders geared towards improvement of the national payment system.

Source: Central Bank of Kenya
5.1 Legal, Regulatory and Governance Aspects

While PesaLink is owned by Kenya Bankers Association, IPSL operates the system.

**Institutional and Governance Framework**

**Legal Framework:**
National Payments System Act, CBK Act, Banking Act and NPS regulations

**Regulator and Overseer:**
Central Bank of Kenya

**Operator:**
IPSL

As per IPSL website:

- Integrated Payments Service Limited (IPSL) concept can be traced back to 2012. Established by the **Kenya Bankers Association (KBA)** under the **National Payment System (NPS) Act**, IPSL was formed to address the challenge of integrating retail payments in Kenya.

- IPSL aims at creating value for the industry, banks and customers through innovation and interoperability. The company was established to provide a **secure, fast and efficient money transfer system** by tapping into the latest technological advances.
5.2 Risk Management

PesaLink follows different risk management measures such as capping transaction limit, high availability of system, etc.

### Liquidity and credit risk
- All the participants are commercial banks and settle for the transactions in Central Bank Money to mitigate settlement risk. Continuous Settlement is done at the RTGS (KEPSS) During the day, giving banks the opportunity to raise fund from market to meet their obligations.
- Additionally, transaction limit has been capped to **Ksh 1 million** to ensure liquidity for banks throughout the day.

### Settlement and operation risk
- During the conceptualization of PesaLink, IPSL envisaged the need to have frequent settlement cycles, but it was decided to have 2 transactions cycles initially. Currently, there are plans to increase the settlement cycles to **5 times daily**.
- The average annual uptime for PesaLink is **99.99%** ensuring minimal operational risk. Consistent efforts are taken by KBA to maintain high uptime for system.
- Banks are responsible for settlement of indirect participant. Also, non-bank or indirect participant have account domiciled with their respective bank to prevent liquiditiy and settlement risk.

### Data Protection
- PesaLink transaction data are not shared by banks, IPSL repository holds the data. Retention period for the data is **7 years**. Banks are custodian of customer data and safety measures are put in place to ensure data protection.
- Recently, parliament has also passed a Data Protection Act which is getting operationalized.

### Cyber security guidelines
- The Central Bank issued cyber security guideline under the National Payments Act that governs incident management and incident reporting.
- Banks need to have the **cyber security standard** for the switch to participate in PesaLink. The Central Bank has also issued cyber security compliance measures that are evaluated on **yearly basis**.

Source: Primary Interviews
6. Annexure

Chapter sections:

6.1. Key Features
### 6.1. Key Features

**Key Highlights**

- **Operating hours**: 24*7 including weekends and bank holidays
- **Payment speed**: Real time (Maximum 30 second)
- **Transaction limit**: Minimum – Ksh. 10, Maximum – Ksh. 1 million
- **Alias**: Mobile Number
- **Channel**: ATM, Branch, Internet and Mobile channels, USSD and Agency banking
- **User charges**: User charges are determined by individual banks*
- **Infrastructure setup**: New System
- **Messaging format**: ISO 8583
- **Use of Open APIs**: Limited API for non-banks
- **Authentication**: Information not available

### Payment Types & Use Cases/Services

<table>
<thead>
<tr>
<th>Type</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Deferred Net Settlement</strong></td>
<td>2 Cycles Per Day</td>
</tr>
</tbody>
</table>

**Settlement**

- **Individual**
  - Merchant
  - Cross-border payments
  - Request to Pay
  - Schedule future payments
  - Bill payments
- **Business**
  - Bulk / Batch Payment
- **Government**

*Source: IPSL website

*For Kenya Commercial Bank – Fee ranges from Ksh.15 to Ksh.500, For Bank of Africa - Fee ranges from nil to Ksh.200