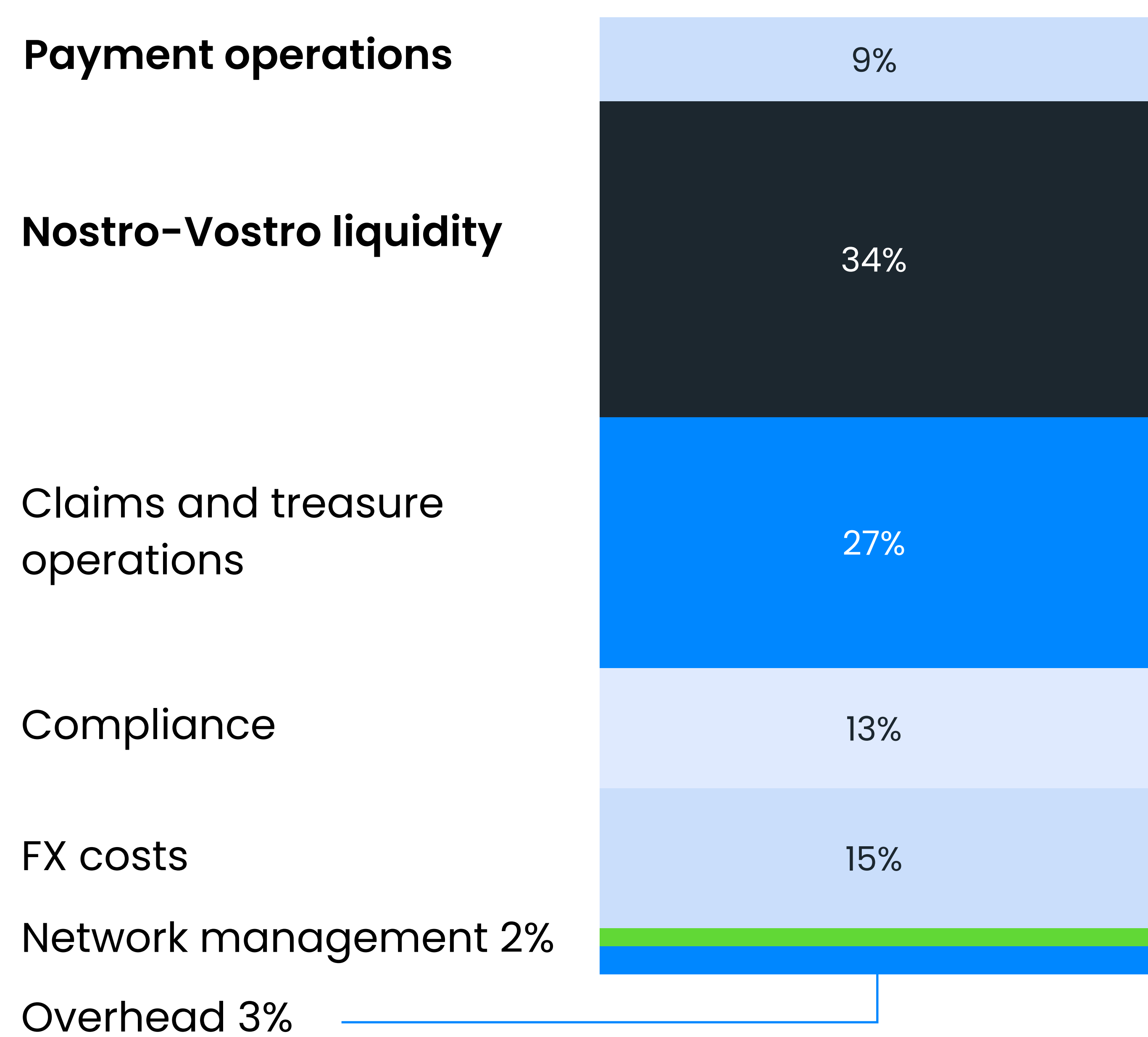


# Knox CBDC

**Knox CBDC (Central Bank Digital Currency)** sets a goal to comprehensively restructure the banking sector. It can influence both inter-banks transactions and settlements between clients, and improve cross-border settlements by minimizing the costs associated with transaction fees and maintenance of the infrastructure. Over 35 countries are currently researching CBDC implementation , with more to join in the next years.

Adding to the circulation within a country a new digital asset based on **Knox CBDC infrastructure**, will change the distribution of influence zones in the banking sector. **Central banks** will strengthen their current functional position as **a controlling entity**. Apart from only issuing the money, they will also serve as a guarantor that the population will always have access to their CBDCs. Furthermore, central banks, through **Knox CBDC**, aim to decrease the influence of cash payments inside their countries, which brings higher security and transparency of the operations between entities.

**Figure 1.**  
The structure of fees in classic cross-border payments



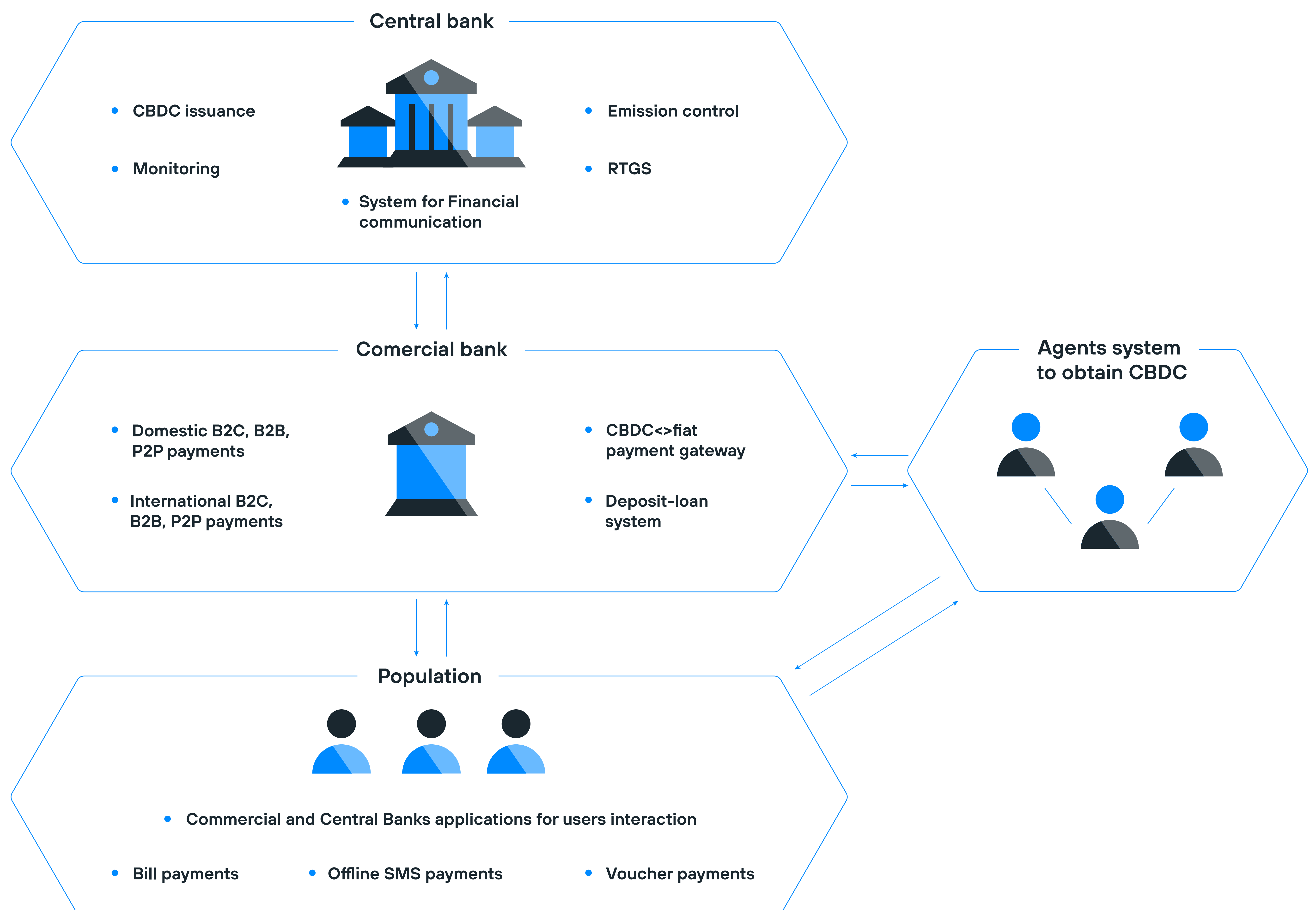
Once **CBDC fully replaces fiat money in cross-border payments**, the overall expense structure to support those payments has the potential to **decrease up to 50-70% per transaction**. Knox already has a fully functional solution - Knox Wire to accommodate cross-border transactions with real-time settlements.

Reducing cross-border costs could benefit economic growth, creating new opportunities for lending and investing funds that, in the current banking system, are frozen in nostro-vostro accounts, since this role will be covered by the Central Bank.

# Knox CBDC Components

**Knox CBDC is a multi-component system based on a proprietary distributed ledger technology.** The system is designed for interaction between commercial banks within the country, as well as for cross-border payments, providing a comprehensive package of user services. The central bank acts as a key entity ensuring the effective management of the CBDC.

**Figure 2.** Functional possibilities of Knox CBDC





## Knox DLT

**Knox DLT is designed to be a comprehensive core of the CBDC solution.** In general, distributed ledger technology allows to effectively set a **trustful relationship** within the banking system. This is possible due to:

- General internal registry of all financial operations
- Setting up each participant of the system as an operational node to ensure transparency and security

Knox DLT allows a central bank to formulate **a new beneficial offer** for:

- Internal banking sector – to make interaction with CBDC **more secure and transparent for the population** by improving the legitimacy of the source of funds.
- International interaction between banks – central bank will offer commercial banks and their clients a possibility to have **fast and cheap cross-border transactions**.

**Performance, scalability, and operational resilience are key to facilitate real-time payments and attract new members to the ecosystem.**

Each node in the production version of **Knox DLT** will be able to generate a throughput of **several thousand TPS**, which, when connected to the network, will be summed up to already connected nodes. Thus, a few medium-sized banking network will be able to generate a performance of **1 million+ TPS (Transactions Per Second)** on the Knox infrastructure, while not having the classic DLT limitation of sequential transaction processing.

	INDUSTRIAL CHALLENGES	KNOX <small>(wire)</small> SOLUTION
<b>SCALABILITY</b>	As part of a proof of concept testing in a few countries, it was found that if a bank needs to make payments to several banks at the same time, transactions will be carried out in sequence, meaning one chain of transactions should be completed before the second one can be initiated.	Knox's proprietary DAG-based DLT provides a unique distinguishing feature - <b>asynchrony</b> . It allows scaling the network in a web-type manner without being limited by linear restrictions.
<b>RESILIENCE</b>	System availability is another potential issue in DLT, which lacks disaster recovery procedures when some components of the system fail.	The ecosystem's resilience is ensured by a separate <b>Knox Stability System</b> , which adds key batches with information about all core elements of the network. In case of force majeure situations, it can be used as a backup to resume the system.