World Bank Fast Payments Toolkit

Case Study: Poland

Express Elixir | 2012

Payment Instruments

- Credit Transfer

Use Cases/Services

- Merchant Payment
- Bill Payment
- Request to pay
<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                                                                                     |
## Abbreviations

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Term</th>
<th>Expanded form</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CSV</td>
<td>Comma Separated Values</td>
</tr>
<tr>
<td>2</td>
<td>ECB</td>
<td>European Central Bank</td>
</tr>
<tr>
<td>3</td>
<td>IBAN</td>
<td>International Bank Account Number</td>
</tr>
<tr>
<td>4</td>
<td>KIR</td>
<td>Krajowa Izba Rozliczeniowa S.A.</td>
</tr>
<tr>
<td>5</td>
<td>NBP</td>
<td>National Bank of Poland</td>
</tr>
<tr>
<td>6</td>
<td>PBA</td>
<td>Polish Bank Association</td>
</tr>
<tr>
<td>7</td>
<td>PFMI</td>
<td>Principle of Financial Market Infrastructure</td>
</tr>
<tr>
<td>8</td>
<td>PSP</td>
<td>Polski Standard Płatności</td>
</tr>
</tbody>
</table>
## Selected parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GDP</strong></td>
<td>GDP – $592 billion</td>
</tr>
<tr>
<td><strong>Income Category</strong></td>
<td>High</td>
</tr>
<tr>
<td><strong>Population</strong></td>
<td>38 million</td>
</tr>
<tr>
<td><strong>Access to mobile phone</strong></td>
<td>89.1%</td>
</tr>
<tr>
<td><strong>Access to internet</strong></td>
<td>78.6%</td>
</tr>
<tr>
<td><strong>Bank account</strong></td>
<td>86.7%</td>
</tr>
<tr>
<td><strong>Branches per 100,000 adult</strong></td>
<td>29.3</td>
</tr>
<tr>
<td><strong>Made or received digital payment in last 1 year</strong></td>
<td>81.8%</td>
</tr>
<tr>
<td><strong>Received government wages or transfer in account</strong></td>
<td>60.20%</td>
</tr>
</tbody>
</table>

Currency Exchange Rate USD 1 = PLN 3.84 <2019 Average, World Bank>
Others – World Bank 2017
* For age >15 years
How to read this report

• This **deep dive report** relates to the **Express Elixir System** in **Poland**
• It has been developed based on **primary interviews** with key stakeholders such as **regulators, operators** and **service providers** in the system as well as by leveraging **secondary sources**
• Key secondary sources include NBP website, KIR website, BLIK website and NBP publications
• The table below presents a legend to assist readers as they navigate through different sections of the report

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**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**
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<td></td>
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</tbody>
</table>
A. Executive Summary
Express Elixir is a fast payment system in Poland launched in 2012, Express Elixir enables their customers to make cross-bank payments by entering account number of the recipient, with funds available to the recipient almost immediately. The Express Elixir system operates on **24x7 basis and supports payments in Polish Zloty**

- Express Elixir is owned and operated by **Krajowa Izba Rozliczeniowa S.A. (KIR)** which is a key infrastructure institution of the Polish banking sector, providing clearing and settlement services
- Express Elixir took approximately 1.5 years to develop. The system was developed by an external vendor post a public tender
- Express Elixir was one of the early faster payment systems and second in Europe after U.K’s FPS
- Express Elixir was developed as a **completely new system** in addition to KIR’s Elixir system, a designated system in Poland for retail payments

**Key features of FPS are**

- Real time payments
- Only supports IBAN for credit transfer
- ISO 20022 messaging standard
- Operates 24x7x365
- Real time settlement
- Supports only Polish Zloty

- Users can make payments in Express Elixir system via their **internet or mobile banking platforms**
- The most popular use case for Express Elixir system is **mobile P2P payment** using mobile number as alias. This feature has **been enabled on** Blik platform (operated by PSP - a payment service provider in Poland) which uses the Express Elixir system for instant P2P transfer

Source: NBP | KIR | BLIK
B. Detailed Report
1. Overview

Chapter sections:
1.1. Background
1.2. System Development and Key Timelines

Chapter Summary:

- Poland is amongst the early adopter of Faster Payment Systems globally with the launch of Express Elixir system in 2012. It was the second instant payments system in Europe, following the British FPS

- Express Elixir system is operated by Krajowa Izba Rozliczeniowa S.A. (KIR S.A.) under the working name: Instant Payments Clearing System

- The development of the system was undertaken after extensive research done by KIR for the need of such a system. Public opinion surveys conducted by KIR S.A. indicated that instant payments represent a service expected by banks’ clients

- KIR floated a public tender to develop the system specifying all the required characteristics. An external vendor was selected to develop and implement the new payment system

- It was developed as a completely new system and not as an upgrade to other payment systems offered by KIR such as Elixir, Euro Elixir, etc.

- Blik in 2015 launched instant mobile P2P payments using the Express Elixir infrastructure. It is now the most widely used case for the Express Elixir platform
1.1. Background

The Express Elixir System was launched in June 2012 by Krajowa Izba Rozliczeniowa S.A. (KIR S.A.) under the working name: Instant Payments Clearing System. It was the second instant payments system in Europe, following the British FPS.

- Express Elixir is the first instant payment clearing system in Poland which allows the direct execution of the transaction from the payer’s account in one bank to the payee's account in another bank. It allows settling of transaction in near real time, without any intermediary institutions 24*7 all days of the year.

- Express Elixir is owned and operated by Krajowa Izba Rozliczeniowa S.A. (KIR) which is a key infrastructure institution of the Polish banking sector, providing clearing and settlement services. KIR's services are mainly directed at financial institutions, public administration, and the e-commerce sector. KIR S.A. has many years' experience in the clearing of retail payments on the Polish market, arising, inter alia, from operating the Elixir system – the largest system in terms of turnover and volume of transactions.

- The Express Elixir infrastructure supports the independent development of 'overlay' services to offer innovative payment services to end-users. An example of a service using these capabilities is of mobile P2P payments by BLIK, which is the first overlay service on the platform.

How the system was conceptualized

KIR S.A., as an active participant in the market of modern electronic clearing services, made the decision on the requirement of fast implementation of the instant payments system, taking into consideration the necessity of creating a solution with a high security and stability standard, enabling participants to create new products and services based on a direct transfer executed in a matter of seconds.

- Banks: There was some resistance from the banks as they felt the range of use of a new real-time system was limited as the existing Elixir system with three settlement cycles per day would help execute the transaction in 4-6 hours.

- Banks did not see any substantial advantage of moving to an instant payment system as there were few global analogies to provide the benefits of having such a system.

- Banks were convinced after KIR made them aware of the feedback received by them post their research with customers and decided to project Express Elixir as a premium offering.

- Customers: KIR undertook extensive research with the end users of the proposed instant payment system to gauge customer needs and make them aware of having such a system in place.

- Customers particularly liked the instant nature of the payment and the convenience it brought to them.

Source: KIR | NBP | Primary Interviews
2. Business and Operating Model

Chapter sections:
2.1. FPS Structure
2.2. Participants
2.3. Payment Instruments, Transaction Types & Channels
2.4. Aliases and Use Cases/Services
2.5. Overlay service - BLIK

Chapter Summary:

- Krajowa Izba Rozliczeniowa S.A (KIR) a private company jointly owned by the leading banks in Poland with the central bank being the largest shareholder. It operates the Express Elixir system in Poland while the National Bank of Poland performs the role of supervisor and overseer of the system.

- In the Express Elixir system only direct type of participation is provided for. Because the Express Elixir system is not a so-called designated payment system*, in which systemic risk exists, its participants may also include payment institutions or electronic money institutions as stipulated within the laws of Poland.

- Express Elixir also allows each participant to register one or more of the so-called participant's units in the system (a separate unit registered by the participant, e.g., a bank's branch), which are explicitly identified by a clearing number or numbers.

- The maximum permissible transaction limit is PLN 100,000 for standard transactions. The limit is extended to PLN 250,000 for tax transfers.

- Express Elixir only supports IBAN for credit transfer. Mobile number as an alias is supported with the help of an overlay service called Blik. Mobile number P2P payments via Blik continues to remain the most popular transaction type for Express Elixir.

- Express Elixir supports multiple use cases which results in more customer convenience and adoption.

*Payment systems in which systemic risk exists are defined in the regulation of the Minister of Finance of 6 June 2003.
2.1. FPS Structure

KIR is both the owner and operator of the Express Elixir system. While the settlement happens through the Sorbnet2 (RTGS) system of the National Bank of Poland where Express Elixir has its own dedicated fiduciary account set-up.

- **Bank Channels**
  - **Express Elixir**
  - **Overlay Services**

**Key entities**

<table>
<thead>
<tr>
<th>National Bank of Poland</th>
</tr>
</thead>
<tbody>
<tr>
<td>- NBP carries out oversight activities pursuant to payment system oversight policy, approved by the NBP Management Board in October 2017</td>
</tr>
<tr>
<td>- Infrastructure of payment system is overseen by the President of NBP directly</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>KIR</th>
</tr>
</thead>
<tbody>
<tr>
<td>- KIR is owned by multiple banks in Poland with the central bank as the largest shareholder</td>
</tr>
<tr>
<td>- KIR team is responsible for the day-to-day operations and maintenance of the system</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BLIK</th>
</tr>
</thead>
<tbody>
<tr>
<td>- BLIK P2P Mobile Payments Service was launched in 2015 by Polski Standard Płatności (PSP)</td>
</tr>
<tr>
<td>- It facilitates mobile P2P payments with the help of mobile number as alias using Express Elixir infrastructure</td>
</tr>
</tbody>
</table>

*Source: NBP | KIR | BLIK | Primary interview*
2.2. Participants

Only banks participate in Express Elixir system. To enable instant mobile P2P transfer, banks have to be members of both Express Elixir and BLIK payment services.

- In the Express Elixir system only direct type of participation is provided for as it is not a designated payment system, in which systemic risk exists, as recognized by the NBP.
- Each participant may register one or more of the so-called participant’s units in the system (a separate unit registered by the participant, e.g., a bank’s branch), which are explicitly identified by a clearing number or numbers.
- A participant’s unit may independently submit and accept payment orders in the system.

Adoption Statistics (as on May-2020)

23 banks (participant’s units)

Source: NBP | KIR | Primary Interview
2.2. Participants

Conditions for Participation

Participants can join the Express Elixir system only after they have met the following conditions:

- Become acquainted with the Technical Specifications of the Express Elixir system
- Make necessary changes to the IT systems of the Participant Units, enabling proper handling of Messages exchanged with the Express Elixir system
- Payment of a fee for joining the Express Elixir system, in accordance with the System Price List Express Elixir
- Submitting to the KIR the data of the Participant and its Participant Units
- Positive result of tests of Participant Units in the scope of cooperation with the Express Elixir system, carried out on the principles and to the extent specified in the Technical Specification of the Express Elixir system
- Topping up the Settlement Account with an amount not less than the sum of the Basic Account Limits

- The participant sets the amount of the Basic Internal Account Limit based on estimated turnover due to Payment Orders sent for clearing in the Express Elixir system by Participant Units assigned to this Account and Transaction Limits declared by this Participant

- Apart from direct participants, Express Elixir has introduced a concept of Participant Unit which depends on various technical parameters like branch number, security, working hours, operating staff, etc. Participant Unit can have flexible parameters based on the need and different rules can be assigned to them. Participation Unit allows banks to provide flexible configuration based on their requirements. The inclusion of a Participant Unit to participate in settlements under the Express Elixir system begins on the date agreed by KIR and the Participant
2.3. Payment Instruments, Transaction Types and Channels

Express Elixir enables payments via **banks account** with the help of **mobile & internet banking**. Each bank is at the liberty to decide the access channels they provide to their customers.

### Payment Instruments Supported

- **Credit Transfer**: ✓

### Interoperability

- Account to account interoperability supported

### Payment Types, Limit and Currency

<table>
<thead>
<tr>
<th>Payment Types</th>
<th>Transaction Limit</th>
<th>Transaction Currency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual</td>
<td>• PLN 100,000 for standard transactions</td>
<td>Polish Zloty zł</td>
</tr>
<tr>
<td>Business</td>
<td>• PLN 250,000 for tax payments</td>
<td></td>
</tr>
<tr>
<td>Government</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Access channels and Agent networks

- **Mobile**:  
- **Internet**:  
- **Phone services**:  
- **Branch**:  

- Express Elixir allows transactions across mobile banking and e-banking.
- **Agent mode or any other assisted mode of transfer is not supported** by the Express Elixir system.

Source: NBP | KIR | BLIK
2.4. Aliases & Use Cases/Services

### Aliases

- Express Elixir uses IBAN for all types of transaction initiated on its platform. IBAN has certain advantages over other aliases like single IBAN can provide various details like Bank name, Bank account number, customer details, etc.
- KIR believes market players are at the best position to decide various use cases which best meet customer needs while Express Elixir is the underlying platform which the banks can innovate to develop various use cases.
- Mobile P2P payment is the most popular use case for Express Elixir system enabled by the BLIK services using mobile number as alias. It is a good example of the Instant payment system being used as underlying platform to provide innovative solutions.
- KIR does not want to constraint the market by allowing only certain use cases but rather let the participants decide on various use cases based on market suitability.

### Mobile Number

- Immediate transfers to a phone number are made online in the Express Elixir system and available to BLIK users.
- PSP, as the entity creating the BLIK services, decided to establish cooperation with KIR S.A. in order to settle P2P payments with immediate effect in the Express Elixir system.
- The phone number of the recipient should be registered in the BLIK database and banks of both transferor and the transferee should be participant in the Express Elixir and BLIK.

### Use Cases/Services

- Express Elixir supports P2P payment via mobile phone number & IBAN while all other use cases are supported only via IBAN.
- All transactions can be initiated on mobile app and internet banking.
- P2P mobile payment via BLIK is the most popular use case for Express Elixir.

---

**Source:** NBP | KIR | Primary Interview | FIS Report
2.5. Overlay Service

BLIK by Polish Payment Standards is an overlay service for mobile P2P payments on the Express Elixir platform. It uses Express Elixir’s core capabilities to enable users to make payments by using mobile number as an alias.

Overlay Service

The BLIK Mobile Payments Service was launched in February 2015 by Polski Standard Płatności (PSP), established by six commercial banks. BLIK offers the following facilities to its customers:

- Make payments in-store and online,
- Withdraw and deposit cash at ATMs,
- **Send money over the phone to others immediately instantly**
- Generate BLIK checks (a one-time 9-digit code) used to make payments and ATM cash withdrawals

- Out of the above facilities offered by BLIK, the **instant mobile P2P transfer is based on the Express Elixir platform**. BLIK facilities can only be used by customers of banks who have partnered with BLIK. Due to its popularity and wide adoption, all major banks in Poland offer BLIK facilities to their customers (12 banks*)

- BLIK system enables the execution of payments via mobile application of its partner banks. Payments of this type are cleared in the BLIK payment service, and then directed to the Elixir system operated by KIR S.A., which is settled in the SORBNET2 system. PSP, as the entity creating the BLIK service, decided to establish cooperation with KIR S.A. in order to gain the possibility of settling P2P payments with immediate effect in the Express Elixir system. Using the existing solution instead of building a new one resulted in lower costs and did not require additional time for the development of the system. For the participants in the system, adopting such a solution meant incurring lower adaptation costs associated with the operation of P2P payments and the comfort of applying the clearing standards of KIR S.A., which they were familiar with

- Prior to the accession to BLIK, each participant must change its current proprietary solution used for the implementation of mobile payments to the solutions designed for the needs of implementing the P2P service in banks participating in BLIK. In some cases, this is associated with the development of a new product by the bank, or replacement of the previous solution by a new one. Because the P2P payments will be directed for clearing in the Express Elixir system, BLIK participants offering such a service must be simultaneously a participant in the Express Elixir system

*As on June 2020
While the **volume of transactions** through **Express Elixir** has witnessed a growth rate of 221.66% CAGR Y-o-Y from 2013, the transaction value witnessed a growth rate of 89.82% CAGR. This was due to the increase in smaller ticket retail payments. **High growth post 2015** was a result of **growing awareness** of the system and launch of mobile P2P payments via Blik.

**Growing adoption of Instant Payment System**

- The significance and share of Instant Payment System in Poland in retail settlements is systematically growing, although their share in 2017 in relation to the overall market of retail payments was insignificant, amounting to only ~0.5%.
- The aggregate share of the value of orders performed in instant payment systems in the value of payment orders on the Polish market also amounted to ~0.5% in 2017.

**Source:** NBP | KIR
4. Technical Details and Payment Process

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

Chapter Summary:
• Express Elixir has adopted ISO 20022 messaging standard. It was one of the earliest country to adopt modern ISO 20022 messaging standard for its Faster Payment System

• Express Elixir did not publish additional QR code standards as it is not a very popular method of payment in Poland. It can support QR code standards as specified by the central bank to invoke payments on its platform

• Banks have to comply with authentication guidelines as mandated by the central bank. No additional authentication measures were imposed by Express Elixir

• Clearing payments in the Express Elixir system is based on the deposit model, i.e. the so-called prefunding. For the needs of Express Elixir system clearing, in the SORBNET2 system NBP operates a dedicated settlement account of KIR S.A., supplied by participants in order to ensure the adequate liquidity of individual participants in the system

• There are a number of confirmation and clearing steps & settlement steps that occur in quick succession to enable users to make payments with immediate funds availability to the payee
4.1. Technical Details | Messaging Format and APIs

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

**Messaging Format**

- Poland was among the first country for FPS to adopt ISO 20022
- KIR is primarily a clearing house and current business is of clearing and settlement. For that standards like ISO 8583 which is card originated is not a good case. ISO 20022 was more suitable to use for KIR
- The system also offers additional possibility of using the CSV format based on Elixir system format for the banks
- Since the beginning, certification program was introduced for technical firms providing solutions to banks in Poland. It was important for the IT companies to be aware of the technical knowhow so that they could help banks integrate the same in their system

**APIs**

- Polish API was launched to standardize the interface for communication with banks and other entities operating payment accounts
- Polish API was the response to PSD2 which imposed on payment service providers to enable initiating payment orders through another entity (TPP)
- KIR S.A is also working on developing services supporting the Polish API standard (so called PSD2 HUB)

Source: NBP | KIR | BLIK
4.1. Technical Details | QR Code, Customer Authentication and Tokenization

Below are the technical details of Express Elixir covering the **QR standards and customer authentication**

<table>
<thead>
<tr>
<th>QR Code</th>
<th>Customer Authentication</th>
</tr>
</thead>
<tbody>
<tr>
<td>• In European countries, QR code is not a very popular mode of invoking payment unlike countries in Asia-Pacific region</td>
<td>• For customer authentication guidelines have been issued to the banks by National Bank of Poland</td>
</tr>
<tr>
<td>• In Poland, standards for presenting of data via QR code were issued some years ago for the wider payment ecosystem</td>
<td>• <strong>All banks have to ensure that they adhere to central bank guidelines on the same</strong></td>
</tr>
<tr>
<td>• Specific set of standards for QR code were not rolled out with the introduction of Instant Payment systems</td>
<td>• Express Elixir does not impose any additional customer authentication measure other than those mandated by the NBP</td>
</tr>
<tr>
<td>• The Express Elixir system is such that banks can invoke payment using its infrastructure by issuing QR code to merchants or for bill payments. It would not require any additional development from KIR</td>
<td></td>
</tr>
</tbody>
</table>

Source: NBP | KIR | BLIK
4.2. Payment Process

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 | Transaction Fulfilment

1. The sender of the payment submits a **payment order** in its bank (Sender's Bank).
2. The **Sender's Bank secures funds** to cover such a payment order and informs the payment sender of the acceptance of the payment order.
3. The sender's bank sends the **payment order to the system**. Such an order may not be cancelled as of its entry into the system.
4. The **system verifies the entered payment order** (performs the relevant technical and business validation).
5. In the case of **positive verification**, the system **blocks funds** on the internal participant's account in the amount equal to the amount of the payment order received and sends the confirmation of acceptance of this payment order to the sender's bank.
6. The system sends the **message to the receiver's bank requiring authorization**. The receiver's bank performs the verification of the payee's account & sends a message to the system containing the confirmation of the authorization.
7. Following the receipt of the message with **authorization confirmation**, the system, in one operation: a) removes the blockade from the internal account of the sender's bank; b) debits the internal account of the sender's bank; c) credits the internal account of the receiver's bank.
8. The **sender's bank debits the account** of the payment sender immediately after receiving the information referred to in point 7 from the system.
9. The **receiver's bank credits the account** of the payee immediately after receiving the information referred to in point 7 from the system.
10. Within the **process of liquidity adjustment** performed once a day on operating days of the SORBNET2 system, KIR S.A. debits the settlement account of the system and credits participants' accounts in the SORBNET2 system with the amount constituting the surplus over the basic limit defined by the participant.
11. **KIR reduces the balance** of the internal account of a given participant by the amount of the paid surplus referred to in point 10.
12. Whenever the balance of the internal account falls below the lower limit of the participant, a **special alert is sent from the system to the participant**. In order to replenish funds above the lower limit, the participant debits its account in the SORBNET2 system & credits the settlement account of the system.

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**User / Remitter**

1. **Express Elixir**
2. **Internal account of sender bank**
3. **Sorbnet 2**
4. **Internal account of receiver bank**
5. **Current account of sender bank**
6. **KIR SA Escrow account**
7. **Beneficiary bank**
8. **Beneficiary**

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**Payment Process**

Source: NBP | Primary Interviews
4.2. Payment Process | Liquidity Management and Settlement

**Settlement Mechanism**

<table>
<thead>
<tr>
<th>Approach</th>
<th>Type</th>
<th>Time</th>
<th>Settlement Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deposit Model</td>
<td>Immediate Settlement</td>
<td>Narodowy Bank Polski</td>
<td></td>
</tr>
</tbody>
</table>

- Due to the adoption of the prefunding model, the interbank settlement is performed via a fiduciary account maintained by KIR S.A. with NBP.
- The source of liquidity are the funds deposited on the account of KIR S.A. operated by NBP in the SORBNET2 system, i.e. in the central bank money.
- Express Elixir has adopted a prefunding deposit model to mitigate credit and liquidity risk.

- For the needs of Express Elixir system clearing, in the SORBNET2 system NBP operates a dedicated settlement account of KIR S.A., supplied by participants in order to ensure the adequate liquidity of individual participants in the system.
- Clearing payments in the system is performed in real time, order by order. The balance of the internal account is changed dynamically, including the clearing of individual payment orders by the system.
- In the system, the process of liquidity adjustment is launched on a cyclical basis (once per day), resulting in the transfer of potential surplus over the defined basic limit from the settlement account of KIR S.A. to the account of a given participant in the SORBNET2. The process of liquidity adjustment is performed on each operating day of the SORBNET2 system between 3.00 p.m. and 4.00 p.m.
- The moment the balance of the internal account decreases below the level defined as the lower limit (it may amount to at least 20% of the basic limit and may not be lower than PLN 500,000), the system will immediately inform the participant who may decide to supply the settlement account with an additional amount.

**Liquidity Management**

To reduce liquidity risk, Express Elixir has adopted a prefunding deposit model.

- In Express Elixir systems, payments are executed based on deposits accumulated by participants, held on a fiduciary account maintained with the central bank.
- Each participant defines the single transaction value limit (maximal value of a single transfer). If the limit is exceeded, the payment is rejected.
- All transfers sent by a given Participant must be covered by funds earlier deposited on a dedicated account. Transactions are executed only up to the level of funds available on internal account. If the funds are not sufficient to execute a transfer, the payment is rejected.
- Participants manage the level of their liquidity on the settlement account of the system and, depending on the situation, may complement the required limit or transfer the surplus of funds collected over the limit to their account.

Source: NBP | KIR | Primary Interviews
Chapter sections:
5.1. Legal and Regulatory Aspects
5.2. Risk Management, Dispute Resolution and Customer Complaints

Chapter Summary:
• The Settlement Finality Act provides the legal basis for the powers of the National Bank of Poland in relation to the regulation of payment system
• The President of National Bank of Poland has been empowered with the role of overseer and regulator of the Payment Systems in Poland
• The National Bank of Poland undertakes its overseeing responsibility with the help of various instruments like inspection, seeking reports, analysis of data, etc.
• KIR as operator of the system has published set of Express Elixir regulations which apply on all participants of the Express Elixir system
• Participants are encouraged to formulate their own dispute resolution and customer complaint procedures to ensure fair redressal
• No centralized guidelines were issued by the central bank for risk management, dispute resolution and customer complaints
• International best practices as stipulated under PFMI and ECB guidelines apply to all payment systems in Europe
5.1 Legal, Regulatory and Governance Aspects

Institutional and Governance Framework

Legal Framework:
The Settlement Finality Act

Regulator and Overseer:
Narodowy Bank Polski (NBP)

Operator:
KIR

Primary regulations:
- The Settlement Finality Act, together with secondary legislation
- The Payment Services Act, together with secondary legislation
- In Poland issues relating to payment systems are regulated by the Act of 24 August 2001 on settlement finality in payment systems and securities settlement systems
- A settlement order that has entered the system may not be effectively revoked by a participant or by a third party from the moment defined by the rules of that system

The laws of Poland form the legal basis for the operations of Express Elixir, supplemented by various statutes, regulations and contractual provisions. All the relevant documents are governed by Polish law and are legally binding and enforceable.

Source: NBP | KIR | Primary Interview
5.1 Legal, Regulatory and Governance Aspects

Narodowy Bank Polski payment system oversight policy is primarily addressed to entities which operate systems subjected to oversight, i.e. payment systems operators and the Express Elixir system is governed by the same

Institutional and Governance Framework

Legal Framework:
The Settlement Finality Act

Regulator and Overseer:
Narodowy Bank Polski (NBP)

Operator:
KIR

- In accordance with Article 16 of the Settlement Finality Act, as of 1 January 2002, the President of NBP performs oversight of payment systems
- The main objective of oversight performed by the President of NBP is to promote safety and efficiency of payment infrastructure as well as to ensure compliance with the legal rules of its functioning in order to guarantee smooth operation and thereby to reduce the systemic risk and ensure all guidelines are met as per the Payment Oversight policy of the Central Bank
- President of NBP is authorized to acquire statistical data and information concerning the current functioning of the payment systems, including incidents occurring in those systems (i.e., events which may potentially disrupt their proper functioning)

Payment System Oversight:

- Oversight assessment is performed according to "Narodowy Bank Polski payment system oversight policy". There was no specific (different) rules applied to the licensing of the Express Elixir system.
- Payment System oversight focuses on functioning of payment systems, payment schemes, securities clearing systems, securities settlement systems and acquiring services
- NBP’s role in the conduct of oversight entails assessing applications submitted by entities which intend to operate within the above scope, collecting information regarding the current operations from entities which it oversees, assessing these operations and the performance of tasks with a view to introducing amendments necessary for the functioning of the aforementioned systems, and provision of the acquiring service
- The provisions of the national law and the generally accepted international standards (inter alia, issued by CPMI-IOSCO6, mainly the Principles for financial market infrastructures (PFMIs) and the European Union requirements, particularly those issued by the European Central Bank, serve as a benchmark in the assessment of payment systems
- The tools used in exercising the oversight enabling an appropriate ongoing provision of the oversight function include
  - Quantitative data analysis, including the performance of stress tests
  - Clarifying incidents which occur in payment systems and schemes
  - Ongoing cooperation with entities operating payment systems & payment schemes

Source: NBP | KIR | Primary Interview
5.1 Legal, Regulatory and Governance Aspects

KIR as the System Operator of Express Elixir has published rules on the operations, which are mandatorily applicable on all the participants of the system.

### Institutional and Governance Framework

<table>
<thead>
<tr>
<th>Legal Framework:</th>
<th>The Settlement Finality Act</th>
</tr>
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<tr>
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<td>Narodowy Bank Polski (NBP)</td>
</tr>
<tr>
<td>Operator:</td>
<td>KIR</td>
</tr>
</tbody>
</table>

KIR is a key entity of the Polish payment system infrastructure, which renders complex clearing services and provides top quality solutions meeting the needs and expectations of the banking and payment sectors. The owners of KIR are the NBP, the Polish Bank Association and the biggest commercial banks. KIR is head-quartered in Warsaw and has 17 regional offices.

**Enforcement of guidelines across Express Elixir:**

- The Express Elixir Regulation have been made by KIR in accordance with all the regulations of NBP and laws of Poland.
- These Regulations set out the rules for the operation of the Express Elixir system operated by KIR SA, in particular:
  - Tasks of Krajowa Izba Rozliczeniowa (KIR) related to the operation of the Express Elixir system.
  - Rules for the exchange and settlement of Payment Orders in the Express Elixir system.
  - Rules for participation in the Express Elixir system and obligations of Express Elixir System Participants.
  - Mutual liability of the Express Elixir system participants and the National Clearing House.
- The rules mandate participant to act in accordance with the provisions of the Regulations, Agreement, Functional Specification of the Express Elixir system and Technical Specifications of the Express Elixir system.
- The regulations list out the responsibilities of KIR and the participants to each other and between themselves.
- It makes participant is liable only for damage resulting from a culpable failure to perform or improper performance its obligations towards KIR.
- It also has provisions of suspension of participants from the system in case of any violations of the regulations laid down by KIR and the NBP.

Source: NBP | KIR | Primary Interview
5.2. Risk Management, Dispute Resolution and Customer Complaints

**Risk Management**

- Centralized guidelines have not been issued for risk management framework by the regulator National Bank of Poland or the operator KIR with respect to Express Elixir System.
- All payment systems in Poland must adhere to international best standards in terms of overall risk management framework, operational risk, cyber security, data management and AML/CFT as described under the Principles for Financial Market Infrastructure (PFMI) issued by CPMI and all other relevant guidelines mandated by European Central Bank in the E.U.
- The recommendations of the European Central Bank and their local version issued by the Polish Financial Supervision Authority imposed a series of requirements on banks operating in Poland regarding the fight against fraud in the electronic channels. NBP does not provide any other additional guidelines in this regard.
- NBP as the operator of the SORBNET2 system had to make changes in the central module of the previous version of the SORBNET system as well as prepare and provide KIR with the dedicated module enabling access to its escrow account kept in the SORBNET2 system.
- From the legal point of view, it was necessary to prepare amendments to the agreement with banks concerning the rules for opening a bank account in the SORBNET system, and defining, in a separate agreement between NBP and KIR, the rules for operating the escrow account.

**Inter-Bank Dispute and Customer Complaints**

- Participants are encouraged to formulate their own dispute resolution and customer complaint procedures to ensure fair redressal.
- Dispute parties also have the option to avail legal remedy under Polish Chamber of Commerce if guidelines stipulated by the participants do not provide for impartial redressal of dispute and complaints.
6. Annexure

Chapter sections:
6.1. Key Features
6.1. Key Features

**Operating hours**
- 24*7 including weekends and bank holidays

**Payment speed**
- Real time (~3 seconds)

**Transaction limit**
- PLN 100,000 for standard transactions.
- PLN 250,000 for tax payments

**Alias**
- Mobile number (optional)

**Channel**
- Internet and Mobile (branches and phone service also partially available)

**User charges**
- Each bank individually decides on the policy of fees (range from Nil to PLN 10)

**Infrastructure setup**
- New system

**Messaging format**
- ISO 20022

**Use of Open APIs**
- Dedicated API for system participants

**Authentication**
- Strong authentication

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**Payment Types & Use Cases/Services**

- **Individual**
  - Merchant Payments
  - Cross-border Payments
  - Request to Pay (limited)

- **Business**
  - Scheduled future Payments
  - Bill Payments

- **Government**
  - Bulk / Batch Payments

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**Settlement**

- **Approach**
  - Hub
  - RTGS
  - Distributed clearing

- **Type | Time**
  - Information not available
  - Immediate settlement

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Source: KIR S.A. | Blik | NBP | Instant Payments Systems Report | FIS Report