

## W2B Payments

### Complete solution for Cash Acceptance Network

The cash is not yet dominant payment type in the 21-th century, but undoubtedly it keeps (and will keep) very strong position in the market even in the economically and technologically high developed countries. "The cashless market" idea became utopia because of significant business, technical, social and psychological reasons.

Whereas the operations with big amount of cash are seemed as wildness, no one may imagine his/her ordinary day without small banknotes and coins.

The big researches on this issue in 2007 and 2008 discovered huge scales of small cash usage in the market.

Euromonitor International reports that **currently cash remains the most popular method of payment, with some three-quarters of all payments made in cash.**

Another important conclusion is a dominant role of cash payments below \$3 in the total number of personal transactions with the cash.

Thus the business task will be supporting, not ignoring of personal cash payments.

As software developer company **W2B** company started to take up this challenge since 2007. We had developed full-automated **cash acceptance network** based on the advanced technologies. **W2B Payments** allows accepting real-time cash payments for the leading operators of mobile and landline communication networks, commercial television and various service providers. We support up to 200 service providers, 100 000 agent outlets. Our processing center is able to accept more than 500 concurrent client requests. One day turn-over of our system is approximate \$5 million.

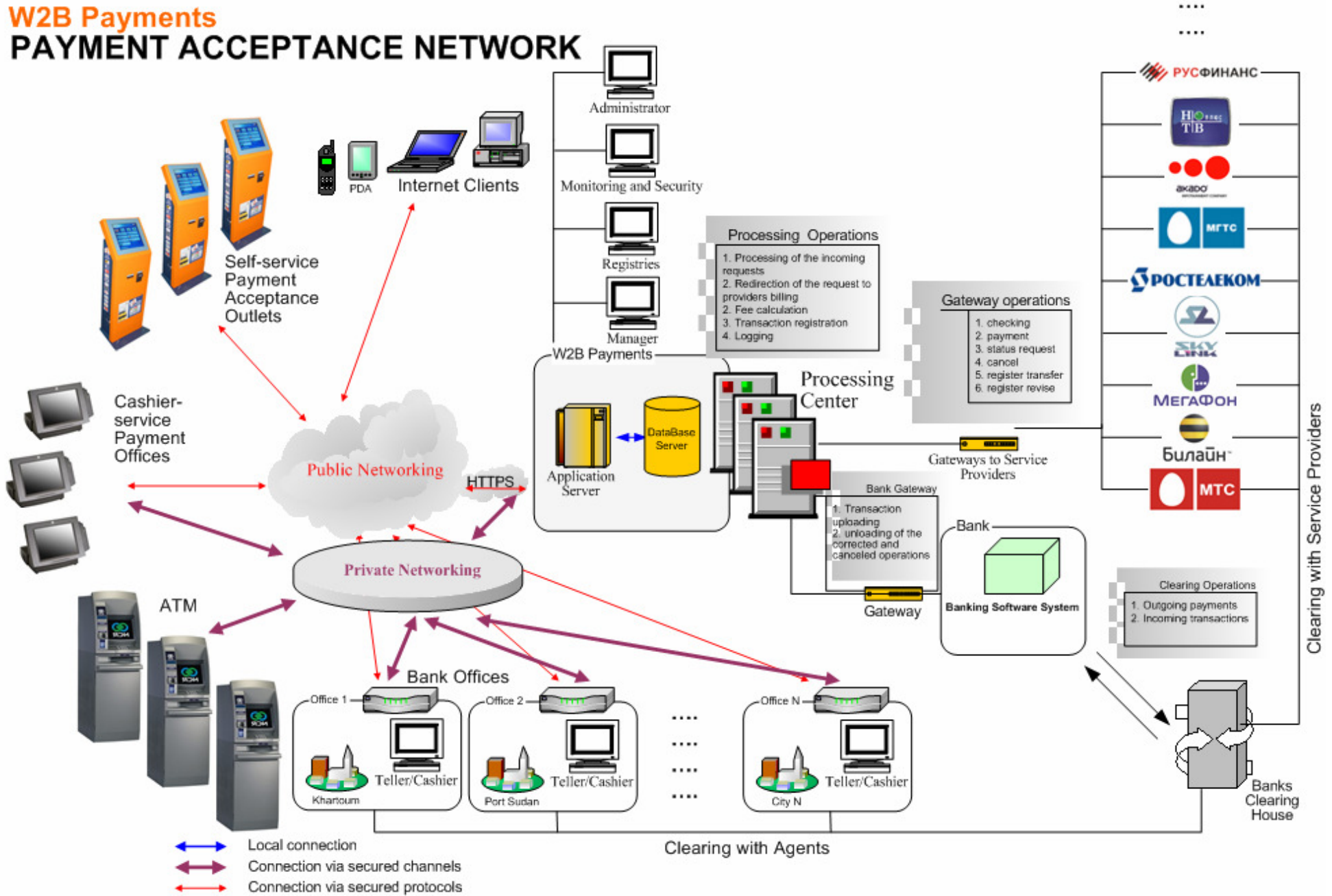


### The main advancements of W2B Payments system

- **Full centralization and management.** All system/network modules are reliable interlocked by the engine. Each module activity is obligatory registered in the core.
- **Full real time.** All operations are processing in the real mode. **W2B Payments** is really online system. No any intentional delay or stoppage during the transaction.
- **Full serial architecture.** Each request is processing in the serial mode since the generation moment until the final result (success or error). The principle basis of processing is "one request, one transaction, one result during limited period". **W2B Payments** refuses threading as transaction processing method flatly. It allows excluding all possible cases of data duplication and overwriting. In the case of timeout or any other problems in the last stages of payment (if the payment was implemented in the Processing Center) the system returns "OK" response to Agent, then moves transaction to active-task queue. Even in the queue the uncompleted transactions are processing by the same principles like online ones. Thus all type operations, actions and events are predictable in the system, which make it more strong, reliable and easy supportable.
- **High number of concurrent connections.** **W2B Payments** based on the high reliable and effective web technologies supports more than 500 concurrent connections.

- **Minimal Hardware/ Software Requirements.** As software with resource save architecture and compact code **W2B Payments** does not arise loading problems for basic hardware units (processor, memory, storage). It may work even in the computer equipments with lowest configuration. As “open source” software **W2B Payments** just require presence of some important platform software Apache+PHP+OpenSSL with standard configuration.
- **3-rd part software licensing FREE.** **W2B Payments** is coming as self sufficient software package. All server equipments in the **Payment Acceptance Network** based on **W2B Payments** are free of **proprietary** soft.
- **Scalability.** The software engine of **W2B Payments** is ready for rapid hardware deployment. It supports wide range of Hardware equipments and Operational Systems.
- **Platform Openness.** It’s an absolutely open system for integration with any possible technologies, standards and protocols. The Gateway module allows integrating wide scale software, which are used in the partner companies (billing systems, client or front end payment acceptance software and so on). Inputting/outgoing data becomes transparent for **W2B Payments** with the help of full featured tools of data format conversion. Nowadays our system supports up to 300 data exchange protocols with different type of cryptography implementation.
- **Quick Modification Readiness.** As web technological product **W2B Payments** is coming with open source code, which is not requires compilation. It’s possible to implement most of changes promptly without stopping or restarting services.
- **Easy Supporting.** The system centralization allows providing full working capacity with the help of minimal staff. The specialized applications with user-friendly interfaces provide operative monitoring, easy management of the list of the payment receivers (enterprises), trucking a condition of the Self-service payment outlets and other client points via Internet. The compact and simple source code facilitates training of the developer staff for further evolution.

# W2B Payments PAYMENT ACCEPTANCE NETWORK



## FUNCTIONAL MODULES

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### Processing Server

The Processing Server is a core section in the system. It is responsible for a payments processing, monitoring, back-office and accounting tasks. It has a full centralized structure with rich and flexible administration tools. The Processing Server is fully real-time system. It processes incoming requests in online mode in the frame of serial architecture. The Processing server uses wide scale cryptography tools for data exchange with payment acceptance points.

Processing Server features:

- Checking correctness of payment essentials with the help of complex means (spell checking, simple data control filters, own data directories, checksum algorithms and, of course, answers by the service providers' billings)
- Processing payments in online mode.
- Downloading payments information into Bank Software System
- Implementation of claim procedures. Payment editing or cancellation in strongly established order
- Generating daily/weekly/monthly registers for business partners (Agents and Service Providers) and revising them
- Rich Reporting and Statistics
- Data Encoding/Decoding and Signing/Verifying (Digital Signature).
- Alarming about problems in Processing to the staff with the help of email and SMS.

### Billing Gateway

Interface with the bank software system is essential to automate the downloading of the payments that are processed through **W2B Payments**. The Gateway module allows:

- Exporting information about payments into bank software system for further transferring to clearing system service.
- Importing incoming payments for Agents' deposit accounts.
- Processing payment cancellation or editing requests by partners' banks

### Bank Software Gateway

Interface with the bank software system is essential to automate the downloading of the payments that are processed through **W2B Payments**. The Gateway module allows:

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### Payment Acceptance Points (PAP)

The **outlets** software is simple client program, which is installed in the computer of payment acceptance point. The data exchange with the server of the accepting payments is doing via any Internet connection. The software allows receiving information about accepting payments, getting information about the results of the processing and the rests in the system accounts. This client software requires minimal requirements of the clients' computer resources.

The client software installed in the PAP allows to:

- accept payments for benefit of the different service providers in the full-scale mode:
  - input required information of the payment by the user
  - checking inputted information with the help terminal and server means
  - determination of the paid-in denominations
  - printing receipt for the payer
- ask transaction status
- report hardware/software measures to server
- receive and run service instructions by the server

## SOFTWARE COMPOSITION

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**W2B Payments** consists of the following subsystems:

- “Manager” Subsystem;
- “Registries” Subsystem;
- “Security” Subsystem;
- “Administrator” Subsystem;

### “Manager” Subsystem

The “Manager” Subsystem is a dispatcher module in the system. Its main designation is an online processing. “Manager” Subsystem allows to:

- view and control flow of receiving payments
- cancel incorrect or dubious payments
- edit processed payments in the frame of strongly established order
- monitor rest in the Agent accounts
- monitor top up operations of deposit accounts

The software provides full reporting and rich statistics. The manager can generate reports using wide scale flexible filters.

### “Registries” Subsystem

The “Registries” Subsystem is mainly designed for supporting offline operations, which are needed to settle clearing-off amounts between network partners (Agent <=> Processing Center <=> Service Provider) at the end of trading period (daily/weekly/monthly)

It allows:

- Receiving and revising partners’ registries. The revising results are sending to back.
- Generating and sending Processing Center’s registries to the Agent/Service Provider servers for revising in the partner side. The results of revising are registered in the system database.
- Exporting information about payments into bank software system for further transferring to clearing system service.
- Importing incoming payments for Agents’ deposit accounts.
- Processing payment cancellation or editing requests by partners’ banks

### “Administrator” Subsystem

The “Administrator” Subsystem allows to:

- manage(add/generate certificate /edit/activate/deactivate/delete) Agents
- manage Payment Acceptance Points
- manage Service Providers as Payment Receivers
- manage Services

### “Security” Subsystem

The “Security” Subsystem is combined software for staff of 3 departments (security, on-duty and system administration)

It allows to:

- monitor hardware and network loading
- monitor transaction processing and data transfer flows
- manage certificates and cryptography implementation
- alarm about problems or in-doubt operations

## SECURITY

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The security is provided with the help of the integral tools and techniques. At the same time it's provided with the help of complex security means in the frame of network infrastructure, Protocols and Operation Systems.

### Security tools and techniques:

**W2B Payments** provides complex tools and technologies for efficient security including modern Cryptographic Systems.

The company has own Certificate Authority Center (<http://www.w2cert.ru>)

**Digital Signature:** Guarantees authenticity of electronically signed documents and certifies the information was not modified during transmission. In addition the digital signature is used for user authentication. Certified encryption algorithms are used to generate the Digital Signature.

**Encryption:** **W2B Payments** utilizes the latest encryption technologies. Secure transmissions ensure information remains confidential. Encryption technology, such as Secure Socket Layer (SSL), protects data in three key ways:

1. Ensures the client is communicating with bank intended and prevents another computer from impersonating the bank.
2. Scrambles transferred data so it cannot be read by unauthorized parties.
3. Protects data integrity by verifying the client information has not been altered during transmission. The system detects if data was added or deleted after the message is sent. If any tampering has occurred, the connection is dropped.

**Session Handling:** An additional technique, which heightens user activity even more with basic application server tools. After successful authorization of the user the application server assigns another unique session id. The session tracks and controls all user activity during the session while the user information is available for any critical operation. For example all main SQL requests to retrieve, modify or remove records in the Database, are built using the identity information (User id, Group id, Client type and so on) stored in sessions. This guarantees each user can work only with his/her own information in according with the user policy in the presence of session identifiers.

**Logging:** Logs all client and bank employee. The client's IP address, access time, sessions, key identifications and payment details are stored in the log files. **W2B Payments** allows for supervisions of the archives containing the finance documents for possible problem resolution. Each document has its own log history starting with the application.

## **ADVANTAGES FOR SERVICE PROVIDERS**

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### **Profitability**

The service providers spend up to 20% of income on scratch cards manufacturing and distribution, while the payment collection with the help of **Payment Acceptance Network** requires only 3% in the large cities and 4% in rural areas.

The service provider would save significant resources shrinking of the scratch cards departments. From the another side, it's an important that the companies contract out of double payment of the sales tax, as compared to sales of scratch cards.

### **Reduction Risks with Cash Money**

The number of operations with real cash money is reduced, which, in its turn:

1. reduces risks of robbery;
2. reduces risks of the staff's fraud;
3. reduces cash collecting costs;
4. reduces the amount of work and risks during checkup by the tax authorities.

### **Counterfeit Risks**

No reputation and economic risks of circulation of the counterfeit scratch cards with the brand name of the operator.

### **Risks of Storage**

No costs for storage and protection of the manufactured scratch cards. Risks of the fraud are minimized.

### **New customers Growth**

The availability of low cost payments allows youngest part of population and other groups experiencing problems with the minimal face value of the scratch cards to subscribe and/or increase their payments.

The full-scale implementation of the **Payment Acceptance Network** by GSM-operators in Russia provides for an increase in the number of subscribers up to 45%, and the revenue grows by 20%.

### **Activity Growth**

The usage of **Payment Acceptance Network** allows reducing time of a subscriber staying disconnected. The sooner the subscriber will top-up, the more airtime will be used.

### **Geography of Payments**

With the help of **W2B** technology, it is possible to arrange payments anywhere in the country.

### **Reliability**

It is more secure to work with several large chains or payment systems in the frame of centralized and online network, than with hundreds of the small scratch cards dealers.

### **Simplicity and Convenience**

The implementation costs for billing gateways is sizable lower comparison with the small dealers

### **Service Range Expansion**

More flexible top-up brings additional advantages in competition.

## **Security**

All members of **Payment Acceptance Network** (Agents and Service Providers) are strictly determined. The requests or other type activates, which are coming from the unregistered points are strongly forbidden. Thus the system is reliable closed and secured against foreign attacks and fraud attempts. The money from Agent's account can be transferred to the service provider's account only. It is impossible to withdraw money from the system at will of a payment acceptance point employee.

## ADVANTAGES FOR PAYMENT ACCEPTANCE NETWORK

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### Thrift and Profitability

The agents save significant staff, finance and other resources with implementation of the self-serve outlets. For example the self-service outlet needs only 1m<sup>2</sup> for installation. Meantime it may replace 2 or 3 traditional sale points with permanent cashiers and operators. As direct staff free solution it may work nonstop. **The self-service outlet is available 24 hours a day, 7 days a week and 365 days a year.**

The recoupment of the self-service outlets is so quickly (just -3-5 months).

The self-service outlets are not object of taxation.

The agents have a chance to set up individual fees for each sale point in addition of the fixed fees by **Payment Acceptance Network**. Moreover each month the agents may be rewarded by results of operations.

**W2B Payments** allows flexible configuration of the service providers

### Easy maintenance

The Agent subsystem of **Payment Acceptance Network** is fully automated. It allows monitoring outlet activity in online mode via Agent Control Panel. **W2B Payments** provides full scale of features for Agents

#### *Hardware checking*

1. Network Connection
2. Processor Loading
3. Memory Loading
4. Disk Storage Loading
5. Fan and Temperature Activities

#### *Transaction Activities*

1. Full Reporting
2. Wide scale Statistics
3. Payment cancellation
4. Claiming of failure transaction

#### *Accounting*

1. Rest screenshots
2. Statements
3. Top up capabilities

#### *Software configuration and Administration*

1. Service List management
2. Individual Fee management
3. Supporting Hardware management

### New Customers Growth

New customers bring turnover growth up to 40%.

### Simplicity and Convenience

It is convenient to work with one large payment system which gives an opportunity to accept payments made to all communication operators, rather than to build and maintain billing gateways with all operators by yourself.

### Service Range Expansion

The customer receives a quality service: the personal account of the operator is refilled within seconds.

**How it works for Agents?** (joining and running by the example of self-service outlets)

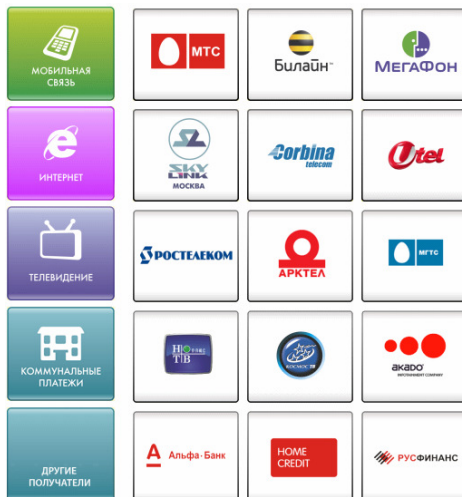
1. The Agent purchases self-service outlets and signs contract with **Payment Acceptance Network**.
2. The Agent buys SIM card and subscribes GPRS or gets contract on dedicated network line (if it's available in the payment acceptance point area).

3. The provider of self-service machines sets up and tests configuration.
4. The ready for running outlets is transporting to payment acceptance point.
5. The Agent installs it in his area or rents **1m<sup>2</sup>**. Just one plug set with 220w (ground connection) is needed for installation
6. The Agent modify service providers list and sets up individual fees (1,5-3% recommended).
7. The Payment System Company opens Agent's deposit account.
8. The Agent tops up it's account with any means
9. The Payment System Company grants access to Agent Control Panel for remote management of account and payment acceptance points. The Access is via Internet. It not needs client's fixed location.
10. The agent may accept payments from the personal clients within account limit.
11. All transaction data are transferred to the processing server.
12. After successful processing of the payment the sum is automatically withdrawn from the Agent deposit account and transferred to the service provider account in the accounting module of Processing Center.
13. The Agent receives a fee from each payment
14. The agent receives additional bonuses by the Processing Center as a result of monthly transactions
15. The Agent must manage it's deposit account and carries out top up it

## ADVANTAGES FOR PERSONAL PAYERS

1. The payer can do express top up operations from same payment acceptance point
2. The payment with the help of self-service outlets does not require any addition actions for example like scratch card activation.
3. Limit free for top up operations. The payer is able to transfer any sum.
4. With the help of **W2B Payments** technology, it is possible to make payments anywhere in the country.
5. All transactions are secure and risk less.
6. User friendly interface makes easy any type of payments

### How it works for Payer?



The system is comprehended and suitable for each social group. With the help of graphical and text hints the client does simple payment operations without foreign aid and special instructions just touching to sensor screen with finger.

The payer chooses operator from the service provider list.

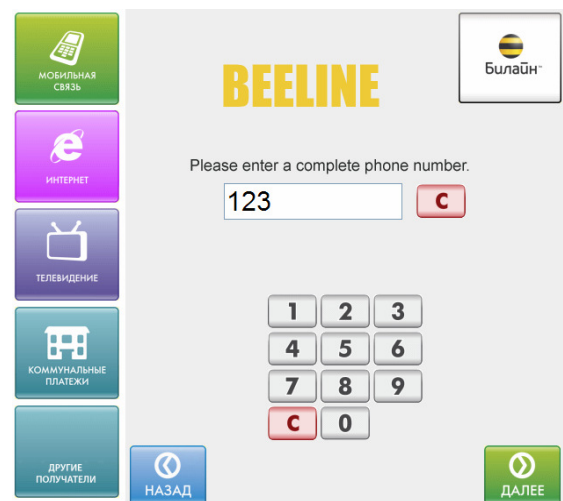
The machine asks to enter payment essentials (phone/account/contract number or any additional information).



Then the outlet checks entered information with the help of payment receiver billing and control filters in the online mode. In the case of success the system asks to enter cash.

The client inserts denominations into cash validator.

After sum checking the payer approves the payment. The machine prints receipt with essentials of payment receiver and Agent companies, transaction number and sum. The payment is processing during pair minutes.



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