A Company-Specific Business Process "Accounting of Cash on the Bank Accounts" in the Global Electronic Payment System

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Abstract. In the document, simulation of the company-specific business process (BP) "Accounting of cash on the Bank accounts" in the global electronic payment system is presented based on the process approach built upon the evolutionary reengineering principles and applying the high-tech software. BP "Accounting of cash on the Bank accounts" (Activity Model As-Is) at the modern Ukrainian companies is analyzed. Simulation of BP "Accounting of cash on the Bank accounts" in the global electronic payment system (Activity Model To-Be) is shown.

Keywords. Business process, accounting, accounting system, information system (IS), e-bank.

Key Terms. Primary document, Workflow, Accounting registers, Operational documents, Universal staging mechanism, Documentary authority, Financial peg, Typical business operation (TBO)

1 Introduction

A current trend in the accounting information systems is transition from the functional (hierarchical) approach to the process one, the fundamental principle of which is representation of a company accounting system as a system of the interacting BPs. Transition to the process approach is accompanied by reorganization of the BPs and depends on a clear understanding of essence of the "business process" concept and its role in accounting. For the functional and modular approach to the construction and operation of an company information system (IS), some localization of the accounting BPs (or their individual modules for the end-to-end processes) within certain areas of accounting is typical, consequently, the structure of the accounting BPs overlaps the functional accounting system of a company, so the basic principle to define the accounting BPs will be the principle of the functional hierarchical ordering.

Under an accounting business process (BP) we understand a guided workflow (actions), resulting in the information (accounting and reporting data) of certain value to

ICTERI 2016, Kyiv, Ukraine, June 21-24, 2016

the users. The construction of an accounting BP network is based on the hierarchical functional structure of a company's accounting system (accounting of cash, expenses, settlements with the staff, etc.).

Evolution of relations between a company and a bank shows a strong tendency of adaptation to the realities of functioning in the constantly changing environment. Electronic banking as a stage of relations "client-bank" amidst E-economy is primarily treated as modernization of the communication channels and means, and secondly, as a response to the increased customers' requirements to the banking services quality and range. As Hammer rightly notes, such categories as innovation and speed, service and quality are the key concepts of the new decade[1].

The goal of the paper is analysis of the current state of cash accounting on the Bank accounts for a typical Ukrainian company (Activity Model As-Is) and formulate recommendations regarding the strategy for implementation of a process approach and evolutionary economics to the information system by the example of simulation of the company-specific BP "Accounting of cash on the Bank accounts" (Activity Model To-Be) in terms of the global electronic payment system.

In order to achieve this goal, it is necessary to perform the following tasks:

- build a BP model "Funds transactions accounting" on the basis of evolutionary postulates of economy that defines the place of BP in the architecture of the accounting system of the enterprise and provides a conceptual understanding of the essence of the process and its surrounding at the top level of the hierarchy, while empirical implementation represents the bottom hierarchy level;
- step by step presentation of business analytics as a general description of the business process, its modules, regulations, providing results in tabular form, identifying and fixing all possible versions of the regulations fulfillment on the basis of the fundamental accounting principles in the form of algorithms;
- achieving balance of evolutionary changes and revolutionary quality transformations of the BP "Funds transactions accounting" in order to adapt it to the current and the potential challenges of the environment to preserve the viability of the enterprise accounting system in the long run.

Paper has following structure: section 2 is devoted to related works, section 3 demonstrates a description of BP "Accounting of cash on the Bank accounts" (Activity Model As-Is), while section 4 considers the description of BP "Accounting of cash on the Bank accounts" in the global electronic payment system (Activity Model To-Be), section 5 concludes.

The following terms within BP "Accounting of cash on the Bank accounts" shall be applied in the above sense:

Workflow – a flow route (scheme) of the documents accounting funds between the services of the company and the bank.

Operational documents – the primary documents supporting and confirming the actual operations on the funds flow on the Bank accounts. BP "Accounting of cash on the Bank accounts" is accompanied by the following documents: a Payment order and Bank account statement. Each primary document, in light of the evolutionary theory

of paradigm [3], can be considered as a living organism having its own life cycle, which in turn comprises the steps of passing certain services or business units of a company. The main steps (stages) of a primary document's life cycle include: preparation → accounting treatment → archive.

Universal staging mechanism - a mechanism designed to formalize and control the BP stages.

For every stage of the BP "Accounting of cash on the Bank accounts" the following parameters are prescribed:

- the stage owner: can work with a staging object at the respective stage (BUH_DS – accountant of cash operations of Bank accounts, FO – finance department, GL_BUH – head of accounting department);
- access to the actions related to introducing changes to the document (adding, deleting, copying) or amending some of its details;
- access to the settlement mode at the stage;
- setting of the automatic checks defining the document flow route.

Documentary authority – an organizational or financial administrative document governing the actual operations with the funds on the Bank accounts (an agreement, supplier's invoice, sales invoice to ship the goods, etc.).

Financial peg – an operation linking a documentary authority and an operational document (for example, invoice → Payment order) or two documentary authorities determining the amount of executing of one document by another (for instance, an agreement → invoice).

Accounting registers (Journals and Books) - for the chronological, systematic accumulation, grouping and summarizing of information about the business transactions recorded in the relevant primary documents (for instance, Book of payment orders, Bank statements register, Business operations journal).

Typical business operation (TBO) – a uniform instrument of the accounting entries for all subsystems of the accounting system.

2 Related Works

The definition of "Accounting" has been attracting the leading scientists around the world for a long time. Accounting is being considered as a management function, system, process, craft, profession, and in light of the current economic institutional theory – as a social and economic institution. However, professor V. Zhuk says "Even if we speak of accounting in terms of its primitive, technical component, it is probably hard to find a more complex system of actions providing a set of operations from assessment of the economic life elements to the end-to-end documentary evidence of the business operations with formation of the corresponding accountable figures" [2].

In addition, the evolutionary transformation in plane of the economic and social

organization related to the globalization processes, scale electronic communication development, rapid development of the computer equipment and communication technologies, increasing number of the E-business types, determine the vector of the accounting deep transformation and accounting data formation in accordance with the post industrial society needs. Professors Y. Kuzminskyi and S. Svirko emphasize the urgency of updating the methods and approaches to the research studies and practical advice in the field of accounting [3].

The idea of the transfer of the cyber process approach to organizations management appeared in the late eightieth of the 20th century. Hammer and Champy understands the business process as "a set of actions, which create the valuable outcome for the client on the basis of one or more types of source data"[4]. Harrington interprets this term as "logical, coherent, interconnected set of activities that consumes the resources of the supplier, creates the value and gives the result to the consumer"[5]. The definition of BP is closely associated with reengineering, developed by Hammer and Champy, who interprets it as a rejection of the established procedures, a fresh look at the work of creating a product or service and understanding the customer's value" [6].

The process approach as a basic foundation of modern management approaches should be represented in the balance circuit of the management system, but scientists in the areas of accounting haven't awarded it with the unambiguous assessment and practice implementation. Most scientists believe that "technical" process approach leads to inhibition of accounting modeling. Shyhun considers the process approach to be too narrow for accounting model creation, which is based on classifications of accounting objects, and economic activity is subject to modeling (processes, operations) [7].

However, Osmiatchenko proposed a methodological approach to the design of information systems of accounting, which, unlike the traditional approach based on functionally closed organizational schemes, stipulates the rejection of the autonomous logic in favor of strengthening the adaptation mechanism, focus on advanced structural engineering methods and business process reengineering [8].

Evolutionary economics has not acquired a significant spread in the academic community of Ukraine, but there are attempts in accounting to combine accounting procedures with the facility lifecycle [9-12].

Let us analyze the current state of cash accounting on the Bank accounts for a typical Ukrainian company (Activity Model As-Is) and formulate recommendations regarding the strategy for implementation of a process approach to the information system by the example of simulation of the company-specific BP "Accounting of cash on the Bank accounts" (Activity Model To-Be) in terms of the global electronic payment system.

3 A Description of BP "Accounting of Cash on the Bank Accounts" (Activity Model As-Is)

Cash at Ukrainian companies is usually accounted in IS of the company and an individual E-bank module without an established relationship or not using the electronic payment system at all.

3.1 Specifying Problems ("Bottleneck")

The problems of operation of the existing model of BP "Accounting of cash on the Bank accounts":

- double entry of the data contained in the primary documents, duplication of information, high risk of errors due to possible amendments in different systems;
- absence of operational information on balance and cash flow on the Bank accounts, a possibility of payments to contractors in real time, as well as planning and cash flow management at the company;
- slow response of the staff with regard to the innovations;
- limited resources for the purchase and operation of the appropriate IT platform supporting the workflow management, for instance, ERP- or CRM-systems.

3.2 Objectives and Metrics of Simulation and Automation of BP "Accounting of Cash on the Bank Accounts" (Activity Model To-Be)

The main objectives of BP "Accounting of cash on the Bank accounts" are:

- organization of operational accounting of funds on the Bank accounts in real-time in the "now for now" mode;
- a possibility to obtain timely information on the balance and cash flow on the Bank accounts.

Among the key metrics of BP "Accounting of cash on the Bank accounts" the following can be mentioned:

- no duplicated input of the primary (accounting and operational) data into the system;
- optimization of time to input and treat the primary documents;
- availability of actual data on the balance on the Bank accounts in the "now for now" mode;
- a possibility of planning and analysis of the cash flow on the Bank accounts.

4 Description of BP "Accounting of Cash on the Bank Accounts" in the Global Electronic Payment System (Activity Model To-Be)

4.1 General Description of BP "Accounting of Cash on the Bank Accounts" in Accounting System of a Company

BP "Accounting of cash on the Bank accounts" in the coordinates of a company's accounting system and from the position of evolutionary economics is a "branch" of the accounting area "Accounting of transactions in cash" along with BP "Cash accounting", "Loans accounting", "Deposit accounting" and others. To ensure operation of the electronic payment system it is necessary to add BP "Electronic payment system. Relationship with the E-bank system", consisting of several modules, to IS of the company (fig. 1).

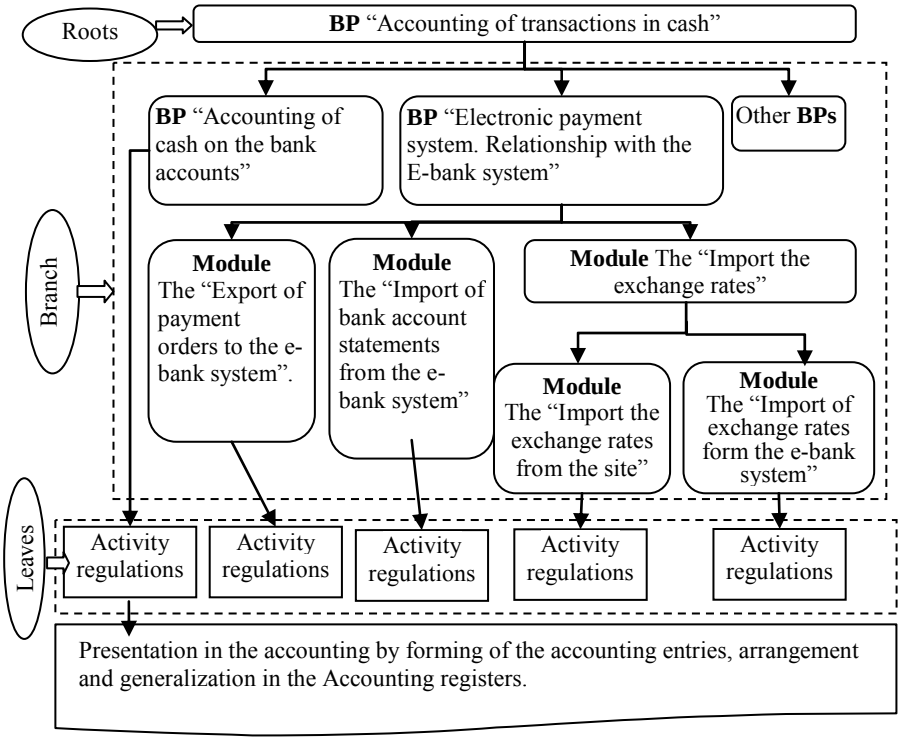

Fig. 1. Simulation of BP "Accounting of transactions in cash" in a company's accounting system on the evolutionary economics basis

The order for execution of a certain actions sequence defines the procedure for each BP or module. Description of the account parameters and procedure of actions

for BP define the mechanisms of formation and treatment of correspondence of the accounts in the accounting system, the control algorithms, the procedures for compilation of figures for the cumulative statements.

4.2 General Description of BP "Accounting of Cash on the Bank Accounts" in Accounting System of a Company

4.2.1. Procedure and Model of the "Export of Payment Orders to the E-Bank System" Module

According to the procedure of the "Export of Payment orders to the E-bank system" module, the accountant responsible for this area of accounting shall perform the following actions:

1. Prepare the Payment orders.

The Payment orders are prepared manually or generated automatically according to the documentary authority. Registration in the Book of payment orders is automatic in the context of each current account with the bank.

2. Export the Payment orders to an external file.

The duly executed Payment orders are exported to an external fixed-format file.

3. Import of the file to the E-bank system.

The existing file is sent to the E-bank system.

4. Transfer the signed Payment orders to the bank via the E-bank system.

The Payment orders are signed electronically by the responsible persons and sent to the bank via the E-bank system.

So, the Payment orders entered are transferred from the IS enterprise to the E-bank system (fig. 2), these operations shall not be displayed in the financial accounting, in other words, no correspondence of the accounts is formed.

4.2.2. Procedure and Model of the "Import of Payment Orders from the E-Bank System" Module

Every day the accountant responsible for this area of accounting shall perform the below specified actions in accordance with the procedure of the "Import of Bank account statements from the E-bank system" module:

1. Unload the Bank account statements out of the E-bank system.

Using the export procedure, the user unloads a file of the Bank account statements in the given format from the E-bank system through the exchange buffer for the previous day.

2. Download the Bank account statements to the company's IS.

Import to IS of the company of the file received using the exchange procedure to the interim Bank statements register.

3. Amendment of data (if compliance is not determined automatically).

4. Set the data arrangement mode.

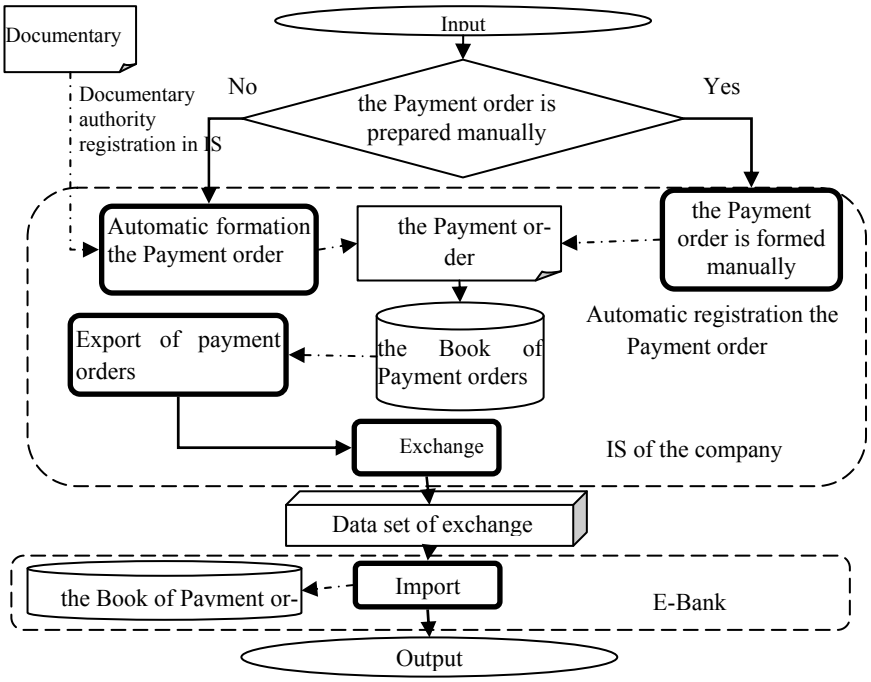

Fig. 2. Model of the "Export of Payment orders to the E-bank system" module

The Bank account statements imported from the E-bank system to IS of the company are processed determining pegging to the relevant Payment orders and/ or Documentary authorities (fig. 3), these data shall not be displayed in the financial accounting, so that no correspondence of the accounts is formed.

Consequently, the operation of BP "Electronic payment system. Relationship with the E-bank system" offers the following advantages:

1. When you download a file to IS of the company from the E-bank system using the exchange procedure, the following actions are performed automatically:

- identification of the organization for its details from the Bank account statements (search in the "Register of organizations" under the Bank codes, account or other details, when the codes match - the organization is identified, the previous statement is filled in from the Register);
- search for the Payment orders matching the Bank account statement in the IS Journal of the company. When the match is found - the previous Bank account statement is marked;
- determination of a typical business operation code for the debit and credit Bank statement (required for possible manual line arrangement in the Bank account statement).

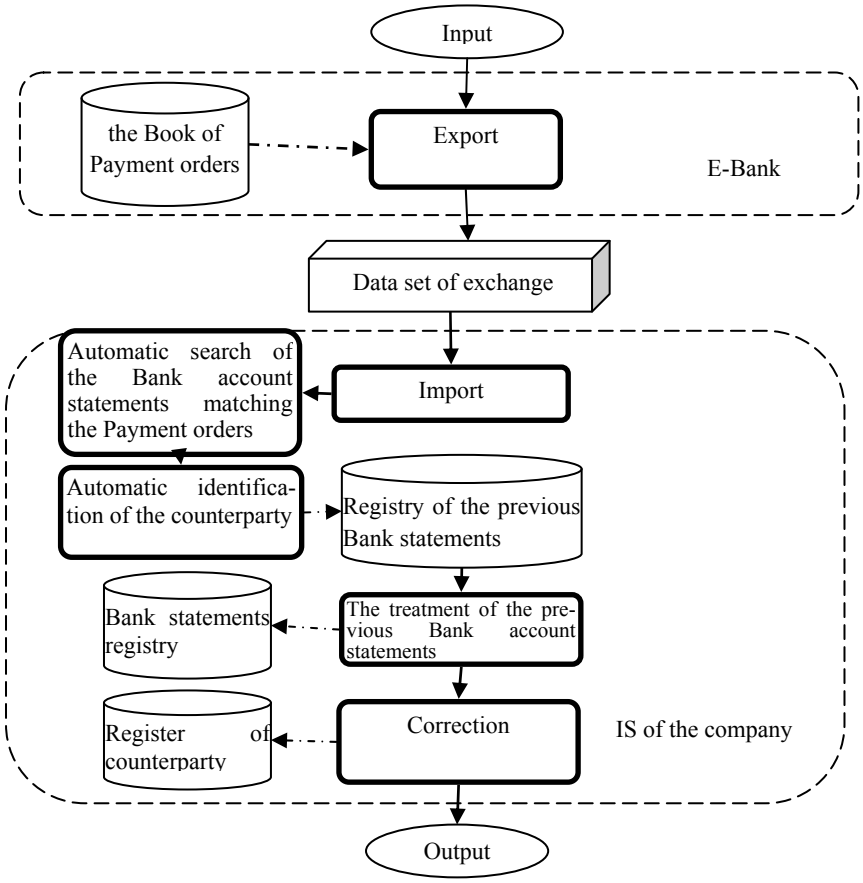

Fig. 3 Model of the "Import of Bank statements from the E-bank system" module

2. The results of treatment of the previous Bank account statements are:

- automatic determination of a typical business operation code for further formation of correspondence of the accounts during arrangement;
- automatic specification of number and date of the documentary authority matching the Bank account statement.

3. The data arrangement mode automatically performs the following actions:

- the Bank account statements from the previous database are transferred to the Bank statements register;
- the "Paid" note is made and date of entry in the Payment orders matching the Bank account statement is specified;
- the financial peg of the Bank account statement to the relevant documentary authority is determined, if the number of the documentary authority is specified during the treatment of the previous Bank account statements.

4.2.3. Procedure and Model of the "Impor of Payment Orders from the E-Bank System" Module

The exchange rate published on the website at 14-00 p.m. becomes effective on the following day. The module is configured to daily automatically import the exchange rates if the following requirements are met:

- the user is connected to the internet;
- the time for the daily request for the actual exchange rates is set.

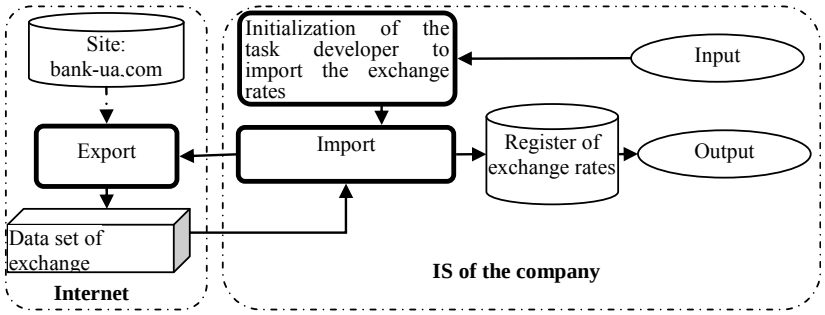

Fig. 4. Model "Import of exchange rates form the site http://bank-ua.com." module

If necessary, all parameters can be changed, and the automatic mode can be completely cancelled.

4.2.4. Procedure and Model of the "Import of Exchange Rates from the E-bank System" Module

This module procedure (fig. 5) includes the daily performance by the employee responsible for updating the currency exchange rates of the following actions:

- export of the exchange rates set by the bank on the current date, to an external fixed-format file from the E-bank system;
- import the file obtained through the exchange procedure to the "Register of exchange rates" of the company's IS.

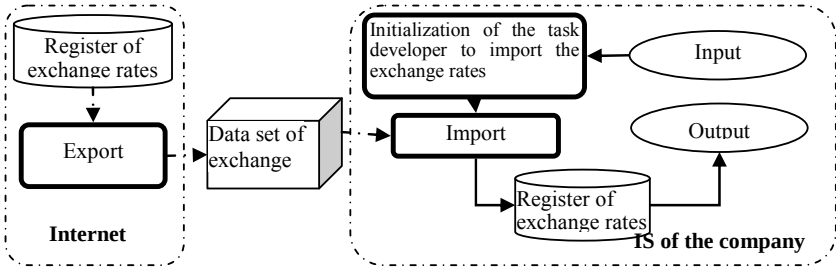

Fig. 5. Model of the "Import of exchange rates form the E-bank system" module

4.3 General Description of BP "Accounting of Cash on the Bank Accounts" in Accounting System of a Company

4.3.1. Procedure and Model of the "Import of Exchange Rates from the E-Bank System" Module

For each current account with the bank, there is a separate sub-account is set up in the work Chart of accounts. For the multicurrency current accounts, one sub-account is set up relating to each current account.

The recommended sub-account format:

311– current account in the national currency (general Chart of accounts)
311XX –bank (ordinal number)
311XXYYY – currency (for instance, code UAH (980)
311XXYYYZZ – current account in the Bank (ordinal number)
312– current account in the currency (general Chart of accounts)
312XX – Bank (ordinal number)
312XXYYY – currency (for instance, code USD (840)
312XXYYYZZ – current account in the Bank (ordinal number)
For instance:
3110198022, 26000000000022 " Open Joint-Stock Company the name of the bank" (UAH);
3120284023, 26000000000023 " Open Joint-Stock Company the name of the bank" (USD);
3120397824, 26000000000024 " Open Joint-Stock Company the name of the bank" (EUR).

4.3.2. Procedure and Model of the "Import of Exchange Rates from the E-Bank System" Module

The owner of BP is an accountant of operations on the Bank accounts that performs the sequence of actions under the Procedure (Table 1).

Table 1. Procedure of BP "Accounting of cash on the Bank accounts"

Action	Essence
1. Preparation of a Payment order. Checking details.	The approved documentary authorities are received by the accountant department to prepare the Payment orders. The accounting department checks the documentary authorities and makes the Payment orders in accordance with the payment period.
2. Making file for export to the E-bank system	Export to the E-bank system according to BP "Electronic payment system. Relationship with the E-bank system", module "Export of Payment orders to the E-bank system".

Action	Essence
3. Approval of the Payment orders	Variant I: if payments are made via the E-bank system, the Payment order shall be approved by the person responsible (electronic signature, visa, etc.). Variant II: if payments are not made via the E-bank system, the Payment order shall be printed out, the printed document shall be signed and delivered to the bank, and after the payments are effected one shall receive a printed Bank account statement.
4. Loading of a Bank account statement from the e-Bank system	The Bank account statement for the previous day is exported from the e-Bank system to an external fixed-format file. This file through the exchange procedure is exported to the company's IS into the interim Bank statements registry in accordance with the procedure of BP "Electronic payment system. Relation with the E-bank system", module "Import of Bank statements from the E-bank system".
5. Treatment of the interim Bank statements register	The Bank account statement is checked line by line (counterparty, documentary authority, business operation code, etc.)
6. Financial treatment of a Bank account statement	Financial peg to the following documents is determined: - the expense part of the Bank account statement (if a Payment order in the company's IS, financial peg to the documentary authority is determined automatically); - the revenue part of the Bank account statement to the documentary authority manually.
7. Accounting treatment of a Bank account statement	Automatic arrangement mode (to form the accounting entry). In the electronic document "Payment order" the "Paid" note is made to automatically form the relevant correspondence of the accounts based on the business operation code determined by the peg. A corresponding account to the "Account with the bank" is determined by the documentary authority. The mode provides a variant of a group formation of correspondence of the accounts based on the documents chosen. After treatment of the Bank account statement and formation of correspondence of the accounts for a certain date, the balance-based account may be closed for amendment before the date specified, that is, any entering/amendment/deleting of correspondence to the account before the specified date inclusive is not permitted.

The algorithm of executing the sequence of actions of BP "Accounting of cash on the Bank accounts" is graphically shown in Fig. 6.

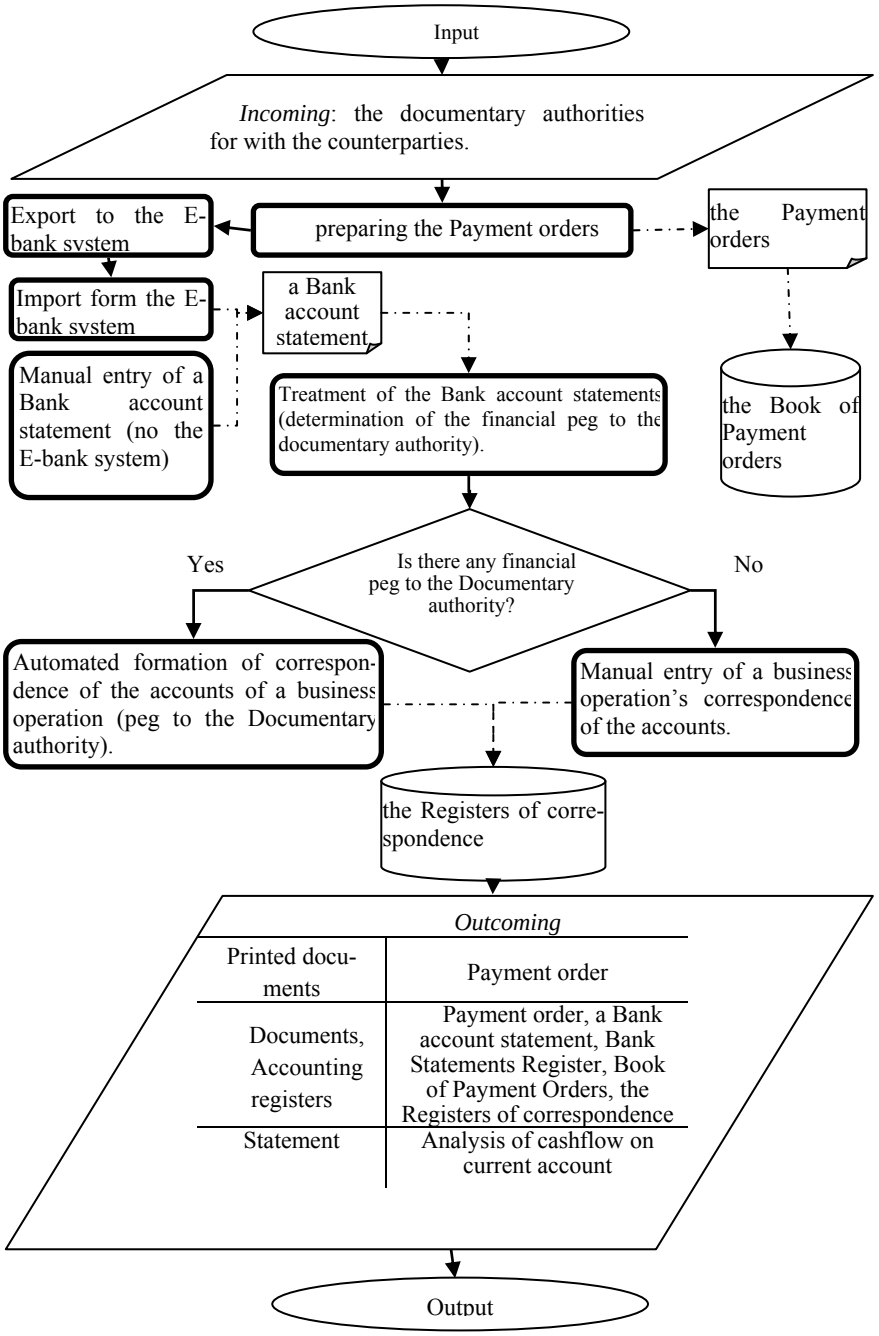

Fig. 6. Model of the BP "Accounting of cash on the Bank accounts"

4.3.3. Procedure and Model of the "Import of Exchange Rates from the E-Bank System" Module

The company's IS makes a provision for keeping the workflow rules according to the approved procedures. A primary document serves as:

- a basis for taking actions;
- a legal confirmation of the transaction;
- a basis for representation in the accounting (entry);
- an accounting information storage medium.

The primary document details storage is divided into the mandatory details (established by the external standards) and optional (introduced by the company at its own discretion). The proposed module of BP "Accounting of cash on the Bank accounts" enters the required details into the mechanism of a primary document preparation, but does not exclude the possibility to revise and add them at the configuration stage (table 2).

Table 2. Documents of BP. Document details

Detail	Explication
the Payment order	
Number	Automatic formation the numeration. There is a possibility of manually correction.
Date	Date of Payment order
Bank date	Date of Bank statement
Organization	
Agreement	
Accounts	31*
Bank	According to the account
Current account	According to the account
Sum	
Including VAT	There is a possibility of manually correction.
Receiver	
Bank of receiver	
The current account of the receiver	
Payment purpose	
Comment	
the Bank account statements	
Number	Ordinal, automatic formation.
Bank date	Date of Bank statement
Organization	
Agreement	
The type of business operation	To determine a corresponding account
Accounts	31*
Bank	According to the account
Current account	According to the account
Currency	
Sum in the currency	
Sum in the national currency	
Payment purpose	

A primary document details determine the assignment operation – specification of numbers of the accounts that are debited and credited, the directions of search and systematization in the section specified.

Normalization (data tabulation) lets to have the Journals (Registers) as the relational tables with the determined associative links between the elements, the lines (tuples) of which comply with the documents entered, and the details of the documents are put into columns (domains).

Each tuple in the table is usually unique due to a single domain.

For example, in the Book of Payment orders (table 3), the "Document number" domain defines the tuple uniqueness. In the operation, if necessary, you can add domains, thus expanding the data analyticity.

Table 3. The Book of Payment orders

Domain 1	Domain 2	…								Domain n	
Document status	**Was paid**	**Document date**	**Document number**	**Type of the document**	**Account of the organization**	**Sum**	**Currency**	**Counterparty**	**Type of the transaction**	**Account of the counterparty**	
Conducted	Paid	01.03.2016	0000001	the Payment order	Current account of the organization	5 000,00	UAH	Ltd «A»	Supplier payments	Current account of the counterparty	Tuple 1
Conducted	Paid	01.03.2016	0000002	the Payment order	Current account of the organization	10 000,00	UAH	Ltd «B»	The buyer paid	Current account of the counterparty	Tuple 2

Each tuple of the Bank statements registry (table 4) makes the "Bank account" domain unique, since a Bank account statement is made based on all transactions in one day on one current account.

The financial treatment of a Bank account statement forms the accounting entries in accordance with the settings of a typical business operation by the procedure of the corresponding accounts determination based on the Documentary authorities. The result is entered into the Business operations journal, which actually combines the information in the Bank account statement cross-cast and the related correspondence of the accounts (fig. 5).

Table 4. The Bank statements registry

Domain 1	Domain 2	⋮					Domain n	
Date	**Bank account**	**Currency**	**the Beginning Balance**	**Inpayment**	**Payout**	**Balance at END**	**Account of the counterparty**	
01.03.2016	Current account of the organization	UAH.	30 000	5 000		35 000	Current account of the counterparty	Tuple 1
01.03.2016	Current account of the organization	USD	45 000		10 000	35 000	Current account of the counterparty	Tuple 2

Table 5. The Business operations journal

The document status	**Date**	**Document number**	**Type of the document**	**Counterparty**	**Sum**	**Currency**	**…**
Conducted	01.03.2016	0000001	Payment order	Ltd «A»	5 000,00	UAH	
Conducted	01.03.2016	0000002	Payment order	Ltd «B»	10 000,00	UAH	

…

Debit	**Credit**	**Sum**	**Substance of Business Operation**	**…**
«Settlements with suppliers »	«Bank account»	5 000,00	The debt to suppliers has been put out	
«Bank account»	«Settlements with buyers»	10 000,00	The buyer paid has been received the current account	

5 Conclusions

Recently, one of the most popular areas of the scientific research is the process approach to the organization and operation of the domestic enterprises, and the advanced foreign and domestic experience of its practical implementation instead of the common functional approach is analyzed. At the same time, we should not forget that apart from the functional approach, the systemic one, which considers a set of the interrelated elements aimed at achieving objectives in the rapidly changing environment, and the situational approach, the essence of which is that the suitability and effectiveness of the system is determined by the situation, as well as the economic theory concepts, which have been forming and developing according to the market conditions, are of a significant influence on the contemporary process approach. Thus, transition to the process approach does not mean a complete give up on other approaches because the process approach is compatible with a variety of approaches,

concepts and theories, so, the question is the change of an imperative, however, the transition shall be based on the reengineering principles and the high-tech software application.

The author worked out the BP model "Funds accounting in the account of the Bank" in the company in the global electronic payment system that summarizes the IC typology involving users with the appropriate level of expertise and competence in IC. The implementation of the BP model reveals the mechanism of documentation and reflection of economic operations according to the principle of double-entry using step by step developed algorithms and providing the results in tabular form. It is proposed to take the results of this research as a basis for simulation of an accounting BPs network for construction of a company's accounting system.

References

1. Bezgin, K. S.: Quality management of business processes in the enterprise. Manuscript (2009)
2. Kozenkov, D.: Business Processes Planning as the Basis of the Creation Enterprise Architecture. The Visnyk of the SSU 3. 126--136 (2011)
3. Harrington, H. J,. Esseling, E. K.C., van Nimwegen. H.: Business Process Improvement Workbook: Documentation, Analysis, Design, and Management of Business Process Improvement. London: McGraw-Hill, 1996
4. Fedorov, I.: Modeling business processes in BPMN 2.0 notation. M., MESI (2013)
5. Davenport, T.: Process Innovation: Reengeneering Work through Information Technology., Boston, MA.: Harvard Business School Press (1993)
6. Druchenko, L.: Implementation of Business Processes Modeling and Optimization in the Local Government. Public Administration: Theory and Practice 1(3) (2010)
7. Ponomarenko, V., Minuhin, S., Znahur, S.: Theory and Practice of Business Process Modeling: Monograph. Simon Kuznets Kharkiv National University of Economics (2013)
8. Manganelli, R., Klein, M.: The Reengineering Handbook: A Step-By-Step Guide to Business Transformation. New York: Amacom (1994)
9. Hammer, M., Champy, J.: Reengeneering the Corporation: A Manifesto for Business Revolution. London : Nicholas Brealey Publishing (1993)
10. Taranyuk, L., Zaporozhchenko, O.: Organizational Principles of Reengineering Business Processes of Enterprises. Mechanism of Economic Regulation 4, 122--131 (2011)
11. Kuzmin, O., Sidorov, Y., Kozik, V.: Achievements and Problems of Evolutionary Economics: Monograph. Publishing House of Lviv Polytechnic National University (2011)
12. Reilly, J. P., Creaner, M. J.: NGOSS Distilled, The Lean Corporation (2005)
13. Kalyanov, G.: Business Processes Modeling, Analysis, Reorganization and Automation. Finance and Statistics (2007)
14. Melnikov, A.: Bases of Business Organization. Center of educational literature (2013)
15. Korzachenko, O.: The concept of business processes modeling and optimization of telecommunications companies. Scientific and theoretical journal Khmelnitsky University of Economics "Science and Economics" 4 (32), 247--253 (2013)
16. Gruber, T.: A Translation Approach to Portable Ontologies. Knowledge Acquisition, 5 (2), 199--220 (1993)