

Optimization of business processes in banks through flexible workflow

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Abstract. This article describes an integrated business model of a commercial bank. There are examples of components that go into its composition: wooden models and business processes, strategic goals, organizational structure, system architecture, operational and marketing risk models, etc. The practice has shown that the development and implementation of the integrated business model of the bank significantly increase operating efficiency and its management, ensures organizational and technology stable development.

Considering the evolution of business processes in the banking sector, should be analysed their common characteristics. From the author's point of view, a business process is a set of various activities of a commercial bank in which "Input" is one or more financial and material resources, as a result of this activity and "output" is created by banking product, which is some value to consumer.

Using workflow technology, management business process efficiency issue is a matter of managing the integration of resources and sequence of actions aimed at achieving this goal. In turn, it implies management of jobs or functions' interaction, synchronizing of the assignments periods, reducing delays in the transmission of the results etc. Workflow technology is very important for managers at all levels, as they can use it to easily strengthen the control over what is happening in a particular unit, and in the bank as a whole. The manager is able to plan, to implement rules, to interact within the framework of the company's procedures and tasks entrusted to the system of the distribution function and execution control, alert on the implementation and issuance of the statistical data on the effectiveness of operating procedures.

Development and active use of the integrated bank business model is one of the key success factors that contribute to long-term and stable development of the bank, increase employee efficiency and business processes, implement the strategic objectives.



1. Introduction

Strengthening inter-bank competition, diversification of banking products and improving quality of the banking services require a faster response to the changes taking place right now for the bank. Consequently, it requires tools and methods that can help banks become more efficient.

The issue of the commercial bank's business model is one vast, given the complexity of banking activity alike actual financial and economic context, defined for commercial banks in Moldova among other factors of influence and the recent global financial crisis, during an European integration banking process. From this perspective complex systems sometimes seem too chaotic to be able to recognize in them a pattern being even difficult to build valid universal templates, but possibly to determine specific influence factors on systems and to determine the influence of these factors on system. Management's opinion of a bank determines the application of a specific banking business model; the vision is influenced in turn by risk appetite and management of commercial bank.

2. The description of the problem and critical state-of-the-art

The main research objective is to evaluate the theoretical and practical aspects of the business model of commercial banks and ways to improve it in terms of a process of European integration, from a competition restricted specifies a national system to more competition broad, specific for an integrated system.

Modeling banking business plan, should be done in close correlation with the management objectives of the bank, if the manager proposes doubling profits, therefore will assume greater risk and if it proposes a development strategy based on minimizing risks, profits will be lower but safer.

Any entity survives in interdependence with internal and external environment in part, thus a bank exists in relationship with others around. From this point of view it should be highlighted two major trends in the development of a business model in the XXI century: sustainable business development and corporate governance.

For better efficiency, especially in the specific markets integrated as the European Union, banks are obliged to be very careful about best practices. But also increasing competition on these markets leads to growth of the risks assumed by bank, hence the practice of regulation authorities to provide a more prominent role in the prudential regulation of capital adequacy. As a result it appeared a natural concern of some authors in studying banking business models hypotheses.

In current economic literature we can find many definitions of the "business process" term, summarized in table 1

Table 1. Conceptual approach to the concept of "Business process".

The author		Definitions
Hammer Champy J	M,	All actions at that input use one or more resources, and therefore the output of this activity is created a product that represents value for the consumer [1].
Davenport T		Several internal steps (activities), from one or more inputs and ending with the creation of required by the customers product, including meeting the cost, durability and the service quality [2].
Porter M E		The totality of actions that produce a result (product or service) and that has a value for the customer [3].
Hammer Stanton S A	M,	Logic array of independent actions using company's resources to create or to receive in the nearest or foreseeable future of measurable outputs, useful for the clients, such as product or service [4].
Peppard J, Rowland P		Balanced and independent activities, with a finality, that under a certain technology transforms inputs in outputs, which represent a value for the consumer [5].
David J Teece		A business model articulates the logic, the data, and other evidence that support a value proposition for the customer, and a viable structure of

Magretta J	revenues and costs for the enterprise delivering that value [6, p. 179]. The business models are ‘variations on the generic value chain underlying all businesses’ [7].
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Source: elaborated by the author based on the mentioned studies

Thus, the most of the definitions listed in Table1 emphasize the organization of the business process to final output and consumer satisfaction, and not to perform certain functions. Other authors define business process as focusing attention on its internal structure. As a result of those presented, we can mention that the business process represents a symbiosis between the direct realization of functions and obtaining favorable end result.

The literature describes several types of business processes and identified six main groups, shown in table 2.

Table 2. Types of business process in banks.

Types of business process	Characteristics	Examples of business processes in a commercial bank
Basic	Focused on the need of banking customers by offering banking products and banking services, namely creating direct a value for client by using resources.	Lending process, serving of deposits, cash services for businesses and individuals, achieve exchange transactions etc.
Accompany	Focused on the manufacturing of services and products that are the results of the organization and related activities that generate income.	Marketing, quality improvement.
Auxiliary	Designed for a normal functioning of the basic processes that do not create value for the customer directly, but generally, are mandatory or necessary for the operation and implementation of a business process of a commercial bank.	Informational technology, logistics, accounting software etc.
Supply	Designed to ensure key processes and associate support focusing on support of its individual characteristics.	IT, software and communication, legal support, administrative and economic security.
Management processes	It covers the full range of management functions within each business and wide-system business process as a whole	Human resources, finance, marketing and risk management, branch network, active and passive, strategic management
Development processes	Improving processes of goods or services, technological development, modifying equipment, innovative processes.	Management and control improving, new banking product development.

Source: adapted by author by 6, p. 180

3. Methodology and data

Business modeling in one form or another is done in all commercial banks, the only difference lies in the level of the development and depth of these activities. Commercial banks, during their development are aware of the need formalizing its activities and therefore there is a rising need to build an integrated business model. Thus, the benefits and advantages the banks obtain are:

1. Integrated business model is very important for merging and bank acquisitions, because banks have different organizational structures, business processes, strategies and other activities that can create

obstacles in such processes. Merges and acquisitions require a combination of these elements, reorganize them and, if they are not formalized as a business model, further work is rather problematic.

2. Integrated business model is very important for opening new branches. Typically, successful modern banks create a model that includes the business processes, its organizational structure, building system and operational resources, the interaction scheme between subsidiaries to headquarter. Thus, an integrated business model facilitates and accelerates opening process of opening new branches, increasing the stability and quality of their operation.

3. Integrated business model is particularly effective as a tool that generates the bank development, growing transparency and efficient management. Thanks to model, the development model issues can be quickly and efficiently resolved: efficient automation, fair select and staff motivation, development and launch on new products and services, etc.

4. Integrated business model is a significant step towards construction and quality management standards certification in accordance with the ISO 9000, to improve the image and increase the market value of the bank.

5. Integrated business model represent one of the key factors in implementing the banking strategy, since the strategy connects all elements and control systems (business processes, human resources, project management, IT system, etc.).

6. Integrated business model due to the existence of regulations, rules, allow releasing managers in carrying out routine functions to make correct managerial decisions timely.

As previously mentioned, the establishment of an integrated business model is important and profitable for the bank, but where each bank will start from scratch to build a model, this realization will be irrational. Each bank is unique, each has its differences and competitive advantages, but, all commercial banks can identify common elements in the management and exploitation. First not last, these processes are determined by the common requirements and regulations of the National Bank of Moldova. Secondly, the entire financial sector and banking industry generally accepted common standards, operating principles and successful practical solutions. Thus, we can talk about the need for an integrated business model typical of a commercial bank.

Typical integrated business model of the commercial bank is an effective informational and methodological tool for formalizing banking activity. It is applicable for banks that start form the scratch description of business processes and formalizing activities alike for banks that continue to update and improve not only business processes already described, but other elements of the business.

Implementing a typical integrated business model allows the bank the following:

- a) significant reduction of time and costs for formalizing and optimization project of organizational development and other costs;
- b) faster and more efficient design of products/services and new business processes;
- c) the introduction of successful activities and practices of the bank;
- d) improving the quality of banking services and internal operations;
- e) improving the efficiency and quality decision management.

The banks' business model consists of four groups of models in accordance with the basic management system: strategic management, business processes, human resources and organizational structure, quality management. Each group includes different business models on specific aspects corresponding group, management system.

Business processes of the bank are divided into basic processes and ancillary insurance and development, as shown in figure 1.

The basic processes are geared towards meeting the needs of bank customers by offering banking products and advanced banking services. They refer to:

- a) lending;
- b) servicing deposits and cards;
- c) settlement services for legal entities and individuals;
- d) foreign exchange transactions;

- e) storage services;
- f) asset management services;
- g) broker dealer;
- h) keep valuables and documents in individual safes;
- i) factoring and forfeiting;
- j) information and communication, and financial services;
- k) financial leasing;
- l) investment project;
- m) guarantees to third parties;
- n) precious metals operations.

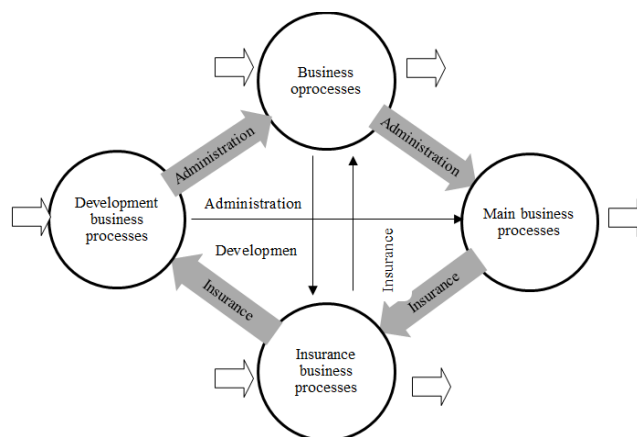


Figure 1. Splitting banking business processes.

Auxiliary processes are designed for normal functioning of basic processes. They do not directly produce value added, accompany the basic processes, and generate data, information or regular administrative procedures. Ancillary processes include:

- collecting and maintaining cash flow;
- information and advice;
- accounting and reporting;
- research marketing of financial services market;
- activities carried out inside bank.

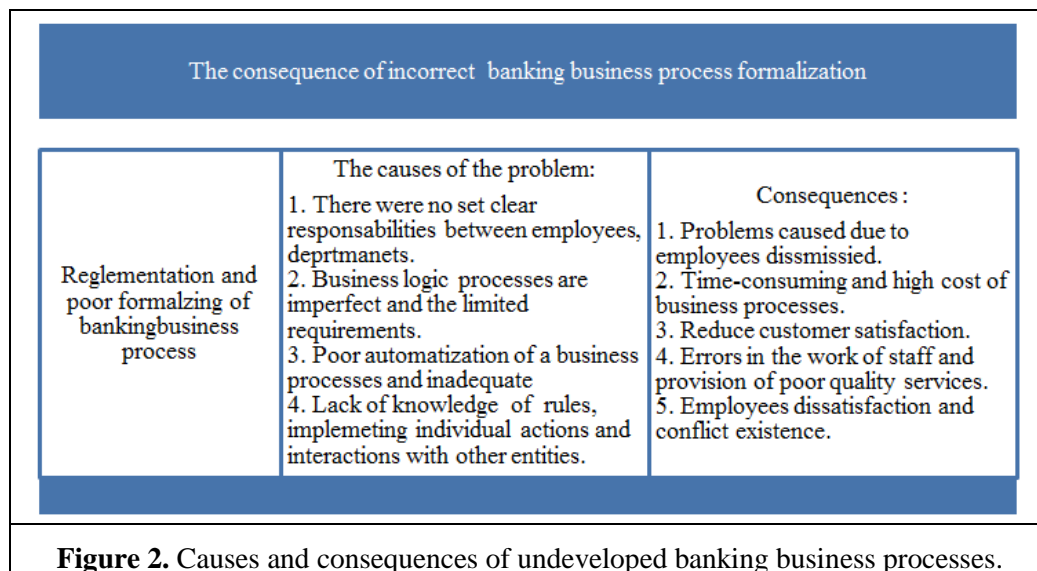
Also, within the banking business processes is required systematically review not only of its basic processes but also of those auxiliary to identify possible changes with positive impact on the bank's image and its performance indicators. Changes may include a variety of directions:

- restructuring;
- a new concept of relationships, motivation and banking management;
- changing and retraining specialists;
- modernization of technology and knowledge;
- re-engineering and ancillary business of management system process in accordance with strategic objectives.

4. Results

Keeping a stable position on the financial market in a competitive environment requires continuous improvement of banking products and services, development of integrated savings and lending programs, to meet the needs of specific groups, well defined of existing and potential customers. This approach to banking activities, on the one hand, involves the restructuring of the bank's key business processes, according to customer-centric strategy, customer relationship management, based on

collecting and analysing information about each potential customer. In this context it is necessary to implement new processes or business models that respond promptly to the needs of the bank. The main problem lies in undeveloped banking business processes, the content and consequences of this problem are shown in figure 2.



Following the reported we can note that the description and optimization of business processes directly affect the operational and strategic bank effectiveness, eventually affecting profitability and bank ratings. It should be noted that the description and optimization issues of banking business processes does not bear unique character but an iterative character (periodical), so it is important to have all the necessary techniques and technologies. The frequency is related to changes taking place at the level of customer's requirement, market, regulations etc. Such modifications require a continuous monitoring and updating of business processes.

As we mentioned, the efficiency of banking activity is to obtain in due time of all banking operations and customer satisfaction at all levels. Thus, the bank leverages its potential to generate revenue and enhance performance indicators. Under an existing business process, the bank has registered growth opportunities not only at the number of customers but also at the level of return on assets and equity (figure 3).

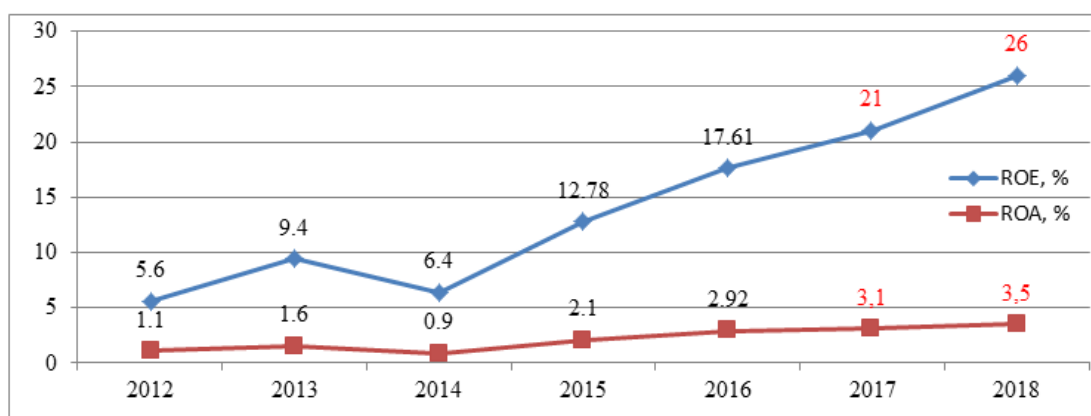


Figure 3. Banking performance indicators trend in the Republic of Moldova.

Source: elaborated by the author based on the data from www.bnm.md/md/financial_indices_of_bank_system

Of those shown in figure 3 we conclude that the performance indicators of the banking sector in Moldova has increased in 2014-2016, according to data reported by the National Bank of Moldova without presenting any characteristics of an integrated business model existence, but under harsh prudential supervision conditions. ROA and ROE values in the years 2017 - 2018 are possible to be obtained through the strategy of the provisions of Basel III and correlation between the currently existing banking business process with technologies and advanced applications including workflow. In addition to a positive development of performance indicators, business process optimization in the banking sector will have positive impact on the quality of information processed on bank loans and subsequent monitoring of its repayment. In this case is welcome assessing the quality of the loan portfolio to optimize the business model and after the implementation of workflow process, according to data shown in table 1.

Table 3. Asset quality indicators.

Indicators	2011	2012	2013	2014	2015	2016	2017	2018
Nonperforming loans rate (Balance debt of nonperforming loans/ Balance debt on loans)	42.5	72.3	11.56	11.73	9.95	16.82	14.0	12.0
Amount of provision (the loan debt balance / Balance debt on loans)	7	10.7	9.66	10.37	8.5	13.54	12.0	10.5

Source: elaborated by the author based on the data from www.bnm.md/md/financial_indices_of_bank_system

Regarding the nonperforming loan rate, the data presented in the table above, present the following picture, this indicator recorded an upward trend, increasing from 42.5% in 2011 to 72.3% in 2012. These values show us the fact that the credit activity performed by the domestic banks is very risky, bank accumulating in their loan portfolio more nonperforming loans. The situation started to recover in 2013 when the indicator's value reduced with 60.74%. In the years of 2014-2015, indicator value remained within the 12% which means that NBM has succeeded to implement an effective policy of sterilizing the domestic banking system of all the existing nonperforming loans. Thus, we conclude that for the 2014 and 2015 banks' strategy in terms of stability proved to be very effective. In the period 2015 – 2016, the nonperforming loan rates increased from 9.95% to 16.82% due to inefficient management strategies and increasing of the NBM portfolio of bad loans per banking sector.

Next indicator used in the analysis of assets quality portfolio of banks, allows us to determine the amount of loan loss provision in the balance of total loans granted by the banks. Watching the evolution of this indicator, we can mention an evolution identical to the rate of nonperforming loan rate. Because the value of the loan loss provisions established is based on the quality of loan portfolio, we can say that the growth of nonperforming loans has contributed in essence to the increase of this indicator, its value has increased from 7% in 2011 to 10.7% in 2013, i.e. by 3.7%. Maintaining the value of this indicator in the 2014-2015 years was caused by the fact that NBM has managed to impose the domestic banks to ensure their loan portfolio using loan loss provision. With increasing of portfolio of bad loans, was recorded an increase of loan losses and the ratio calculated on this basis. Thus, we see an increasing ratio of the loan debt balance / balance debt on loans from 8.5% to 13.54%.

Forecasted results for the years of 2017-2018 are possible to obtain with the cost of streaming customer-oriented business model optimization by reducing the number of hidden fees at the stage of calculation of loan payments and truthful presentation and transmission of data on customers' ability to pay. Improving the quality of loan portfolio per banking system is conditioned by excluding the human factor from the lending decision, which offers the implementation of modern applications that provide a result after processing the data from the package of documents.

Bank orientation towards customer needs requires an individual approach to each stage of business through modern applications and its workflow.

According to the glossary WfMC (Workflow Management Coalition), international organization dealing with the implementation of standards in systems workflow, business process represents one or more procedures that interact, which together solve some business problems or a political objective of the company, usually within the organizational structure, describing the functional roles and relationships within the commercial bank.

In the achieving the workflow process, the information is transmitted from user to user as an ordered set of data. Each operation uses a subset of data, which composition and reporting method is determined by the corresponding interface of the screen. The creation of interfaces is the responsibility of the staff who develop the process, but the tools used for development is an important component of the workflow system. The main requirement for the screen interfaces that circulates in the system is their "intelligence" – the ability to dynamically change the composition, content and the format of presented data [8].

According to the literature, at the basis of workflow concept is positioned the following elements:

- Object – information, material or financial object used in a business process;
- Event – external (uncontrolled) the action that took place with the object;
- Operation – elementary actions performed within a business process;
- Executor – and official responsible for the implementation of the one or more transactions of a business process.

The workflow system provides:

1. Graphical representation of workflows and business processes of the commercial bank;
2. Creation and maintenance of typical scenarios and procedures carried out by company employees;
3. A single repository of information and documents incorporated into the bank's back office functionality;
4. Unified motor of messaging and notification between users, providing employees with the necessary information on every sector of the technological cycle;
5. Creating and managing reports on the activities of all employees and departments of the bank [9].

Thus, using workflow technology the problem of efficient management of the business process becomes a matter of integrated management of resources and the sequence of actions aimed at achieving this objective. This in turn requires interaction management of work or functions, tasks synchronize periods, reducing delays in transmission of results, reducing steps by linking their cyclical control etc. The essence of this technology management and automation of business processes reveals the following analogy: business process is a kind of circuit carrier with its own rules and technologies, and work flow or flow tasks is similar to the existing feed products (components, parts) that changes, modifies, get a new quality and are transported by this transporter.

In other words, workflow automates processes and not functions. The emergence of relevant workflow software category reflects the information technology (IT) market reaction on the introduction of new principles of business management based on transition from functional management to process oriented management. It should be noted that currently, workflow technology is part of the concept of business process management (BPM) in order to speed up its processes and society's reaction to the changes taking place on the market.

5. Conclusions

Achieving the set of those mentioned will not run without the presence of the transparency at the level of banking business, being valued of corporate governance on the development of a sustainable business. In this sense, we can recommend the following solutions that would characterize a performing banking business:

- 1) stable increase of revenue and profit (by minimizing costs, which have a major effect on banking activity: servicing nonperforming loans, correct use of bank capital) based on an integral approach to the efficiency of the bank and the negative impact of the presence of credit risk, and capital risk;

- 2) continuous improvement of the quality of the balance sheet under current regulations;
- 3) creation of the necessary infrastructure that would determine a business model applicable to all commercial banks, universally valid.

The banking business will be carried out continuously and include not only the directions of their activity, but the interaction with partners and clients, with the feedback of achieving short-term goals (increasing revenues, reducing costs) and long term by creating and implementing a flexible infrastructure that would enable the modification of strategies depending on economic circumstances.

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