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Re-engineering of business processes as a bank efficiency method

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Abstract. Currently, the most advanced commercial banks that have undergone expansion and cost reduction have realized the need for a differentiation strategy - ensuring margin over the market average and / or loyalty by personalizing customer relationships. Although the burden of customer base growth and market share gain is still relevant, it is necessary to pay more attention to retaining profitable customers and increasing revenue growth from existing customer base. A business model defines how the bank creates and delivers value to customers and then converts payments received into profits. To take advantage of innovation, business people need to excel not only in product innovation, but also in designing the business model, design options, and the technological needs of customers. The main objective of the research is to identify business processes in a client-oriented bank that would ensure the achievement of goals by controlling the quantitative indicators. In this context, it is necessary to determine not only the methodology of optimizing the business processes within the bank, but also to successfully implement the results of business process reengineering. The most promising strategy for establishing long-term contacts with existing and potential customers is a strategy based on the Customer Relationship Management (CRM) concept. This concept implies a reorientation of the strategic directions of banking business development from the products and characteristics of the bank's internal device to the client's needs and expectations. We mention that the process of implementing CRM systems in banks is linked to a rather complicated integration process with many back-office and front office applications used for passive and active operations, card processing, call centre automation, etc. This requires changing many internal processes and bulky investments. In addition, the CRM system differs from standard solutions, as it is associated with service provision rather than with goods. In a client-oriented bank, the activities of all subdivisions are subordinated to one main objective - to increase sales through a fast, high-quality customer service. With such an organization of the commercial bank, the subdivisions that perform the basic functions are coordinated with each other, being links of a horizontal technological chain and fulfilling the tasks of serving the sales subdivisions. Today, in the face of a changing economic situation, the reengineering of business processes involves a radical and revolutionary restructuring of obsolete business processes and is one of the ways to increase banking efficiency.

1. Introduction

Modern economic realities have greatly changed the main focus of the theoretical and practical approaches to banking business processes that dominated the market in previous decades. The rapid technological breakthroughs in communications, the end of the industrial period, and the predominance of the globalization concept have significantly shifted the attention of researchers and managers from the production processes and products to the customer and its needs. The economic crisis of recent years has in fact shown that one of the strongest competitive advantages of the commercial bank lies in its long-term relationships with customers. Thus, customer-oriented philosophy can rightly be considered a new market paradigm, following the customer relationship management strategy, being one of the best development factors under conditions of economic instability.

However, developing a successful customer-oriented business model is insufficient to provide a competitive advantage, because imitation is often easy: a differentiated (and difficult to imitate) business model is more efficient and more effective and has more chances to get profits. The business innovation model may itself be a way towards a competitive advantage, given that the model is sufficiently differentiated and difficult to reproduce for both traditional operators and new entrants.

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

Distinctive signs of a customer-oriented structure of banking business are summed up by a clear segmentation of all departments within the five-component organizational structure that repeats the logic of banking business processes: product, customer, operational units, infrastructure unit and administrative units, as shown in figure 1.

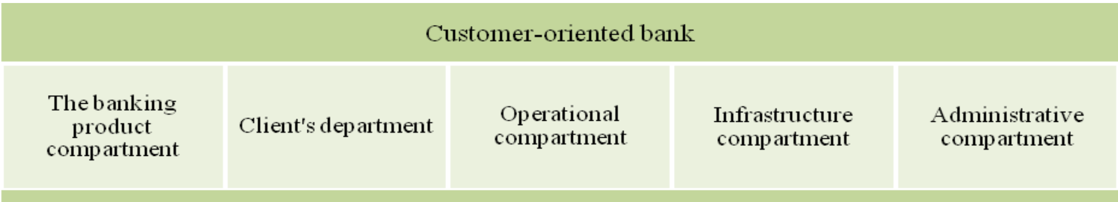

Figure 1. Banking structure oriented towards the client.
Source: elaborated by the author

Each sales point is equipped with all the necessary operational and infrastructure subdivisions for the customer, and the headquarters are focused on the departments that aim at "facilitating" sales and coordinating the sales network (coordination, registration of representations, agencies, development of centralized policies, methodological support activities and others).

The approach of business processes in the perspective of customer orientation has been researched by various economists, among which the studies conducted by Crosby L.A. [2], Day G.S., Formant C. [3], Foss B. [4], Khirallah K., Liu H-Y. and others.

Table 1. Conceptual approach to the concept of “Customer Relationship Management”.

The author	Definitions
Dyche’	the infrastructure that enables the delineation of an increase in customer value, and the correct means by which to motivate valuable customers to remain loyal-indeed, to buy again [5]
Onut et al.	banks and other service providers realize the importance of Customer Relationship Management (CRM) and its potential to help them acquiring new customers, retain existing ones, and maximize their lifetime value [6]
Crosby L. A.	the intelligent use of information about customer needs will create long-term two-way relationship with the customers. This will bring many advantages to the banking sector since long term customers are less costly to serve and smooth-running relationships are less resource demanding [2]

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Philip Kotler	CRM is the process of carefully managing detailed information about individual customers and all customer 'touch points' to maximize customer loyalty[7]
Zablah, Beuenger, and Johnston	suggest that CRM is a philosophically-related offspring to relationship marketing which is for the most part neglected in the literature," and they conclude that "further exploration of CRM and its related phenomena is not only warranted but also desperately needed [8]
Stone, Merlin and Neil Woodcock	CRM is a term for methodologies, technologies, and e-commerce capabilities used by companies to manage customer relationships [9]
Parvatiyar, Atul and Jagdish N. Sheth	CRM is a comprehensive strategy and process of acquiring, retaining, and partnering with selective customers to create superior value for the company and the customer [10]
Hobby 1999	CRM is a management approach that enables organizations to identify, attract, and increase retention of profitable customers by managing relationships with them (Hobby 1999)

Source: elaborated by the author based on the mentioned studies

In our view, CRM systems are relevant irrespective of the chosen business development strategy. In the product model, transactions, software tools, in particular, the sales of priority products are increased, and in the case of client-oriented strategy - a more diverse set of tasks is solved. Implementing the CRM is the first step towards the path from the product-based model to the client-oriented business model of the banking business.

In a client-oriented bank, the activities of all subdivisions are subordinated to one main objective - to increase sales through a fast, high-quality customer service. With such a commercial bank organization, the subdivisions that perform the basic functions are coordinated with each other, being links of a horizontal technological chain and fulfilling the tasks of serving the sales subdivisions.

This principle makes it possible to define clearly the limits of departmental responsibility to avoid duplication when working to determine the structure and form of transmission of results from one subdivision to another (type of client-executor relationship). The structure of processes significantly increases bank management due to the presence of the leader in each process, which is responsible for the outcome of the correct implementation. As processes process end-product exchange, simplification of the development of an efficient employee compensation system is taking place, as it makes it easier to understand each employee's contribution to the Bank's objectives, as well as significantly increasing the productivity of bank staff.

We mention that the process of implementing CRM systems in banks is linked to a rather complicated integration process with many back-office and front office applications used for passive and active operations, card processing, call centre automation, etc. This requires changing many internal processes and bulky investments. In addition, the CRM system differs from standard solutions, as it is associated with service provision rather than with goods.

The complexity is the desire of banks to create individual products that are difficult to manage with standard functionality. However, the use of analytical CRM systems allows us to segment the customer base, identify lost customer loyalty, and form a proposal to "keep" them. Another aspect of the app is managing cross-selling. One example is when the call center operator, along with the customer response to the account balance, offers a "suggestion" product that is automatically generated by the CRM system. And yet another direction is building end-to-end business processes using CRM systems: from the customer's call to solving the problem or selling the banking product.

The implementation of the CRM principles provides for a significant restructuring of all banking activities. The implementation of the objectives and goals formulated in developing a client-oriented strategy involves restructuring the key business processes of the bank by targeting them to the client. The aggregated structure of all business processes in the client-oriented bank is presented in table 2.

Table 2. Aggregate structure of business processes in a client-oriented bank.

Customer Relationship Management	Technical - organizational development	Banking operations	Ensuring banking activity
Determining potential customers	Customer information management	Execution of bank operations	Human resources management
Customer identification	Banking products management		IT systems management
	Quality management		
Attracting customers	Stock management		External Relations Management
Keeping customers	Reengineering the business process	Supporting banking operations	
	Management of organizational development		General administration
Developing contractual relationships			Ensuring banking security
			Other corporate services

Source: elaborated by the author

On the other hand, this model describes the internal processes necessary for the existence of an organization as a subject of economic and legal relations, irrespective of the specific activity or technology used. When building this model, processes are highlighted as control objects in table 3.

Table 3. The bank's business processes.

Elaborate agreed working conditions
Elaborating new products and changing existing ones
Sale of the requested products
Attracting resources
Staff training
Reproduction of technological means
Finance management
Operational activity

Source: elaborated by the author

3. Methodology and data

The research methodology of business process reengineering is based on the system approach and the application of universal scientific methods - analysis, synthesis, analogy and modelling. For example, in the process of collecting, reviewing and organizing data for the study, use of induction and deduction methods, content analysis and comparative analysis, aiming both to identify and aggregate existing aspects of customer concepts and their current strategic importance for the successful development of the bank and the relevance of the information selected for the purpose of the research.

Business processes in the bank are segmented into main and auxiliary (supply). The main objective is aimed at meeting the needs of the bank's clients by offering banking products and providing banking services, as shown in figure 2.

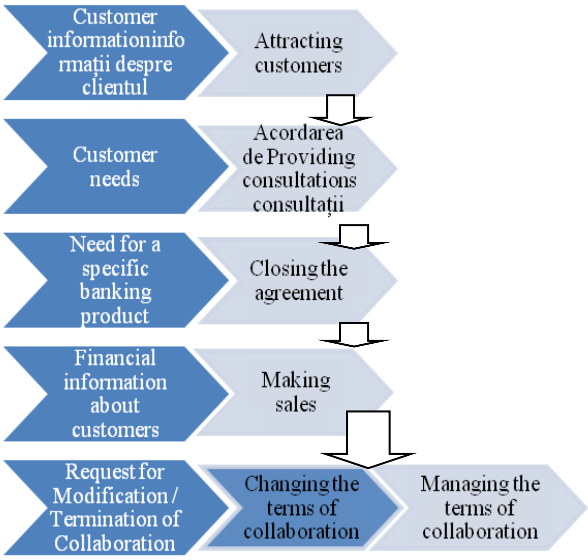

Figure 2. Managing key business processes in a client-oriented bank.
Source: elaborated by the author.

Their features are as follows: start and end of the process - the external client; bring the main contribution to the value of the bank; have a direct effect on the customer.

Auxiliary processes are designed for the normal operation of the main processes. They do not add value directly, accompany central processes, and generate regular data, information, or administrative procedures.

In implementing the client-oriented strategy within the bank, it is necessary to work on regulating transaction procedures within business processes. The development of a system of procedures, regulations and algorithms for interaction between the bank's subdivisions is based on a common strategy as well as business logic based on the interaction between all back and front office processes. For each of the processes, a regulation is formed, the structure of which is recommended by us in the table 4.

Table 4. Structure of the business process regulations of a commercial bank.

Compartment	Content
The goals of activity	are indicated as optimization tasks: what should be achieved during the activity and under what constraints
The result of activity	describes the main outcome of the banking business process
The process owner in the bank	the post is indicated and reference is made to the bank account holder's bank statement or to the administrative document defining the scope of ownership of the bank's business process
Organizational implementation	indicate where the compartment is carrying out the business process, reference is made to the subdivision or to the administrative document, which defines the field of responsibility of the banking unit
Structure of business processes	are listed the business processes included in the process described by the bank

Exits of the banking business process and its consumers	the results of the bank's business process: products, services, documents, information. Brief information about the exit. Consumer: Indicates who is the consumer of the exit from the bank's business process
Inputs of the banking business process and its suppliers	inputs of the bank's business process: products, services, documents, information. Short entry information. Provider: Specifies who is the provider of this entry or the external initiator of the bank's business process
Management inputs	business process inputs that define performance requirements and establish the order of work performance: plans, regulations, methods
Criteria for measuring the indicators of measuring the results of the banking business process	the section contains a list of indicators for impact assessment (result / costs) and customer satisfaction in the bank's business process
Order of bank business owner reporting	describes in what form and frequency the owner of the inferior process reports to the owner of the top-level process

Source: elaborated by the author

Thus, the result of this phase is formalized by the emergence of a system of procedures and regulations describing the interaction between the bank's subdivisions, the performance measurement indicators and the efficiency of its operations, the workflow and reporting, the requirements towards personnel, working instructions.

A particularity of the customer-oriented strategic management of the bank is the presence of a significant number of criteria that characterize the achievement of the strategic objectives of customer relationship development. Therefore, the main criteria for the efficiency of business processes in the implementation of client-centred strategies will be found in the customer service area, as shown in figure 3.

The circuit of customer relations

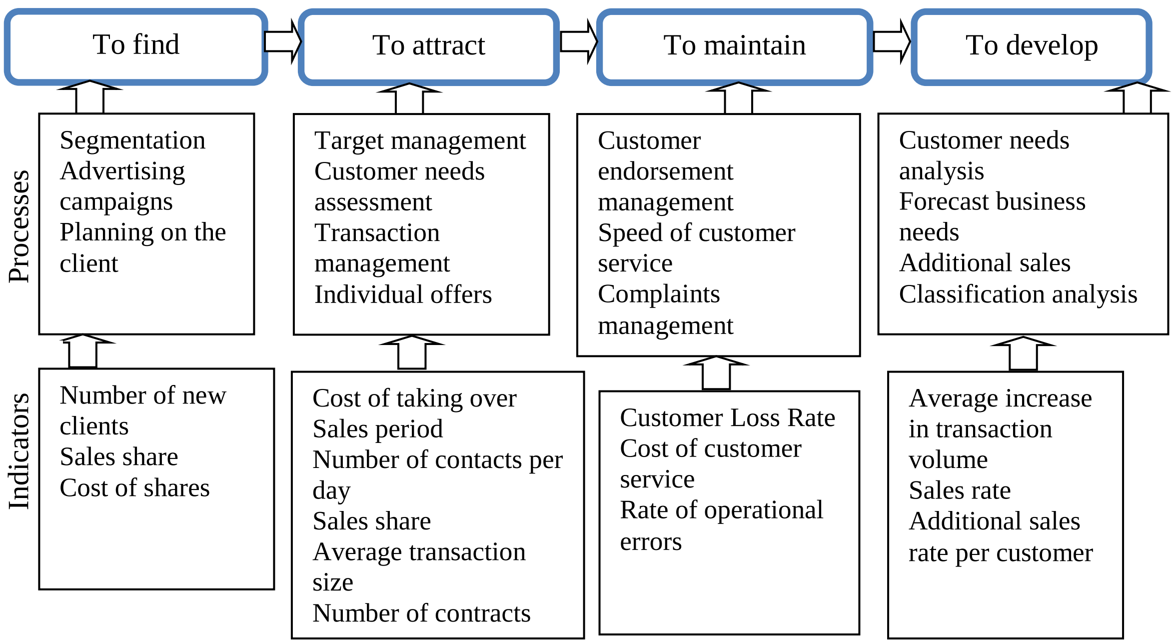

Figure 3. Indicators of business process efficiency in a customer-oriented bank.
Source: elaborated by the author

In order to successfully implement the results of business process reengineering, we need to reconcile it with the restructuring of the bank's organizational structure. The traditional organizational structure of banks, as a rule, does not allow the implementation of a client-centered strategy. Its deficiencies are manifested at the following levels:
- the bank's marketing services are often structured according to certain types of banking products for which marketing plans are being developed that are not coordinated with plans for other banking products, although all can be directed to the same customer groups;
- numerous distribution and marketing networks for banking products and services often pursue competitive objectives;
- each bank subdivision in direct contact with clients focuses on its operations and control over its "costs" without coordinating activities with other entities.

4. Results

Following the description of business process efficiency indicators in a client-oriented bank, we need to identify the bank's problems in customer service and business, depending on the results presented in the financial statements. Stepping up the optimization of business processes within the bank is outlined in figure 4.

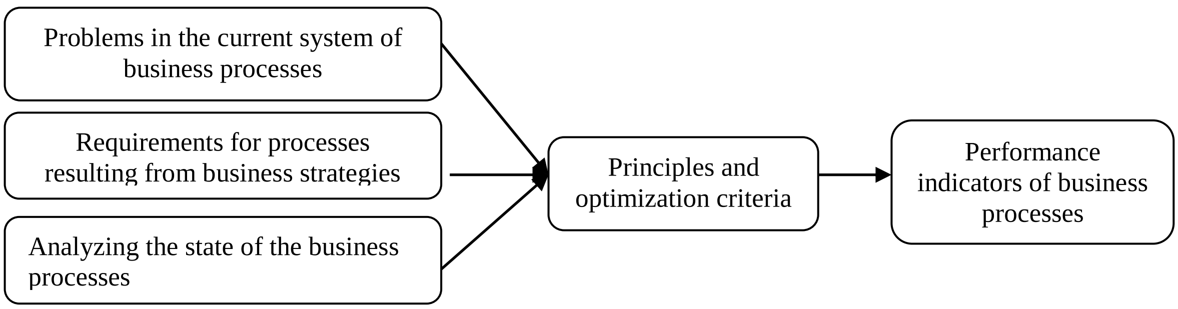

Figure 4. Methodology optimizing business processes within bank.

Customer-benchmarked banking performance can be judged on the basis of several indicators, the most representative of which are included in productivity rates, also known as employee-to-employee and branch-based rates.

The productivity per employee, of major importance for the bank, is as follows:
a) assets per employee - is expressed by the ratio of bank assets to the number of employees;
b) average wage per employee - is determined by the ratio between the total expenses and the number of employees;
c) the level of credits per worker, which is calculated by reference to the ratio between total loans and the number of employees;
d) the level of deposits mobilized per worker - is calculated by the ratio between the total deposits and the number of employees;
e) the net income per employee - is calculated using the ratio between the net banking income and the number of employees.

The evaluation of these indicators is presented in table 5.

Table 5. Dynamics of Banking Productivity Indicators of the Banking Sector of the Republic of Moldova, mil. Lei.

Indicators	2013	2014	2015	2016	2017	2018	2019
total assets / number of employees	6.97	9.17	9.03	9.26	10.10	**10.93**	**11.75**
total credits / number of	3.86	3.99	5.01	4.52	4.25	**4.31**	**4.37**

employees							
total deposits / number of employees	2.54	3.07	3.13	4.42	4.35	**4.88**	**5.18**
total expenditure/ number of employees	0.51	0.68	0.91	0.9	0.61	**0.62**	**0.66**
net profit/ number of employees	0.09	0.08	0.15	0.19	0.19	**0.2**	**0.23**

Source: elaborated by the author based on the data from http://www.bnm.md/bdi/pages/reports/drsb/DRSB6.xhtml

The results presented in table 5 show a good productivity per employee, depending on the results obtained by banks in the banking sector of the Republic of Moldova. Thus, the total active ratio / number of employees is increasing in the periods when the banking system has achieved excellent results in attracting assets, as there is a massive acceleration in the period 2013-2014, from 6.97 million lei per employee to 9.17 million lei per employee, out of which 3.86 million lei and 3.99 million lei respectively belong to the credits granted by an employee. Subsequently, during the period 2014-2015, we see a decrease in the active capital ratio as compared to the number of employees to 9,03 million lei, of which 5.01 million lei belong to the credits per 1 employee. Dynamically, for the years 2015-2017 in the banking sector there was an increase of the total active ratio to the number of employees from 9.03 million lei to 10.10 million lei. The implementation of a more secure and advantageous client-oriented strategy in the bank business model will generate an increase in the results in the years 2018 - 2019 to 10.93 million lei and 11.75 million lei due to the increase of both assets banking, as well as the number of employees of the banks.

The total ratio of credits granted to the number of employees starting with 2015 is reduced from 5.01 million lei to 4.25 million lei in 2017, indicating that the banking system risks being dispersed and avoiding concentration only in a non- a direction or type of operation or a banking product. For the years 2018 and 2019, an improvement in the banking lending situation is expected due to lower costs for these banking products, and as a result a bank employee will provide on average credits of 4.31 million lei and 4,37 million.

Unlike bank credits, bank deposits remained attractive for the population, the only ones that in terms of the number of employees increased in the years 2013-2016 from 2.54 million lei to 4.42 million lei and only in 2017 decreased to 4.35 million lei. The favourable economic conjuncture for the development of the banking sector will, in 2018 - 2019, increase the ratio of deposits / total employees to 4.88 million lei and 5.18 million lei.

From the results presented for the total expenditure ratio and the number of employees, we conclude that they showed a different trend from year to year, depending on the number of employees and the volume of expenditures made by the bank. At the same time, bank expenses also influenced the value of the net profit per banking sector, which in terms of the number of employees varies in the value range of 0.08 million lei per employee and 0.19 million lei per employee. For the years 2018 - 2019, the values obtained in the banking sector as a result of the re-engineering of the business processes could amount to 0.2 million lei and 0.23 million lei.

Productivity ratios per affiliate consist of reporting the most important items to the number of branches available to the bank. The main rates are:

- productivity from credit activity, which is calculated by the ratio between total loans and the number of subsidiaries;
- the productivity of the deposit activity - the determination of which takes place through the fraction, the numerator of which are the total deposits, and the denominator is the number of branches;
- the productivity of bank income - is calculated by the ratio of total income to the number of subsidiaries.

The reference values for subsidiary productivity rates are included in figure 5.

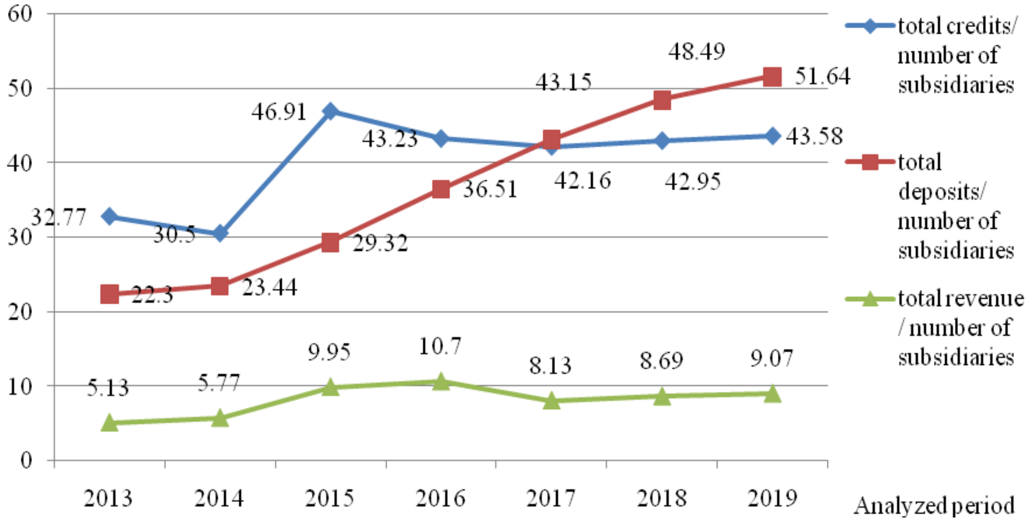

Figure 5. The dispersion of the productivity rates per subsidiary in the banking sector of the Republic of Moldova.
Source: elaborated by the author based on the data from www.bnm.md/md/financial_indices_of_bank_system

The values obtained from the reporting of the amount of credits granted to the number of branches existing in the banking sector show a disruptive development due to the closure of the banks following the theft of the billions of euro and the promotion of a monetary-credit policy oriented in the years 2015-2016 towards the increase of the basic interest rate of the minimum reserves kept by banks at NBM. Thus, the ratio of loans granted to the number of branches varied between 30.5 million lei per subsidiary and 46.91 million lei per subsidiary in the period 2013-2017, and in the years 2018 it would increase to 42.95 million lei and 43.58 million lei, respectively, only from the increase in the volume of credits granted by the banking sector as a result of the decrease of the interest rates paid by the clients.

Reporting total deposits to the number of subsidiaries we notice that it increases in the investigated years from 22.3 million lei per subsidiary in 2013 to 43.15 million lei per subsidiary in 2017. Of course, for the next two years the value of this indicator follows to continue to grow as a result of the remodelling of the deposit policy according to the current development priorities of the banking business.

The results for the last rate of productivity are increasing for the years 2013-2016 from 5.13 million lei per branch to 10.7 million lei, and then in 2017 it is reduced to 8.13 million lei per subsidiary due to the substantial decrease of the total revenues per bank sector from 8606.3 million lei to 6453.6 million lei. In the years to come, we expect an increase in the results to 8.69 million lei and 9.07 million lei only from the increase of the total revenues under the influence of the increase of interest income on loans.

5. Conclusions

Business modelling in one form or another takes place in all commercial banks, the difference being only in the level of development and depth of this work. However, banks, as they develop, are aware of the need to formalize their activities and, therefore, to build an integrated business model. Thus, the benefits and advantages the bank receives when building a customer-oriented integrated business model are:

1. An integrated business model is of great importance for mergers and acquisitions of banks. As a rule, different banks have different organizational structures, different business processes, strategies and other management elements. When merging banks, it is necessary to join these different elements

and reorganize them. And if these elements are not formalized as business models, then this task becomes quite problematic;

2. The integrated business model is very important for the development of the bank's activity in other regions and countries. As a rule, successful modern banks create a typical business model of the subsidiary, including its business processes, its organizational structure, the IT systems and operational resources structure, the branch interaction scheme and the central office. Thus, an integrated business model facilitates and accelerates the process of opening new subsidiaries, increasing stability and quality of their operation;

3. The integrated business model is particularly effective as a tool for generating order at the bank, increasing the transparency of operations and the manageability of the bank. Thanks to an integrated business model, a variety of tasks can be made quickly and easily for the development of the bank: efficient automation, selection and motivation, development and launch of new products and services, business process optimization, improved operational risk management, etc.;

4. Integrated business model is an important step towards building and certifying various management systems (information security system, quality management system - ISO 9000 standards, risk management systems). This, in turn, leads to an improvement in the bank's image and market value;

5. Due to the integrated business model, the bank can increase its ratings, attributed by international rating agencies (Fitch, Moody's, S & P, etc.). This is due to the fact that rating methods include the analysis of the materials and mechanisms that are necessarily present in the integrated business model;

6. The integrated business model is one of the key factors for the successful implementation of the bank strategy as it links the strategy to all the bank's elements and management systems (business processes, personnel, projects, information technologies, etc.);

7. The complex business model, due to the availability of real business models, regulations and rules, allows managers to free their time from performing their routine functions, making timely and accurate managerial decisions.

As mentioned earlier, building an integrated business model is important and profitable for the bank. But if each bank builds an integrated business model from scratch, then it will not be entirely appropriate and economically efficient. Each bank is unique in this way, each has its own differences and competitive advantages, but all can assemble common elements in management and operation, which are, in fact, similar to most banks.

In conclusion to those addressed in this study we mention that building a model based on processes should be done taking into account the requirements and limitations of owners, consumers and management bodies.

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