

REENGINERING OF THE PROCESS OF GRANTING CREDIT CARDS

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Abstract: It is greatly advanced in transformation of banking sector in our country and basic preconditions were created for development of card business. The bottleneck in development is still an independent trade network in our country, as well as poor equipment by POS terminals. As modern way of life is increasingly based on the use of payment cards, it is necessary to take certain measures in order to overcome the existing problems. Those measures need to include active role of the state and state institutions in terms of the development of telecommunication sector, which represents technical and technological basis of the functioning of payment cards. Through the measures of various sector and structural economic policies, the state should create such an economic environment in which all organizations, on which transactions with payment cards are based, will be able to function. For implementing these measures, a certain time flow is necessary, as well as the regulation of economic situation in our country.

Key words: reengineering, payment cards

INTRODUCTION

Until some 40 years ago, the process of bank management was based on assumptions and experience, and with the appearance of computers, management was increasingly based on empirical data and analytical processes. Development and application of more and more perfect computer technology has enabled the appearance of a several tendencies in bank management [11, 12, 13]:

- Firstly, the process of scientific research of the essence of banking business was initiated. Basic principles are analyzed and specific rules are determined in sub-balances of assets and liabilities of banks and on that basis they formulate business strategies.
- Secondly, mathematic modelling of management processes is increasingly used. The relationship between banking assets and liabilities is mathematically modelled for the sake of optimizing banking tendency towards liquidity, safety and profitability.
- Thirdly, the latest tendencies in development of computer technology move towards the use of artificial intelligence in the function of experts for particular banking problems. The so-called expert systems in banking are developed.

Inspired by successful application of management science in other fields, banking experts have more frequently, especially with the emergence of computers, asked themselves a question – could some procedures and techniques be applied in resolution of banking problems as well?

In develop market economy, owing to computer technology, banks have improved the technique of giving various types of loans, by applying the scientific approach to management, using statistical models for economic predictions, as well as introduction of linear programming. Computer equipped and mathematically oriented modern banks increase the number of engineers, statisticians and mathematicians in the composition of its staff [18].

Computerization of banking has began with data processing, then it was moved on to information processing, so that the processing of specialized knowledge in the function of decision-making could be reached in the latest period. Information technology and information systems are increasingly being designed as expert systems, which are in function of banking experts. The essence is to operationalize and apply expert knowledge of bank staff as a set of models and procedures, as well as hardware and software

solutions, which will have the function to replace banking experts, which are engaged in collecting the information, forming the knowledge and data bases and their use in resolution of concrete banking problems [17, 18].

Due to accelerated expansion of electronic banking systems, it comes to major upheavals in the essence of e-banking, which is becoming synonymous with modern banking. Today, banking business is entirely based on technical and technological resources and ICT becomes a guide for strategy and reengineering.

»Reengineering is a radical redesign of business processes for the sake of their dramatic improvement. Radical redesign implies starting from the beginning instead of changing or modifying the existing methods of work. It is started with a clean sheet of paper. Business process is a group of activities that create value for the user. Realization of orders, for example, is a process that implies many activities, ranging from ordering to delivery. Under the dramatic improvement, we imply a leap in performances – ten times increase of productivity or 80% reduction of the process's duration length. [19].«

Business reengineering is one of the key words of modern managerial theory and practice, especially significant for the approach to development and designing of information systems.

Classic metaphor of business reengineering a well-known story about cutting the Gordian knot. Instead of trying to unravel some parts of the complicated knot by the hand in a quicker, better and more effective way (which nobody ever succeeded in), Alexander the Macedonian decided to change the approach. What is the point of unravelling if it can be cut by a sword? [18].

In order to perform the reengineering, it is necessary to re-examine the existing doctrine, practice and activities firstly, and then the capital and human resources are innovatively regrouped. However, in order to do that, it is necessary that there are also basic elements that define the reengineering process, and those [3, 4, 5]:

- Vision of organization's future and its acceptance of all the employees in reengineering process.
- A systematic approach, because it includes all organizational functions, procedures, tasks.
- Clear intentions and authorizations, because it is a precondition for all participants in reengineering to accept the change and assume the responsibility.
- Specific methodology of previously planned every step. It is necessary, since in reengineering there are no codified rules and standards for their application.
- Efficient and permanently available management, which needs to possess specific knowledge, skills and abilities, because it is necessary for the process of reengineering to succeed completely.

The processes that follow reengineering ought to be simple, people assume a wider scope of tasks, perform controls, instead of being controlled. The focus in the environment in which reengineering was carried out is moved from a individual to a team. The basis for measuring the contributions is no longer an activity, but a result, and manager's role is changed from a supervisor to team leader. In organizations in which reengineering was performed, the employees are oriented on satisfying the clients rather than managers [1, 2, 3].

1. AUTOMATION OF ELECTRONIC BANKING

With the development of electronic banking, the need for its automation appeared. The first step towards that was the emergence of *Automated Teller Machines – ATM* –

cash machines. The next serious step in electronic banking was introduction of POS terminals (*Electronic Funds Transfer/Point Of Sale – EFT/POS*) [3].

1.1. Systems of automated teller machines

Automated teller machines are technical solutions for a distant entering of clients into bank's system, for the sake of performing various routine transactions. By introducing *ATM* in their business, the banks improve their roles, enabling for the clients to realize their routine financial transactions, such as cash withdrawal, deposit-taking etc.

At first, there were *Cash Dispensing Machines – CD*. Those are devices that provide only the automatic cash withdrawal. *ATM* provide full counter service, such as: cash withdrawal, paying deposits, transfer of funds from one account to another, access to account balances, paying from various deposits, issuing of check-books, receiving the reports etc.

Within *ATM*, there are a several generations, depending on technical characteristics, which we improved over the time. The most modern form are *electronic tellers*. They work *on-line* with a distributed database. They own personal computer, video monitor for communication and optical disc. They are more automated when it comes to providing the services.

The advantage of *ATM* is in prolonging bank's working hours and reduction of working costs, because by them it is possible to serve a greater number of clients, without increasing the number of branches and counter staff. Due to the improvement in financial market and reduction of operational costs, the banks maximize the investments into new technology and equipment. With the growth of the labour costs (wages) and reduction of the costs of exploitation of computer equipment, the appeal of machines that work by the principle of self-servicing, i.e. that perform the tasks of counter staff, is increased.

ATMs can function on the basis of *off-line* and *on-line* connection with central computer. *ATMs* that work in *off-line* system are not directly connected with central computer, i.e. they do not perform an instant authorization of each individual transaction. For that reason, these systems need to be equipped with special memory with black lists (lists of cards that are no longer in use), own logic for reading the entry data and means for daily control of work from the part of banking staff. Due to the inability of providing an instant authorization, clients very often have a limited number of cash withdrawal within a certain period. There is a report on each operation on *ATM*, where the original is given to client and the copy is kept in the machine.

ATMs that work in the *on-line* regime are directly connected to central computer of the bank, they perform data processing in real time. The work in *on-line* regime is more expensive than the work in *off-line* regime. Direct connection enables significant advantages from the aspect of safety of automated renewal of information and bank control for the operations that it performs. Work in *on-line* regime requires for *ATM* to be equipped by own memory and because of that all data are kept in database and available to every *ATM* in network.

ATMs do not appear only at remote locations, but in bank offices as well. Apart from classic banking counters, the banks are equipped with *ATMs* as well, for individual or complete services. In that way, business is improved and the time of providing bank services is prolonged, because after the working hours, hall with classic bank counters is closed and clients still use bank's services through *ATMs* (which are always functioning). Banks have, competing with each other, given a great significance to branching their own *ATM* networks. This was also a matter of prestige among the banks. However, the banks have later on observed that there is no purpose in independent development of *ATM*

networks, and thus the processes of their integration have began, where two or more banks have an agreement about mutual use of their ATM networks. Thus, a bank that accesses one of these networks can use ATMs of all the other banks that are members of that network, regardless whether they are in the same place, or in the same country. [6, 7, 8]

When you use *ATM* of your bank, it is called “*on-us*” transaction, and when you use *ATM* of some other bank, it is called “*non-on-us*” transaction and it goes through a central transmission switch. Although *ATM* networks have initially been organized by big commercial banks, they are increasingly being organized by non-banking institutions. In USA, *ATM* network is developed by the company *Electronic Data System (EDS)*, which is engaged in services of computer data processing. [9, 10]

1.2. Systems of electronic payments in retail

Electronic Funds Transfer/Point Of Sale – EFT/POS provides the clearest electronic transfer of funds that is realized up to this day. *EFT/POS* provides the absolute elimination of paper instruments from the entire process of payment transactions. Payment is done through the terminals in retail, which represents the points of a direct, mass entering of individuals into computer payment system.

Mechanism of *EFT/POS* system functioning is based on connections between terminals, located on various sale or service places, with computer centres of particular financial institutions. Terminals in retail are activated by electronic payment card, as means for entering and identification and currently the transfer of funds from buyer's account to seller's account is performed.

In the beginning of XX century, a great novelty in trade was the appearance of mechanical cash registers. After the II World War, the companies in America (*National Cash Register – NCR*), Great Britain (*Hugin*) and in Germany (*Nixdorf*) produce firstly electric and then electronic cash registers.

Terminals in retail can be in *off-line* and *on-line* regime of work. Terminals in *off-line* regime of work do not have a direct connection with bank's central computer, i.e. they do not perform a direct authorization of each individual transaction. For that reason, the bank must previously perform the selection of clients that will be able to use certain types of services and to implement it into the programme. If the magnetic stripe cards, as means of entering and identification, are used, then the programme mentioned is necessary. For a card with a chip, this procedure is not necessary. With systems in *on-line* regime of work, there is the option of direct instant authorization with each transaction. Within this system, there are terminals of various levels of sophistication. Each higher level requires a more detailed study from the aspect of speed of data entering, redesigning of operations, increase of the number of consumers that can pass the test in certain period etc. [14, 15]

Different number of financial institutions can be included in *EFT/POS* system. If the buyer and seller have accounts at the same bank, it is about the simplest model then. This model of *EFT/POS* system was applied only in local relations. Somewhat more complex model assumes the involvement of more banks, which involve automated clearing among them. That is so-called interim model. The third model of *EFT/POS* network implies using *switching* centres and it is used in national and international relations. This category includes current systems *EFT/POS*.

For the application of *EFT/POS* system, it is necessary that there is the interest from the part of buyers, trade and banks. The number of stores, which are included into the system, should be such to provide a sufficient volume of traffic and make the entire *EFT/POS* system reasonable and cost-effective.

Buyers get more rapid transactions performance, through *EFT/POS* system, as well as reduction of concern and risk due to the use of cash, elimination of writing the checks and possible realization of price benefits.

In use of *EFT/POS* system, the merchants find their own benefit in modern image, improvement of service providing to consumers, reduction of „paper work”, reduction of risks when using cheques and cash, increase of sale, reduction of time loss due to paying the receipts to accounts, more efficient disposal with monetary funds, as well as control of staff's work in own sale objects.

For banks, the advantages of using *EFT/POS* system are enormous and can be subsumed under a system of overall development of non-cash payment, and that means:

- Increasing use of non-cash payment in form of electronic cards,
- Reducing the traffic of monetary documentation (checks, remittances, specifications etc),
- Increase of deposit funds of banks, since the clients spend their funds in the moment of buying goods or services and they do not have the need to withdraw big cash amounts from deposit accounts,
- Stabilization of deposit potential of banks,
- Increase of credit potential of banks.

POS systems are becoming new standards of overall globalization of financial market, both within national borders and at international level. They are accelerators of the accelerated development of computer networks, whose objective is to provide for financial services to be realized in trade and service network. Basically, *POS* systems are becoming the last buckle between clients and bank within *retail* banking, having in mind that non-banking payments finally obtain their complete confirmation through it. [16]

2. IDENTIFICATION OF THE EXISTING PROCESS OF GRANTING VISA CREDIT CARDS

In this paper, we will show the process of granting credit card Visa Card, in Banca Intesa p. l. c. Novi Sad.

Examination of the process of card granting in Banca Intesa p. l. c. Novi Sad is done by collecting the data through interviews with all participants of the process. initial interview was agreed with the Director of the Branch in Novi Sad and then there were consultations with all process participants, due to a better observation of process and problems that they encounter in the work. The interview was planned in order to obtain necessary information, thus respecting the rules that a good interview contains.

Recorded process was shown by activity algorithm, network diagram and system diagram, at the level that shows all significant elements and course of the process and enables for its deficiencies to be spotted easily.

The essence of reengineering is good functional analysis and examination of the existing processes, so that the course of the process could be reorganized on the basis of determined deficiencies and, as a result, the process will have greater efficiency, reduced performance time, i.e. smaller number of participants.

„Reengineering is not an ordinary job. Traditional paradigms for implementation are of small value in context of radical, multi-dimensional change. Reengineering requires a unique style of changes, which is reflected in adherence to the following instructions:

1. Always start with the client

Recognize that the purpose of the process is to create a new value for the client and ensure for all the work to be aimed at satisfying their needs. Set achievable goals.

People are always motivated to abandon the traditional and really start from the beginning only when they are able to accomplish the objectives that are set before them as a challenge.

2. Work quickly.

Reengineering will fail if implemented by careful steps. It needs to be carried out before the resistances in organization overcome it.

3. Tolerate the risk.

There is no progress without the risk. The unknown is always scary, but the greatest risk comes from maintaining the status quo.

4. Accept the imperfection.

Reengineering is an iterative process. When you are engaged in the unknown, it is inevitable for you to make mistakes and it is necessary for you to learn on them.

5. Don't stop too early.

Great number of organizations stops the reengineering process as soon as they start seeing some results. That is equally bad as stopping the process before the first difficulties. Endurance and patience are necessary in order to achieve significant results [5]. “

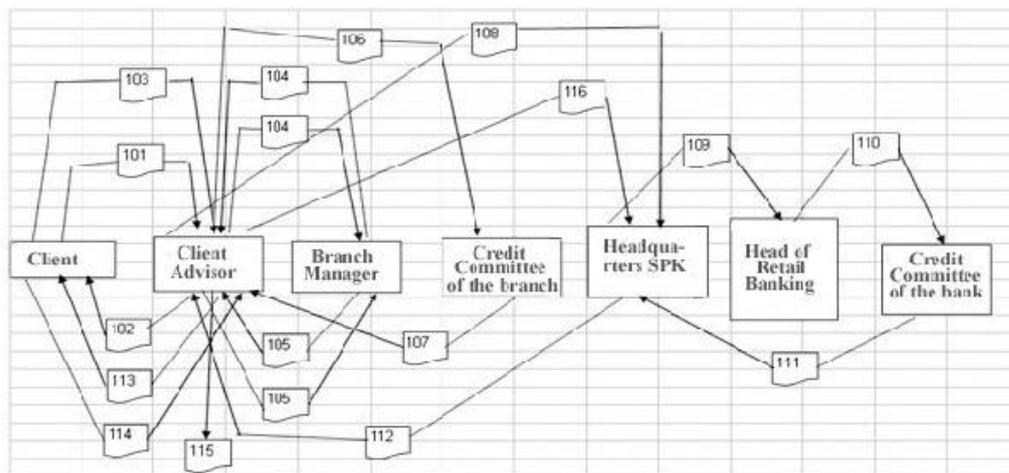


Figure 1. System diagram of the recorded process

System diagram shows the exchange of information and documentation between all process participants. In further text, there is a list of all documents and information related to the process:

101. Information on the application for the credit card

102. Offer, i.e. Credit card terms

103. Basic information about the client, documentation

104. Acceptance of credit card request

105. Analysis of credit documentation

106. Credit proposal

107. Decision of the Credit Committee of the branch

108. Complete documentation

109. Credit proposal for Credit Committee of the headquarters and documentation

110. Processed documentation in appropriate form

111. Decision of bank's Credit Committee

112. Decision of bank's Credit Committee

- 113. Customer notification about the outcome
- 114. Contract signed
- 115. Granting the number of Visa Card (VC)
- 116. Request to activate Visa Card (VC)

2.1. Identification of the problem

After recording the process, the following problems were identified:

- The process is rich in a great number of activities,
- Some participants in the process are too burdened,
- Long duration of the process,
- Needless repetition of activities,
- Low utilization of the existing IT.

Good reengineering programme needs to be process-oriented and ready to reduce the entity observed into its constituent parts and then to put it together again.

Reengineering combines strategy of improving business innovation with the strategy of performing major improvements in business process. However, although potential cost-effectivity of reengineering is great, the risk of failure due to high level of interference from organizational environment is also great. Performing radical changes in business processes that lead to dramatic improvement of efficiency and effectiveness is not an easy task [16].

2.2. The objectives and criteria for achieving the objectives

Having in mind main values that the presented process of this project has, and that is meeting the clients' needs, objectives of reengineering process are:

- Adding new values for the clients,
- Simplification of the process,
- Reducing the duration of the process,
- Reduction of the number of performers,
- Professional training of employees,
- The introduction of IT into the process.

Banca Intesa aims at raising the level of services that it provides for its clients to the highest level.

Leadership position that it has in the field of cards needs to be preserved, as well as in other fields. In order for that to be achieved, it is necessary to adhere to principles, such as being the first in innovativeness and quality of services provided and adjust their relationship to the price of the service.

The aim of the paper is to eliminate observed errors and inconsistencies by applying the reengineering principles in the process of granting credit cards and to point to the possibilities and benefits from reengineering on other business processes in enterprise by designing new solutions.

The introduction of reengineering into banking also implies great changes in operating. Although the banks in modern world have already performed those changes, they still work on permanent improvement of the same. Bank's management is faced with a big task, but the benefit he brings with its implementation is multiple.

Inputs that this project requires are:

- Software program from analysis of requirements for Visa Card

- Professional training of employees

Development of information techniques, especially the software, provides unlimited possibilities for the implementation of reengineering. However, the problem is in the way of using information technologies, and that brings us back to the man, who has the most important role in the entire process. Parallely with technology, people are the ones that provide the reengineering of the process. They need to be able to understand new possibilities and to use them. It is necessary to train employees very well, so that they could assume the responsibility for the job they do. Awareness of the importance of changes and constant improvement is the key to the success for reengineering.

When aforementioned conditions are provided, the new process can be applied.

Setting too high requirements before the management of enterprise can frequently be the factor that will hinder or even prevent the implementation of new ideas. For that reason, when designing, it is necessary to observe enterprise's capacities in a realistic way and willingness of management to mobilize them into the implementation of the solution suggested.

The basic idea of reengineering of the shown existing process is decision-making about granting credit cards in one place by introducing the software for data analysis into the process, and professional training of workers based on that, all of this in order to shorten the procedure and make the clients satisfied.

3. DESCRIPTION OF THE NEW PROCESS

Client comes to the bank and after the obtained information about terms for credit card, he submits the request. Client Advisor receives the request, documentation for issuing the credit card and enters the data from the enclosed documentation into database. After the completion of entering, the processed data in appropriate form are electronically submitted to Risk Department of the Central Bank. Risk Department performs the verification of documentation for issuing the credit card, as well as the processed data, and makes a decision on granting the card that is both in electronic form and by mail submitted to Client Advisor. Client Advisor submits the decision to the client and after the client's arrival to the bank, he signs an agreement with him and grants the number of VC and activates the approved limit.

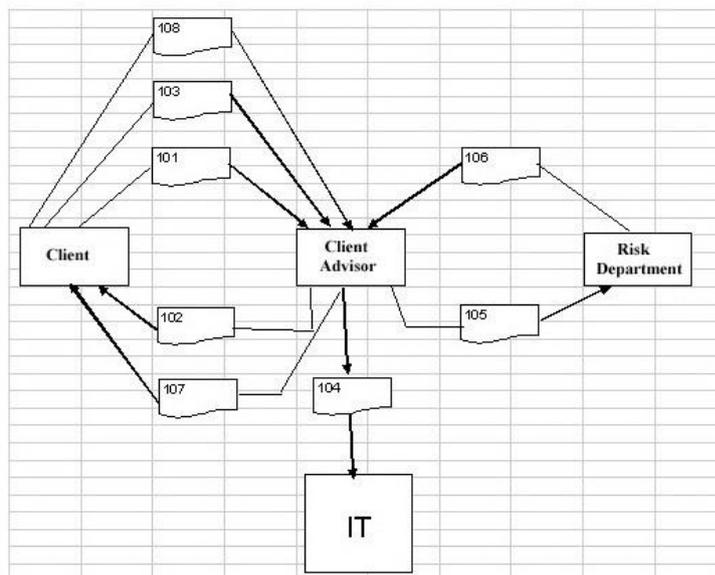


Figure 2. System diagram of the new process

New system diagram is significantly different than the previous one in the number of activities necessary for obtaining the credit card:

101. Information on the request for credit card
102. Offer, i.e. terms for credit card
103. Basic data about a client, documentation
104. Processed documentation
105. Processed documentation
106. Credit decision
107. Notification
108. Agreement on credit card.

4. CONCLUSION

The changes that our systems go through, and particularly the segment of banking business, require great changes both in behaviour of organization and the individual in it. The relationship towards the client is the most significant element, and thus it needs to be respected and improved, so that the Bank would survive and make a progress in the market.

The greatest expected effect of this reengineering process is increasing the value for buyer, which is reflected in simplified process and reduction of the total time of the process. The new process significantly decreases the critical parts of the process by improving the software solution for a specific process, and it is maximally obtained in efficiency and effectiveness. The process that was rich in a great number of activities is rather simplified by reengineering. Decision-making becomes the constituent part of the process. All unnecessary control procedures are abolished, employees become creative workers rather than performers, with greater responsibility and they are aimed at buyers and service rather than managers.

Reengineering seeks the breakthroughs in important performance measures, rather than gradual improvement, it involves multiple objectives rather than objectives focusing. It adopts process perspective of business and includes the will for redefining and radical design. The most important task of reengineering is to determine and explain business results for which the management is interest, which is the process that provides the best results and which process the team that performs reengineering wishes to optimize. Without establishing a clear connection between business and results of the process, the reengineering process is doomed to failure. Process results measured by speed, preciseness and reduction of the cycle are not the objective by themselves. They are significant for the improvement of business performances that are measured by number of clients in our case, by number of successfully completed processes of granting the cards.

In terms of modern economy, value of the company is no longer measured through the value of its inventory or fixed assets, but through the knowledge, competence and motivation of its workers. Starting from the idea that the achievements of information technologies provide us with the possibility to work in a more efficient and simpler way, the project of reengineering the process of granting credit cards is important for the business and reputation of the entire company.

The subject process is recorded and analyzed with the aim to observe the deficiencies and problems that the existing process had, after which it was accessed to designing the new model that includes the improvement of the existing software, by generating new solutions in order to improve the existing situation.

Extension of participants' authorization in the given process is of key importance. Training and authorization of participants in the process leads up to the increase of their

motivation, because decision-making becomes a part of the process, which eliminates control procedures and everything in general leads to the simplification and reduction of process costs.

Although the change in the work of the department for granting cards will affect the other spheres of business as well, to reorganize only one part of the process and one part of the service is not sufficient to acquire the terms for further and more significant changes. Reengineering, in order to give successful results, needs to become a process that needs to be monitored and controlled from its idea to its implementation by previously defined measurable criteria. Reengineering precisely provides the best results when it is timely done, while the company still operates successfully, instead of waiting that can lead to the collapse. Every successful company needs to know that once performed reengineering is not sufficient for the success in the long run, but it needs to monitor and predict the changes of environment constantly and to adapt its business to the changes in environment. Rapid reaction to the generated changes, adaptation of production, i.e. service providing to the needs of the market, insisting on cooperative relationship with partners, even competition, is necessary for successful operation.

The task of this paper was:

- To record and analyze the existing process by using the method of reengineering,
- To observe the disabilities and problems that occur within it,
- To generate new ideas, by whose implementation the process itself would be accelerated and more efficient and economical.

The given goals of reengineering the process of granting credit cards Visa, having in mind basic values that the process of this project has, and that would be satisfying client's needs, were the following:

- Adding new values for the clients,
- Simplification of the process,
- Shortening the duration of the process,
- Reduction of the number of performers,
- Professional training of employees,
- Introduction of IT into the process.

Based on the analysis of the new process of granting Visa credit cards, which is presented by network diagram, algorithm and system diagram of the new process, we come to the following conclusions:

- In the existing process, entire activity of granting credit card lasted 15 days at least, while after the implementation of reengineering the complete activity of granting was reduced to 48 hours.
- Material value is very difficult to express and predict, but it is obviously increased by shortening the process.
- Through reengineering of this process, a very complex process is simplified, both for clients and the company, which results in reduction of process's costs.
- Unnecessary control procedures are abolished
- Extending the authorizations of participants (employees) in the given process is of key significance
- Training and authorization of participants in the process leads up to the increase of their motivation, because decision-making becomes a part of the process and everything in general leads up to the simplification and reduction of process's costs.

- The interest of employees in teamwork and development of the sense of belonging to a team
- Through reengineering, the process that had an abundance of activities was significantly simplified
- Reduction of the number of activities from 17 to 9
- Reduction of the number of performers from 6 to 3.

Such a drastic reduction is possible owing to the intensive use of modern technologies, primarily information technologies.

Reengineering of the process of granting Visa credit cards has brought:

- The effectiveness of the process,
- The efficiency of the process,
- Reduction of costs,
- More satisfied clients,
- Motivation of employees,
- Increase of bank's reputation.

Material value is difficult to express and predict, but it is certainly increased by shortening of the process.

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