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DIGITAL TECHNOLOGIES IN TRANSFORMATION OF CLASSICAL RETAIL BANK INTO DIGITAL BANK

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Abstract: This paper considers, proposes and describes possibilities and methods for using digital electronic technologies for transformation of classical banks into modern digital banks. Digital electronic technologies are widely used, including banking, bank operations and services as one of important sectors. Application of different types of digital technologies, including computers, computer networks, digital communication, Internet and information and communication technologies, with appropriate software, enables increasing speed, security and efficiency of all banking operations and services. It gives many benefits and advantages to the banks and to users of banking services. Way to use modern digital technologies to effectively transform classical financial data bank into digital data bank on the example of typical commercial/retail bank is proposed and described. It is also proposed organizational model of the digital bank. Advantages of using digital technologies and digital banks compared with classical banks are given.
Keywords: digital electronic technologies; information technologies; bank transformation; classical bank; digital bank

1. INTRODUCTION

Modernization of banks, banking sector, financial institutions and financial sector necessarily involves introduction and application of modern digital electronic technologies based on using different kinds of computer systems, computer system networks, digital communication, Internet, mobile phones and similarly. It also needs appropriate data bases and software applications (APP) for different needed bank services. All it increases speed, security and efficiency of all banking and financial operations and services. It also brings many benefits and advantages to the banks and to users/clients of bank services. All this processes lead to transformation of banks from classical financial retail data banks into modern digital data banks [1-5].

Possibility and way to apply modern digital electronic technologies for efective transformation of classical financial data bank into digital data bank are considered, proposed and described in the paper. The process of transformation was ilustrated via proposed transformation phases on example of a commercial bank. Organizational model of the digital bank and organization of the bank information system were also proposed and given.

2. CLASSICAL AND DIGITAL BANK

The classical bank with its the biggest part is a retail bank. Such banks are waiting for the clients to come into tha bank premises with their requests and needs for the services. Such way of work creates many problems and disadvantages to clients and to banks. Clients need to go to the bank premises and to wait for the service wasting their time. Banks need to provide enough premises and space for the clients and enough personal for the services.

It is also well known that it is very hard to adapt the classical bank to use growing power of digital and mobile electronic technologies and devices. In the time of appearance of the computers, data base servers and communication links banks were one of the leaders in the introduction of the new technologies. But, the latest expansion of digital and mobile technologies and devices banks were received quite unprepared. The main reason is in the classical retail bank organization that is impossible to be adjusted, without significant changes, to new technology, in the way it takes full advantage of it.

The basis of the classical bank is the Central Unit. The unit includes the strategic and operational management of the bank, information technologies (IT) center, marketing, call center, back office, accounting, legal service, head of retail and corporate and other support services. Figure 1 shows principle of typical classical bank organization. The Central Unit dictates the working procedures, designs and puts the products on the market, manages the operation of the bank network. The bank network consists of belonging branches, agencies and counters. Recently, the bank network was expanded with automated teller machine (ATM) and point of sale (POS) devices. That in some way represents a limited usage of modern digital technologies.

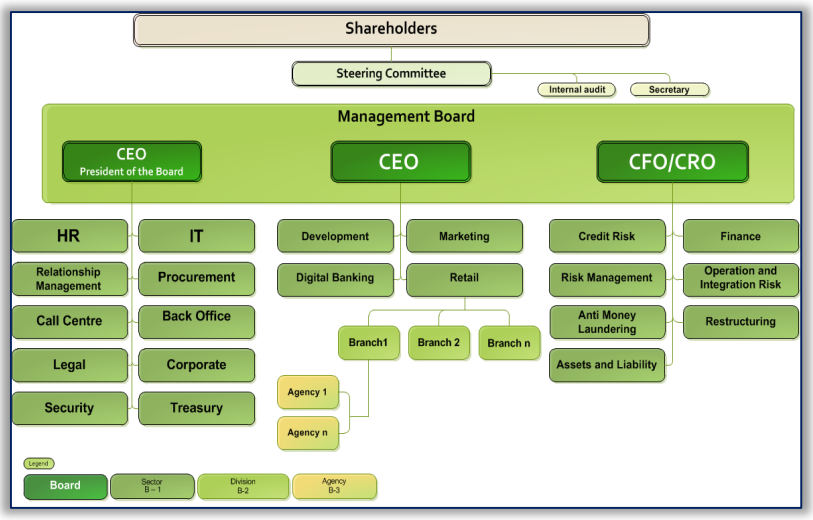

Figure 1 - Model of classical bank organization

The basic problem of this approach is the fact that the modern person/client, through the use of modern digital and mobile technologies, mobile smart phones and mobile computers, more and more information and services receives remotely using such devices. So, the need of client to come in the bank for a service becomes unnecessary and very rare. But, the basic concept of classical bank is to attract clients to visit their branches and offices.

Banks try to use modern digital and IT technologies, but in a wrong way. Banks send emails and text messages, publish information on their web pages in order to attract clients to visit their offices. But, that is a real problem. Modern client would like to be able to get banking services on their mobile devices and to be able to realize the services from home, from working place, when is on a journey, etc. But, the concept of the classical bank is still to do everything to attract client to visit bank office and to present and sell to lient products there. It should to be changed and to enable clients to use and obtain banking services from anywhere and at any time.

In order to somehow satisfy the wishes of clients, banks have begun to develop and deliver electronic and mobile banking as a products. Exactly these products, when are popularized and expanded, show the correctness of the proposal that way of working and organization of the banks should to be changed. With this new aproach, more and more bank services client can use via mobile devices. It shows that the network of branches, agencies and counters becomes unnecessary in the form it is now.

Simple cost and benefit analysis would show that branches cost more and more, with less and less of profit. Client habits are increasingly moving in other direction. The only thing that still keeps branches is the legal regulation of the Banking Agencies. It still requires need for client to be physically present in certain banking services (physical identification, signature on paper, etc.) [1-3]. Classical organization also implies a classical way of client treatment. It becomes too official and refuses modern client from the bank. Good examples of such bank behavior are the exchange rates in branch offices and on the web pages. The exchange rate tables do not understand even the majority of employees in the bank and clients also do not understand it.

In addition to the listed arguments caused by the usage of digital and mobile technology and changes in the habits and wishes of clients, there is another important fact for proposing and why the process of transformation from the classical into a digital bank is natural and unavoidable. Almost all of banking products and services have become of virtual type. So, with the withdrawal of the cash from the usage, the last real product will be lost from the use in the banks. Also, it is known that every virtual product and service can be described algorithmically, software processed and automated (the API function is a modern name for it). If it is accepted as true, then arises the logical question and problem for the banks. What about the fact that at this moment banks have a large number of branches, most often in their possession and what to do with them? The solution is to conduct the bank transformation from a classical (retail) to a modern (digital) bank. The possible way of the transformation is proposed here.

3. PROPOSED WAY OF BANK TRANSFORMATION

It is proposed here that the process of bank transformation from classical retail to digital bank be performed using two phases or periods. The first phase should be one hybrid period. The second phase should be period of creating digital bank.

❖ Hybrid Period of Bank

It is proposed that in the hybrid period of the bank transformation be implemented next activities:

— Replace classical tellers in the bank branches with multifunctional ATM devices that with money delivery can also receive money, make payments and gradually increase the number of banking services. At the start, it would be desirable to ATM devices to be equipped with microphone handsets, as well as to have the ability to play video clips that are essentially the help reproductions. Such equipped ATM devices would be

able, at a later stage, when no more be employees at places of posting ATM devices, to connect to the Call Center, for purpose of providing help and consultations to clients.

- Bank workers should be more and more trained to be consultants, product sellers and to be less irreplaceable elements in performing of particular banking services [2].
- In places where by using multifunctional ATM devices would be created more free employees it should to organize work in several shifts in order to provide as much as possible high quality service on basis 24hours/7days.
- ATM devices, located in separate locations, outside the branches, banks should try to transfer to ownership of specialized firms that will necessarily appear on the market. Their primary business will be working with ATM devices and taking care about ATM devices. It is already known that ATM devices are becoming more cost and less profitable for banks. Reason for this is increase in the cost of leasing, insurance and transportation of the money. But if it takes a specialized firm costs will be the same or lower than for the bank. The reason is that one same ATM device can be used from more banks, with one same cost for each bank. Bank will, on the other hand, expand its network of ATM services and at same time reduce the costs.
- Convert branches and agencies into places for providing consultations for the purpose of selling products and raising the level of bank services.
- Selling places that appear insufficiently visited (not profitable in terms of contribution to the overall image and business of the bank) try to sell or rent.
- Introduction and continuous upgrading of customer relationship management (CRM) solutions in the information system of the bank in order to better and faster segment clients connected in groups according to some common characteristics. Accordingly to that, create successful campaigns for the purpose of selling and popularization banking products and services. Good CRM solutions allow more efficient use of information about client financial habits and achievement principle of know your client (KYC) in the full sense.
- Introduction and continuous upgrading of document management system (DMS) of the bank in order to more efficiently archive bank documents, to achieve their faster search and saving in physical space, paper and everything else that involves archiving in physical sense. DMS is also very useful for automation of jobs.
- Permanent work on the automation of banking operations in all parts of the banking business.

❖ Creating Digital Bank Period

It is proposed that in the period of creating digital bank in the bank transformation be implemented next activities:

- Synchronously with the hybrid phase strengthen the centralization of the bank with the core in the Call Center. The reason for it is because the Call Center will provide advisory and help services to clients. It could be performed either through educational video clips or by telephone or via live video or by chatting or email correspondence. By contacting the Call Center clients will be able to get answers to their questions and consultation from the best experts in bank staff related to the particular product. In classical bank system client received information from the Account Manager, i.e. Personal banker, who was trained by mentioned experts. Whatever Personal bankers are capable they are still less qualified staff. Therefore, quality of the presentation of the particular product is lost.
- Electronic banking (eBanking) and mobile banking (mBanking) applications will be merged into one, at least as far as users are concerned. The goal is that user when uses an eBanking or mBanking application does not notice the difference at all. User can start at one and to end on other application, training is the same for both, and so on.
- How the tempo of adoption of legal regulations will allow, it should change banking products and services in a way that they can be executed and used remotely and transferred to mobile applications.
- Create a flexible information system (through the API functions, on the Lego dice principle) that is easy to fit with other applications, especially those already offered by so called Fintech (Financial technology) firms, because such firms are leading in innovative services [4]. Few of banks have own development teams that can parry to such firms. If they have it, it is only in certain areas of banking business. It is more profitable to have ability to provide some service on time than to develop it itself for any price. The upcoming PSD2 EU directive supports this opinion.
- Reorganize the bank on that way to have much less vertical and much more horizontal elements. Fig. 1 shows the lack of cooperation between sectors in the classical bank, since all cooperation goes through central parts. In that way too much energy, time and skills are lost on the synchronization of work of

individual organizational units, because they are not organized by product while whole business is turning around the products. So, it is necessary to reorganize current banking sectors (Retail, Corporate, IT, etc.) into more efficient teams, concentrated around bank products or product groups. Only minimal staff whose job is to common serve these teams and very small number of commanding posts that serve to effectively integrate these teams into organizational unit should be left in the vertical part of organization. Programmers, development teams, marketing, sales teams should be grouped in the product teams. This will ensure high specialization of professional staff, their greater efficiency and better teamwork.

— Introduction of the Big Data concept into information system of bank. It should be performed in a way to enable better collection of both financial and other data about clients of the bank, on the way of doing of world famous search engines firms, online shops, social networks, etc. [4]. Already it is clear that in order to provide adequate services to clients it is not enough to have only knowledge about financial characteristics of client, but also other knowledge about client behavior especially related to its purchasing habits. So, it is necessary and desirable to begin to prepare, as soon as possible, transformation of banks from banks of client financial data to banks of client all data [5]. This will also cause employment of some of up to now unused bank worker profiles. In addition to Data Science experts who will be experts for Big Data, it will be needed that the data be classified and statistically processed. So, there are places for worker profiles as mathematicians and statisticians type and psychologist (or similar) type who will provide correct interpretations of statistically processed data.

Figure 2 shows proposed model of modern digital bank organization in teams according to groups of bank products.

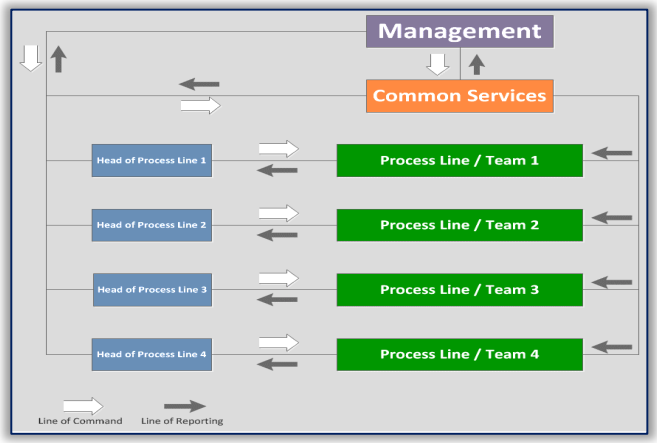

Figure 2 - Proposed model of modern digital bank organization using teams of product groups

All the activities in the bank transformation should be performed by using modern digital electronic technologies. It is needed to appropriate apply and integrate digital and mobile electronic technologies and systems, using modern computers, computer systems, computer networks, Internet, wired and wireless communication technologies and protocols, big and fast data storages, mobile devices, data bases, cloud technologies, big data and data mining concepts, application software for banking services, etc. Figure 3 shows proposed principal block diagram of the information system of the modern digital bank.

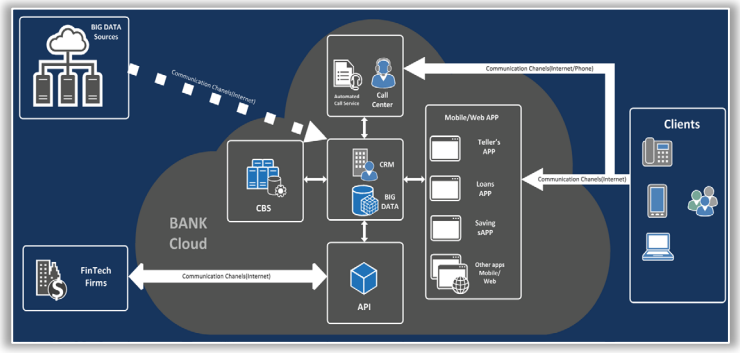

Figure 3 - Proposed principal information system organization of modern digital bank

4. CONCLUSION

It is clear and no doubt that serious changes should be implemented in the banking sector in the future applying modern digital and mobile electronic technologies and systems. The way how it will be performed can vary in accordance with the specific factors. Here is proposed and described one of possible and expected ways. Speed of introduction of all mentioned activities and technologies will depend largely on the speed of adoption of the necessary legal regulation. It is related to the digital signature and other regulations that will replace the need for physical visit and presence of the client in the bank branches. It will also depend on the degree of client pressure to the banks to be able to use bank services remotely by modern mobile devices and systems. It is recommended that banks already perform some such activities and introduce such digital systems in order to more readily accept these changes. Even more, in accordance with their possibilities the banks should initiate these changes. Symbioses of banks and telecom operators, according to their perspective, have great chances to give good results, especially for local or regional organizations.

It can be very good seen the tendency among bank clients to complete the entire retail business in a centralized way. For example, the buyer wants to buy a new kitchen. The buyer wants to select from one place model of the kitchen that suits to him/her and settle the commercial conditions at the same place (chooses a loan and makes a payment). The opinion is that if a bank does not create itself as a leader in this process, someone else will become a leader. In this sense, many professionals think about companies working with the most modern digital and mobile technologies and systems that successfully developed social networks, search engines and Internet shopping as new retail leaders. Such modern companies have a greater perspective to take over retail business and therefore retail banking in the future.

The banks are actually very threatened if they do not access to the necessary changes and application of digital and mobile electronic systems on time. There is an opinion that banking is necessary but that banks are not.

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