

The Application of Digital Banking to Promote Banking Products and Services

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ABSTRACT

The present article focuses on the issues of the application of digital banking to promote banking products and services. The authors compare budget expenditures of major banks on online marketing, analyze the rates of user engagement in the communities of major banks in social networking sites, conclude that effective content marketing increases the rates of audience engagement, establish the correlation between marketing factors and the annual profit value of Sberbank PJSC, develop and analyze a regression model of annual profit dependence on the expenditures on digital banking.

Keywords: digital banking, marketing strategy, digital service, digitalization, the Internet, social networking site, interaction, correlation analysis, regression analysis

I. INTRODUCTION

The development of new technologies inevitably results in the transformation of all businesses and changes in the relationship between commercial banks and their existing and potential customers [1]. There is a growing demand from bank customers for remote services through mobile devices, personal computers and other means, which leads to digital banking increasing in importance. What digital banking represented earlier was more the technical and operational side of the process associated with automating routine operations and increasing the quality of service functionality. At present, however, it refers to targeted and interactive creation, promotion and provision of products and services by means of digital technologies, which is aimed at attracting and retaining customers [2].

Thus, the key factors of a banking strategy include the development of promotion tools, the expenditures on content creation, the methods and budgets for search engine optimization, and metrics of effective purchase funnels.

The purpose of the research is to analyze and evaluate the impact of digital banking on the development of marketing strategies of banks.

The hypothesis of the research is the statement about the increasing influence of the total of marketing expenditures on the income of a bank in the context of digitalization.

Research methodology to assess the specified impact involves the correlation and regression analysis and the development of a regression model.

II. THE ROLE OF SOCIAL MEDIA MARKETING IN DEVELOPING MARKETING STRATEGIES OF BANKS

Intense competition encourages the banking market to search for new and effective marketing solutions associated with the application of Internet-based technology, mobile networks, growing customer needs, and forming digital banking user profiles [3].

One of the major phenomena of digital banking is social networking sites, with over 70 million unique users registered [4]. Moreover, not only individual people, but also organizations are increasingly creating their accounts in popular online resources. Banks are of no exception, as they establish social media communities to interact with customers and advertise their products. In addition, in their accounts, banks provide links to their sites, show videos, advertise special offers, receive feedback from customers and share news to attract their attention. The key idea of this method of implementing a marketing strategy is that the clients get involved in the activity of the bank, feel important and cared for by the bank [5].

Due to digital banking, the promotion of banking services on social networking sites covers hundreds of millions of users worldwide, who in their turn ensure attracting the attention of the target audience to a brand or product, providing coordinated actions and established relationships with customers, receiving

feedback, managing brand credibility, promoting sales by means of the advertising tools of social networking sites, identifying loyal users, and engaging a larger audience [6]. Presently, the main channels of SMM promotion are Instagram, Vkontakte, Odnoklassniki, and Facebook.

Clients continue to resort to bank branches or call centres when dealing with major issues, while in social networking sites they can get answers to urgent questions, which do not require visits to the bank [7].

Alongside with people adapting to new technologies, socio-cultural environment is also developing. Customers spend more time online, use social networking sites around the clock and get information on the Internet. By the date of January 1, 2020, the average user in Russia spent 6 hours 43 minutes a day on social networking sites [8].

According to the study conducted by Mail.ru Group and ResearchMe, 74% of Russian Internet users utilize digital banking services ("Fig. 1").

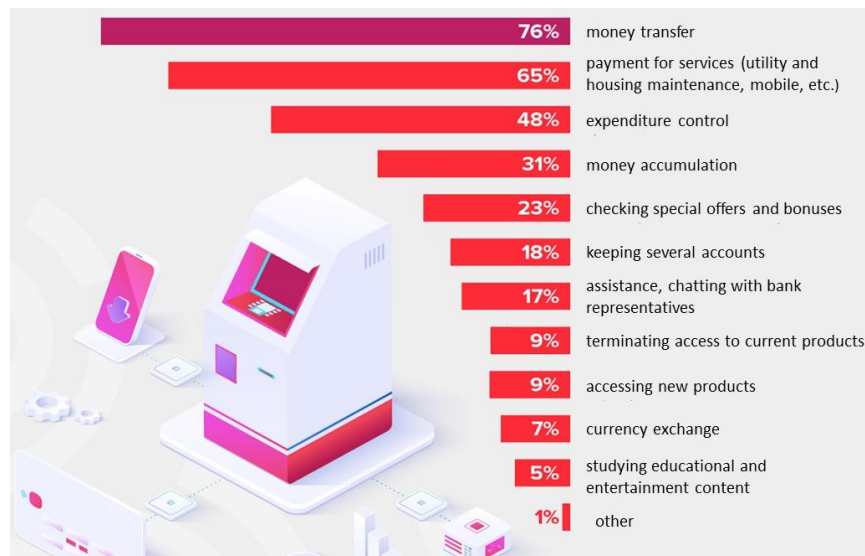


Fig. 1. The most popular digital banking services [9].

Currently, the use of digital banking services is most widespread among individuals ("Fig. 2").

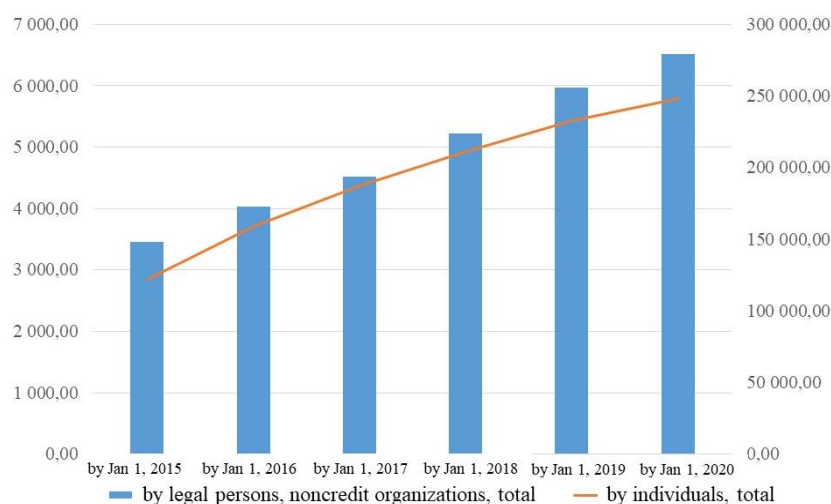


Fig. 2. The number of remote bank accounts opened in credit institutions [10].

^a Source: Compiled by the authors.

With ever-increasing frequency, when developing their marketing strategy banks apply digital tools to promote their products [11]. Nowadays, the banks to allocate the largest budget amounts for advertising and marketing are Sberbank (RUB 9.4 billion) [12] and Tinkoff Bank (RUB 6.1 billion) [13]. Meanwhile, if

Sberbank resorts to more conventional ways (banner advertising, including on social networking sites), Tinkoff Bank allots most of its budget to mobile advertising of various types, encouraging users to install the mobile applications of the bank ("Fig. 3").

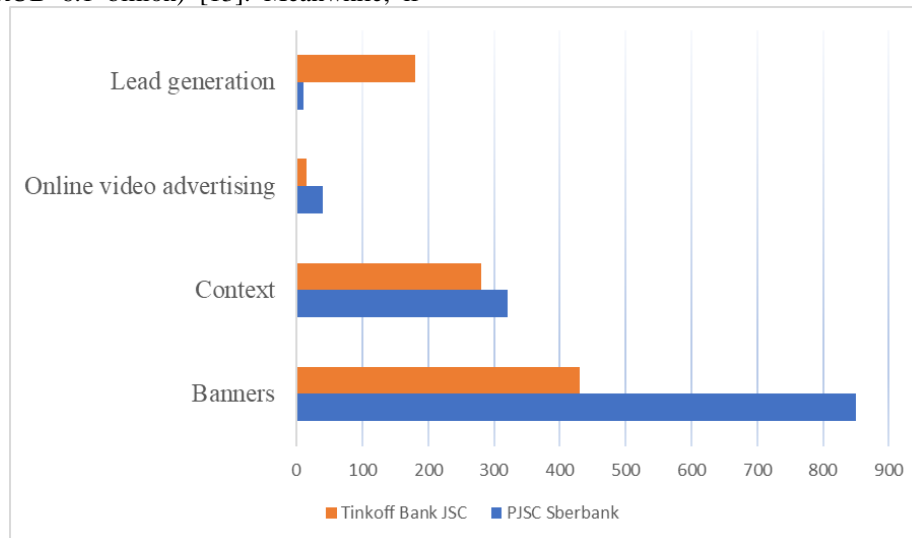


Fig. 3. Comparison of budget expenditures of Tinkoff Bank JSC and Sberbank PJSC on online marketing [14].

Social Media Marketing has become an integral part of the banking marketing strategy. The authors of the present article analyzed the promotion activities of the 10 major banks in the Vkontakte social networking site by the date of March 1, 2020 ("Fig. 4"). The bank community to have attracted the greatest number of followers is the Sberbank community (2,862,520 people by the date of March 24, 2020). In addition, the bank makes considerable use of the SberCat chatbot (the number of followers in the community is almost 13.8 million). Thus, the monthly audience coverage of Sberbank in just one social networking site is about 17 million people. Additionally, Sberbank PJSC widely employs more traditional Internet advertising options, for instance, banner and targeted advertising on other social networking sites [15].

In order to assess the efficiency of banks in social media and evaluate the quality of the provided content the indicator of the "number of interactions per month" [16] or Engagement Rate is applied. This indicator demonstrates the rate of community audience engagement, expressed as percentage. Customer reaction implies likes, comments, shares and clicks on posts. The indicator is calculated as follows:

$$ER = \frac{\text{Total Reactions}}{\text{Total Followers}} * 100$$

The average engagement rate per 1,000 followers has amounted for 11% over the entire period of the activity of the communities. The community of Credit Bank of Moscow has the highest engagement rate of 37.31% of interactions per 1,000 people, while the communities of Sberbank PJSC and Gazprombank JSC are characterized by the lowest engagement rate - 3.37% [16].

It is important to highlight that banking services promotion in modern social networking sites is a complex and labour-intensive process. However, Gazprombank JSC and Credit Bank of Moscow PJSC do not actively use social networking sites to communicate with their customers, despite the interest of the audience, the possible reason for which being the assumption that these banks do not consider the audience of the Vkontakte social networking site to be their target audience.

With the focus of conducting a more accurate analysis of the efficiency of the major banks in social media, the authors of the article made a second sample applying the method of expert evaluation of the content strategy quality. This sample considers five banks by the largest number of followers: Sberbank PJSC and its chatbot community SberCat, Tinkoff Bank JSC and its community Tinkoff Journal, Gazprombank JSC, Alfa-Bank JSC and Raiffeisenbank JSC ("Fig. 5").

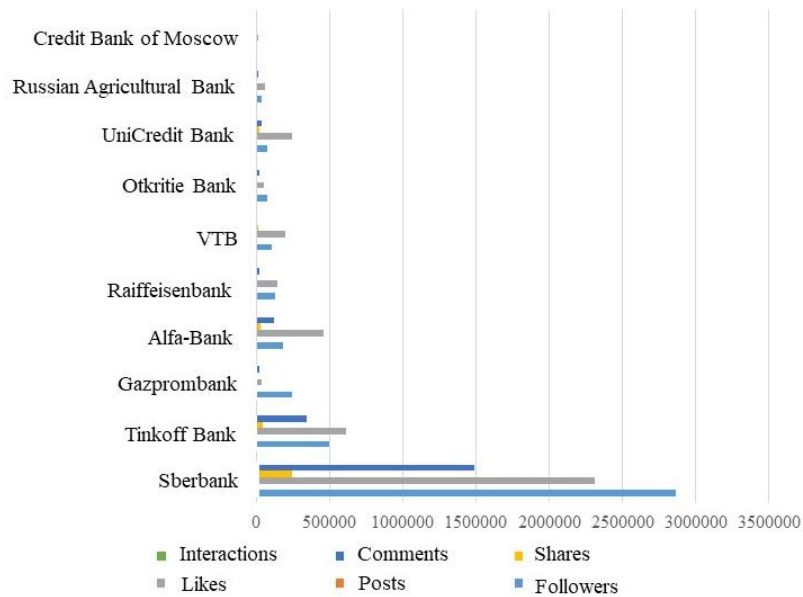


Fig. 4. The comparative chart of user engagement in the communities of major banks in social networking sites [17].

The average engagement rate per 1,000 followers is 58.10%, which is more than five times higher than in the top 10 major banks by capital.

Thus, we can conclude that audience engagement rates increase significantly when effective content marketing is employed.

a. Source: Compiled by the authors.

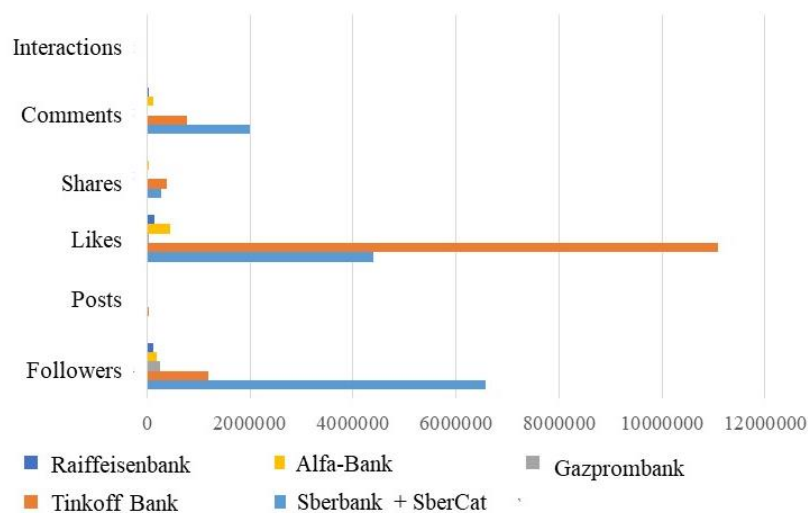


Fig. 5. The rate of social network user engagement in the most popular bank communities [17].

a. Source: Compiled by the authors.

III. THE ROLE OF A BANK WEBSITE IN PROMOTING BANKING PRODUCTS AND SERVICES

Brand websites have a significant role in the promotion of banking products and services. The

authors of the article analyzed bank websites, search engine optimization and paid traffic of the major banks in Russia ("Table I", "Fig. 6").

TABLE I. THE ANALYSIS OF TRAFFIC AND THE SHARE OF PAID WEBSITE TRAFFIC OF THE MAJOR BANKS IN RUSSIA [18]

Bank	Total visitors, mln. people	Unique visitors in 3 months, mln. people	Share of paid traffic
Sberbank PJSC	190.8	19.83	68.18%
VTB Bank PJSC	38.15	5.204	10.50%
Gazprombank JSC	14.5	4.017	4.24%
Alfa-Bank JSC	36.1	2.324	13.11%
Russian Agricultural Bank JSC	5.29	0.88	18.90%
Bank Otkritie Financial Corporation PJSC	12.71	1.676	45.42%
Credit Bank of Moscow JSC	3.69	0.598	13.17%
UniCredit Bank JSC	1.08	0.166	3.85%
Raiffeisenbank JSC	12.26	1.297	3.97%
Promsvyazbank PJSC	5.23	0.738	18.66%

a. Source: Compiled by the authors.

Based on the statistics above, it can be stated that the website of Sberbank is one of the most visited websites of financial institutions and banks not only in

Russia but also worldwide. The bank is in the Top-8 of the SimilarWeb world ranking [18].

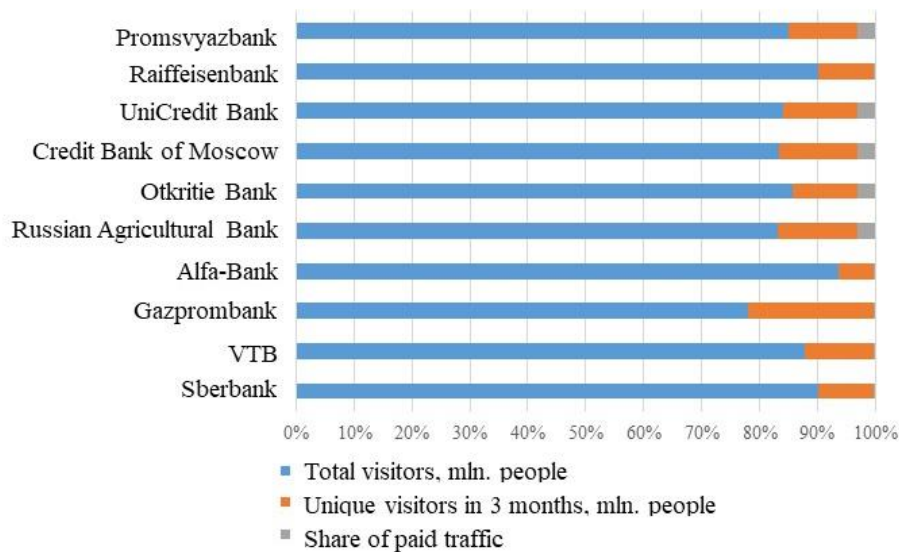


Fig. 6. Comparative chart of the traffic and the share of paid website traffic of the major banks in Russia [18].

a. Source: Compiled by the authors.

Based on the results of the study, we can conclude that banks are actively introducing and applying modern marketing tools when promoting their products and services, as well as employing new digital banking channels in order to win the new audience. The most well-known credit institutions that operate through Internet applications exclusively are Tinkoff Bank JSC, the Tochka Bank project by Otkritie Bank FC PJSC. However, at present, the offline operating banks are intensively developing their digital banking applications as well, for instance Sberbank PJSC, Alfa-Bank JSC, Raiffeisenbank JSC and others.

Among the banks that perform operations through branch banks, Sberbank PJSC is the one to most actively introduce digital banking ("Fig. 7"). According to the annual report of Sberbank, the Sberbank Online mobile application is the most popular digital channel of the bank. In 2019, its monthly audience grew by 30% and accounted for over 54 million people.

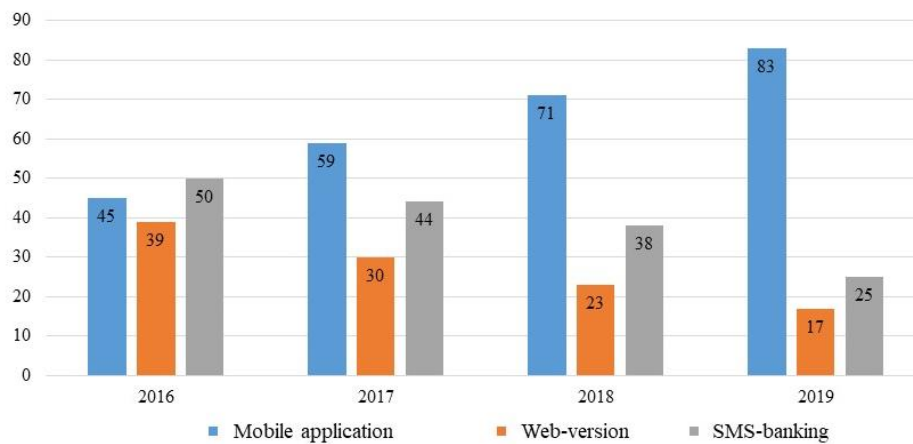


Fig. 7. Comparative analysis of the changes in the audience of the Sberbank Online digital channels (%) [12].

In 2019, the major application update was released, which due to artificial intelligence allows the application to adapt to each client's needs.

The primary goals of Sberbank for 2000 in digital banking are to provide easy access to services through all possible channels combining online and offline services, and maintaining its presence in the regions.

However, the leader in providing digital banking services is Tinkoff Bank JSC that has 5.7 million clients. Its target audience is mobile device users aged 20 to 40. The channels of attracting new customers are the young audience itself and the expansion into the regions where the number of banking organizations is limited [19]. According to Markwebb Rank & Report, Tinkoff Bank JSC offers the most reasonable rates of online services, while being the most efficient bank in ratio of profit to average assets [20].

IV. DEVELOPMENT OF A MATHEMATICAL MODEL FOR ASSESSING THE IMPACT OF DIGITAL BANKING ON THE PROFIT OF A COMMERCIAL BANK

Upgrading digital banking tools contributes to strengthening the position of Russian commercial banks in the global banking market. However, mathematical models of the analysis of credit institution activities can simplify business plan and marketing strategy development. It should be highlighted that the applied models allow accounting for the uncertainty of the future market parameters.

In order to identify the effect of digital banking on the profits of Sberbank, it is necessary to develop a model of profit dependence on the expenditures on

a. Source: Compiled by the authors.

digital banking, using the correlation analysis and multiple regression equations. The stimulated example, based on the data on the expenditures of Sberbank PJSC on digital banking for the period 2008-2019 [12] demonstrates the dependence between the increase in annual profit and the changes in variables (factor indicators): x_1 - advertising and marketing expenditures (billion roubles); x_2 — information services expenditures (billion roubles); ("Table II")

TABLE II. INITIAL DATA FOR DEVELOPING A MODEL OF ANNUAL PROFIT DEPENDENCE ON THE EXPENDITURES ON DIGITAL BANKING [12]

Period	Advertising and marketing expenditures, RUB bln.	Information services expenditures, RUB bln.	Profit for the year, RUB bln.	Bank customers, mln. people	Average income of Russian population, RUB
2008	3.4	23.7	97.8	52.2	14939
2009	2.2	6.1	24.3	54	16895
2010	2.9	8.2	181.6	57.2	18958.4
2011	5.1	10.8	315.9	60.8	20780
2012	9.6	19.1	347.9	63.4	23221.1
2013	12.7	16.6	362	70.3	25684.4
2014	9.60	18.80	290.30	75.6	27412.40
2015	7.30	27.10	222.90	78.9	30254.40
2016	8.70	29.40	541.90	85.4	30865.00
2017	7.80	25.30	748.70	87.3	31896.50
2018	8.40	24.20	831.70	93.0	33178.10
2019	9.40	28.90	845.00	96.2	35249.30

a. Source: Compiled by the authors.

TABLE III. CORRELATION BETWEEN MARKETING FACTORS AND THE ANNUAL PROFIT OF SBERBANK PJSC [12]

	Advertising and marketing expenditures, RUB bln.	Information services expenditures, RUB bln.	Profit for the year, RUB bln.	Bank customers, mln. people	Average income of Russian population, RUB
Advertising and marketing expenditures, RUB bln.	1				
Information services expenditures, RUB bln.	0.510842	1			
Profit for the year, RUB bln.	0.552236	0.626283	1		
Bank customers, mln. people	0.621744	0.751215	0.901231	1	
Average income of Russian population, RUB	0.687354	0.732358	0.861044	0.986547	1

a. Source: Compiled by the authors.

As the performed correlation analysis shows, the closest relation is observed between the parameters of Information services expenditures and Advertising and marketing expenditures ("Table III"). This testifies to the fact that these parameters should be accounted for when developing a model.

Let us calculate the regression equation showing the relation between X and Y ("Table IV").

TABLE IV. REGRESSION MODEL

Multiple correlation	0.930406
R ²	0.865656
Standardized R ²	0.788887
Standard error	128.5406
Observations	12
	Coefficients
Y- intersection	-1191.83
Variable X 1	17.32543
Variable X 2	-5.91512

a. Source: Compiled by the authors.

In order to identify the dependence between annual profit and the expenditures on digital banking, we apply the linear regression equation.

To check the correct selection of the function, we identify the determination coefficient. The determination index in this example is 0.866, which

illustrates that 86.6% of the initial data is fully consistent with the selected trend. The multiple correlation coefficient is 0.930, which indicates 93% dependence between the effective and factorial features. The linear equation is as follows:

$$y = -1191.83 + 17.33 \cdot x_1 - 5.92 \cdot x_2$$

TABLE V. THE COMPARISON OF THE ACTUAL AND MODEL DATA ON THE ANNUAL PROFIT OF SBERBANK PJSC[12]

Period	Y (actual annual profit)	Y mod (model annual profit)
2008	97.8	99
2009	24.3	25.7
2010	181.6	191.3
2011	315.9	320.1
2012	347.9	352.9
2013	362	370
2014	290.3	300.3
2015	222.9	251.5
2016	541.9	567.21
2017	748.7	761.67
2018	831.7	847.04
2019	845	859.86
2020	n/a	869.3
2021	n/a	875.8

a.

Source: Compiled by the authors.

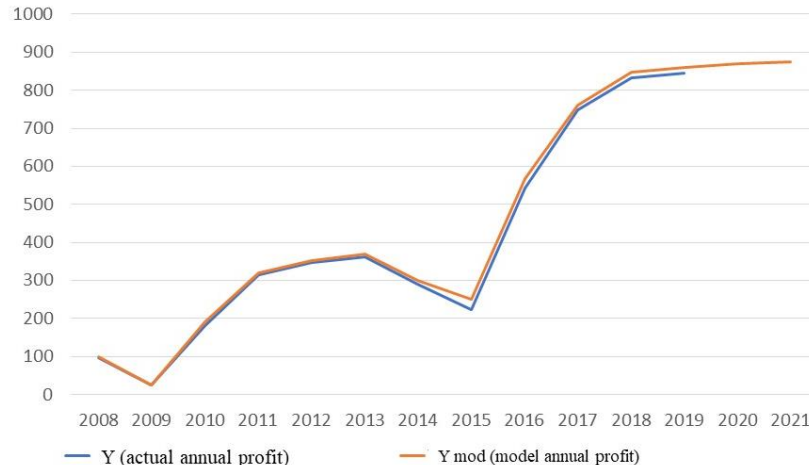


Fig. 8. The graph of the correlation between the actual and model annual profit of Sberbank PJSC.

a.

Source: The calculations by the authors of the article.

It is important to emphasise that there is no substantial discrepancy between the actual and calculated profit ("Table V", "Fig. 8").

V. CONCLUSION

Increasing digital banking expenditures can have a positive effect on the results of the operational activity of banks. A well-developed advertising, marketing and information services strategy provides competitive

advantages and ensures the development of a customer-oriented approach. The success of digital banking largely depends on the correctly selected target audience, which allows offering the most relevant banking products and services to customers in the most efficient and personalized way.

Thus, a conclusion can be made that digital banking serves as the foundation for strategic planning and provides competitive advantages that ensure development.

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