

ROMANIAN BANKS AND DIGITAL TRANSFORMATION

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Abstract:

Digitization and digital transformation radically changes society, business, and models, and financial operations seem to know the most important remodeling. Hence, the concerns of banks and their efforts towards digital transformation. Banks that have advanced positions on the digital transformation line have clear strategies, offer interfaces that shape the bank's profile rather than impose uniformity on the client. The Romanian banks, analyzed by their actions, appear to be easily offset in time, disadvantaged not only by their inertia due to the 90% share in the Romanian financial market, but also by the Romanian client profile. The Romanian uses the card because he received it from work, frequently for cash withdrawals and rarely or sporadically for shopping. Banks are the ones who have stimulated using cards, imposing costs and other negative barriers, so the customers have to use the card.

Keywords: *digitization, bank, card, bank machines*

JEL classification: G21

1. Digitization - Digitization - Digital transformation

A simple search on the Internet with digitization tag or digital transformation and dozens of articles, studies, conferences on this subject appear. You find strategies, sectoral approaches, steps, effects, and other things about our present and future, about the things next to us, and about how these concepts will affect what is left of your life.

However, we have found fewer about what digitization or digital transformation is. Evidence that digitization or digital transformation has come too quickly and transforms everything so quickly that we do not have time to understand it. Let's start with a brief outline of digitization - digitization - digital transformation.

Digitizing means creating a digital version, that is, expressing in bits and bytes, analog / physical things such as paper documents, microfilm images, photos, sounds and more. So it's simply a conversion and / or representing something non-digital (other examples include signals, medical records, location data, identity cards, etc.) in a digital format that can then be used by a calculation system. But, very importantly, digitization does not mean replacing the original document, image, sound, etc. Sometimes the digital representation is destroyed (after digitizing a document on paper you can destroy it or keep it, for example, by legal requirements), sometimes it disappears anyway (eg if someone is capturing - filming / recording - my sound and motion while presenting this communication, the digital format will continue to exist, while my voice and physical presentation during the presentation have disappeared forever) or sometimes reality is transformed (if you take a picture of a person you have a digital representation of them, but the person is not digitized, or you may have an analog image you scan in order to digitize it, but that's not about digitization in the strictest sense).

So we digitize mainly by using physical information carriers (paper documents or analog, printed images). But we can also scan when we just take a picture with the cell phone. This scan creates a digital representation (documentary imaging) of a scanned document, photo, etc. But digitization does not stop at document imaging. We also scan because we want to use the data that the analog elements contained. So, it's more important that data in the scanned image can be taken over by a software. That is, using all kinds of smart and less intelligent capture technologies, the scanned data is extracted in a digital form and used to feed the workflow, process, system, whatever is needed to get a result.

Digitization means using digital technologies and digitized data to replace / transform processes: create revenue, improve business, technology flow, in one word to create a digital business environment.

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In business, digitization mostly refers to the improvement and / or transformation of business and / or business types and / or business models / processes and / or activities using digital technologies and digitized data. So digitization refers to knowledge systems that use digitized data and processes.

Digitization also means that employees work using digital tools such as mobile devices and mobile technologies and / or using social communication platforms or digital systems that enable them to work in a more "digital" way.

But digitization goes beyond business and refers to the continued adoption of digital technologies in all societal and human activities. For example, to increase digital medical care, digitization in governance, customers using digital technologies to buy, etc. Digital transformation, as we use it today, is more than digitization as a way to move to the digital business. Digital transformation involves digital business and digitization. Digital transformation is the deep and accelerated transformation of businesses, processes, skills and business models to fully harness the changes and opportunities of digital technologies and their impact on society.

According to the World Economic Forum, the main technologies that transform the business environment today would be: artificial intelligence, autonomous vehicles, customized production and 3D printers, Big Data and cloud, the Internet of Things, robots and drones, augmented reality and virtual reality, social media platforms.

2. Banking transformation into the banking system. Bank of the Future - Open Bank

Obviously, digital transformation also affects the financial environment and within it banking and bank operations. The big problem is that for a long time the banks have benefited from very strict regulations, numerous entry barriers, elitism behaviors that have rejected a large number of customers, and all of these, now that the virtual world is already more and more comprehensive, are confronted with a competition that until recently did not exist and with technologies that were rejected for a long time and with staff who did not understand at all or very little the new products and working environments. New bank competitors are young: Paypal, TransferGo, etc., live more or totally in a virtual environment (for example, SaxoBank), so they are less controllable, promise much lower costs (they promote their services by comparing their commissions with banks', several times larger), because they do not have too many walls and numerous staff, promise or even offer impossible gains (see cryptocurrencies) or the possibility of hiding less cleaner incomes and, last but not least, less regulation, plus convenience, fewer roads and more free time. However, this does not mean the disappearance of banks. The money they have allows them to recover the setbacks. But only if they prove smart.

An interesting idea is suggested by Saxo Bank, through Open Banking, a strategy based on a banking operating system not based on more or less unwieldy applications offered to customers, but by a system that allows the systems used by bank customers to interconnect with its systems. Thus, giving customers the flexibility and the ability to innovate and, at the same time, outsource processes that add low value. Thus, the new strategy seems to be a lego, to the bricks represented by the bank system are added the bricks represented by its customers' systems. Thus, systems are integrated, each using its resources for innovation and gaining more added value.

A study on bank digitization, titled European Digital Banking, conducted in 2017, 11 European states indicate that:

- between 49-76% of the surveyed audience positively assesses digital banking services, considering that they make their lives easier and safer;
- digital banking services save time for consumers, they are considered safe and easy to use and offer great availability;
- they rarely go to the bank when they need advice (in the case of some countries, more than half of the respondents said they had spent more than a year since their last visit to the bank);

- About 75% of respondents are sure about lowering the number of bank agencies over the next 10 years;
- almost half of those interviewed believe that the first thing for which they would change the bank service provider would be its availability everywhere and ease of use;
- 62% to 92% respondents are clients of online banks or have used a bank's online and / or mobile services;
- between 53-83% conducted financial transactions online or through mobile applications daily, weekly or once every two weeks;
- the criteria taken into account when using a digitized banking solution are: safety and security, convenience, ease of use and product diversity;
- between 7 and 27% of respondents would change their bank for one online in the next 12 months and between 23-45% postpone the change of bank for more than 12 months. Would refuse to change the traditional bank with an online one 21-52% of respondents, and between 9 and 39% (39% in Russia) were already online;
- The reason why respondents believe that the demand for online services will increase is that they make transactions simple and convenient.

From the previous observations, it is easy to deduce that the future belongs to the banks that offer digitized services, that the traditional bank has no future, and those that do not adapt are destined to exit the market. The consumer is already familiar with digital products, they are comfortable and tailored to his needs, he does not like the classic banking agency and predicts his disappearance. The traditional bank should be afraid of this prospect, because the new customers want something else, they want something simple, convenient, adaptable, time-saving. But the new, tailored bank, which offers digital services to customers, should critically look at the future, consumers are no longer loyal, they would quickly change one financial service provider to another, if what they offer it is available everywhere and it is easy to use.

3. Romania and digital banking services

Romania, was not a member of the surveyed countries, but a recent poll. But to give a perspective on Romania's digital transformation process, it should start with the five conclusions of the Digitization Barometer, 2017 edition:

- 60% of companies did not make digital transformation a component of their business strategy;
- 69% of companies have not nominated a responsible for digital transformation;
- 63% of companies did not use digitization to have a competitive advantage;
- 55% of companies say the main brake on their digitization is the lack of digital consumers;
- 46% say the main benefits of digitization would be cost reduction and simplification of processes.

For the Romanian banking system there are no thorough studies to analyze the digital transformation of this field. There are a few programs, plans and desires for the management of a few banks or banking organizations, but they appear to be "forms without substance".

The Romanian Banking Association mentions in the 2016-2017 Report as a strategic objective a "Digital Agenda", defined as "a national and international project". The main issues RBA wants to solve in the project are:

- knowledge of digital clients ("simplification of authentication and identity verification procedures in the" customer knowledge "procedures);
- acceptance of digital documents and customer digital agreement;
- simplifying procedures for proofing customer income and making scoring by using digital records (which for almost two years is already possible for most banks).

However, the difference from reality to desideratum is quite significant because in the study "Digital Agenda", the Romanian Association of Banks states that:

- in Romania, the proportion of the non-banked population is 40%, compared to 10% of the EU average;

- Romanian consumers make only 12% of transactions online, compared to 55% in the EU;
- 94% of transactions in Romania are carried out with cash, compared to 68% in the western part of the EU;
- In Romania, only 7% of the transactions carried out by SMEs participate in online transactions, compared to 17% in the EU.

In the following we intend to analyze some aspects of the digital transformation of banks in Romania.

Table 1. Evolution of cash in circulation

Year	Intermedite money (M2)	Of which		Share in M2		GDP -current prices	Share in GDP	
		Restricted money supply (M1 = cash and overnight deposits)	Cash in circulation	M1	Cash		M1	Cash
		(billion. lei)	(billion. lei)	%	%		(billion. lei)	%
2006	106,3	51,6	13,5	49	13	347,0	15	4
2007	148,0	79,9	21,4	54	14	418,3	19	5
2008	173,6	92,5	25,3	53	15	524,4	18	5
2009	188,0	79,4	24,0	42	13	510,5	16	5
2010	199,6	81,6	26,8	41	13	533,9	15	5
2011	212,1	85,8	30,6	40	14	565,1	15	5
2012	221,8	89,0	31,5	40	14	595,4	15	5
2013	241,3	100,3	34,8	42	14	637,5	16	5
2014	261,6	118,6	39,9	45	15	668,1	18	6
2015	286,1	149,6	46,5	52	16	712,7	21	7
2016	314,0	180,0	54,7	57	17	761,5	24	7
2017	332,2	199,9	61,6	60	19	797,5 (e)	25	8

Source: NBR, calculations of the author using indicators taken from the interactive database, www.bnr.ro

One of the prerequisites for bank digitization is the use of cash. A digital economy emerges from one of the fundamental elements of the old analogue economy, the cash being replaced by electronic payment instruments. Unfortunately, in Romania, in recent years, is witnessed an increase in cash, both in absolute value and as a share in the total money supply, but also as a share of GDP. Thus, between 2006 and 2017, the cash in circulation increased fourfold, and as a share of the total money mass increased from about one-eighth to about one-fifth. Also, in the same period, currency doubled as a share of GDP, reaching 8% (Table 1). The cash correspondent in the digital economy, the card, has high dynamics, with over 16 million cards in circulation in the NBR's statistics, increasing by more than 1.6 million units in the past two years.

Table 2. Evolution of the number of cards

Date	Total number of cards in circulation	Number of cards with a payment function	Number of cards with a credit function	Number of active cards
	<i>(mill. units)</i>			
Mar. 2015	14,56	14,50	2,31	11,29
Dec. 2015	14,96	14,87	2,48	11,03
Dec. 2016	15,96	15,90	2,83	11,87
Jun. 2017	16,17	16,13	2,80	12,36
	<i>%</i>			
Mar. 2015	100,00	99,62	15,88	77,57
Dec. 2015	100,00	99,43	16,57	73,75
Dec. 2016	100,00	99,62	17,70	74,36
Jun. 2017	100,00	99,74	17,33	76,44

Source: NBR, calculations of the author using indicators taken from the interactive database, www.bnr.ro

In terms of structure, over 99% are those of payment (so those with exclusive cash withdrawal function are negligible in number), so they would be prerequisites for developing cashless payments. Of the total of cards, about one in six are credit cards. Unfortunately, only three-quarters of the cards in circulation are active, that is, used with a certain frequency for transactions.

Table 3. The evolution of the number of POSs

Date	Number of POSs provided by PSP residents	Number of EFTPOSs provided by PSP residents	Number of EFTPOSs provided by PSP residents
	(units)	(units)	%
Mar. 2015	132.245	129.848	98,19
Dec. 2015	144.441	142.001	98,31
Dec. 2016	161.905	160.630	99,21
Jun. 2017	189.609	188.428	99,38

Source: NBR, calculations of the author using indicators taken from the interactive database, www.bnr.ro

Infrastructure required for the use of cards, POS and ATMs was at about 200,000 units in the middle of 2017, of which nearly 190,000 were POSs. It should be noted that the number of POSs increased in almost two years by almost 50%. Most of the POSs in Romania are electronic (over 99%) and the mechanical ones are just over 1000 units. With regard to ATMs, their turnover has fluctuated in the last years between 11.2 thousand units, 93% of which have the cash withdrawal function, but 87% can also be used to make payments, so conditions are created for the decongestion of banking agencies by the client who wants to withdraw cash or just make payments.

Table 4. The evolution of the number of ATMs

Date	Number of ATMs provided by PSP residents	Number of ATMs with cash withdrawal function	Number of ATMs with credit transfer function	Number of ATMs with cash withdrawal function	Number of ATMs with credit transfer function
	(units)			%	
Mar. 2015	11.544	10.741	9.921	93	86
Dec. 2015	11.492	10.682	10.019	93	87
Dec. 2016	11.127	10.341	9.616	93	86
Jun. 2017	11.208	10.373	9.740	93	87

Source: NBR, calculations of the author using indicators taken from the interactive database, www.bnr.ro

Over the past two years, the number of card transactions has almost doubled, rising from around 62 million transactions to more than 110 million. Obviously, due to the high number of debit cards, the highest growth is recorded at their level, which grows from about 50 million transactions to 97 million. Transactions, as well as credit cards, increase by 4 million transactions, 40% more than in mid-2015.

Depending on the destination of most transactions, we notice a meaningful mutation for the digital transformation of the Romanian banking system. So, if two years ago cash withdrawals accounted for more than half of transactions made with the card, in mid-2017, most of them are POS transactions and almost 20% more than cash withdrawal transactions. In terms of ATM cash deposits, they represent about 2-3 million transactions, meaning 2% of total card transactions.

Table 5. The evolution of the number of card transactions

Indicator	Mar. 2015	Dec. 2015	Dec. 2016	Jun. 2017	Mar. 2015	Dec. 2015	Dec. 2016	Jun. 2017
	<i>(million)</i>				<i>%</i>			
Total payment transactions with debit and credit cards issued by PSP residents	61	76	98	112	100	100	100	100
Number of payment transactions with debit cards issued by PSP residents	52	65	84	97	84	85	86	87
Number of payment transactions with credit cards issued by PSP residents	10	11	14	14	16	15	14	13
Number of POS and ATM transactions with cards issued by PSP residents	105	121	140	154	100	100	100	100
Number of ATM cash withdrawals with cards issued by PSP residents	54	59	61	64	52	49	44	41
Number of ATM cash deposits with cards issued by PSP residents	2	2	2	3	2	2	2	2
Number of POS transactions with cards issued by PSP residents	49	60	76	88	47	50	55	57

Source: NBR, calculations of the author using indicators taken from the interactive database, www.bnr.ro

The same increases are also seen at the level of transaction values. Thus, the payment transactions with the card increase from about 8 billion lei, to about 15 billion lei, almost 85% of these are carried out with debit cards, and the difference with credit cards. According to the destination of the transactions, the increase is 50%, from a value of 37 billion lei. Two years ago, to 55 billion lei, in the middle of 2017. Unfortunately, in value terms, cash withdrawal transactions represent 75% of the total (42 billion lei), less than 20% (10 billion lei) represent transactions to POSs, and the difference (6%) cash deposits to bank machines.

Table 6. Evolution of the number of card transactions

Indicator	Mar. 2015	Dec. 2015	Dec. 2016	Jun. 2017	Mar. 2015	Dec. 2015	Dec. 2016	Jun. 2017
	<i>(million)</i>				<i>%</i>			
Total amount of payment transactions with debit and credit cards issued by PSP residents	8.331	11.067	13.904	14.973	100	100	100	100
Value of payment transactions with debit cards issued by PSP residents	6.939	9.153	11.488	12.627	83	83	83	84
Value of payment transactions with credit cards issued by PSP residents	1.393	1.914	2.416	2.346	17	17	17	16
Total value of ATM and POS transactions with cards issued by resident PSP residents	36.821	45.028	51.621	54.896	101	100	100	99
Cash withdrawals at ATM with cards issued by resident PSP residents	29.563	35.270	39.356	41.495	80	78	76	76
ATM cash deposits with cards issued by resident PSP residents	1.605	2.202	2.997	3.745	4	5	6	6
Value of POS transactions with cards issued by PSP residents	5.653	7.556	9.268	9.656	16	17	18	18

Source: NBR, calculations of the author using indicators taken from the interactive database, www.bnr.ro

But if we look qualitatively, the issue of card transactions, from the point of view of the average value of a card transaction, the increases almost disappear. Thus, on average, a payment transaction with the card has a value of 134 lei, two lei below the average of a transaction two years ago. The average value of a credit card transaction is slightly higher and in slight increase than the average transaction value with the debit card. This development shows that among customers who make card payments are added segments of the population with lower incomes compared to the previous period, especially as they are made with debit cards commonly used by the lower income population, less financially sophisticated. The average amount of a cash withdrawal is 650 lei, slightly more than a half

of wage of the employee with the minimum wage, which means that at the majority of the employed population, paid at or near the minimum wage, the card is not used for payments. Card payments to merchants (at POSs) show a decrease in the average value of a transaction, but here too, the explanation is that it also starts to be used by lower-income people. The only significant increase in the value of a transaction is seen in cash deposits, from 900 lei to 1,400 lei, but it may be due more to deposits made by small entrepreneurs to avoid queues at bank counters.

Table. 7. Evolution of the average value of a card transaction

Indicator (million lei)	Mar. 2015	Dec. 2015	Dec. 2016	Jun. 2017
The average value of a transaction with debit and credit cards issued by resident PSPs	136	145	142	134
The average value of a payment transaction with debit cards issued by resident PSPs	134	141	136	130
Value of payment transactions with credit cards issued by PSPs	146	170	178	163
The average value of an ATM and POS transaction with cards issued by resident PSPs	349	372	369	356
The average amount of ATM cash withdrawals with cards issued by resident PSPs	544	599	646	650
The average value of a ATM cash deposit with cards issued by resident PSPs	899	1.095	1.266	1.399
The average value of a POS transaction with cards issued by resident PSPs	115	125	121	110

Source: NBR, calculations of the author using indicators taken from the interactive database, www.bnr.ro

Obviously, the digital transformation of banks and their clientele also involves the provision of banking services through alternative channels to the classic window: the Internet (Internet banking-IB), the mobile phone (mobile banking-MB) etc. In Romania, most banks with significant market shares offer such services in many cases promoted at zero costs or included in current account balances with minimal costs. Unfortunately, there are no statistics either on the banks that offer the services in question or on the degree of their use.

However, it is important to note, not only that, for Romania, there are no statistics in this respect, the existing ones (mostly fragmentary) are also less credible. For example, a survey conducted by a financial publication in 2015, at the level of 16 banks currently operating in Romania stated that "The total number of clients of Internet banking services declared by banks was about 4.38 million, a surprisingly large figure in appearance. Apparently only because if we add the total number of clients of the 16 participating banks we get about 16 million customers and a simple conclusion: over 27% of the clients of the credit institutions use the internet banking service, which is perfectly feasible. Considering that some customers use more Internet banking services from different banks, it can be estimated that the number of enrolled "unique customers" has reached 4 million, an acceptable threshold. "

A year later, another study for the Financial Market publication noted that "the total number of active clients is about 2.2 million. The y / y increase was over 15%, a robust figure of two digits. The number of active individuals reached 1.8 million, 16.6% more, and enterprises over 390.000, almost 10% more than in 2015. Out of a total of over 796,000 active companies officially registered 2016, 49% are already IB customers. "

However, given the evolution of cards, it is possible, as in this IB or MB field, to exist increases and a more often use than to say two years ago but certainly they remain poorly represented not only at the level of the adult population, but also the level of the service portfolio used by the banking clientele and, most importantly, used rarely or very rarely, stands proof the increase of the cash in circulation and the value of an average transaction with the card.

Let us also notice that the increase of the card and its use, of the new channels of communication with the bank (IB, MB) are reflected at the level of the banking network and the banking staff, and the management of the banks will accelerate these processes because they have invested in the remote bank type services, which must be amortized, and the costs with the banking network (agencies, staff) affect the bank's profit.

Table 8. The evolution of the size of the banking network and banking staff

Indicator	m. u.	2008	2009	2010	2011	2012	2013	2014	2015	2016
Total number of employees	Thousands	71,6	67,9	66,8	65,8	61,8	58,6	57,7	55,9	55,4
	% to 2008	100,0	94,8	93,2	91,8	86,2	81,8	80,6	78,0	77,4
Total number of units	units	6.552,0	6.425,0	6.170,0	6.040,0	5.679,0	5.450,0	5.304,0	4.906,0	4.757,0
	% to 2008	100,0	98,1	94,2	92,2	86,7	83,2	81,0	74,9	72,6

Source: Statistical data series used in graphs in Financial Stability Reports 2011-2016, www.bnr.ro, periodical publications section and author calculations using data from "2016 banking system indicators", www.bancherul.ro

4. Conclusions

Digitization and digital transformation radically changes society, business, and their models, and financial operations seem to know the most important remodeling. Hence, the concerns of banks and their efforts towards digital transformation. Banks that have advanced positions on the digital transformation line have clear strategies, offer interfaces that shape the bank's profile rather than impose uniformity on the client. The Romanian banks, analyzed by their actions, appear to be easily offset in time, disadvantaged not only by their inertia due to the 90% share in the Romanian financial market, but also by the Romanian client profile. The latter is cantonated in banking conservatism, aggravated by the rapid changes in the Romanian financial environment, timid by the lack of income and mistrust of banks, given the frequent crises in the relationship with the financial intermediaries, no matter who they are and what notoriety they have. The Romanian adult's profile is that more than half of it is a client of the banks. He loves cash and can not be separated from it, he even prefers it, because they make their activities less identifiable and can boast of a full wallet rather than if it is full of cards. He uses the card only to withdraw cash and sporadically to make payments. He uses the card because he received it from work, and banks have imposed costs if you want to make cash withdrawals or bill payments at the counter or avoids a few tens of minutes of queues at the classic counter, especially that banking agencies seem to have become more and more squeamish, and the employees of such a unit appear to be less and less.

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