

# WHAT, HOW AND WHEN

## *The Story of e-Banking in Croatia*

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Abstract: This paper will present the reasons for success of e-banking (including actual results) in Croatia both among the individuals and companies. The main reason is that up to early 2002 all companies' payments were done through a centralized system. Only then banks started to do payment services for companies which were faced with a rather easy choice – continue using paper payment orders and receive service that is more expensive and slower than before or switch to e-banking and get faster and cheaper service.

## 1 INTRODUCTION

E-banking, sometimes also called “online banking” or “internet banking” most commonly refers to bank accounts that can be accessed over the internet. The e-banking service generally allows account holders to make payments, initiate or amend direct debits and standing orders, transfer funds between accounts and use some of more sophisticated services offered. That may include foreign currency conversions and payments to another country, term deposits, purchasing investment fund shares, checking status of bank cards, cheques, loan applications and so on. In principle all this is possible by logging on to a bank's secure website. More recently e-banking can be complemented by m-banking where some or all of the services are accessible over a mobile phone, too.

Banks view online banking as a powerful value-added tool, which they use to attract and retain new customers and expand their offer by converting offline customers into online and vice versa. E-banking also substantially reduces operating costs, removing the need to handle paper transactions. For customers, the convenience of such a service and the ease of paying bills, as the most common service, which combined with reduced cost and increased security makes e-banking an attractive proposal.

## 2 HISTORY AND DEVELOPMENTS

It is next to impossible to define the exact birth date of internet banking because long before some banks were offering “PC banking” to its account holders. This was certainly a kind of e-banking, but it was a service which could be reached only by dialing a bank's phone number and then, after some verification procedures, it would give access to one or more bank accounts. Even in Croatia, first such service was offered to the market back in 1991. Only much later, in 2001, this particular service was converted to access over the internet. In France, Minitel technology allowed some banking services back in the 80's, even on rather rudimentary technology and very slow speed by today standards (300, later 1200 bauds).

Some claim that first real e-banking service in Europe over the internet was launched in May 1997 by Nationwide bank in Great Britain with 13,000 customers registering in the first year. E-banking growth rates were impressive everywhere, so today the same bank counts about 3 million internet banking customers. British statistics claim that the number of people using e-banking reached 18.1 million by the end of 2006. Five-year growth rate shows increase of 174%, and the breakdown by age groups show higher than average growth in the older age groups. Statistics in other countries prove that e-banking users are on average better situated, have higher education than banks' average customers. In

the US, sources say that Stanford Credit Union was the first financial institution to offer online internet banking service to its members late in 1994.

Some worldwide surveys mention a number of 122 million users worldwide in 2004, with Western Europe dominating that with almost 58 million users, with US and Japan having 23 and 22 million respectively. Estimates today claim that 50% or more of internet users are customers of one or more e-banking services, in developed countries where such services exist on a large scale.

In most of the developed countries, e-banking is more widely accepted to manage and access individuals' bank accounts, while the companies use them more sparingly. Croatia is an example of just the opposite, where more than half of the companies use actively e-banking services.

### 3 TECHNOLOGY

A common usage of user identification and a password which is used to access many online sites, offering either diverse services or internet commerce is not considered to be secure enough for e-banking. Therefore, two different security methods were developed. One is combination of PIN and TAN (Personal Identification Number and Transaction Access Number). PIN is, in fact, a password to login a financial institution's internet site and TAN is a one-time password used to authenticate transactions. E-banking client usually receives a list of TANs by mail and uses them in order. A more secure way of using TANs is to generate them whenever needed using a security token which a bank gives to each customer. Web browser used to access e-banking site normally uses SSL secured connections so there is no need to additional encryption.

The second, more advanced security method is digital signature. To use this technology, a user must have a smart card and a card reader connected to his computer. Then, on a smartcard a bank's certificate is downloaded through appropriate procedure, so it can be used when digitally signing transactions or other documents. This technology is more expensive, so in many cases it is used only for company customers, while individuals are more likely to use the PIN/TAN technology. If an individual would prefer a smart card and a reader, he would be assessed a fee.

### 4 SITUATION IN CROATIA

Croatia had a rather particular situation. Coming from a socialist system where there was an overwhelming state control of the entire economy, more than a decade after getting rid of such a system the entire payment systems for companies were still handled by a state-owned agency. Other countries coming from the same provenience managed to convert the system in one way or the other, while Croatia, in spite of the plans made in 1994, waited until 2002 to finally "move" the company payment services to where they belong – to banks.

So, until 2002, while individuals and small, mainly personal businesses would go to banks for services like in the rest of Europe, all companies' accounts were held in one agency (at the time it had the name Institute for Payment Systems) and only nominally they were on a bank's books (the amounts were counted into a bank's assets or liabilities at the end of a day, but the money was never moved). That means all payments between companies were processed within this agency, giving state full control of all money flowing between companies because payments were executed according to unique rules providing for situations when there were insufficient funds. It was easy to devise procedures for different situations because money was practically never leaving the agency. The same agency also handled all cash in the country.

One "problem" with this agency was that the service was extremely efficient and cheap. It was a monopoly, with no fears of competition and priced not according to business requirements, but decided by the head of agency and approved by the central bank. Therefore there was no big motivation to close such a service and go into something more costly and with questionable efficiency. However, it was obvious that banks as a service companies had to offer full set of services to their corporate clients, rounding the offer and making it similar to other countries. Even with the plan from 1994 delayed, the agency had developed a National Clearing System (NCS) which it was using exclusively, performing transactions on behalf of banks – in fact on behalf of those bank's clients. The intention was to have a system whose doors would open some day to direct access by the banks and allow them to finally perform payment services and other transactions directly with other banks through NCS, without the need to go to the agency counters or computers.

In mid-2001 the new Law on Payment Traffic was enacted providing for the necessary basis to take over payments from the agency. April 2002 was

Table 1: Payment transactions in Croatia 2005-2007 – individuals.

Individuals - numbers	2005		2006		2007		
	year						
Total number of payment transactions		110.222.370		142.056.664		175.238.715	
Electronic transactions – total		39.037.268	35,4%	53.157.595	37,4%	70.055.372	40,0%
Internet		7.592.836	19,5%	10.464.708	19,7%	13.695.863	19,6%
telebanking		0	0,0%	151	0,0%	0	0,0%
mobile phone		73.688	0,2%	120.822	0,2%	168.807	0,2%
fixed phone		404.627	1,0%	431.964	0,8%	418.085	0,6%
POS (EFTPOS)		29.477.938	75,5%	40.912.399	77,0%	53.647.917	76,6%
other		1.488.179	3,8%	1.227.551	2,3%	2.124.700	3,0%

determined to be the month of conversion and that was a major task, because more than 100.000 accounts which were “physically” held at the agency, had to be transferred into banks’ books without disruption, allowing customers to perform their banking without noticeable difference. In the old system companies would have to go to the agency's branches (spread all over the country), and place all their payment orders, withdraw cash and get their daily account statements. Instead of having secretaries with paper orders go into branches, in the final years, it was possible to bring floppy disks with data, or even connect directly to computers and upload and download the files. No online access to services was possible.

Of course, a complete switch was impossible. That would mean complete desertion of agency's branches and major crowds getting into banks to perform same tasks as they did in the agency earlier. Therefore, agreement was made between agency and each bank where the agency would (still) perform the same services, only this time on behalf of the bank, and bank would be issuing statements and, depending on one of the three possible business models, slower or faster take over most of the tasks of full handling of companies' accounts.

However, due to the set up of the clearing system (NCS) which had several processing cycles, transactions wouldn't be almost immediate (as they appeared earlier, but it was not really known given that all accounts were at the same place), and the pricing was defined, where a bank could choose different options. As a result, to an ordinary customer, it seemed as a substantial deterioration of the service he had before – it was bound to be slower and more expensive.

## 5 MOTIVATION TO GO INTO e-BANKING

So, the stage was set and in 2002 the internet banking technology was already well developed and present on the market to individuals and small businesses. A few months before the switch, banks started to offer to corporate clients an e-banking service which turned out to be very competitive business proposal. Instead of crowding bank's branches or going into “old” agency's branches, which was a service that a bank would have to pay to the agency (it performed those tasks on behalf of a bank), a company could satisfy most of its banking needs without leaving the office, and at a price which was substantially lower than off-line transactions and even lower than fee for payment transactions in the old (agency-only) system.

As a result, e-banking became a huge success for both the banks and the companies, and banks that were first on the market reported that relatively large percentage of its clients signed up for e-banking. Nowadays, more than half of all companies in Croatia use e-banking service generating a large proportions of transactions.

## 6 DATA ON e-BANKING IN CROATIA

Source: Croatian National Bank

Note: data for 2005 are factorized, because statistics start only from 3<sup>rd</sup> quarter of 2005.

Table 1 shows that out of total number of payment transactions, executed by individuals, electronic transactions had a share of 35,4% in 2005 and that share grew to 40% in 2007. Internet transactions were at the constant share of close to 20% of all electronic transactions. Majority of transactions

Table 2: Payment transactions in Croatia 2005-2007 – companies.

Companies - numbers		2005		2006		2007	
	year						
Total number of payment transactions		82.940.580		94.306.581		102.077.450	
Electronic transactions – total		39.196.561	47,3%	49.023.032	52,0%	57.957.209	56,8%
Internet		24.639.485	62,9%	30.943.230	63,1%	37.595.750	64,9%
telebanking		2.313.661	5,9%	2.869.240	5,9%	3.079.810	5,3%
mobile phone		121	0,0%	3.000	0,0%	8.462	0,0%
fixed phone		277.060	0,7%	276.324	0,6%	263.467	0,5%
POS (EFTPOS)		1.450.606	3,7%	2.029.333	4,1%	2.737.419	4,7%
other		10.515.629	26,8%	12.901.905	26,3%	14.272.301	24,6%

Table 3: Value of payment transactions in Croatia 2005-2007 – individuals.

Individuals – value (million euro)		2005		2006		2007	
	year						
Total value of payment transactions		5.954		8.518		13.344	
Electronic transactions – total		1.750	29,4%	2.670	31,3%	4.772	35,8%
Internet		917	52,4%	1.531	57,3%	3.266	68,5%
telebanking		0	0,0%	0	0,0%	0	0,0%
mobile phone		1	0,0%	1	0,1%	2	0,0%
fixed phone		33	1,9%	39	1,5%	43	0,9%
POS (EFTPOS)		785	44,9%	1.089	40,8%	1.444	30,3%
other		14	0,8%	10	0,4%	17	0,3%

Table 4: Value of payment transactions in Croatia 2005-2007 – companies.

Companies – value (million euro)		2005		2006		2007	
	year						
Total value of payment transactions		87.320		218.491		279.344	
Electronic transactions – total		45.423	52,0%	112.275	51,4%	142.651	51,1%
Internet		25.634	56,4%	64.248	57,2%	86.810	60,9%
telebanking		4.203	9,3%	9.636	8,6%	10.174	7,1%
mobile phone		0	0,0%	1	0,0%	2	0,0%
fixed phone		45	0,1%	86	0,1%	94	0,1%
POS (EFTPOS)		52	0,1%	148	0,1%	215	0,2%
other		15.488	34,1%	38.156	34,0%	45.355	31,8%

were purchases by cards on the point of sale (POS).

At the same time, as Table 2 shows, electronic transactions' share performed by companies (corporate clients, legal entities) grew from 47,3% in 2005 to 56,8% in 2007. Already in 2005 share of internet transactions was extremely high (62,9%) and the share slightly increased to 64,9% in 2007.

That means, in 2007, close to 37% of ALL payment transactions initiated by a company were executed through internet.

When we look at the value of transactions in Table 3, for individuals, there is a major difference compared to number of transactions. Even as the share of electronic transactions in total value is smaller, and grew from 29,4% in 2005 to 35,8% in

2007 (compared to Table 1), the share of value of internet transactions went from 52,4% to 68,5% in the same period. The reason is that POS transactions which have a clear majority when looking at the numbers, are of smaller value, while credit transfers (paying bills and other transactions) have higher money value.

Table 4 shows exactly the opposite phenomenon for companies. While share of the value of electronic transactions among all transactions has similar share as in numbers (in fact, it is slightly lower – holding steady around 51%), the value share of internet transaction is lower. It grew from 56,4% in 2005 to 60,9% in 2007, but is well below 62,9-64,9% of share in number of transactions. It can easily be

Table 5: Growth of internet transactions in Croatia 2005-2007.

Internet transactions - Growth in numbers	2005		2006		2007	
	Individuals	7.592.836		10.464.708	37,8%	13.695.863
Companies	24.639.485		30.943.230	25,6%	37.595.750	21,5%

  

Internet transactions - Growth in value	2005		2006		2007	
	Individuals (million euro)	917		1.531	67,0%	3.266
Companies (million euro)	25.634		64.248	150,6%	86.810	35,1%

Table 6: Number of internet banking users and growth in Croatia 2005-2007.

**Number of internet account users in Croatia**

	31.12.05	31.03.06	30.06.06	30.09.06	31.12.06	31.03.07	30.06.07	30.09.07	31.12.07
individuals	276.170	296.443	312.538	330.070	350.787	368.447	385.806	403.834	424.298
companies	83.527	89.095	96.309	94.213	106.088	113.177	119.977	124.815	130.111

**Growth 31.12.2005.-31.12.2007.**

individuals	53,6%
companies	55,8%

explained by the fact that highest value transactions among companies are executed in "other" category, usually due to contractual constraints, usage of escrow accounts, or just preferring to give a written order to the bank to transfer funds, instead of doing it themselves over the internet.

Table 5 shows yearly growth in internet transactions. Here, looking at the number of internet transactions, we can see that individuals grew at a faster rate than companies, which can be explained by the fact that there is much higher penetration of internet banking among companies, so there is less room for growth. It seems that growth is slowing down, because year-on-year growth slowed down from 37,9% (individuals) and 25,6% (companies) in 2006, to 30,9% and 21,5% respectively in 2007.

When we compare value of internet transactions, the growth was even more impressive, and in both segments (individuals and companies) growth was more than three times in this period. Individuals paid more than 3,2 billion euro in 2007 over the internet (compared to 917 million in 2005), and companies total payments over the internet reached impressive 86,8 billion euro, starting with 25,6 billion in 2005.

Data which exist only from the initial period published by the central bank (end 2005) show that number of internet account users grew slightly more than 50% in the last two years, as shown in Table 6.

Unfortunately, it was not possible to find the exact share of internet users compared to all accounts, because there is not a unique methodology

in counting. Many individuals and most companies have more than one bank account, and then it cannot be resolved if they use internet on all accounts or just their "main" accounts, so some of them can be counted more than once. However, trying to get data on number of internet account users from major banks (and then extrapolating to reach the entire market), it can be estimated with good certainty that more than 20% of all individuals accounts are used over the internet (not exclusively, of course), and more than 60% of all company accounts. These numbers are supported by data we have on internet transactions and are shown in Tables 1-4.

## 7 CONCLUSIONS

Main reason for relatively high usage of e-banking among companies in Croatia is due to the fact that banks were not allowed to service companies and their needs before 2002. Since, at that time, e-banking was well developed and ready to be used on a large scale, and it would offer more efficient and less costly service, many companies immediately switched to e-banking and caused the high share of accounts and transactions (both by volume and by value) to be performed electronically.

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