



Ewa Jagodzińska-Komar

PKO Bank Polski S.A.

e-mail autora: ewa.jagodzinska-komar@pkobp.pl

INFLUENCE OF THE DIGITAL ECONOMY ON DISSEMINATION OF NON-CASH TRADING

Abstract

The aim of the article is to assess the influence of the digital economy on the popularisation of non-cash trading in Poland as well as to indicate actions intended to help Poland join the group of digitalisation leaders. What is drawn attention to in the first place is the establishment on the Polish market of a new entity – the Polish Cashless Foundation, which is responsible for disseminating the idea of non-cash trading through the development of a payment cards accepting network. The article describes the position of Poland against the background of other member states of the European Union in terms of the digitalisation progress in 2017. One of the elements which could improve the DESI index (the digital economy and society index) is the development of electronic administration, which is assessed subsequently. The article proceeds to present the results of research concerning digital payment innovations conducted by two largest international payment organizations, VISA and Master Card, which shows that Polish society is more and more willing to make use of innovative payment instruments.

Keywords: mobile payments, Polish Cashless Foundation, electronic administration, single digital market, Digital Economy and Society Index (DESI)

Introduction

There is no doubt that digitalisation and implementation of innovative ICT solutions (ICT – Internet Communications Technology), which are a key element of building a competitive Polish economy, are among the most elementary conditions of the country's development. In the words of Vice-Minister of the Ministry of Development Tadeusz Kościński: “Polish economy needs a strong development impulse. If we want it to be more innovative and more competitive, we must take effective advantage of the opportunities generated by the digital revolution. Digitalisation will help us strengthen the foundation of the plan for responsible development which is an efficient state”.¹

The digital economy plays an extremely important role in the countries of the European continent, which is attempting, as it is known, to unify economically. Attention has been drawn to the fact that half of the growth of productivity in firms in the European market can be attributed to investments concerning new technologies. Developed economies provide greater funds for investments in ICT and this, consequently, contributes to the dissemination of digital economic processes. It should be noted that Poland belongs to this group of the European continent countries whose economies exhibit a high Index of Economic Digitalisation (in the case of the DESI index the situation is reverse with Poland occupying the 23rd place). Our country comes fourth in terms of the growth of this index (e.g. the use of smartphones in work or the use of Customer Relations Management). Polish banking, being without doubt an innovative branch of the economy, has adopted the strategy of the so-called *leapfrogs*, that is the implementation of the latest technological solutions available on the payment market, without including the subsequent stages of technological development (e.g. contactless mobile payments). It can be observed that over the past few years our economy has been developing dynamically. However, if this trend is to be maintained, investments in the area of digitalisation and Industry 4.0 need to be increased.²

Thus, it is hard to question the existence of an integral link between growth and digitalisation. Moreover, this is constantly confirmed by economic practice as well as results of a variety of different analyses and research works which indicate an intensive development of advanced information technologies supporting cash operations. On the other hand, it is worthwhile to abstain from claiming that cash will lose its

¹ *Konferencja o rozwoju płatności bezgotówkowych w Polsce*, Ministry of Development, <http://www.mr.gov.pl/strony/aktualnosci/konferencja-o-rozwoju-platnosci-bezgotow-kowych-w-polsce/>, 6 April 2016 (retrieved: 09.09.2018).

² *Czas na przyspieszenie. Cyfryzacja gospodarki Polski*, Polityka Insight Research, Warszawa 2916, p. 6.

hitherto importance. Any conclusions concerning the directions of the development of financial operations can only come from reliable, honest studies conducted not only by institutions vitally interested in digitalisation. Forecasting the future solely on the basis of analyses carried out by international payment organizations has little in common with a well-founded, reliable and objective assessment of what awaits us. It is enough to have a good look at, for instance, the statistics prepared by banks and endorsement bodies which illustrate the scale of offences involving forging of payment cards. The data differ significantly and in the case of banks one can get an impression that the problem does not deserve any major attention. And this is not what is, in turn, revealed and confirmed by police statistics.

1. Poland's situation in the scope of popularising non-cash trading

In 2017, the Polish Cashless Foundation was established and entered in the National Court Register. The Foundation is a non-profit organization and a unique solution in terms of the integration of entities operating in the market of non-cash payments. The primary task of this entity is to implement the Programme of Support for Non-Cash Trading, which has been developed by the financial sector in cooperation with the Ministry of Development. The financial sector implies in this case entities from the domestic market of card payments, i.e. banks (card issuers), clearing agents and two main payment organizations, that is Visa and Master Card, with support on the part of the Association of Polish Banks. On 12 June 2017, a formal agreement was signed on cooperation in the development of non-cash turnover in Poland by the Ministry of Development and Finance, the Association of Polish Banks as well as the international payment organizations, Visa and Master Card. The project implements the assumptions of the programme called *From paper to digital Poland*,³ which is part of the government Strategy of Responsible Development (SRD) and is aimed at increasing the presence and level of non-cash transactions in Poland.⁴

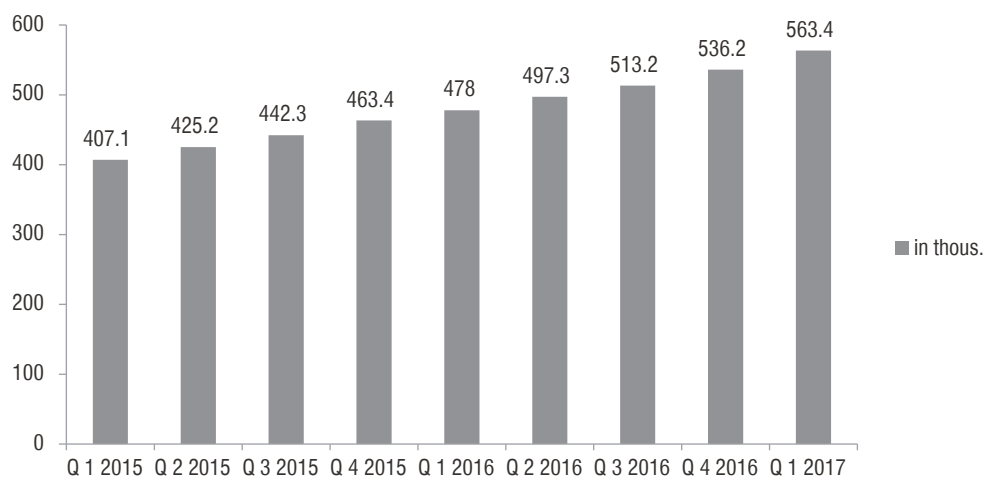
The principal assumption of the Foundation is a growth of the share of non-cash transactions in the Polish market up to 80% (this is the level reported in Switzerland). The idea of the programme is to develop and implement the instruments applied, within support for the sector of small and medium-sized entrepreneurs who are

³ Program 'Od papierowej do cyfrowej Polski' – organizacja, strumienie i status prac, Ministerstwo Cyfryzacji, 2016, <https://www.gov.pl/cyfryzacja>

⁴ Powołanie Fundacji Polska Bezgotówkowa, Bank Monthly Portal, 2017, <https://alebank.pl/powolanie-fundacji-polska-bezgotowkowa/?id=231213&catid=18911>, (retrieved: 02.10.18).

not using non-cash payments in their trade-service facilities at present. What will be broadened in the first place is the infrastructure for the acceptance of non-cash payments. According to the adopted assumptions, up to as many as 600 000 of terminals are to be installed over three years. Figure 1 shows the number of POS terminals in Poland in the period from the 1st quarter of 2015 to the 1st quarter of 2017. What was drawn attention to was that only one third of the transactions was non-cash settled. Over three years starting from the launch of the programme financial institutions will cover expenses (of PLN 600 m) related to the installation of payment terminals in small and medium-sized enterprises. The operation is to commence at the beginning of 2018.⁵

Figure 1. Number of POS terminals in the period Q 1 2015-Q 1 2017



Source: own elaboration on the basis of: *Informacja o kartach płatniczych I kwartał 2017 r.*, July 2017, National Bank of Poland, <https://www.nbp.pl>, p. 26.

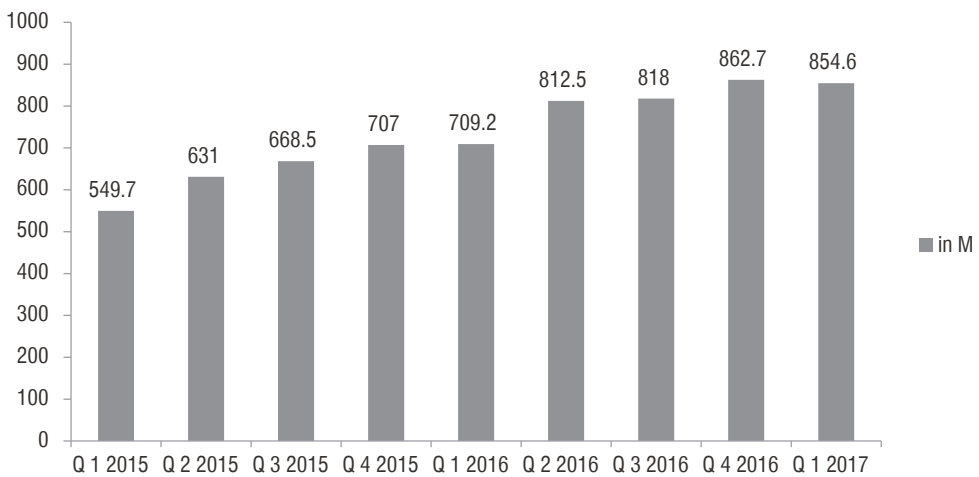
According to Mieczysław Groszka, President of the Board of the Polish Cashless Foundation: “The aim of this joint venture of banks, the Ministry, clearing agents and payment organizations is first of all to generate macroeconomic scale benefits for the Polish economy, expected to result from non-cash turnover. Only thanks to the accessibility to digital payments it is possible to raise the competitiveness of Polish economy based on innovations.”⁶

⁵ *Powstaje Fundacja Polska Bezgotówkowa*, Rzeczpospolita, 2017, <http://www.rp.pl/Finanse/309069890-Powstaje-fundacja-Polska-Bezgotowkowa.html/> (retrieved: 30.09.2017).

⁶ *Powołanie Fundacji Polska Bezgotówkowa*, op.cit.

According to the data collected by the National Bank of Poland, in the 1st quarter of 2017 the number of transactions with the use of cards amounted to 854.6 m, which means their dropped by 0.9% in comparison of the 4th quarter of 2016. Comparing the 1st quarter with the analogical period, that is the 1st quarter of 2016, the number of transactions was 21% higher (Figure 2). The upward trend is caused by ever greater popularization of non-cash trading, including especially proximity cards and an ever larger network of POS terminals.⁷

Figure 2. Number of non-cash transactions in the period I Q 2015-I Q 2017



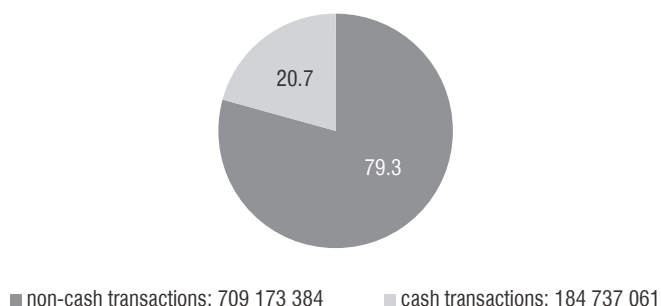
Source: own elaboration on the basis of: *Informacja o kartach płatniczych I kwartał 2017 r.*, July 2017, National Bank of Poland, <https://www.nbp.pl>, p. 15 (retrieved: 01.12.2018).

In the 1st quarter of 2017 non-cash transactions were in the majority, accounting for 83.20% of all transactions made both in Poland and abroad (Figure 4). By comparison, in 2016 this indicator was 79.30% (Figure 3), which means an increase of 3.9 percentage points.⁸

⁷ *Informacja o kartach płatniczych I kwartał 2017*, July 2017, National Bank of Poland, <https://www.nbp.pl>

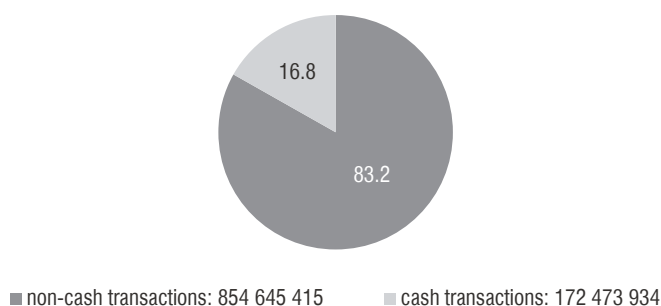
⁸ *Informacja o kartach płatniczych ...*, op.cit.

Figure 3. Share of non-cash and cash transactions in the total number of transactions carried out with the use of payment cards in the 1st quarter of 2016 (data in %)



Source: own elaboration on the basis of: *Informacja o kartach płatniczych I kwartał 2017 r.*, July 2017, National Bank of Poland, <https://www.nbp.pl>, p. 13 (retrieved: 01.12.2018).

Figure 4. Share of non-cash and cash transactions in the total number of transactions carried out with the use of payment cards in the 1st quarter of 2017 (data in %)



Source: own elaboration on the basis of: *Informacja o kartach płatniczych I kwartał 2017 r.*, July 2017, National Bank of Poland, <https://www.nbp.pl>, p. 13 (retrieved: 01.12.2018).

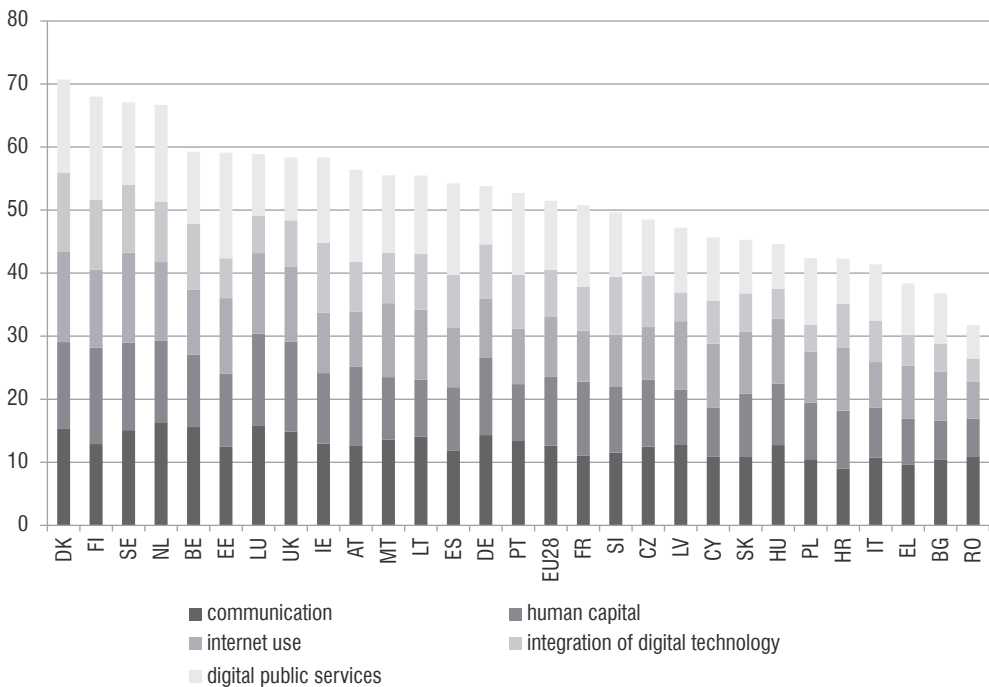
2. The position of Poland in the European Union in the area of digitalisation

In February 2016, Poland adopted the Plan for Responsible Development⁹ concerning the area of the development of enterprises, with particular attention paid to their expansion abroad and their productivity (a more friendly legal environment which will free the potential of the sector of small and medium-sized enterprises to create innovations which are an element of economic growth).

⁹ *Plan na rzecz Odpowiedzialnego Rozwoju*, Ministry of Development, 2016, <https://www.mr.gov.pl>

The Polish Ministry of Digitalisation and Development prepared a project called *Poland without documents and cash*, the aim of which is to develop digital infrastructure making it possible for citizens to automatically arrange all administrative matters. In January 2013, the Council of Ministers adopted the Strategy of Innovativeness and Effectiveness of Economy (SIEE),¹⁰ which provided for the establishment in October 2017 of an industrial platform 4.0. The most important aim of the strategy is to develop an innovative economy which will be based on knowledge and cooperation, thanks to which it will become more competitive on the international arena.

Figure 5. DESI index (i.e. the index of digital economy and digital society) of 2017



Source: own elaboration on the basis of data from reports for individual countries: *Countries' performance in digitisation*, Digital Single Market, June 2017, European Commission, <https://ec.europa.eu/digital-single-market/en/progress-country> (retrieved: 15.09.18).

Figure 5 shows that Poland occupies at present the 23rd place among the 28 member states of the European Union. In comparison with the year 2016 (when Poland held the 24th place) this is slow progress. Our country belongs to the countries with a low DESI index, together with countries such as Romania, Bulgaria, Greece, Italy, Croatia,

¹⁰ *Strategia innowacyjności i efektywności gospodarki. Dynamiczna Polska 2020*, Ministry of Economy, 2013.

Cyprus, Hungary and Slovakia. Poland is implementing the Digital Poland 2014–2020 operating programme, which is intended to raise the level of digital public services.¹¹

In 2017, the DESI index in the European Union amounted to 0.52 pts (i.e. 0.3 pts more than in 2016). Poland is facing challenges as regards the introduction by enterprises of digital technologies and should focus on the development of digital public services. The progress of Polish enterprises (especially from the SMEs sector) in terms of digitalisation is slow when compared with other EU countries. The highest DESI indicators were reported by Denmark, Finland, Sweden and the Netherlands. Many European countries should increase investment outlays so as to be able to benefit from a single digital market and avoid the emergence of a digital Europe of two speeds.¹²

E-business¹³ in our country accounts for ca. 4.1% GDP (for comparison, in Denmark, Sweden or Great Britain the share of this business amounts to 6–8% GDP). This is not changed by the fact that Polish economic activity suffers losses due to its failure to take advantage of the potential of digital technologies.¹⁴

In the area of digital public services, Poland is much below the average for the European Union and has shown lower progress than other member states. Digital administration constitutes one of the priorities of the Digital Poland for the years 2014–2010 programme,¹⁵ which is aimed at improving the effectiveness of public services through the implementation of advanced technologies.

3. Non-cash payments in public administration

In the second half of 2016 actions were taken to continue the initiative of the *Increase of non-cash trading*, which is one of the twelve objectives of the programme *From paper to digital Poland*. The initiative is aimed at the implementation of the main economic targets, which include:¹⁶

- 1) decrease of cash trading related costs (the authors of the programme have estimated budget revenues from this source to reach as much as PLN 10 bn);

¹¹ *Program Operacyjny. Polska Cyfrowa na lata 2014–2020*, Ministry of Infrastructure and Development, Centre for Digital Poland Projects, 2015, <https://cppc.gov.pl/>

¹² *Raport KE: cyfrowa przepaść*, https://ec.europa.eu/poland/news/170303_digital_pl

¹³ The term 'E-business' refers to enterprises which have implemented an enterprise management model based on advanced technological, IT and communication solutions, e.g. electronic invoicing, customers relations management (CRM).

¹⁴ *Czas na przyspieszenie. Cyfryzacja gospodarki Polski*, Polityka Insight Research Warsaw 2016, p. 5.

¹⁵ *Program operacyjny...*, op.cit.

¹⁶ *Ocena funkcjonowania polskiego systemu płatniczego w II półroczu 2016*, National Bank of Poland, May 2017, <https://www.nbp.pl, pp. 122–123.>

- 2) limitation of the grey-zone area through the spread of non-cash payments in B2C relations (business-to-customer);
- 3) introduction and popularisation of non-cash payments in public administration.

At the beginning of April 2017, the Programme for the Dissemination of Non-Cash Payments in Public Administration was launched. The project was implemented by the Ministry of Development in liaison with the National Clearing Office. In the final phase of the project, all offices in Poland are going to accept payments via POS terminals. The offices concerned will have at their disposal POS terminals or the WebPOS Paybynet service dedicated to mobile payments. Clients making mobile payments will be able to choose between two applications, the so-called PeoPay and the IKO application using BLIK codes. It is crucial that entities taking part in the programme do not incur any financial outlays related to the installation or use of POS payment terminals or the WebPOS Payby net service. Piotr Alicki, President of the Board of the National Clearing Office assured that: "The National Clearing Office is consistently implementing the strategy of digital acceleration, getting engaged in sectoral projects aimed at the digitalisation of public services. Our task is to support actions allowing for the dissemination of non-cash trading in all possible areas".¹⁷

Within three months from the launch of the programme POS terminals were installed in over 219 offices throughout Poland, while the WebPOS Paybynet service is available for clients in 128 public administration units. Over those three months 29 000 non-cash payments were made to the total amount of PLN 3.9 m. The programme assumes that introduction of modern electronic administration is crucial to the efficient functioning of the state.¹⁸

4. Research conducted by international payment organizations with respect to digital innovations

The division into the online world and the offline world is becoming more and more blurred. Greater development of digitalisation seems to be inevitable and more and more frequently it is becoming a natural element facilitating transactions and payment services also for Polish consumers. Not only do clients make transactions

¹⁷ *Program upowszechnienia płatności bezgotówkowych w administracji publicznej*, Ministry of Development, 5 April 2017, <https://www.mr.gov.pl/strony/aktualnosci/program-upowszechniania-platnosci-bezgotownkowych-w-administracji-publicznej/> (retrieved: 15.09.18).

¹⁸ *Płatności bezgotówkowe w administracji publicznej – coraz więcej urzędów bez gotówki*, National Clearing Office, 2017, <https://www.kir.pl/o-nas/aktual-nosci/platnosci-bezgotowkowe-w-administracji-publicznej-coraz-wiecej-urzedow-bez-gotowki>, 190.html (retrieved: 20.09.18).

via the Internet more and more commonly, but they are also ready to make use of advanced solutions and new technologies. International payment organizations attempt to foresee the needs of consumers and develop ever more advanced digital services based on ensuring high security level.

In September 2016, Mastercard, one of the largest payment organizations, published the results of a study *Postawy wobec cyfrowych innowacji* [Attitudes towards digital innovations],¹⁹ which was carried out in cooperation with the IPSPS. The study was conducted with the use of the CAWI²⁰ method and covered 23 000 internauts from 23 countries (including Poland). According to the study findings, Polish consumers are ready for payment innovations, including also biometry and payments in mobile devices. As many as 75% of Polish respondents support the development of digital innovations and are satisfied with them, 22% of Polish respondents have a neutral attitude to digitalisation and only 3% negative. The respondents taking part in the survey underlined that there was a need to introduce digital services on a broader scale, particularly in education (42%), healthcare services (37%) and public transport (34%). Consumers are satisfied with the level of digitalisation in financial services.

Poland is a leader in the Central East European region as regards the use of mobile payments and electronic banking. As many as 26% of the respondents declare themselves among advanced users of mobile devices (in comparison with 17% of consumers in the CEE region as a whole and 9% in Western Europe). Making transactions via electronic banking 81% of the respondents use a web browser, while 42% make use of mobile phone applications. As for the device for carrying out payment transactions, clients indicated in the first place: smartphone (49%), tablet (18%) and smartwatch (12%) (by comparison, the relevant figures for Western Europe were: 37%, 14% and 9%, respectively).²¹

One of the questions in the questionnaire concerned the readiness to apply biometric methods of authorizing payments. Over 34% of the respondents declared themselves ready to authorize payment with a fingerprint. The majority of consumers believe that biometric authorization of payment is an innovative (65%), easy (58%) and very fast (61%) way. Moreover, 66% of the respondents believe the authorization method in question to be very safe.²²

¹⁹ *Badanie MasterCard: polscy konsumenci otwarci na cyfrowe innowacje*, Mastercard, 2016, <https://newsroom.mastercard.com/eu/pl/press-releases/badanie-mastercard-polscy-konsumenci-otwarci-na-cyfrowe-innowacje/> (retrieved: 29.09.2019).

²⁰ The CAWI (Computer-Assisted Web Interview) method consists in collecting quantitative data concerning the market and the public opinion. The respondent is to fill in a questionnaire in an electronic form.

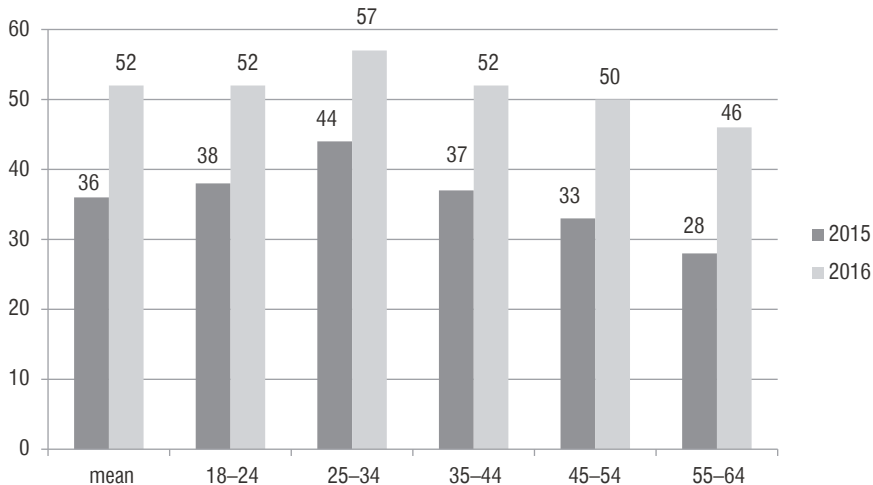
²¹ *Badanie MasterCard...*, op.cit.

²² Ibidem.

The second of the largest payment organizations, Visa, also conducted a study *Digital Payment Study 2016*,²³ which covered approximately 36 000 consumers from 19 countries.²⁴

As illustrated by Figure 6, there is a correlation between the use of proximity cards in payment transactions and the growth of the popularity of mobile payments among the respondents. According to the 2015 study findings, 36% of the respondents used proximity cards while in 2016 the percentage of this group of users increased to 52%. What is worth drawing attention to is the fact that their largest growth was reported in the last age-group, that is in the 55–64 age group, from 28% in 2015 to 46% in 2016.²⁵

Figure 6. Users of proximity cards in the years 2015–2016 according to age groups (data in %)



Source: own elaboration on the basis of: *Visa Infografika z badania Digital Payment Study 2016*, Visa, 2016, <https://www.visa.pl/o-nas/aktualnosci/digital-payments-study-2016infografika60657?returnUrl=%2Fonas%2Faktu-arnosci%2Flisting.aspx> (retrieved: 29.09.2017).

According to the study findings, the past year witnessed a significant increase in mobile payments. On the European continent a three-fold growth was reported in the use of mobile devices to make payment transactions (in 2015 users of mobile

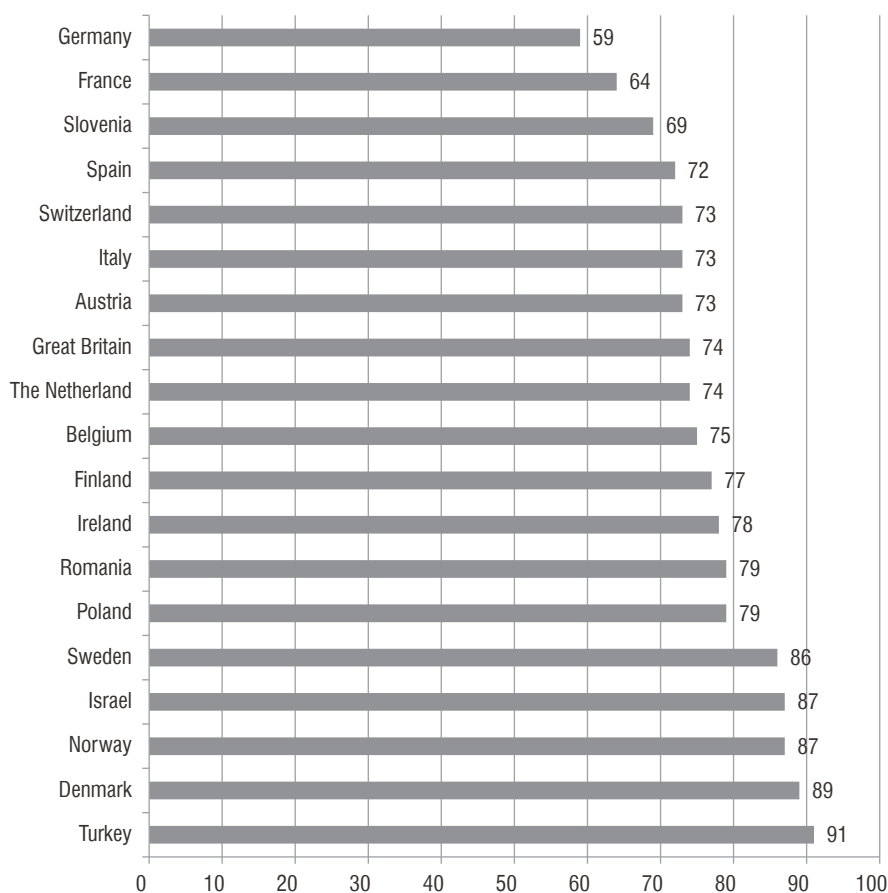
²³ *Digital Payment Study 2016*, Visa, 2016, <https://www.Visa.pl/>

²⁴ Taking part in the study were: Austria, Belgium, Denmark, Finland, France, Spain, the Netherlands, Ireland, Israel, Norway, Germany, Poland, Rumania, Slovenia, Switzerland, Sweden, Turkey, Great Britain and Italy. The study was carried out from August to September 2016.

²⁵ *Visa Infografika z badania Digital Payment Study 2016*, Visa, 2016, <https://www.visa.pl/p-nas/aktualnosci/digital-payments-study-2016infografila60657?returnUrl=Fonas%2Faktu-arnosci%2Flisting.aspx> (retrieved: 29.09.2017).

payments accounted for only 18%, while in 2016 their number surged to 54%). Figure 5 shows that Turkey takes the first place in terms of the percentage of mobile payments users (91% of the respondents use mobile devices to make payments). Poland comes sixth preceded only by the Scandinavian countries (Denmark, Norway, Sweden), Israel and the leader – Turkey. The lowest indicators were reported in Germany (59%) and in France (64%). The European mean is 77%.²⁶

Figure 7. Countries with the highest percentage of mobile payments users (data in %)



Source: own elaboration on the basis of: *Visa Infografika z badania Digital Payment Study 2016*, Visa, 2016, <https://www.visa.pl/o-nas/aktualnosci/digital-payments-study-2016infografika60657? returnUrl=%2Fonas%2Faktu - alnosci%2Flisting.aspx> (retrieved: 29.09.2017).

²⁶ Ibidem.

The study provided also information as regards the level of security of digital payments. A large part of the respondents still express concern about possible financial abuses resulting from the use of mobile payments (in 2015 they represented 62% of the respondents).²⁷

Conclusion

Poland still remains below the European average as regards the readiness to carry out a digital revolution. The Polish government supports the development of digital financial services yet not to the same extent as it is in the case of West European countries. What is important is the fact that the Cashless Poland Foundation was established, which is a pioneering and unique solution on the international scale. The assumptions of the programme include integration of all non-cash payment market entities as well as preparation of instruments which would provide entrepreneurs with a possibility of making non-cash transactions in their trade-service points.

The presented report of the European Commission concerning the index of digital economy and digital society (DESI) confirms that Poland is below the EU average in the group of 'laggard countries'. According to Andrus Ansip, vice-president for the single digital market: "Europe is slowly reaching an ever higher level of digitalisation, however, many countries should increase their efforts and all member states should increase investments if they want to make full use of the single digital market. We do not want a digital Europe of two speeds. We should act together so that the European Union would become the world leader in digital economy".²⁸ The value of investments should be increased in all member states. To fully benefit from the potential created by the single digital market Poland should make financial outlays aimed at accelerating digital growth and levelling differences between our country and other EU member states.

The article confirms that Poland has a great chance to increase the efficiency of digital public services. To this end, the Polish government is implementing advanced technologies which are intended to accelerate and facilitate things for citizens. Care should also be taken to promote the use of electronic applications available in public administration units, which would make them more easily acceptable by the Polish society. Simultaneously, new, entrepreneurs-oriented services should be developed and implemented.

²⁷ Ibidem.

²⁸ *Sprawozdanie z postępów Europy w zakresie cyfryzacji za 2017 (EDPR), profil krajowy Polski*, European Commission, 2017.

The presented results of studies, carried out by the two largest international payment organizations, Visa and Mastercard, and concerning digital payment innovations, provide extremely interesting conclusions. The *Digital Payment Study 2016*²⁹ conducted by Visa indicates that mobile payments are widely spread on the Polish market and more and more trade-service points make it possible for consumers to pay with the help of a mobile phone. Poland is at present one of the five countries in which this modern form of payment is developing the fastest, Poland being the Central and East European leader in this field. The MasterCard study *Postawy wobec cyfrowych innowacji*³⁰ revealed that Polish consumers are more and more open to digital innovations in the field of payments and actively making use of them. The study confirmed that the Polish financial market is ready to make use of innovative payment solutions and Polish society makes ever more frequent use of mobile payments as compared with cash payments.

To sum up, the necessity to implement electronic solutions in the field of non-cash payments seems to be natural and obvious. Yet, a certain degree of caution should be maintained as regards overoptimistic conclusions predicting mass replacement of cash transactions with non-cash trading. While not undermining the importance of the studies carried out in this area, their results should not, by any means, be automatically translated into firm and final forecasts. For instance, it should be kept in mind that numerous analyses are based solely and exclusively on opinions of internauts. Consequently, they cannot be generalized in the presentation of the final conclusions pointing to the inevitable, omnipresent digital currency already in near future. While the continuous development of this form of making financial settlements can raise no doubt, the 'magic of cash' clearly dictates moderation in spreading a vision of cash being soon replaced with non-cash payments. As usual, it is the future, not necessarily the nearest future, that will verify any opinions and forecasts also in this area.

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²⁹ *Digital Payment Study 2016...*, op.cit.

³⁰ *Badanie MasterCard...*, op.cit.

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