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## The development of the FinTech industry in the Visegrad group countries

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### ABSTRACT

This article aims at presenting the development potential of FinTech branch in the Visegrad Group countries, representing similar economic and geopolitical situation. The article consists of two main parts – the first part discusses theoretical aspects of FinTech branch; the second presents statistics concerning the development of companies of this kind, both internationally and regionally. To elaborate on the subject, authors based on Polish and foreign source literature and reports on the discussed subject.

**Keywords:** FinTech, Visegrad Group, payments, innovations

### 1. INTRODUCTION

The countries of Central and Eastern Europe face the challenge of double transformation – on the one hand, they remain in the process of rebuilding the free enterprise economy's structures; on the other hand, they must assail the need of constant accommodation to rapid technological changes in global economy. The world is inevitably evolving and it will not wait for the countries of the discussed region to parallel rich Western countries. Contemporaneously, “technological revolution” is going through the world's

economies. Technological innovations are changing economy, including the finance services sector. Dominant factor of the global financial sector became the innovation called FinTech.

The main objective of the article is presentation of the potential in the FinTech branch in Visegrad Group countries. New technologies and their wide deployment in the financial sector constitute a quickly developing branch in global economy. They revolutionize property and resources management, regardless of their role in economy. Citizens, business, and civil service every day conduct transactions, deposit savings, and invest. FinTech are innovative methods of doing all these transactions connected to property management, and technologies which allow for them. Financial innovation shortens the time of reaching clients and minimizes operational and process costs wherever the online transfer of value takes place. High mobility of citizens of Central and Eastern Europe contributes to the branch's development, since it enables on quick adjustment of clients to innovation. It is worth underlining that there exists a correlation between the size of financial sector and FinTech's development; the former constitutes the root of demand of the latter.

## **2. WHAT IS FINTECH?**

FinTech is a compound of the words: “fin” (financial) and “tech” (technologies). FinTech stands for the usage of the most modern solutions to improve conducting of financial services (taking loans, credits, finance management, currencies operating and online payments) tending to the greatest digitization of the financial sector<sup>1</sup>. The process of digitalization of the financial services is done by using new technologies such as mobile, social media and IOT [1]. This new channels allows FinTech companies to achieve higher level of competitive advantage relative to traditional financial companies thanks to: *low margin, asset light, scalable, innovate and compliance easy*<sup>2</sup>.

The issue of FinTech has been called a revolution recently. However, the name is not so new. First mentions about FinTech appeared in the American press at the beginning of the 1980s. They related to the solutions of computerization and mass telecommunication in banks and on financial markets. Some experts see the beginning of FinTech even earlier, together with the emergence of automatic tellers (1960s). Undoubtedly, media creation of the term and dynamic development of FinTech branch are strongly connected to the expansion of the Internet (the beginning of the 1990s). First FinTech global companies appeared simultaneously with the spread of new online services, for example PayPal in 1999, which took an assessment on auction sites. FinTech revolution began for good together with the popularization of smartphones, after 2010<sup>3</sup>. Many authors argue that the linkage between financial sector and technology is inseparable, and the correlation between them continues from the time when the financial sector was created. This means that evolution of the FinTech industry is ongoing and it affects to whole market participants [4].

Irish National Digital Institute Centre in Dublin defines financial technologies as “innovations in financial services” which demonstrate dynamic or even radical development

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<sup>1</sup> T. F. Dapp, *Fintech – the digital (r)evolution in the financial sector*, Deutsche Bank Research, Frankfurt nad Menem, (2014).

<sup>2</sup> D. Kuo Chuen, E. Teo, *Emergence of FinTech and the LASIC principles*, Journal of Financial Perspectives, Vol. 3, No. 3, (2015).

<sup>3</sup> *Polski Instytut Credit Management*, <https://picm.pl> [17.05.2017].

of applications, business models and products in the financial sector.[2] Unfortunately, the term of FinTech innovation itself is hard to define. To simplify, it is defined as all the new solutions using modern technologies to<sup>4</sup>:

- accelerate,
- secure,
- improve,
- increase availability,
- lower the costs offered by a financial services entity.

It is deemed that the services of FinTech sector do not have to be necessarily provided in the B2C model, but also in B2B (in practice, there are also relations C2B, C2C, for instance social lending for companies). In the simplest terms, to FinTech sectors belong<sup>5</sup>:

- online payments management (Payu, PayPal, Blik),
- e-banking and mobile banking, online insurances (BZ WBK, iPko),
- data analysis and facture of predestination models used in payment process and realization/finalization of the decisions with financial effects, compression and storage of financial data (Creditcheck, BIK, Bloomberg),
- online loans (Vivus, Wonga) and affiliate networks (systempartnerski.pl, affiliate44),
- communication solutions using payments (Uber, Mytaxi),
- applications used to optimize home budgets/spending, online payments applying HCE (Apple pay, Android pay),
- comparison shopping websites and auction sites (Ceneo, Allegro, e-bay),
- online exchange offices (Cinkciarz, Walutomat),
- peer-to-peer loans (Kokos),
- companies implementing and applying solutions based on blockchain (inPay).

FinTech functions always in defined, local environment, which to large extent is determined by regulation, historical factors and the cultural ones. Coherent country's digitization strategy, as the examples of the developed countries prove, translates into favorable circumstances to develop key technologies, including financial. As a result, new products and revolutionary business models appear, such as those based on "Peer2Peer" model or on "open data" shared by a country<sup>6</sup>. The development of FinTech's industry influence one the emergence of new types of financial services, provided by IT companies and dedicated startups. Just like in many other industries Fintech startups seems to create key technological solutions thanks to: their customers base, ability's to forecast market expectations and their willing to make a risky choices[3]. As a result of this activity, new services and software have become available to optimize the processes of providing financial services<sup>7</sup>. Estimates indicate that in the end of 2015 there was more than 12,000 startups in

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<sup>4</sup> D. Pawęda, *Fintech-szansa, czy zagrożenie dla współczesnej bankowości*, <http://test.alebanc.pl/wp-content/uploads/2016/10/nbs.2016.10.050-051-2.pdf> [17.05.2017].

<sup>5</sup> Ł. Piechowiak, *Definicja FinTech – co to jest FinTech?*, <https://fintek.pl/> [14.05.2017]

<sup>6</sup> P. Widawski, i in., 2016, *Fintech w Polsce bariery i szanse rozwoju*, Fintech Poland, (2016).

<sup>7</sup> T. Lee, H. Kim, *An Exploratory Study on Fintech Industry in Korea: Crowdfunding Case*, (2015)

the FinTech industry, which compete not only for clients, but also for source of financing, for example from financial institutions or early-stage investors [5].

### **3. DOUBLE-CHALLENGE TRANSFORMATION OF THE VISEGRAD GROUP COUNTRIES**

The countries of Central and Eastern Europe face the challenge of double transformation – on the one hand, they remain in the process of rebuilding the free enterprise economy's structures; on the other hand, they must assail the need of constant accommodation to rapid technological changes in global economy. The world will not wait for the countries of the discussed region to parallel rich Western countries; it is inevitably evolving. Simultaneously, world economy is going through technological revolution, which completely transmutes foregoing forms of single entities' economic activities. Banks are no longer natural providers of capital, because there might be constructed a contract on our own terms with a person, who has got an excess cash<sup>8</sup>.

In the V4 countries, science, structurally rooted in the previous system, is only learning how to cooperate with business, while on West, the opportunity to commercialize the results of studies is frequently a main standard of their rationality and effectiveness. Other factors inhibiting development are<sup>9</sup>:

- low financial investments on B+R (Czech Republic reaches European average of 1,95% GDP – in Poland and Slovakia the proportion is half as big), and their ineffective allocation (the preliminary phase of projects, seed, is primarily financed; there is a short supply of money for the implementation phase, which converts the studies' results into real products);
- lack of opportunities to gain new capital – investment funds with a significant contribution of the state treasury are characterized by high aversion towards risk, and regional venture capital, which might stimulate development and expansion of startups, is still shallow and inexperienced;
- keeping the most talented employees, researchers and innovators – annual net outflow of the founders of startups from CEE region passes 3%.

### **4. VISEGRAD'S ASSETS IN ECONOMIC RACE**

Demographic factors conduce to creation of innovation ecosystem. The societies of the Visegrad Group's countries are younger than the Western societies. Other contributors to the development are:

- positive tendencies in the field of innovations funding – during the recent years, V4 countries noted a double-digit annual growth of spending on R&D;

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<sup>8</sup> M. Mazur, *Wyszehrad wychodzi poza geopolitykę*, <http://jagiellonski24.pl/2017/04/07/>, [17.05.2017].

<sup>9</sup> *Raport Specjalny, Państwa Grupy Wyszehradzkiej europejskim centrum innowacji*, <http://www.pi.gov.pl/PARP> [14.05.2017]

- access to European funds together with decreasing cost advantage of economies translated into appearance of national innovations and studies support programs;
- constantly increasing value of investments on innovations in private sector;
- business-friendly environment.

The foundation for financial innovation is technology, and significant condition for harmonious development of FinTech sector is a clear law-business situation of separate technologies, which are the bases for implemented solutions (for example data processing in cloud computing). Digital strategies of economies, while defining objectives and expected parameters, are setting the directions of development for particular technologies, and, at the same time, constitute the benchmark for any efforts taken by business<sup>10</sup>.

## 5. RESULTS OF ANALYSIS

The trends associated with the FinTech branch are undoubtedly correlated with the level of digitization of particular domestic economies. The impetus for initiating changes is the development of information and communication technologies<sup>11</sup>, which play increasing role in social dimension. This fact gives financial institutions new opportunities to implement alternative channels of providing services and acquiring customers. International studies on the level of world economy's digitization allow to notice which markets have potential to absorb technological innovations and the development of the FinTech market as a result<sup>12</sup>.

**Table 1.** Level of digitization of societies in selected countries.

<b>Stagnant</b>	<b>Promising</b>	<b>Outstanding</b>	<b>Dominant</b>
Netherlands	Poland	Singapore	China
Czech Republic	Spain	The U.S.A.	Malaysia
Belgium	Portugal	Switzerland	Chile
Finland	Hungary	Hong Kong	Thailand
Denmark	Slovakia	Korea	Brazil
France	Egypt	Ireland	Columbia

Source: authors' elaboration based on: *Czas na przyspieszenie – cyfryzacja gospodarki Polski*, Warszawa (2016).

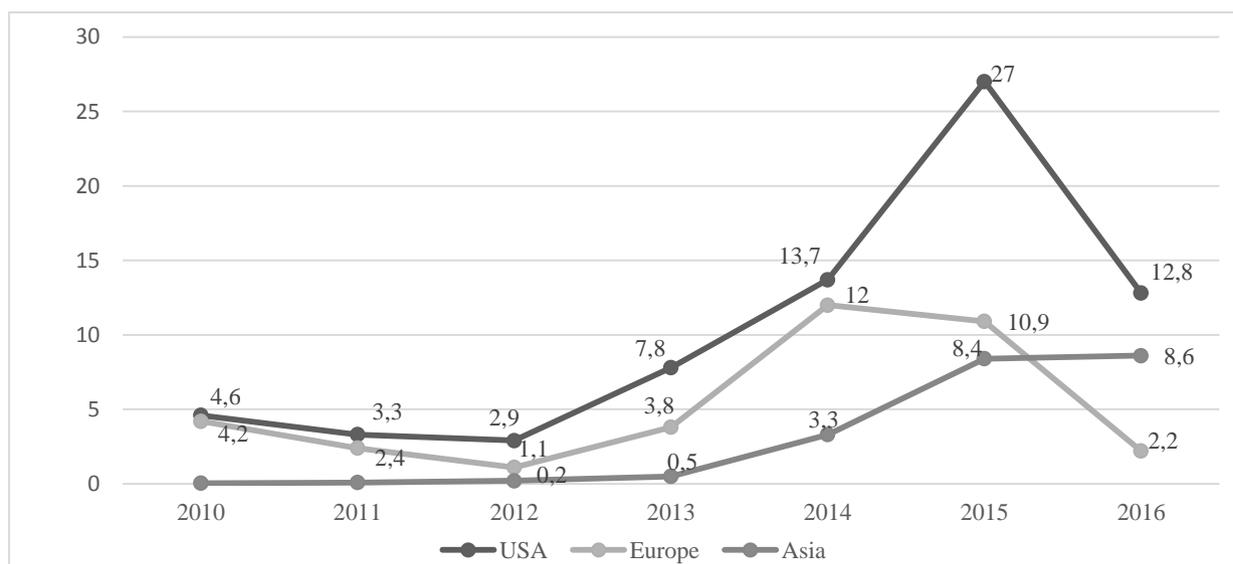
It is obvious that dynamic advancement of digitization influences on the growth of capital expenditures intended for the development of the FinTech branch. The Figure no. 1

<sup>10</sup> M. Mazur, op. cit.

<sup>11</sup> Information and Communication Technologies (ICT) are the group of technologies processing, gathering and submitting data electronically. Source: *Krajowy Punkt Kontaktowy*, [http://www.kpk.gov.pl/?page\\_id=10254](http://www.kpk.gov.pl/?page_id=10254) [15.05.2017].

<sup>12</sup> P. Arak, A Bobiński, *Czas na przyspieszenie – cyfryzacja gospodarki Polski*, Warszawa, (2016).

presents the scale of inflow of foreign investments included in projects connected with the development of new technological solutions. The market which shows the biggest potential to absorb such investments is The United States. During only 6 years, in the American FinTech branch, the assets with the value over 72 bn. dollars were allocated, which equals to over 55,5% of global worth of investments in the area of this branch. Record capital flows took place in 2015, when aggregate value of investment projects reached 46.3 bn. dollars, but a year later, they drastically dropped to 23.6 bn. dollars. This change of investors' behavior, which appeared on the two biggest markets (the American and the European ones), according to the authors, was the result of the need of verification the branch's development potential. The solutions proposed by i.a. FinTech startups has created indubitably new business solutions, the implication or rejection of which will have an impact on the future decisions of investors<sup>13</sup>. However, disparate tendencies appear in case of Asian countries. This market matured relatively late to deploy such technological solutions. Dynamic growth of expenditures on the FinTech branch was initiated in 2013 and is characterized by strong development trend. It is worth emphasizing that until 5 among 30 biggest investments in this branch worth 548 m. dollars were conducted in China<sup>14</sup>.



**Figure 1.** Value of investments in the FinTech branch in 2010 – 2016 (bn. dollars)

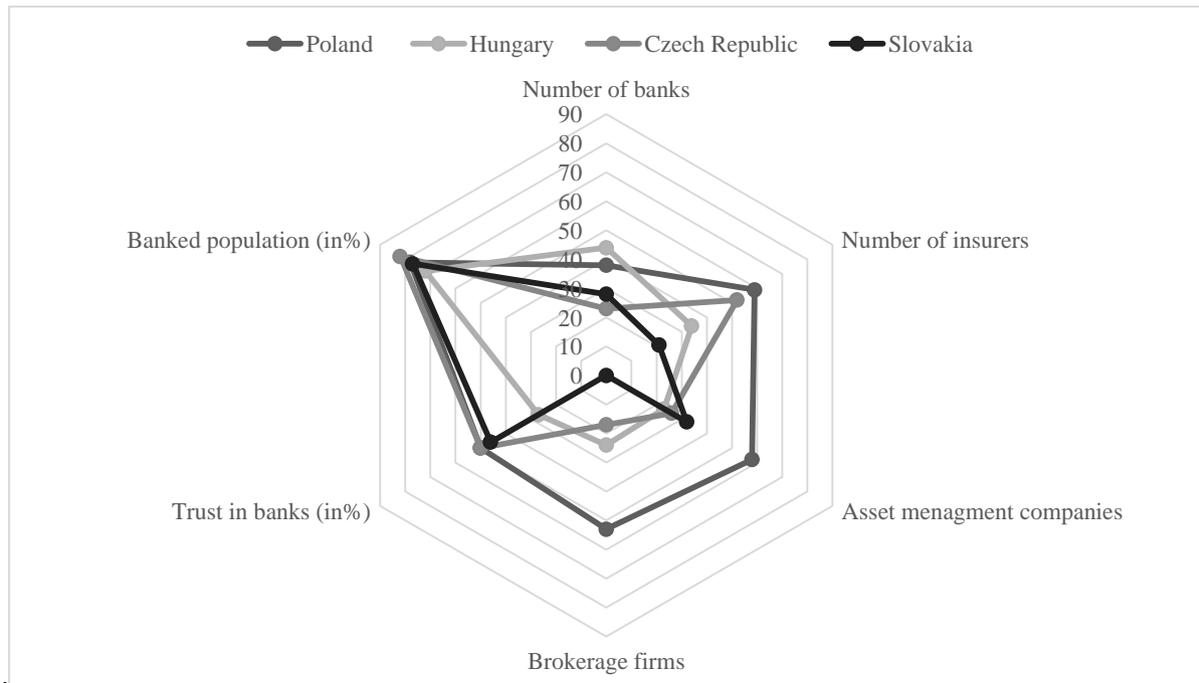
Source: authors' elaboration based on: Fortnum D., Maed W., Pollari I., Huges B., Speier. A, *The Pulse of Fintech Q4 2016 Global analysis of investment in fintech*, KPMG (2017).

Presented statistics concerning both the level of digitization and the scale of inflow of foreign investments to FinTech reveals the level of diversity of this market, globally and regionally. Excellent example can be the European market, on which part of the countries can be defined as mature in the context of digitization, while others, including Poland, are in the process of technological evolution. For this reason, to assess the dynamic of FinTech's

<sup>13</sup> Fortnum D., Maed W., Pollari I., Huges B., Speier. A, *The Pulse of Fintech Q4 2016 Global analysis of investment in fintech*, KPMG (2017).

<sup>14</sup> Ibid.

development in Poland, authors compare the development of the branch among relatively cohesive group of countries, which is Visegrad Group. On the basis of the data from report: *FinTech in CEE Charting the Course for Innovation in Financial Service Technology*<sup>15</sup>, there was made a statement on the determinants of the development of financial sector in Poland, Czech Republic, Slovakia and Hungary. The following variables were used: trust in banks (in %), number of banks, number of insurers, asset management companies, banked population (in %), and number of brokerage firms (see: Figure 2).



**Figure 2.** Determinants for development of financial sector in the Visegrad Group countries  
 Source: authors' elaboration based on: *FinTech in CEE Charting the Course for Innovation in Financial Service Technology*, Business is Great, 2017.

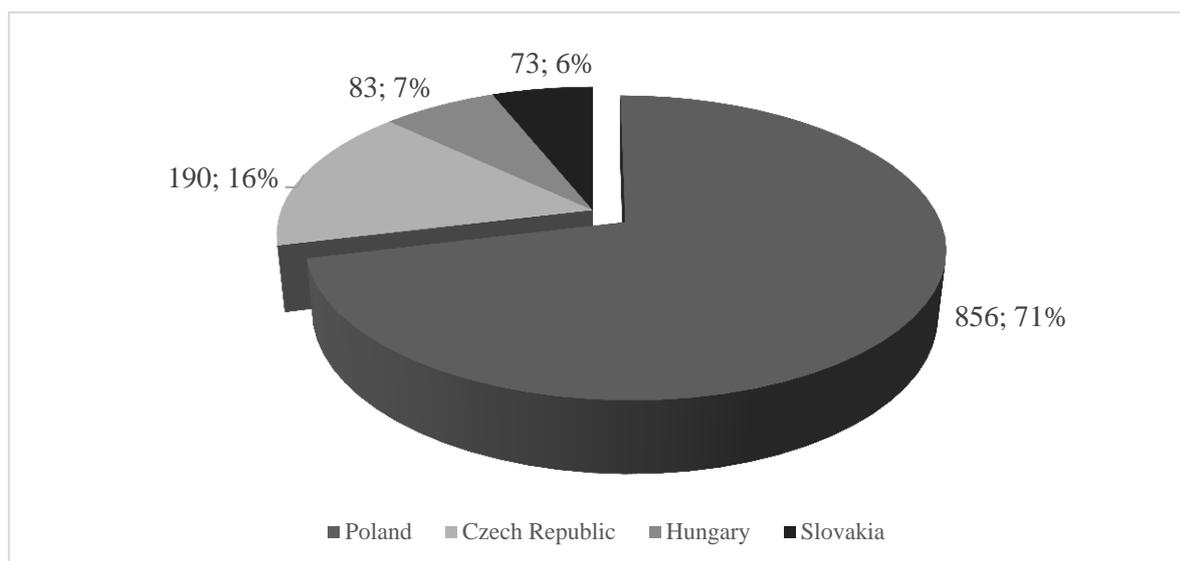
Presented data show unequivocally that financial sector in Poland is characterized by the biggest potential of development against the rest of the V4 countries. This is due to the competition both in the bank and insurance sector, which is contingent on relatively high degree of fragmentation of business entities constituting market pulp. The demand for financial services simultaneous with progressive process of the economy digitization led to clarification of numerous startups working on Fintech projects in collaboration with financial institutions. Poland distinguishes itself in this matter among the rest of Group's countries, since the propitious financial "ecosystem" renders potential for implementing of part of these innovations on the national market. In the case of the remaining countries of Central and

<sup>15</sup> *FinTech in CEE Charting the Course for Innovation in Financial Service Technology*, Business is Great, (2017).

Eastern Europe, the solutions are made to export to the countries of higher degree of digitization development level<sup>16</sup>.

Paradoxically, the factor which might also determine dynamic advancement of Fintech in the region is limited trust of customers towards bank institutions. This animosity is partly mirrored by low banking penetration ratio of citizens. This state contributes to an interesting market niche, which might be filled in with the entities providing alternative payment solutions. It seems to be reasonable, especially from the angle of introducing the most recent European Union's regulation: *Payment Services Directive 2*, which standardizes i.a. the issue of new entities providing payment services, also known as Third Party Provider. Announced legislation changes might revolutionize in short period of time currently used non-cash transactions mechanisms, and in turn, contribute to the next growth in the investments in FinTech. Confirmation of this thesis might be found in the results of the report *FinTech w Polsce. Bariery i Szanse Rozwoju*, in which the examined companies pointed the business clients (69%), banks (56%) and non-professional clients (50%) as the main receivers of the produced goods<sup>17</sup>.

In contrast, examining the markets of the Visegrad Group countries from the perspective of Fintech branch's development, it can be noticed that the fastest evolution of the branch takes place in Poland. In 2016, the value of the market was assessed for 856 mil Euro. It gives Poland the position of the leader of this type of solutions both among the V4 countries and the whole region of Central and Eastern Europe [6]. Polish FinTechs implement such technological solutions as: financial platforms, electronic payments, crowdfunding, P2P lending, Big Data analysis, personal finance management and cryptocurrencies<sup>18</sup>.



**Figure 3.** FinTech market size in Visegrad Group countries (mln Euro)

Source: authors' elaboration based on *FinTech in CEE Charting the Course for Innovation in Financial Service Technology*, Business is Great, 2017.

<sup>16</sup> M. Dzięguć, M. Guzek, M. Olczak, Fintech wróg – czy przyjaciel [w:] Wyzwania Informatyki Bankowej, pod red. A Kawiński, A Sieradz, Instytut Badań nad Gospodarką Rynkową (2016).

<sup>17</sup> P. Widawski, i in., 2016, op. cit.

<sup>18</sup> Ibid.

## 6. CONCLUSIONS

There is no doubt that progressing process of societies' digitization will have increasing impact on the development of the contemporary finance and banking. This fact raises both great expectations and numerous questions about the future of financial services. The scale of investments and their dynamic global development seems to confirm the thesis that the world of finance will soon experience a real revolution. Poland, as the country of dynamically functioning FinTech branch is on the right track to become a precursor of the regional changes. Poland's potential to produce innovations in such areas as payments or eCommerce was repeatedly noticed at international level. For this reason, it is extremely significant to maintain an advantageous position on the market in this rapidly evolving branch. Digitally developed countries of the Western Europe might constitute an excellent group of receivers of Polish FinTech solutions. It is worth mentioning that the Polish people are very open-minded for any technological innovations in banking and finance, a great example of which might be the Blik system. Polish society would be a great "guinea pig" for the diverse FinTech solutions, which in case of their adopting to the domestic market might be successfully internalized. Comparison of the level of the FinTech branch development in Poland and in the rest of the Visegrad Group countries shows that Poland is the leader in the group of post-transformational countries. This position was achieved despite huge difference in societies' digital evolution, for example compared to Czech's economy, which remains at a considerably higher level. FinTech branch is likely to become Polish economy's domain, which reveals high potential to create and implement this kind of innovations.

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