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## Article

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## ANALYSIS OF THE ATTRACTIVENESS OF THE POLISH MARKET FOR VENTURE CAPITAL FUNDS

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### Abstract

The purpose of this article is to present the factors and phenomena resulting from the interaction of economic entities (entrepreneurs and consumers), which determine the level of investment attractiveness for venture capital funds. The activities are aimed at identifying which sectors and sectors of the economy in Poland may in future draw a growing interest of venture capital investors. They conclude that in the long run, consumer values and expectations will have a far greater impact than the technological change itself, on the process of building a market position and on the management of an enterprise. It is concluded that the Polish economy, as a result of demographic change, globalization and technology, will appear as an attractive area for venture capital investment. The basis of the discussion is Polish and foreign literature on the subject, current reports and statistical data.

**JEL classification:** D15, D21, D25, O30

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## INTRODUCTION

Variation has become an immanent feature of the economies of the 21st century. In the market space there are constant transformations resulting from the pace of technological progress, economic and social realities. On the one hand, they affect consumers' market behavior and, on the other, motivate companies to seek new opportunities for growth, mobility in the market space, and redefinition of the strategy. Searching for attractive investment areas is a challenge and an expression of the paradox of the hyper-competitive environment, i.e. the constant search for new sources of competitive advantage (Aveni, 1995, p. 45). The basis of this exploration is innovation, whose creation, implementation and dissemination is carried out in a variety of systems and structures (formal and informal), enterprises in the private and public sectors and in different areas of human activity. On the one hand, all this shows the wide variety of use of human activity, and on the other the need for adequate management and non-financial support. In light of the above, it is justified to consider what socio-economic spheres may represent the investment attractiveness of Polish enterprises in a time perspective; analyze the possibilities of financial support, bring the experience and knowledge necessary for the future development, and create partnership relations. All this is considered to be the basis for ensuring transparency, independence and speed in making investment decisions. The background to the accepted and concluded conclusions is that not only financial support but also the market, its changes and its determinants are factors that determine success. The basics of Friedrich von Hayek's (Hayek, 2004, p. 28) words apply: "The peculiar task of economics is to show people how little they really know what they think can be designed".

The purpose of the discussion is to present selected factors and phenomena resulting from the interaction of individuals and societies, with particular attention to the sphere of consumption, which designates areas of market activity attractive to venture capitalists. The proposed analyzes are an attempt to identify areas of the Polish economy that may in future draw growing interest of venture capital investors.

The reflections are based on the identification of the level and directions of investment of venture capital funds in Poland against the background of the EU countries. The

analysis period covers the years 2008-2015. Against this background, the essence of the changes that are emerging and the chance to become active on the Polish market is presented. The essence of demographic change, the process of globalization and technological advancement of life have been taken into account. It is believed that they form a system of connected vessels and are the source of the evolution of consumer preferences and expectations towards the level (of higher quality) of life. As a result, they will determine areas of investment attraction for venture capital funds.

## VENTURE CAPITAL - THE ESSENCE OF ECONOMIC DEVELOPMENT

With the increasing demand and the growing expectations of the market, entrepreneurs are striving for growth by seeking better and more modern, risky, and innovative solutions. Finding these new attractive areas is a must in order to meet the demands of the environment. Ubiquitous competition forces the entities to continually search for sources of competitive advantage. As a result, companies are constantly looking for new opportunities that generate high financial costs. One of the sources of capital to finance new ventures is venture capital funds. They are an essential part of the process of creating innovation, which is cited as an important factor in economic growth. These institutions deal with risky businesses in the early stages of development or in the early stages of the market. In this concept they also invest in the idea (seed), so in the business concept itself to explore the possibilities of its commercialization. We can also find the term venture capital as an experimental field for the entire private equity sector<sup>1</sup>, because venture capital investments support new businesses, including innovative ones (Sieradzan & Sobańska, 2004, pp. 13–14; Hass, Laffer & Pryor, 2009, p. 293). Jerzy Węclawski introduced one of the first definitions of the venture capital concept in Polish literature. It defines venture capital "as

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1 According to the terminology used by the European Association of Private Equity / Venture Capital Association (EVCA - European Private Equity & Venture Capital Association), private equity refers to medium- or long-term capital provided non-listed companies on the capital market, and the service of achieving profits through growth in the value of the company. EVCA further outlines the goals private equity can provide. We can mention here the development of new products and technologies, the increase of working capital, acquisition financing, the improvement of the company's balance sheet as well as the solution of ownership and managerial problems. Venture capital is closely linked to early stage financing and expansion and is considered a part of private equity. There is also a high risk of this type of transaction, which is compensated by an above-average expected rate of return on invested capital, (Drewniak, 2013, p. 51)

equity for a limited period of time by external investors to small and medium-sized enterprises with an innovative product, method of production or service that has not yet been verified by the market and therefore poses a high risk of investment failure but also success. The Project, assisted in the management by investors, provides a significant increase in the value of invested capital, which is realized by the sale of shares “(Węclawski, 1997, p. 17).

Venture capital funds, which are extremely important, act as a financial intermediary between a capital investor and a capital company, which is an investment and therefore not a direct investor, but as a specialized unit in the servicing of small and medium-sized capital companies with high growth potential and high risk. Another important factor in the operation of venture capital is filling the so-called capital gap in financing innovative enterprises. Venture capital funds are better at overseeing innovative projects than traditional financial intermediaries. They are also more inclined to invest in risky business ventures.

In summary, the distinguishing characteristics of venture capital investments distinguishing them from traditional forms of financing are (Gladstone & Gladstone, 2002, pp. 5-7):

- 1) early stages of the company's development, including its establishment,
- 2) high risk,
- 3) managerial support,
- 4) non-public nature of the financed enterprises.

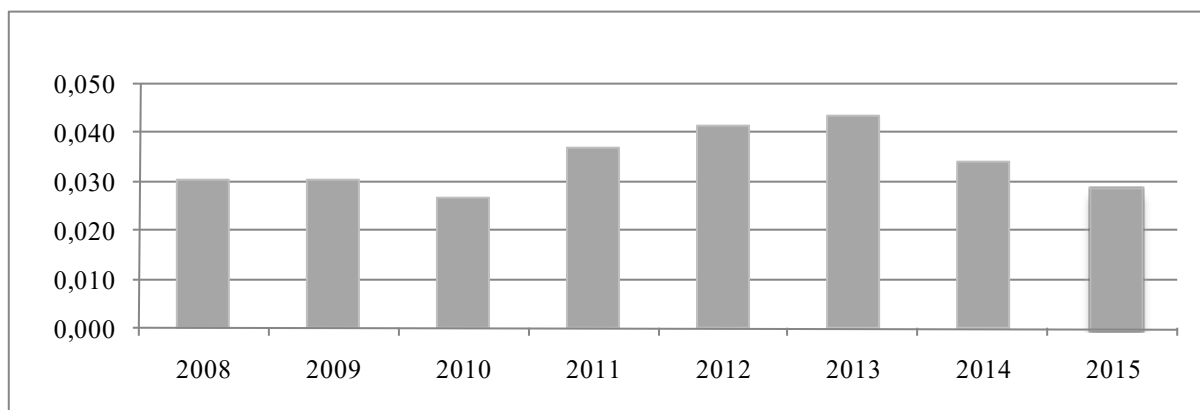
Due to the low risk aversion and the provision of additional non-financial support (in management, in business networking), these funds are a particularly

valuable partner for innovative businesses at certain stages of their development. From the innovation standpoint of the whole economy, the advantage of the funds is the quick and effective search on the market for the most promising young companies. The cyclical investments, concentrating on several selected industries (while failing to meet the investment opportunities of other industries) are a disadvantage. In addition - which is not a charge against the funds themselves - they are not a source of capital to replace the state in research and development spending. Venture capital funds are more widespread in those countries where there is higher R & D. There are more attractive economic innovations, whose slight refinement and commercialization are a chance for these funds to exceed above average profits.

The availability of venture capital funds is also important, as a significant facilitation for the commercialization of risky but potentially very promising business ideas. As mentioned above, they are financial intermediaries who receive shares in companies in exchange for the funds they provide, and their potential increase is the main source of funds (Czerniak, 2010, p. 812). The successful venture capital fund's investment cycle usually ends with the withdrawal of capital through the introduction of shares in publicly traded companies, ie the shares of the stock market (Metrick, 2007, p. 3).

Among European countries, the earliest venture capital market began to develop in the UK (in the second half of the forties of the twentieth century). In continental Europe, this kind of funding has been used since the 1960s. This delay was due to the rebuilding of economies from war damage and policies based on strong interventions in limiting the role of the market. Industrial policy was

**Figure 1: Value of venture capital funds in Poland in 2008-2015 (% of GDP)**



Source: *European Private Equity Activity Statistics on Fundraising, 2015, Investments & Divestments, Invest Europe*, <https://www.investeurope.eu/media/476271/2015-European-Private-Equity-Activity.pdf>



primarily aimed at supporting large and medium-sized enterprises while neglecting small businesses, which were a natural base for the development of the venture capital market. Social conditions, notably the greater traditionalism of European entrepreneurs, were also important. It was only a retreat from interventionism and the growing liberalization of European economies in the 1970s that stimulated the dynamic development of medium and small enterprises and created incentives for the revival of the venture capital market. At the same time the progressive globalization of economic activity and greater openness to new financial instruments, as well as increasing competition led European companies to benefit more from funding by venture capital. The conditions for the development of the venture capital market began to develop with the process of transforming the Polish economy from a centrally planned economy into a market economy.

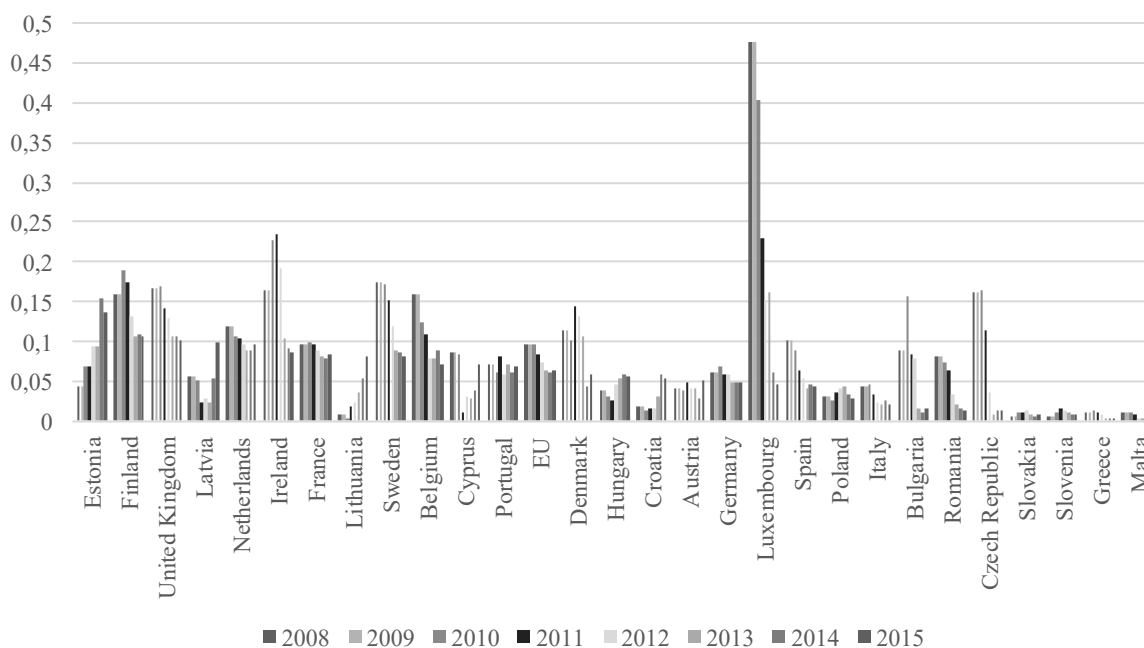
The effects of innovative activities that can be funded by venture capital funds have different uses and characteristics. This can be seen as a new product introduced by the company, a new production method, or even increased jobs in an enterprise applying a new marketing strategy. Much depends on the economic situation of the country. Scandinavian countries, the

United Kingdom, and Germany use funds to finance projects at the initial stages of development and at the time of basic research, hypothesis building, which is different from the situation in Poland, which uses venture capital to finance, for example, distribution.

Countries belonging to the European Union structures use available finances in a variety of ways. In developed countries, where the capital market has a long history of existence and strong support from the government, bank lending is complementary to venture capital (Czerniak, 2010, p. 819), which is different for example, in Poland versus other developing countries. In addition, countries classified in the group of innovating and technology-transferring economies (not belonging to the innovators) spend less than 1% of GDP on R & D. This is a different situation for highly developed countries (innovators), where such expenditure is over 2% of GDP and even more than 3% in countries such as Sweden, Denmark, or Germany (Ciborowski, 2016, p. 56).

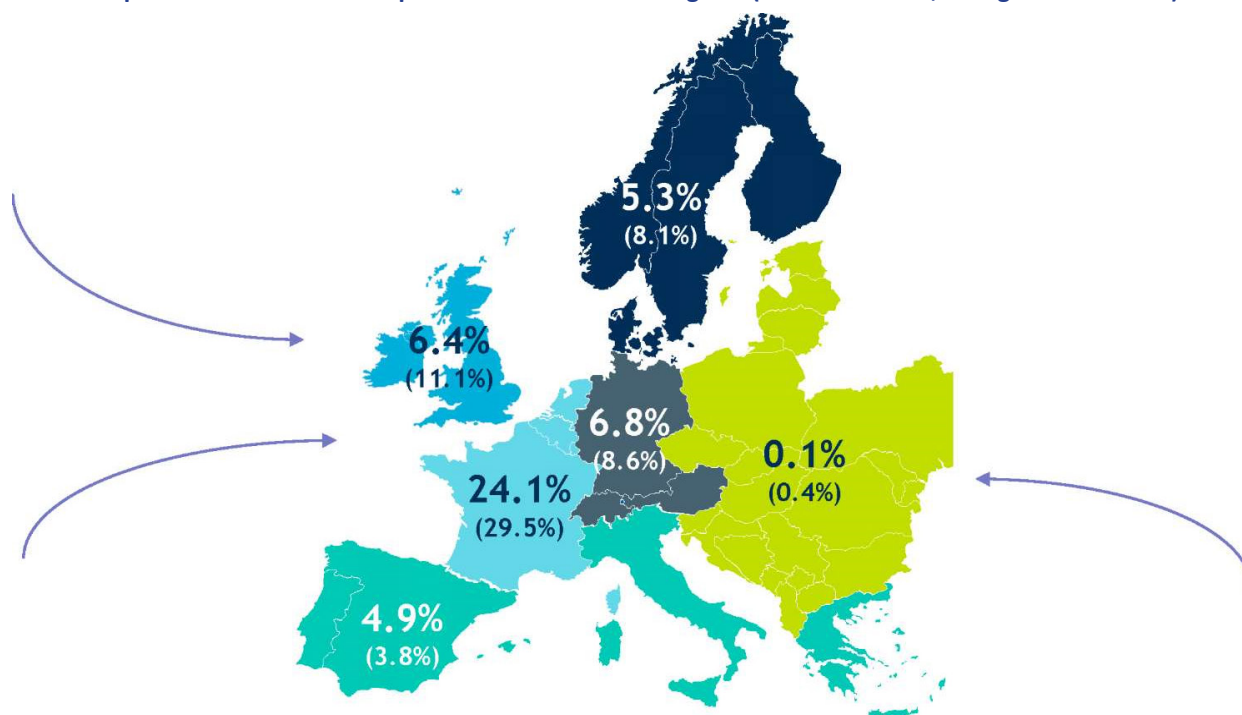
Developed countries, as shown on the map, use funds in a dynamic way. The increase in investment in 2016 in countries such as Luxemburg and France was as high as 29%, compared to Poland, Ukraine, Lithuania and Russia, where growth was only 0.4%.

**Figure 2: Value of venture capital in EU Member Countries in 2008-2015 (% of GDP)**



Source: study based on *European Private Equity Activity Statistics on Fundraising, 2015, Investments & Divestments, Invest Europe*, <https://www.investeurope.eu/media/476271/2015-European-Private-Equity-Activity.pdf>.pdf

Graph 1: Value of venture capital funds in individual regions (% of total value, change % 2016-2015)



Source: European Private Equity Activity Statistics on Fundraising, 2015, Investments & Divestments, Invest Europe, <https://www.investeurope.eu/media/476271/2015-European-Private-Equity-Activity.pdf>

## MEANING OF VENTURE CAPITAL FUNDS IN THE MARKET ACTIVITY OF POLISH ENTERPRISES

There is no universal method for generating innovation. The whole innovation process is based on the unique characteristics of each enterprise, the specific nature of the processes involved, and the dynamics of changes in the environment that generate new opportunities and challenges. Many pro-innovation initiatives fail, and innovators have difficulty in introducing breakthrough products to the market or even achieving good results. Among the reasons for this situation are the lack of financial capital, erroneous analyses and forecasts of market development or the low frequency of their execution. Barriers also include the lack of a professional team of employees who can create products that stand out in the market, lack of substantive knowledge, contacts and relationships in a given sector.

Venture capital funds are looking for companies with a strong team of people, with qualified employees, skills, competencies, adaptability and openness to change. They seek to capitalize on scalable projects capable of generating high revenue in the next 3-5 years. They look for entities that through their activities (manufactured

goods and services) fill a gap on the market and as a result, provide an internal rate of return on the invested capital at the desired level. They combine the expected financial benefits with their own involvement, ie they offer funds for the purchase of machines, software, equipment, intellectual property protection and patent procedures at home and abroad and provide their own management support, knowledge, contacts and relationships in the sector as well as assistance in the process of obtaining new business contracts. The indicated venture capital activity is significant due to the currently observed shortened life span of products and consequently the life of the enterprise.

Most venture capital funds are optimistic about the prospects for development on the Polish market. This attractiveness is seen not only by the rate of development of the economy, but also by changes in the expectations of individuals and society. The sphere of consumption is becoming more and more a factor of innovation and social change, which generally takes on the dimension of long-term processes. The effects of these changes are the result of the activity of people, the society involved in the process of creating innovation. This means that they are the result of collaborative action in all stages of the activity, from recognition of needs, to implementation of

the effects of the process of producing goods and services, and dissemination of effects.

At the end of the twentieth century, it became important to reach out to a broad group of customers by designing products and services, i.e. targeted at the recipient's experience. The two decades of the 21st century are marked by the high rate of change in consumer tastes and preferences driven by the development of new information and communication technologies. Entrepreneurs, in order to stay on the market, must ensure their success should be characterized by far-reaching flexibility of operations allowing for continuous adaptation to the changing transformations. In this respect, the basis of market activity is to have a broad and up-to-date set of information. Meanwhile, Polish innovative companies show low diversification of sources of information for innovation. Their activity is based mainly on internal sources and knowledge of other companies (Table 1). They show little interest in the knowledge and experience of clients, institutional sources, conferences, fairs and exhibitions. The reasons for this situation are as follows: lack of appropriate legal solutions regulating cooperation between the business and science sectors; lack of financial resources for such cooperation; failure to adapt the offer of these institutions to the needs of

the business sector; lack of appropriate structures for managing research activities for businesses, especially for national universities.

Low interest in the expectations and preferences of individuals and societies by Polish companies is translated into, diagnosed from the beginning of the 21st century, uncertain demand for proposed innovative solutions. This is an important barrier that Polish entrepreneurs face, which should be seen as an opportunity and benefits that venture capitalists expect.

### AREAS OF ATTRACTIVENESS OF THE POLISH MARKET FOR VENTURE CAPITAL FUNDS

Depicting the scenarios of the future development of the economy and society is a difficult task, and highly risky. It does not mean, however, that such attempts should not be made. Analysis of market changes and their anticipation is the key to market success. The 21st century abounds in phenomena and processes, varied in different dimensions and cross sections, with changes in the forces where new industries emerge. Among the processes that will create attractive investment areas for venture capital funds are the following: an aging society, expansion of

**Table 1: Selected aspects of innovative activity of enterprises employing 10-49 people in Poland in 2011-2015**

Specification		2011-2013		2012-2014		2013-2015	
		industrial enterprises	service sector enterprises	industrial enterprises	service sector enterprises	industrial enterprises	service sector enterprises
Enterprises which rated as the most beneficial co-operation with:	other enterprises in the same enterprise group	18,9	26,3	16,4	26,1	15,6	40,9
	clients	18,3	8,3	10,3	12,3	9	13
	consultants	15,3	1,8	1,1	1,5	7,3	3,2
Expenditures on innovation activity in enterprises from funds of venture capital (current prices, in mln zł)		68	52	130,6 (2014)	62,5 (2014)	106,5 (2015)	26,5 (2015)
		-2013	-2013				

\* Own calculations as a difference between total expenditures on innovative activity and expenditures from own resources, state budget, from abroad, bank loans. Data available for selected years: 2013, 2014, 2015.

Source: own elaboration based on: GUS, (2014). *Działalność innowacyjna przedsiębiorstw w latach 2011-2013. Informacje i opracowania statystyczne*; GUS, (2015). *Działalność innowacyjna przedsiębiorstw w latach 2012-2014. Informacje i opracowania statystyczne*, GUS, (2016). *Działalność innowacyjna przedsiębiorstw w latach 2013-2015. Informacje i opracowania statystyczne*



globalization, and technological advancement of human life.

The phenomenon of an aging population is a problem of global dimensions. Changing age structure will in fact lead to the intensification of generational differences, which will be a challenge for companies offering consumer goods and services. Poland is on the top thirty demographically old countries in the world. Eurostat projections indicate that the share of people aged 65 years and older in the structure of the total population will be 37,4% in 2020 (EU (28) – 41,2%), - 61,9% (more 4 pp than in the EU (28) – 57,6%) in 2050 and it will reach to 68,8% and will be higher by 10,3 pp. to the EU level (28) in 2060 (Eurostat, 2017). The increasing demographic aging will be accompanied by the shifting of the activity of the population from the sphere of production to the sphere of consumption and changes in the structure of the acquisition of goods and services. Increasing demand will be seen for rehabilitation equipment, ergonomic furniture and household appliances, new mobile phones, nursing homes and care services (Mróz, 2013, p. 70). The demand for social services such as health care, culture, and active forms of recreation will increase dynamically.

The inevitable “partner” of demographic change is and will be the process of globalization. It will foster the development of polar opposites, ie homogenization and heterogeneity of consumption. Symbiosis and / or autonomy of indicated behaviors of consumers will fulfill the whole set of indirect attitudes (individuals will express the attitude of partial, selective adaptation of selected elements of the global culture). A compromise between national, local and global values will be exacerbated by the increasing availability of the Internet, the emergence of new information and communication technologies, and the expansion of e-commerce infrastructure. Consumer behavior surveys, that is, individuals who want to meet the needs (felt and triggered by the market) functioning in both real and virtual space, will gain particular importance.

According to the Digital Yearbook in 2017, in January 2017 15 million. Poles (39% of the total population) used social media (over 0,5% of all global users), of which around 12 million (31% of the population and 0,47% of the global population) used mobile devices (an increase of 20% in comparison to the beginning of 2016). Internet access through tablets, smartphones and other mobile devices increases the convenience of shopping, saves the time it takes to make the final decision to purchase

a product or service, and intensifies the activity of people learning and sharing, providing feedback on products and services. Consumers benefit from the ability to communicate their expectations and purchase preferences, levels of satisfaction and dissatisfaction with their purchase, use of the product, service level and accompanying services. According to a survey conducted by SW Research for Leroy Merlin Polska (What will the trade look like in 2025?, 2017 survey results), 40% of clients indicated that in 10 years they will contact the offer or eg. Internet communicators, and as many as 36% of respondents prefer such contact made by mobile applications. Over 1/3 of the respondents considered that communication with the seller by face-to-face is the most important. In the light of the above-mentioned inevitable research it seems to be getting wider and more open to the multilevel and technologically different contact with the customer. These changes are being followed by international networks, auction site owners and resellers. More and more mobile applications are being added to mobile devices (smartphones, smartphones, tablets) and created according to customer preferences. One of the reasons for their increasing importance is the delivery of personalized content. An increasing number of mobile consumers will demand the optimization of the purchase process. As a result, the personalization of the deals will increasingly be linked to the further development of micro-localization and geotargeting, that is, to capture more accurate information about customer behavior and location to match ads or messages to their current needs and where they are. At present, only 7% of Polish enterprises use geotargeting (Geotargeting, 2017). Investors should be encouraged to invest in Internet Things (IoT - Internet of Things). It is estimated that the value of the Polish IoT market is likely to reach \$ 3,7 billion in 2018, and in 2020 to \$ 5,4 billion USD. Its development will be driven by retail and consumers. Nearly 70% of the decision makers in the trade are already ready to make the changes required for the IoT application.

In addition to the challenges already facing Polish companies offering consumer goods and services, the interest of venture capital funds should focus on the development of treatment-oriented products and prophylaxis based on specialized medical knowledge. According to the PwC report published in 2016, “Patient in the digital world. So how new technologies change the market for medical services in Central and Eastern Europe? “there is a shift in patient preferences and their



health system requirements. Among them, significant from the point of view of the allocation of venture capital funds are:

- 1) openness to telemedicine services - more than 60% of patients in Central and Eastern Europe say that they are interested in telemedicine services because they receive expert advice quickly, avoid queues in public health,
- 2) increased interest in using video conferencing (up from 10% to 25% of all teleconsultations in just one year),
- 3) growing interest in a personalized approach (ie tailored to the needs of the individual), including the willingness to use not only specialized medical care but also the so-called Medical care, such as medical services such as dietician advice or psychologists.

According to J. Werner, medical director of the University Hospital in Essen, artificial intelligence will be the foundation of 21st century medicine (World of Knowledge, 2017). Many indications show that soon the doctor will not be setting up his own diagnosis, but only available to translate and interpret patient data collected and analyzed by analytical apparatus, smartphones or fitness bands. As a result, the smart electronics market will grow dynamically, it means wearables, that is, devices that receive medical data and thus monitor human health (eg watch with heart rate monitor) or the production of biometrics such as monitoring the basic functions of the body (for example the Hexoskin biometric t-shirt monitors the frequency and volume of breathing, rhythm and variability of the heart, and calories burned). There will be a growing demand for mHealth applications (for example, health monitoring, routine physician communication, or emergency calls).

## SUMMARY

The investment attractiveness of the Polish market will increase with the changes in the age structure of the population, the impact of the globalization process and the unwavering aspirations to improve the standard of living. The development of information technology (standardization and reliability), networks and telecommunications infrastructure (throughput, integration, availability) creates and will expand the level of cooperation (business with consumers or physicians with patients), which does not require personal contact. As a result, the essence of interpersonal contact will be multi-channel, it means to enable people to simultaneously use the fixed, mobile and Internet platforms. It will cover many areas of socio-economic life. Poland is and will be in the coming years an emerging market for highly developed economies using new high technologies at a much higher level. The drive to change the model of the Polish economy to a more technologically advanced one will be conducive to the development of the technological sector, which has a significant impact on the generation of new consumer needs as well as solutions for enterprises. Supply and demand side market adaptation is a challenge and a source of future financial benefits, that's why it should be considered attractive to venture capitalists. Poland has relatively young venture capital markets, so the value of this kind of investment is still lower than in Western European countries. In addition, a large part of family businesses in Poland are faced with the need for succession, and this can be a factor generating demand for venture capital funds.

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