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**FACTORS THAT INFLUENCE THE COMPETITIVENESS OF  
ELECTRONIC MONEY INSTITUTIONS IN THE EU**

**FAKTORI, KAS IETEKMĒ KONKURĒTSPĒJU STARP  
ELEKTRONISKĀS NAUDAS IESTĀDĒM EIROPAS SAVIENĪBĀ**

**BACHELOR PAPER**

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## **ANNOTATION**

This paper studies competitiveness of Electronic Money Institutions. The field of Electronic Money Institutions that provide digital banking services is quite young in the market and it seems to be another stage of banking industry that is mainly driven by innovations to provide cheaper and faster service to the population. It is important to develop new innovative solutions as it gives an advantage to states competing in the global area. In the European Union the competition of Electronic Money Institution is in a high level. Competitiveness is not based in one factor. This paper is focused on the main factors that influence competitiveness of Electronic Money Institutions. The fact that the field is quite complex and insufficiently studied makes it important to research it.

## **ABBREVIATIONS AND ACRONYMS**

EU - European Union;

EMI - Electronic Money Institution;

PI - Payment Institution;

EEA - European Economic Area;

EBA – European Banking Authority;

SEPA - Single European Payment Area;

CHAPS - Clearing House Automated Payment System;

SWIFT – the Society for Worldwide Interbank Financial Telecommunication

EUR - Euro (currency);

GBP - Great British Pound;

USD - U.S. Dollar

MLRO - Money Laundering Responsible Officer;

UBO - Ultimate Beneficial Owner;

AML - Anti-Money Laundering;

CFT - Countering the Financing of Terrorism;

ECB - European Central Bank;

ATM - Automated teller machine;

API - Application programming interface

IT - Informational technology

IBAN - International bank account number

Fintech - Financial Technologies

## INTRODUCTION

The introduction of the achievements of scientific and technological progress in the financial sector contributed to the development of means of payment and settlement: a consequence of the improvement of computational and information technologies was the emergence of a new financial and settlement instrument - electronic money, the peculiarity of which is the possibility of existence in both centralized and decentralized systems.

The specific features and properties of electronic money, as well as the large-scale nature of their development and distribution in the daily life of society, have attracted the attention of not only potential users, but also regulatory organizations. At present, the increased interest in improving the procedures for their circulation is explained by the successful functioning of electronic money and virtual currency schemes. The first is explained by the increasing demand of technological delivery of financial services to end-users, especially for millennials and the latter is explained by mistrust and decrease the reliability of monetary systems after the financial crisis of 2008.

In modern financial science there is some representation and understandable concept of electronic money, however, one can be confused on the interpretation of the concept of electronic money. To clarify the exact concept that is used in this paper, comparison of centralised and decentralised electronic money schemes is provided in the first, theoretical part of the research.

Electronic money market is becoming highly competitive as production costs with variable costs are lower than for other payment instruments with less time-to-value which attracts the investors. The number of players is increasing in the market that allows to look at the most important factors of competitiveness in this market. In this regard, the formation of a theory and the development of practical analysis of competition in a new high-tech non-cash payment instrument market based on a synthesis of financial, legal and informational components are the priority areas of research, which is associated with the special public importance of new technologies that accelerate settlements and payments and, accordingly, minimize time and cost barriers to economic growth.

The theoretical and methodological basis of the thesis research was the scientific works and applied works of many scientists and specialists in the field of competitiveness, electronic money and payment systems; legislation; provisions, instructions and other regulatory documents governing the field of electronic money.

During processing and analysis of the accumulated data, a set of methods of economic research was used, combined by a systematic approach to studying the problem. At different stages of the work, the following were applied: formal logic; systems approach; methods of historical, statistical and comparative analysis; chronological approach and graphical interpretation techniques; economic-statistical and economic-mathematical methods; method of systematization, classification and expert evaluations; modeling; empirical research.

The informational and empirical basis of the thesis was the laws of the EU, legal acts; statistical and information-analytical materials of the European Central Bank, Bank for International Settlements; scientific and educational publications of foreign scientists; information and reference sources; statistics published in official publications; articles of periodicals on the topic of the thesis; Internet resources; results of an empirical research.

The purpose of the thesis is to research the theoretical principles of competition and electronic money and practically define the factors influencing competitiveness in the electronic money market.

Achieving this goal required the following tasks:

1) conduct a theoretical analysis of the concept of competition, competitiveness and competitive advantage;

2) conduct a comprehensive analysis of various approaches to the interpretation of electronic money, determining their functions in comparison with the functions of traditional money;

3) explore the essence and principles of main operating centralized systems of electronic money and revealing their advantages and disadvantages;

4) analyze the practice of using electronic money in the EU and the reasons of demand to define the factors of competitiveness in electronic money industry;

The 1st Chapter of the paper includes the theory of competition, competitiveness and competitive advantage as well as the concept of electronic money, diffusion of innovation and factors of competitiveness of Electronic Money Institutions are defined.

The 2nd Chapter includes analytical research of Electronic Money Institutions in European Union, cashless market of the EU and regulations of EU EMIs.

The 3rd Chapter includes empirical research with experts to define the most important factor influencing the competitiveness of Electronic Money Institutions in the European

Union and public survey to define the most influential factor from customers' side. Results of both interviews and survey will be analyzed.

**Hypothesis:** Price is the most significant factor that influences competitiveness of Electronic Money Institutions in European Union.

**Methodology:** Empirical research will be used to prove or disprove the hypothesis as expert interviews and public questionnaire will let us know which factor will be the most important.

**Keywords:** Competitiveness, Electronic Money Institutions, digital banking, electronic money

# 1. COMPETITION AND COMPETITIVENESS

The term competition comes from the Latin "comptere", which is translated as to be equal and compete. The essence of this concept lies in the struggle of producers for the most profitable sectors of capital application, in the search for markets for turnkey products and sources of raw materials.<sup>1</sup>

Nowadays, one can notice how much competition has intensified in all markets of the world. But not long ago, it was almost nonexistent in most countries and industries. Many countries adhered to protectionism policies. National markets were protected, and dominant positions were clearly defined. But even if there was a competition, it was not as fierce as it is today.

The development of competition, in particular, was constrained by the direct intervention of governments and cartels. This phenomenon is not new, but the variety of manifestations requires constant study, including an assessment of dynamics or intensity. Now, with the development of globalization, the market has become easier to enter, the customers are easier to achieve, and all the companies are facing competition. Every economic subject is trying to choose a strategy for achieving success in the market that will help it cope with a variety of forms and methods of competition. And the market of electronic payments is not an exception as with the development of globalization and technological development with support from regulatory changes, the competition of financial and non-financial institutions has got the international level. The revolution of the internet now let the companies to enter foreign markets with much decreased costs that increases the number of players in an international level in the market.

## 1.1. The evolution of the theory of competition and competitiveness

The most holistic theories about the driving forces of competition were formulated only in the middle of the 18th century by scholars of the classical political economy, who considered competition as a matter of course, permeating all branches of the economy and limited only by subjective reasons. The English economist, philosopher, an outstanding representative of the classical school in economic theory, Adam Smith, in his study "The Study of the Nature and Cause of the Wealth of Nations", conducted an analysis of

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<sup>1</sup> Vid'yapina V.I, Dobrynina A.I, Zhuravleva G.P., Tarasevich L.S., Экономическая теория: Учебник, ИИФРА-М, 2015, p. 271

competition. In the framework of classical economic theory, competition is regarded as an integral element of the market mechanism<sup>2</sup>.

A. Smith claimed that competition is a behavioral category when individual sellers and buyers compete in the market for more profitable sales and purchases, respectively. Competition is the “invisible hand” of the market that coordinates the activities of its participants. The competition is most developed under conditions of capitalist production. The purpose of competition is the struggle to get the greatest possible profit.

The work of A. Smith's theory of competition is that for the first time:

1) formulated the concept of competition as rivalry, increasing prices while reducing supply and decreasing prices with excess supply;

2) designated the main principle of competition - the principle of the "invisible hand", according to which, "pulling" behind the puppets of entrepreneurs, the "hand" forces them to act in accordance with a certain "ideal" plan for the development of the economy, ruthlessly crowds out firms engaged in the production of products unnecessary to the market;

3) theoretically developed a very subtle and flexible mechanism of competition, which objectively balances the sectoral rate of return, leads to an optimal distribution of resources between sectors. The subtlety of the competition mechanism lies in the fact that, with a decrease in demand for goods, the companies that produce low-quality or excessively expensive products experience the greatest difficulties. The flexibility of the competition mechanism is manifested in its instant reaction to any changes in the environment. Mobile firms quickly adapt to that environment;

4) determined the basic conditions for effective competition, including the presence of a large number of sellers and buyers, comprehensive information, mobility of the resources used, the inability of each seller to significantly affect the change in the market price of the goods (while maintaining its quality or quality of service);

5) developed a model for enhancing and developing competition, proved that in the conditions of market relations the maximum satisfaction of consumers' needs and the best use of resources on the scale of society as a whole is possible.<sup>3</sup>

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<sup>2</sup> A. Smith, An inquiry into the Nature and Causes of the Wealth of Nations, *MetaLibri*, 2007, p.48

<sup>3</sup> Fathutdinov R.A., Стратегический маркетинг: Учебник Р.А. Фатхутдинов, ЗАО “Бизнес-школа, Интел-Синтез”, 2000, p.158

A certain contribution to the development of the theory of competition of Adam Smith was made by: D. Ricardo, J. S. Mill, J. Robinson, J. Schumpeter, P. Heine, F. Knight, K.R. McConnell, M. Porter, etc.

McConnell K.R. believe that competition is the presence on the market of a large number of independent buyers and sellers, the opportunity for buyers and sellers to freely enter the market and leave it<sup>4</sup>.

The outstanding Austrian economist, creator of the evolutionary theory of economic development, synthesizing the equilibrium and non-equilibrium methods of analyzing the market economy, J. Schumpeter defined competition as the rivalry of the old with the new, with innovation<sup>5</sup>. If we take a look on electronic payments market that what currently begin to take place.

Austrian scientist, economist and sociologist, the most prominent representative of neoliberalism F.A. Hayek noted that competition is the process by which people receive and transmit knowledge. According to him, in the market only due to competition, the hidden becomes apparent. Competition leads to better use of abilities and knowledge. Most of the achieved human benefits are obtained precisely through competition.<sup>6</sup>

In his book “Competitive advantage of nations”, M. Porter notes that competition is a dynamic and evolving process, a constantly changing landscape, on which new products, new ways of marketing, new production processes and new market segments appear<sup>7</sup>.

Today, the concept of competition in the economic sphere is interpreted as a competition between economic entities, which consists in the struggle for markets of goods and services to obtain higher profits and other incomes. This phenomenon is rightfully considered one of the most effective mechanisms for regulating a market economy, as well as a civilized and legalized form of struggle for the existence and functioning of certain entities and corporations.

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<sup>4</sup> **McConnell K.R., Brue S.L.**, Economics in 2 volumes (Vol. 1 Economics: Principles, Problems and Policies), *Infra-M*, 2008

<sup>5</sup> **Schumpeter J.**, The Theory of Economic Development. An inquiry into Profits, Capital, Credit, Interest, and the Business Cycle, *Transaction Publishers*, New Brunswick (U.S.A) and London (U.K.), 1983, pp. 11-12

<sup>6</sup> **Hayek F. A.**, Competition as a discovery procedure, translated by MARCELLUS S. SNOW, *THE QUARTERLY JOURNAL OF AUSTRIAN ECONOMICS VOL. 5*, 2002, p.9-15

<sup>7</sup> **M. Porter.**, Competitive advantage of nations, *THE FREE PRESS*, 1985, p. 20

**Table 1.2.1.**

**Evolution of theories on competitive advantage**

<b>Theories</b>	<b>Authors</b>	<b>Factors</b>
Absolute advantage	Adam Smith	Natural resources (including climatic conditions)
Opportunity cost	David Ricardo John Stuart Mill	Natural resources, production costs
Comparative advantage	Eli Heckscher Bertil Ohlin Peter Samuelson	Whole population production factors
Competitive advantage	Michael Porter	Whole population factors of economic relations

Source: Author’s illustration based on qualitative research

Research of the evolution of competitive advantage assists us in making the following conclusions: absolute advantage is the first step in the evolution of competitive advantage. New technical discoveries, especially the advent of the steam engine and the industrial revolution, led to the emergence of the theory of opportunity cost; the development of industrial relations and the first fruits of scientific and technological progress contributed to the emergence of theory of comparative advantages and, as a result, developed competitive relations against the backdrop of the scientific and technological progress of society, the advent of electronic technology and high technologies have contributed to the transformation of all previous theories into the concept of competitive advantage of M. Porter. Analysis of the study allows us to conclude that each of these theories supplement the previous one with factors that depended on the country's ability to participate in the international sharing. The theory of competitive advantage, in turn, has expanded factorial relationship with competitive relations taking shape both within a single country and in the global economy as a whole. As it seems to be the correct way of researching the competitiveness as, for instance, government role was not taken into consideration in classical school of economy as scholars

## 1.2. Types of competition

Competition in a market economy plays a major role. It is the engine of economic progress. This is justified, first of all, by the fact that competition in the market is only successful when the entrepreneur not only strives to maintain his production, but also expand it. For that reason, he will improve the technique and organization, increase the quality of goods, reduce the cost of producing a unit of production and thereby have the opportunity to reduce prices, expand the range of goods, improve trade and post-trade customer service<sup>8</sup>.

In economic science, there are several types of competition. Their classification depends on various characteristics, for example, the scale of development or its nature etc.

Depending on following the rules of equilibrium in the market, competition is perfect and imperfect.

Perfect competition is such a state of the economic system in which the influence of each participant in the economic process on the overall situation is so insignificant that it can be neglected. This type is characterized by the ability for buyers and sellers to freely enter and quit the market. In this case, the price of the goods is determined in accordance with market laws, based on supply and demand<sup>9</sup>.

One of the main requirements for perfect competition, as was emphasized above, is the absence of entry and exit barriers in a particular industry, such as:

- state monopoly;
- illegal activities (production and sale of products);
- restriction or prohibition of access to resources necessary for the production of goods, etc.

As for the imperfect type of competition, it is based on the violation of the prerequisites of competitive equilibrium. Today, this type is common in all global markets.

In the economic sphere, there are several main forms of imperfect competition:

- Oligopoly;
- Monopoly;
- Monopolistic competition.

The main methods that are often used in conditions of imperfect competition:

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<sup>8</sup> **Bogomolova I.P., Hohlov E.V.**, Анализ формирования категории конкурентоспособности как фактора рыночного превосходства экономических объектов, 2014, p.230

<sup>9</sup> **Yasin E.G.**, Конкурентоспособность и модернизация экономики, *ИД ГУ ВШЭ*, 2014, p.477

- dumping;
- erection of entry barriers to the goods market;
- price discrimination (sale of the same product for different prices);
- disclosure of confidential information;
- use of false information about the product;
- concealment of important consumer information

The main problems in a market with imperfect competition:

- 1) price increases;
- 2) rising production costs;
- 3) stagnation of scientific and technical progress;
- 4) a decrease in competitiveness in world markets;
- 5) a drop in the efficiency of the economy.

Also, by the nature of development, competition is divided into price and non-price. The basis of price competition is the use of prices to crowd out rivals. It arises, first of all, by artificially knocking down the prices of these products. In this case, price discrimination is most often used, this mainly happens when this product sold at different prices and these price differences are not justified by differences in costs.<sup>10</sup>

This type of competition is often used in the service sector, for example, in the provision of transportation services; when selling goods that cannot be redistributed from one market to another (transportation of perishable products from one market to another).

Competition without price manipulation is non-price competition. It is, first of all, carried out by improving the quality of products, production technology, innovation and nanotechnology, patenting and the conditions for its sale.

Non-price competition through the sale of products is called competition in terms of sales. This type of competition is based on improving customer service. This includes consumer impact through advertising, customer service.

### **1.3. Competitiveness, competitive advantage**

In economic theory, there is as yet no single concept of competitiveness, which can show its whole multifaceted nature as an economic category. Presently, there are many definitions of this concept. One of the most common interpretations was given by the

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<sup>10</sup> Filosofova T.G., Bykov V.A., Конкуренция и конкурентоспособность, *Unity*, 2015, p.271

outstanding American economist Michael Porter. He stated that competitiveness is a property of a product, service, subject of market relations to act on the market on a par with similar goods, services or competing subjects of market relations<sup>11</sup>.

In modern economic theory, the concept of "competitiveness" is used for categories of various levels, which include the competitiveness of goods, industries, enterprises and, of course, the country. In order to have a visual representation of the interdependence of levels, there is a scheme called the "pyramid of competitiveness"<sup>12</sup>.

**Figure 1.3.1.**



Source: Filosofova T.G., Bykov V.A.

Looking at the hierarchy of the presented concept, we can see that the country's competitiveness is in the first place. It represents the country's ability to produce goods and services that meet the requirements of international markets and create conditions for increasing government resources at a pace to ensure stable growth in GDP and quality of life.

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<sup>11</sup> **Fathutdinov R.A.**, Стратегический маркетинг: Учебник Р.А. Фатхутдинов, ЗАО "Бизнес-школа, Интел-Синтез", 2000, p.539

<sup>12</sup> **Filosofova T.G., Bykov V.A.**, Конкуренция. Инновации. Конкурентоспособность, Юнити-Дана, 2007, p.58-59

The second place is taken by the competitiveness of the region. It includes region's ability to produce goods and services that meet the requirements of national and international markets, create conditions for increasing regional resources (innovative, intellectual, investment) to ensure growth of potential competitiveness of households and the quality of life of the region in the international arena.

Third place is the competitiveness of the industry. It is the ability of industry to produce goods and services that meet the requirements of the global and domestic markets. Also, to create conditions for increasing the competitiveness potential of the entities of industry. This level of competitiveness should be taken into consideration as currently there is a rivalry between banks and electronic money institutions on getting the customers' funds and controlling the future of banking.

Following is the organization's competitiveness - the ability to meet the needs of consumers through optimized production than that of competitors, the use of production and management resources for the development and expansion of markets and to increase the market value of the company. This level is in the focus, as we analyze the organizations which are Electronic Money Institutions.

And the last competitiveness of the product is the ability of the product to be attractive to the buyer, in comparison with other products of that type and of the same consumption, due to better compliance with the requirements, quality and cost effectiveness, market and consumer assessments.<sup>13</sup>

Competitiveness is a universal measure that can be used in many areas of life. As previously mentioned, yet inherently, it remains an economic concept, and the most correct is its application specifically to economic facilities. The competitiveness is determined by the presence of its competitive advantages - internal characteristics (including dynamic abilities) or environmental factors that provide superiority over competitors in a particular market in the considered period of time.<sup>14</sup> At present, a common concept in the theory of competitive advantages has not yet developed. At the distinguished evolutionary stages of its formation, various factors of competitive advantages were determined, which was due to the changing socio-economic conditions for the development of society.

Competitive advantages M. Porter subdivides according to the nature of the factors that provide them: the quality of goods and costs. A source of competitive advantage based

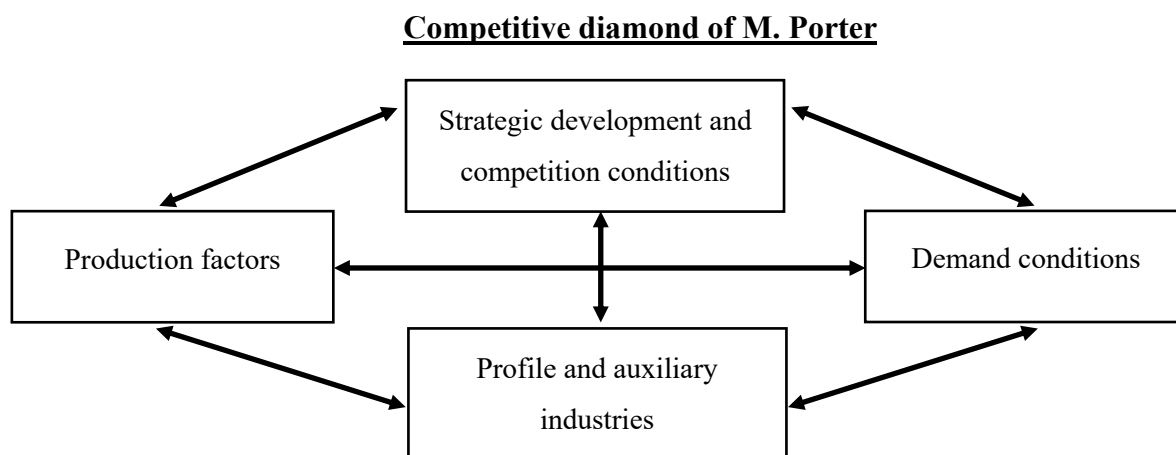
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<sup>13</sup> **Hasbulatov R.I.**, *Мировая экономика: Учебник для бакалавров, ЮРАЙТ*, 2015, p.884

<sup>14</sup> **Savelyev N.A.**, *Управление конкурентоспособностью фирмы, Феникс*, 2009, p.28

on quality, are unique consumer product features that enhance its value to the buyer. This competitive advantage has external character, as it allows you to set a higher price on the product than from competitors. Cost-based (internal) competitive advantage is the result of increased labor productivity and high effectiveness of the enterprise.<sup>15</sup>

**Figure 1.3.2.**



Source: M. Porter, *International competitiveness: The competitive advantage of nations*

The essence of the well-known methodological approach of Porter, the so-called competitive diamond, is to identify the four fundamental systems of factors that determine the competitiveness of the economy, and the subsequent study of the mutual influence of these systems on competitiveness.

Four systems of factors (each individually and collectively as a system) create an environment in which firms of each country are established and operate. “Competitive diamond” is a system of factors of competitive advantages, the components of which are mutually reinforcing. The first system of factors is national conditions, or rather, production factors necessary for the activities of firms in any industry, which are divided into the following groups: human resources (quantity, qualifications, labor costs, including management); physical resources (quantity, quality, availability and value of land, water, minerals, forest resources, energy sources and other natural conditions); knowledge resource (the sum of scientific, technical and market information affecting goods and services); financial resources (the amount and cost of capital that can be used to finance industry), as well as infrastructure (its type, quality and usage fees that affect the nature of competition).

<sup>15</sup> **M. Porter**, *Competitive advantage*, *THE FREE PRESS*, New York, 1985, Ch.1, pp. 11-15

The second system of factors is the demand conditions, i.e., determining what demand for products or services offered by this industry is in the domestic market. The most important manifestation of the effect of demand on competitive advantage is the correlation and nature of the needs of domestic buyers. In addition, influencing the economies of scale, domestic demand determines the nature and speed of innovation by enterprises. As a result, countries are gaining competitive advantages in those sectors and segments where domestic demand provides insight into the needs of buyers of local enterprises earlier and more accurately than for foreign competitors.

The third system of factors is the presence or absence, as well as the level of development in the country of competitive industries in the world market. Availability of competitive supplier industries in the country creates a range of benefits for industries that should be supported. In particular, supplier industries provide efficient and quick access to the most expensive resources, allows coordination of suppliers in the domestic market, increases activity in innovation processes and contributes to the growth of labor productivity.

The fourth factor system is the strategy of national enterprises, their structure and competitors, as well as the conditions in the country that determine the nature of competition in the domestic market.

Those countries have the greatest chance of success, industries or segments of which have the most favourable national "competitive rhombus". Analysis of the conditions for the development of a "competitive rhombus" in various countries led M. Porter to distinguish four stages corresponding to four main driving forces, or incentives that determine the development of national economies in a certain period of time, which are the factors of production, investment, innovation and wealth<sup>16</sup>.

In the first three stages of development of competitiveness of the national economy is strengthening and complicating competitive advantages of the economy, the fourth stage indicates a gradual slowdown in growth and recession, which may be long enough until some new shock will not "push" the economy out of it.

All stages are characterized by different levels of development and condition of individual factors and various values of competitiveness indicators. At the first stage of development of competitiveness, based on factors of production - the latter are a decisive force, with the help of which all national industries achieve their global advantages market (for example, cheap labor, natural resources, favorable agricultural climate, etc.).

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<sup>16</sup> **M. Porter**, Competitive advantage, *THE FREE PRESS*, New York, 1985, pp. 71-100

At the second stage of development of competitive advantages - on the basis of investment - the decisive moment is the opportunity and desire to invest in the development of the economy.

The third stage of development of competitiveness - on the basis of innovation - is characterized in that national enterprises not only apply and improve foreign ones, but also create new equipment and technology. Price competition is based on high productivity achieved through staff qualification development and advanced technology.

The fourth stage of competitiveness - on the basis of wealth - is final, and here the gradual loss of competitive advantage by the national economy occurs.

#### **1.4. Competitive advantage obtainment**

Several important parametric characteristics are distinguished in the economic literature. In particular, all competitive advantages are divided into two groups: low-order advantages and high order advantages. Low order advantages associated with usability cheap sources: labor, materials (raw materials), energy. Low order of these competitive advantages is due to the fact that they are very unstable and can easily be lost either due to price increases and wages, or because these cheap manufacturing resources can be used by competitors in the same way. In other words, low order advantages are low resilience benefits, unable to provide an advantage over competitors for a long time. High order advantages are unique products, unique technology, optimal marketing structure, organization production, good reputation of the company.<sup>17</sup> If competitive advantage achieved the launch of unique products based on own design and some technological achievements, then to destroy such advantages competitors will either have to develop similar products or come up with something better.

Competitive advantages can be real and potential. Real competitive advantages should be understood as factors of internal and external environment of the subject, by which he already surpasses competitors. Potential competitive advantage - factors of internal and external environment of the subject, in which he can surpass competitors in the near or longer term when performing certain conditions.

All the variety of competitive advantages can be divided by main types:

- resource (non-technological), which are based on factors production and the degree of effectiveness of their use;

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<sup>17</sup> F. Romano, Clinton and Blair. The political economy of the Third Way, *Routledge*, 2006, pp. 24-25

- technical and technological, based on the achievements of scientific and technological progress;
- organizational, which are the ability of management to mobilize the development factors of the business entity and provide effective management.

In terms of banking field as in any other field there are several ways to obtain a competitive advantage. It can be achieved by the excellent customer service, high quality of products provided, lower costs that allow to offer lower prices for customers and gain profits. It is very important for the customers to receive the value that they are expecting. Admirable value for the customers can be created with the help of lower costs or, for instance, high quality product that will serve for a long and worth to pay for.<sup>18</sup> Geographical location being a lower order type of competitive advantage than, for instance, innovation and technological factor or the effectiveness of management decision gives comparative advantage at the level of regulations which is of a high importance in the financial field as all of the solutions can be provided from anywhere, especially, when considering the electronic money, as more and more people around the globe are getting an access to electronic devices and the internet.

### 1.5. Basic principles of electronic money

Electronic Money is a modern payment instrument that was established in the 21st century. In September 2000 the first EMI directive was accepted and all of the member states were obliged to introduce the instrument at a regulatory level.<sup>19</sup> E-money was prophesied to replace the cash and to create a competition for credit institutions as banks and, of course, one of the main purposes of EMI directive was the assistance for innovations development in the financial services field in Europe.

Electronic money is an ambiguous and evolving term used in many meanings related to the use of computer networks and stored value systems for transferring and storing money. In the European Union, electronic money is considered the issuer's monetary obligations in electronic form, which are on electronic media at the user's disposal. Such monetary obligations meet the following three criteria:<sup>20</sup>

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<sup>18</sup> **Arthur A., Thompson Jr.**, Economics of the Firm, *Englewood Cliffs*, 1993, p. 426

<sup>19</sup> **Malte Krueger**, The Case of E-Money Regulation in the EU, Background Paper No. 5, *Electronic Payment Systems Observatory (ePSO)*, January 2002, p. 1

<sup>20</sup> Directive 2000/46/EC of the European Parliament and of the Council of 18 September 2000. Available at: <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32000L0046:EN:HTML>

- stored on an electronic device;
- issued on receipt of funds of an amount not less in value than the monetary value issued;
- accepted as means of payment by undertakings other than the issuer.

According to ECB e-money can be two types: hardware based and software based.<sup>21</sup> Hardware based electronic money is a value stored in personal electronic device. It is usually made for one-time small payments (e.g. parking cards, small chips, gift cards etc.). In such case the accepting parties are very limited and payments can be received offline, meaning without the necessity of ‘real-time connectivity to a remote server’. Software based electronic money is stored in a central server which requires online connection to make the transactions. So, the issuer of electronic money is a server. The user has access to his account through personal devices with internet connection. E-wallet systems can be viewed as examples here. Both types of e-money services can be offered by non-banking institutions.

But, as mentioned, electronic money is discussed in this paper, not virtual currencies. As virtual currencies can have some of the criteria above, there are significant differences between virtual currencies and electronic money.

First of all, electronic money is equal by the amount and currencies to real money like the U.S. Dollars, Euros etc. Virtual currencies in turn have virtual currency in exchange for fiat like Bitcoin, Litecoin etc. Secondly, electronic money schemes are regulated by central trusted authority, unlike virtual currency schemes where all regulations are on the side of the issuer, which is usually even a non-financial institution. That is the reason why virtual currencies have less liquidity and more volatility as there is a mistrust among the society for them.

Brief comparison of those two schemes is shown in the table below:

**Table 1.3.1.**

**Differences between electronic money schemes and virtual currency schemes**<sup>22</sup>

	<b>Electronic money schemes</b>	<b>Virtual currency schemes</b>
<b>Money format</b>	Digital	Digital
<b>Unit of account</b>	Traditional currency (EUR, USD, GBP etc.)	Invented currency (Bitcoin, Litecoin etc.)

<sup>21</sup> ECB, Electronic Money. Available at:

[https://www.ecb.europa.eu/stats/money\\_credit\\_banking/electronic\\_money/html/index.en.html](https://www.ecb.europa.eu/stats/money_credit_banking/electronic_money/html/index.en.html)

<sup>22</sup> ECB, Virtual currency schemes, October 2012, p.16

<b>Acceptance</b>	By undertakings other than the issuer	Usually within a specific virtual community
<b>Legal status</b>	Regulated	Unregulated
<b>Issuer</b>	Legally established electronic money institution	Non-financial private company
<b>Supply of money</b>	Fixed	Not fixed (depend on issuer)
<b>Possibility of redeeming funds</b>	Guaranteed	Not guaranteed
<b>Supervision</b>	Yes	No
<b>Type(s) of risk</b>	Operational	Legal, credit, liquidity and operational

Source: ECB

Electronic money schemes are a part of monetary policy as it affects the money circulation in the economy. Currently, the impact is significant. But in future, it can be changed. If we are looking at the electronic money as something that can replace cash and banknotes, it is very important to have a regulatory framework to maintain money supply and price stability in the economy. Thus, the monetary policy and central bank regulations should include the control on electronic money from financial and non-financial institutions and the link between electronic money and central bank money should be created to include the issuance into the central bank's balance sheet, so electronic money will be among the monetary aggregates. Creating a direct link, central banks reduce risks of the detrimental effect of electronic money. That is why, currently, ECB limits the issuance of electronic money and gives the rights to some credit institutions and EMIs (Electronic Money Institutions)<sup>23</sup>.

Electronic Money Institutions - any legal entity that has been granted authorization to issue electronic money,<sup>24</sup> regulatory principles of which will be studied in the second part of this paper.

In terms of comparison to credit institutions like banks, electronic money institutions have the following characteristics:

<sup>23</sup> ECB, Issues arising from the emergence of electronic money, Monthly Bulletin, November 2000

<sup>24</sup> Directive 2009/110/EC of the European Parliament and of the Council of 16 September 2009

Lower transaction costs. The reason is absence of cash collection points and ATM support costs. Cash-in-transit services plus costs for branches for cash collection (including rent, equipment, employees' salaries etc.) increases the costs of services for other payment instruments. Additionally, lower transaction costs can be caused by less amount of data exchanged in comparison with other payment instruments;

Higher fixed costs. Electronic money is highly connected with the newest technologies. As a result of regular updates in terms of usage of the modern IT with the latest technological innovations, that has pretty high costs for implementation.

E-money has no value if not used for transactions. As e-money cannot be used for the banking deposits while other payment instruments can be taken as a deposit.

E-money can potentially substitute cash circulation. Still the impact is very low but in the near future it is forecasted that e-money will have more value in terms of usage and range of services provided by e-money institutions.<sup>25</sup>

The principles of e-money operation are shown below:

Usually there are three parties in the process of delivering e-money service to the customers:

- Bank;
- E-money issuer (Electronic Money Institution);
- User.

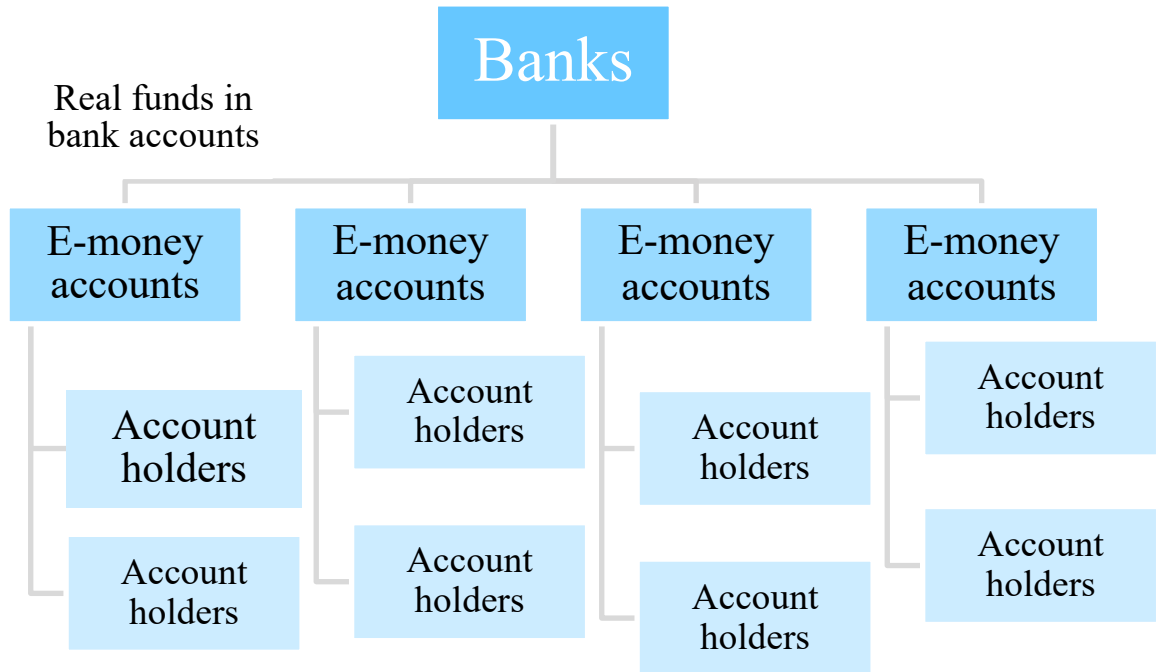
Bank can be an issuer by itself if it is providing e-money services to its customers. In this case users can top up an account by transferring the funds from other bank accounts of themselves, receiving the payment from the third parties or by making the cash deposits in ATMs or bank branches.

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<sup>25</sup> **Neda Popovska-Kamnar**, The use of electronic money and its impact on monetary policy, *Journal of Contemporary Economic and Business Issues*, 2014, p. 81

Figure 1.3.1.

Bank directly issuing electronic money<sup>26</sup>



Source: B. Dyson, G. Hodgson, Digital Cash

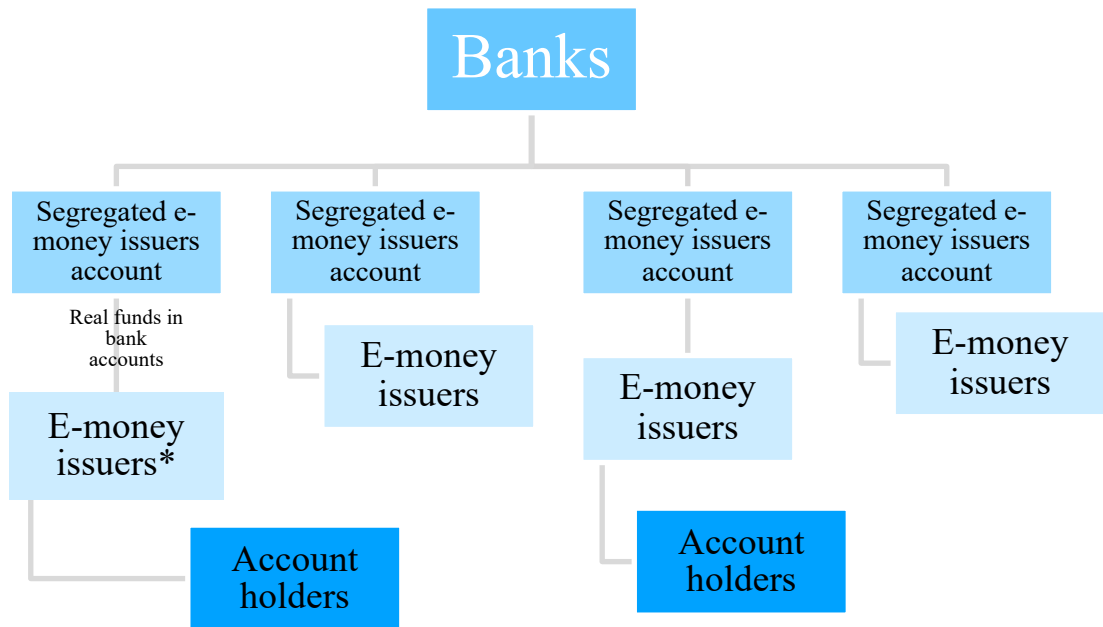
In the second case, users transfer the funds to the bank account (usually it is a pool account of EMI in the bank where this EMI holds clients' funds account) in several ways depending on what is offered to the customers - bank transfer or with help of credit or debit cards. After receiving the funds to the bank account, it is an obligation of EMIs to add the exact amount transferred (with taking all of the commissions agreed with the user for topping up an account) to the account of the user in the e-wallet system of EMI.

The effectiveness of funds circulation depends on partnership portfolio of Electronic Money Institution. It is highly important to have productive web of corresponded bank accounts to move the funds in fastest way possible. That is why technological development is also very important, because IT is responsible for speed of information exchange in the system and between the partners of the entity. It gives the possibility to for fast reaction on clients' order.

<sup>26</sup> B. Dyson, G. Hodgson, Digital Cash. Why Central Banks Should Start Issuing Electronic Money, *Positive Money*, 2016, p. 16

Figure 1.3.2.

Electronic Money Institution operations scheme<sup>27</sup>



Source: B. Dyson, G. Hodgson, Digital Cash

\* Electronic Money Institutions that are studied in the paper are E-money issuers in Fig. 1.3.2.

The process described above shows no usage of cash as most of Electronic Money Institutions do not provide any cash services. Only the biggest players in the market that offer pre-paid debit cards for the clients (e.g. Revolut, Monese etc.) can provide cash services. Even in that case, we can see that those companies provide only cash-out services, no cash-in in the process. That is one of the main features of electronic money - to decrease the cash volume in global capital flow and finally, completely remove the cash circulation. But for now, the use of electronic money is still at a low level as it is a black hole for the majority of the population. There could be many factors influencing the slow development of e-money in the economy. One says that there is no demand for electronic money<sup>28</sup>. The

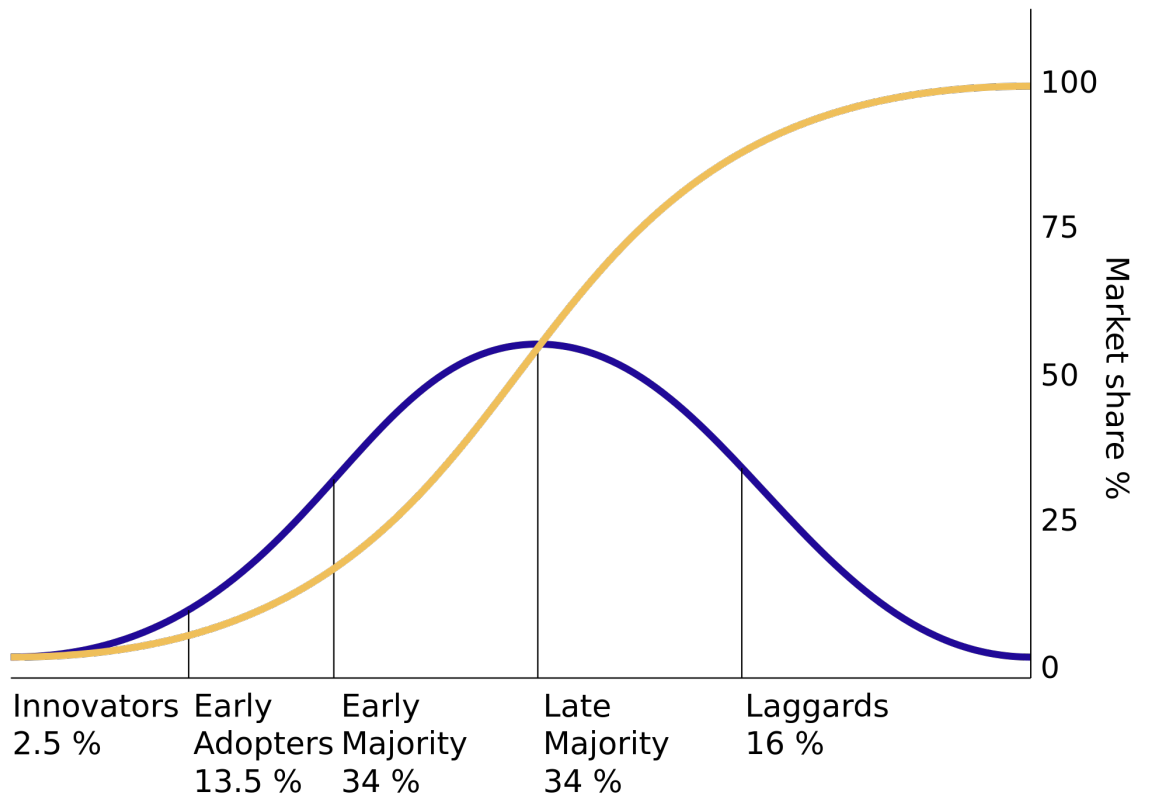
<sup>27</sup> B. Dyson, G. Hodgson, Digital Cash. Why Central Banks Should Start Issuing Electronic Money, *Positive Money*, 2016, p. 17-18

<sup>28</sup> Malte Krueger, The Case of E-Money Regulation in the EU, Background Paper No. 5, *Electronic Payment Systems Observatory (ePSO)*, January 2002, p. 2

others state that there are no strict regulations of electronic money. I believe all reasons can be written under one - it is a very first stage of diffusion innovation<sup>29</sup>.

Figure 1.3.3.

**Diffusion of innovation**



Source: Everett M. Rogers, Diffusion of innovations

In the Fig. 1.3.3. the blue line shows the curve of customers of innovation grouped into the five types of innovators according to the theory of Rogers:

<sup>29</sup> Everett M. Rogers, Diffusion of innovations, 5th edition, August 2003, p.11

**Table 1.3.2.**

**Categories of diffusion of innovation**<sup>30</sup>

<b>Adopter category</b>	<b>Definition</b>
Innovators	Innovators are those who have high financial liquidity that gives a possibility to take more risks. A network and close relationships with other innovators and scientific sources they are ready to test discoveries and implement technologies that can face failing.
Early adopters	Have the highest opinion leadership in comparison to other adopter categories. They are well-educated, have high social status, but more careful with their investments in innovations than innovators. Because of that careful evaluation they have a ‘central communication position’. As leaders, they can impact the innovation either positively or negatively.
Early Majority	It takes much more time for them to adopt an innovation than for innovators and early adopters. They are average in opinion leadership and social status but they adopt innovation earlier than the average person. In the case of the early majority category, they are even more careful in evaluations, so they have to be sure that innovation works.
Late Majority	Very skeptical for any changes and start using innovative products following opinion leaders and being afraid to ‘miss it out’. They usually have below than average social status and little financial liquidity with little opinion leadership.
Laggards	That is the group very hardly transitioning to innovations as very focused on traditions. Usually, they are the oldest among the groups, have little social status, little financial liquidity and no opinion leadership. They are in contact with family and close friends only and believe only those recommendations.

Source: Everett M. Rogers, Diffusion of innovations

<sup>30</sup> Everett M. Rogers, Diffusion of innovations, 1st edition, 1962, p.282-284

The reason why electronic money institutions are getting more and more implemented and popular among users is that they have consumer-centric approaches, providing cheap and innovative products to their clients.

## **1.6. Factors in Electronic Money Institutions market**

From theoretical analysis we can define the main factors that are important to grow the revenue and add the marketplace for Electronic Money Institutions, meaning that in the next two parts the analysis of organizations has been analyzed, so we will focus on competitiveness of organization touching the competitiveness of industry if we evaluate the analysis through the pyramid of competitiveness given above. First of all, as electronic money is closely related to the IT environment, we can conclude that technological factor is a significant one. In case of lack of technology, the organization is at risk to be behind the competitors equally to the lack of productivity.

**Technological development.** Development of modern information technologies systems is very challenging but highly beneficial for the entities, especially in the dynamic, high speed changing environment that the economies are experiencing nowadays. Technologies go in a mix with innovations and it is highly important for organizations to change the operational processes and the services provided.

And this relates to the financial sphere too. Nowadays, in a very high-tech environment, customers expect more comfortable channels and methods to make payments with digital cash. With more and more people having access to mobile phones, the market of new generation users is increasing, creating very good perspectives for technologically developed entities to have their interest. And finally, when we are talking about electronic money, we are focused on the fintech industry and technology plays a huge role in gaining the market share.

Based on the neo-technological trade theories, one can conclude that technology has an impact on competitiveness in the market. Analyzing factors that have an influence on export, authors like Gruber, Sveikauskas, Hughes, Kaldor defined that R&D and innovations are important factors in the U.S. and British export performances. Lately, Lundberg and Engelbrecht came to the same results on R&D and innovations play an important role on trade evidence even in not high-tech developed countries<sup>31</sup>.

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<sup>31</sup> **J. Fagerberg**, 'Technology and competitiveness', *Oxford Review of Economic Policy Vol. 12, No. 3*, INTERNATIONAL COMPETITIVENESS, Autumn 1996, pp. 39-51

**Price.** Being one of the elements of the main 4 Ps of marketing mix, pricing factor is a very important one for each business to be competitive. Companies should be careful with pricing policies as too low pricing can be fatal for the company in the long-term if the company is selling for lower price than production costs. In the opposite way, if the company does sell the goods objectively way too higher than production costs that the competition will be taken by more realistic suppliers with sell prices closer to production costs, around market equilibrium. Basically, it is very important to have the correct strategy depending on the target audience of the product sold, for example, depending on demand elasticity as for some segments price can play a very small role, while for another one, price will be the most crucial factor.

The importance of the price can be viewed from two perspectives - from buyer and seller perspective. From buyer's side the price:

- represents the value of the product or service;
- is the cost that buyer pays for product or service;
- represents the quality of goods or services or even certain supplier;
- impacted by purchasing power.

From seller's side the price:

- represents costs made by the seller;
- represents the income generated by the sale of the product or service;
- represents the profit in short term and long-term time frames;
- represents the ability to adapt to the market's requests<sup>32</sup>.

Price is one of the core factors that influences the relationships of buyer and seller in the market. It is the first point for decision making of a customer in the capitalistic world. With the help of the price the company can increase its profit or gain the market share. There are several pricing strategies from which we can highlight the main 6 strategies that are described below:

Cost plus profit - it is the easiest strategy as it is based on manufacturing costs of the good. Seller calculates the costs spent on production of goods or services and adds the margin for making a profit. Cost-plus strategy can be used when there is a little possibility to get the information from the market, but it has some disadvantages. It is too reliable on production costs, so in case of any increase in variable costs, the price will be also increased as it ignores

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<sup>32</sup> I. Cetina, N. Mihail, Price Strategies in Banking Marketing, p. 27

the demand of the product. And if fixed costs take major part of the costs, then the price for the product will be high in a decreasing market and will be lowered in expanding one<sup>33</sup>.

Price skimming - strategy for new products in the market which are of high quality. The price will be set pretty high than those in the market to maximize the profits from each product in the short time. The strategy implies price decrease after some time frame to increase the quantity of sold products. An example of successful implementation of such strategy is well-known corporation Apple Inc. which introduces new models into the market with quite high prices and decreases them by time.

Price penetration - strategy when the price is sufficiently low in the market. This strategy is used to increase the market share and clientele portfolio. With the increase in the number of customers taking the major part of the market with low prices, companies are limiting the entrance to the market. But it is quite a risky strategy from a profitability standpoint, especially in the long run. Much focus should be distinguished for monetization as many companies fail in price increasing strategies after getting enough loyal customer base.

Price depending on the competition - this strategy refers to the market information opposite to cost plus profit strategy. In terms of perfect competition, the price is set by supply and demand in the market. The highly competitive market pricing factor in terms of this strategy is of low importance as it gives low to no advantage for the customers and other factors like customer support etc. are playing a more important role.

Price depending on the value - this strategy is the most referable to marketing as it relates to the question: "How much money is the customer ready to pay for the product?" In comparison to other strategies, this strategy requires a lot of research on what value it can give to the customer. Also, the market should be carefully studied as the price should answer what differentiates the product from the competitor's one<sup>34</sup>.

Right pricing strategy is becoming more and more important for financial institutions nowadays. According to Deloitte research on pricing for the banking industry 10% pricing improvements can bring up to 25% increase in profitability of the financial company. And

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<sup>33</sup> **N. Shivam**, Cost-plus price: Determination, Advantages and Criticism. Available at: <https://www.economicdiscussion.net/firm/cost-plus-price-determination-advantages-and-criticisms-firms/21760>

<sup>34</sup> **I. Cetina, N. Mihail**, Price Strategies in Banking Marketing, p. 27

there are the internal and external challenges why banking industry is now keen on effective pricing policies:

*Internal challenges:*

- lack of management in pricing policies in special conditions and too wide range of pricing policies;
- lack of information to analyze the pricing policies of competitors;
- lack of analysis of customer segmentation to define the willingness to pay;
- lack of reward and discount system to establish more loyalty from customers.

*External challenges:*

- regulatory costs becoming higher and raising the question of effective use of pricing policies to cover the costs;
- decrease of face-to-face communication in terms of higher importance of new digital channels increases the price sensitivity of clients;
- the cost of investment search to increase the returns on investment becomes more challenging<sup>35</sup>.

Thus, we can conclude that facing some list of challenges financial institutions are able to increase the profits and its competitiveness in the market through paying more attention on pricing policy management.

**Human capital.** People have always been an important resource in competitiveness development of enterprises. Skills and knowledge are driving factors in each organization. It is also a basis for the correct strategy creation and implementation, new knowledge development, increase of expertise and innovations<sup>36</sup>.

Human capital needs to be focused on its development for increasing knowledge and skills of the employees in certain enterprise to increase the development of the goods and services produced and provided by the enterprise to increase the customer value outcome.

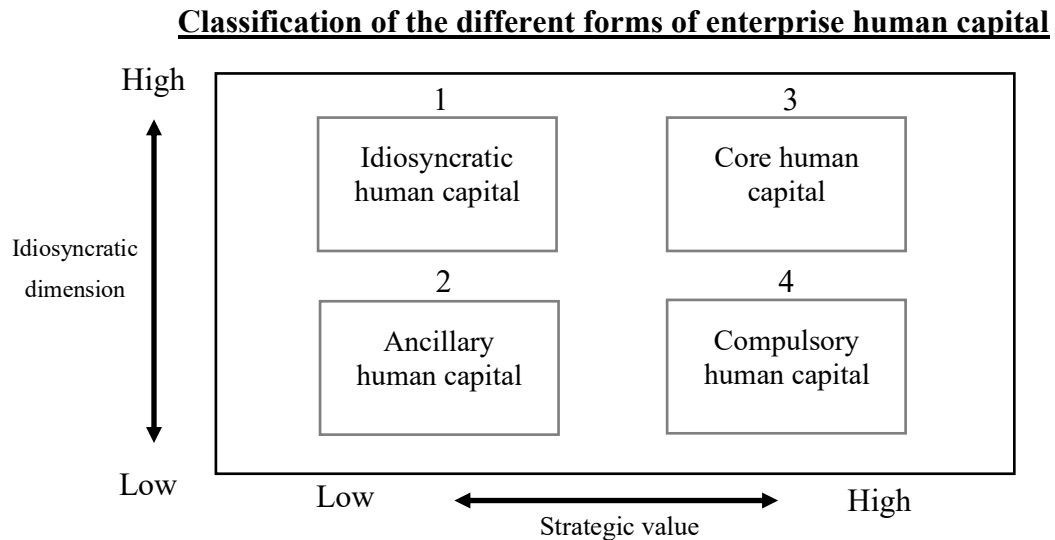
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<sup>35</sup> **Deloitte**, Pricing for the banking industry. Unlocking value through pricing excellence, Zurich, 2011

<sup>36</sup> **P. N. Rastogi**, Sustaining enterprise competitiveness - is human capital the answer?, *Human Systems Management* 19, IOS Press, 2000, p.193

The main challenge for organizations in the market is to define correct talents to invest in. Fig. 1.4.1. shows the classification of human capital on the basis of uniqueness and value for the company<sup>37</sup>:

**Figure 1.4.1.**



Source: S. A. Snell, D.P. Lepak, & M. A. Youndt, *Managing the architecture of intellectual capital: Implications for strategic human resource management*

Idiosyncratic human capital is the one with high idiosyncratic dimension and low strategic value. As the authors stated, the development of such groups is important for organizations and it should be done by creating collaborative groups, team building activities and rotation.

Ancillary human capital has low idiosyncratic dimension and low strategic value and it should be replaced by technology as this group has no value in increasing competitiveness, so the authors suggest no to invest in them, especially in the long-term perspective.

Core human capital is the most valuable one as it has a high idiosyncratic dimension and high strategic value.

Compulsory human capital gives high value but has low uniqueness. This is the least loyal group as most of them are in search of the greatest value to sell themselves as talents. Companies are not likely to invest in compulsory human capital as in the long run it can bring losses.

<sup>37</sup> S. A. Snell, D.P. Lepak, & M. A. Youndt, *Managing the architecture of intellectual capital: Implications for strategic human resource management, Research in Personnel and Human Resources Management*, 1999, p. 175-193

Currently, in the financial industry with a rapid development of technologies, organizations are focused on creating very democratic conditions for the employees to bring the environment for creative and innovative productivity of talents. New ideas for product development and new ways of providing the services are the matter of freedom of exchange of information and learning systems that support creativity and uniqueness. Technologies are created by humans. Also, multiculturalism is of high importance in the globalized world.

**Regulations.** Regulations are another important factor that influence competitiveness in the market. Regulatory framework involves not only the limits, the set of services that certain types of financial institutions are legally allowed to provide, but security system requirements not only for a secure and safe way to make payments but securely hold personal data (according to GDPR). New regulations open up the border for new entrants to the payments and electronic money markets. New PSD2 regulations promote more technological integrations and lowers the cost for electronic transactions so the merchants will be able to pay even less to receive the payments with credit and debit cards of customers. More tailored solutions and more possibilities for fintech firms to grow<sup>38</sup>.

But the fact of differences of regulations in countries of European Union should be taken into consideration. Some states are setting limits to the regulations, some are more democratic ones. The regulatory details of certain states have been analyzed in the second chapter.

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<sup>38</sup> **European Banking Association**, EBA REPORT ON THE IMPACT OF FINTECH ON PAYMENT INSTITUTIONS' AND E-MONEY INSTITUTIONS' BUSINESS MODELS, July 2019, pp. 12-13

## 2. ANALYSIS OF ELECTRONIC MONEY MARKET DEVELOPMENT IN THE EUROPEAN UNION

According to the World Bank, remittances to Europe and Central Asia increased by 11% in 2018 and reached 59 billion USD. Large countries such as Germany, the UK, Belgium, Russia, the Netherlands have a negative balance and show a decent outflow of transactions from countries. Eastern European countries (Ukraine, Romania, Hungary, Georgia, Belarus, etc.) have more inflow through cash transactions. The volume of the money transfer market has been growing from year to year since post-crisis times according to the World Bank. That is why we can say with confidence that the demand for more profitable methods of transactions is growing every year. This is influenced by several factors, including an increase in the number of migrants, a generation change with the development of information technology, which leads to the digitalization and globalization of the economy.<sup>39</sup>

### 2.1. Non-cash transaction statistics analysis

For the past decade the cashless transactions are becoming more and more popular in the world. Global non-cash transactions volume has reached 538.6 billion transactions by 2017 with an increase of 12% in comparison to the previous year (Figure 2.1.). According to the World Payments Report 2019 non-cash transactions will reach 1 trillion transactions. With help of developing countries that implement non-cash transactions and show the growth of this segment by 32% (Emerging Asia with the help of different alternative payment methods like e-wallets etc.). Europe is a mature market, showing stable growth from 2013 till 2017 with 7% (9.4 billion) annual increase and reaching 133 billion transactions in 2017<sup>40</sup>.

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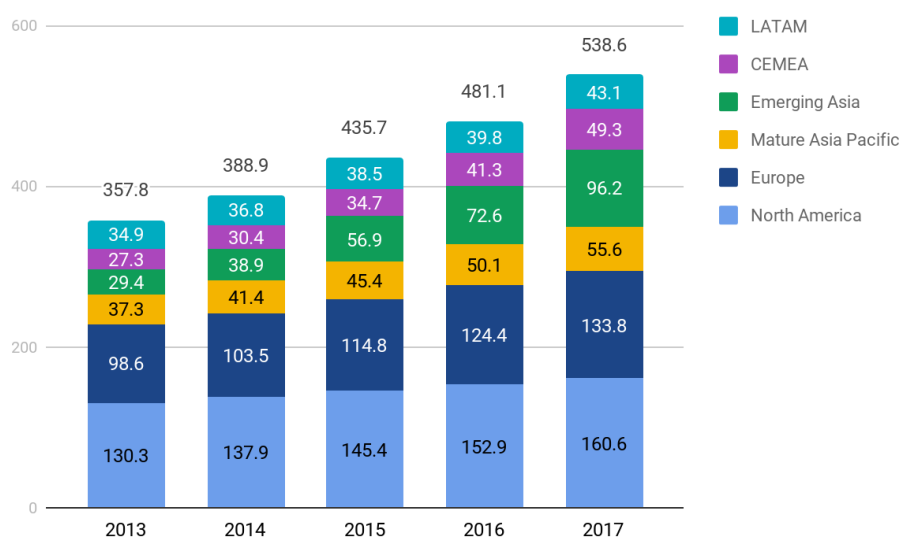
<sup>39</sup> **World Bank**, Record High Remittances Sent Globally in 2018, 2019. Available at:

<https://www.worldbank.org/en/news/press-release/2019/04/08/record-high-remittances-sent-globally-in-2018>

<sup>40</sup> **Capgemini**, World Payments Report 2019, 2019, Available at: <https://worldpaymentsreport.com/non-cash-payments-volume/>

Figure 2.1.1.

**Non-cash transactions globally from 2013 to 2017 (billions)**



Source: Capgemini

Europe is among the most developed regions in non-cash transactions, if being more precise, the second region after North America. According to the World Bank data more than 85% of European population aged more than 15 years has access to bank accounts and the number is continuing to increase (according to the World Bank, as of 2011 81% of the population had access to the bank accounts). Europe is in second place after Oceania in bank account access as well as in the statistics of access to the internet which is quite less than access to bank accounts that is 70% for Europe and more than 80% for Oceania. Mainly, the numbers are increasing annually, but anyway, one should be stated, that demand for cash in society is still high as it plays an important role in day-to-day operations of individuals.

Reviewing the top states on no-cash payments, in the first place in the United Kingdom with 27 billion transactions by 2018 which is not unusual as the UK is the financial center of Europe with the greatest in Europe London Stock Exchange. In second place is France with 23.5 billion transactions. The third is Germany with 22 billion non-cash payments.<sup>41</sup> But still Germans are conservative in payment methods, using mostly cash for payments. In 2018 for the first time credit and debit card payments rate (48.6%) was higher than payments with the use of cash (48.3%).<sup>42</sup> Anyway, the use of cash in Deutschland is quite high as

<sup>41</sup> Statista, EU member states with the most cashless payment transactions in 2018, 2019. Available at: <https://www.statista.com/statistics/276233/eu-member-states-with-the-most-cashless-payment-transactions/>

<sup>42</sup> EHI Retail Institute, Card payment systems in retail 2019, 2019

according to the study of Deutsche Bundesbank found out that Germans hold 107 EUR per person in the wallet. For the reasons of comparison, French person holds on average 32 EUR cash<sup>43</sup>. There are historical reasons for that. Majority of elder people of western side of the state associate cash with the end of World War II. In eastern side of Germany cash is associated with the end of communistic regime. That is why transition to the digital payment methods in Germany is going slower than in any other country in the European Union.

In terms of non-cash transactions amount per inhabitant Scandinavian states are in the first places with a great implementation of new technologies to the whole economy (incl. financial field). Norway is in the first place with more than 500 transactions per inhabitant in 2017 and 7.6% of increase in comparison to 2016. It is the most non-cash state in the world according to the World Payments Report 2019. The second place went to Sweden that was in the first place as a result of the report by 2016. States mentioned above are followed by Finland, the Netherlands and Denmark. It can be explained by the development of the financial sector of these countries and more attention for innovative services with banks like Swedbank, SEB, Luminor, ING bank in the frontier. The UK and Luxembourg have shown top results among European states with around 400 non-cash transactions per inhabitant in 2017 with 6.4% and 12% yearly growth respectively. These states are pretty much advanced in terms of electronic money regulations and, obviously, are quite attractive for fintech companies. The greatest yearly growth of non-cash transactions per inhabitant has been shown by Greece (36.2%), Romania (21.8%), Ireland (14.6%) and Czech Republic (13.8%).<sup>44</sup> The boom in the first two states can be explained that all of the innovations in financial services are just being opened to the population and the second pair of countries are having quite potential growth of interest of fintech companies that are offering new innovative products in terms of non-cash money remittance to the audience and these cases will be reviewed later in this paper.

According to the studies, there are more than 4 billion electronic money payments in the European Union taking 33% of the overall non-cash transactions in 2017. At the same time if we look at the data taking into account the yearly increase of electronic money transactions the market shows on average the growth of 18.05% from 2014 to 2018 (Fig. 2.2.). Having more than 2 billion transactions of e-money in the EU in 2015 and more than

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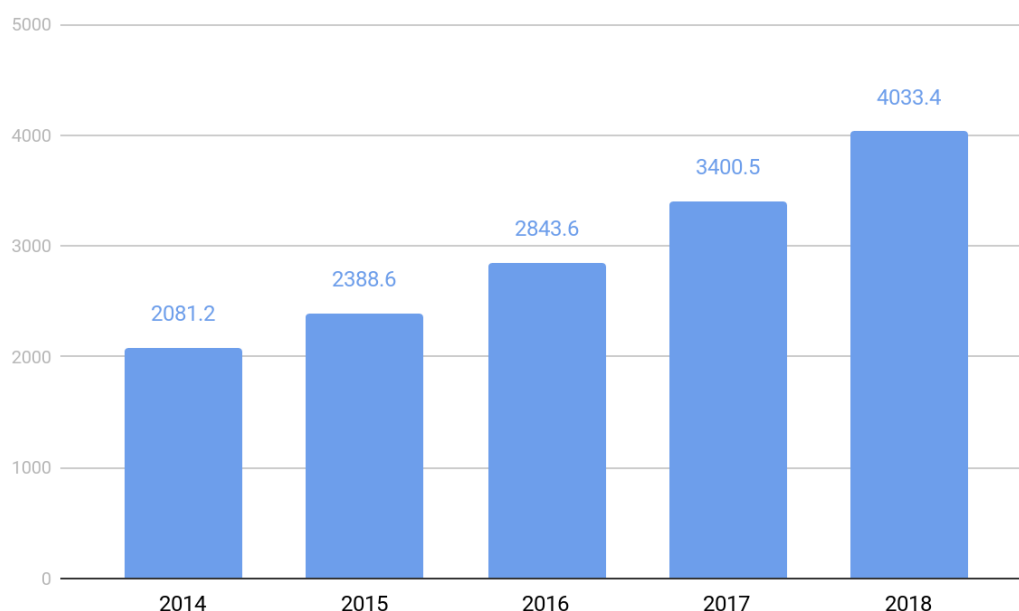
<sup>43</sup> **Deutsche Bundesbank**, Zahlungsverhalten in Deutschland 2017, 2018, p.12

<sup>44</sup> **Capgemini**, World Payments Report 2019, 2019, Available at: <https://worldpaymentsreport.com/non-cash-payments-volume/>

4 billion of e-money transactions we can conclude that number increased twice only in five years and there is more yet to come as yearly increase in 2015 was 15% while in 2018 the number increased till 18.5% annually.<sup>45</sup> It is quite difficult to measure exact participation of Electronic Money Institutions in the market because these entities are providing e-commerce services connected to card payments. But one can be stated for sure that both, electronic money issuance and e-money transaction in the same row with card payments are increasing from year to year and it is believed that they will take dominant positions in comparison to cash transactions.

**Figure 2.1.2.**

**Total number of e-money transactions in the European Union from 2014 to 2018 (millions)**



Source: Statista

## **2.2. Regulation analysis of Electronic Money Institutions in Europe**

As stated earlier, the impact of electronic money is pretty small due to a very little share of non-cash transactions volume, but it could be changed in near future due to the increasing demand of innovative solutions for businesses in globalized environment.

<sup>45</sup> **Statista**, Total number of e-money transactions in the European Union from 2014 to 2018, 2019. Available at: <https://www.statista.com/statistics/443399/electronic-money-payment-in-european-union/>

In the financial field study of regulation is of high importance. Additionally, government impact on any international entities' activities is one of the main factors influencing the operational side as well as competitiveness in the market.

There are two similar types of entities that operate with regulated electronic money in Europe - Electronic Money Institutions and Payment Institutions. Both types of organizations require a license from the regulatory body in one of Member States. But before moving to the analysis of the regulations in Member States of the EU, we will be focused on the differences between Electronic Money Institutions and Payment Institutions as it has a crucial effect on understanding of regulatory points and clarification as the research was made on Electronic Money Institutions in the current paper.

The law under which two institutions mentioned above are different: Payment Institutions (PIs) are regulated under PSD2 Directive (Directive 2015/2336/EU) and Electronic Money Institutions - under the EMI Directive (Directive 2009/110/EC). Basically, Electronic Money Institutions have a wider range of services that can be offered to the clients.

The first difference according to the law is capital requirements as to be able to provide a full set of services under PSD2 Directive Payment Institution must have 125000 EUR and for Electronic Money Institutions the capital requirement is a minimum of 350000 EUR.

According to PSD2 Directive, Payment Institutions has the right to offer the following services<sup>46</sup>:

- Services enabling cash to be placed on a payment account;
- Services enabling cash withdrawals from a payment account;
- Execution of payment transactions, including transfers of funds on a payment account with the payment service provider of the payment service user or with another payment service provider: execution of direct debits, including one-off direct debits, execution of payment transactions through a payment card or a similar device and/or execution of credit transfers, including standing orders;
- Execution of payment transactions where the funds are covered by a credit line for a payment service user: execution of direct debits, including one-off direct debits,

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<sup>46</sup> 'DIRECTIVE (EU) 2015/2366 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 25 November 2015. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32015L2366>

execution of payment transactions through a payment card or a similar device and/or execution of credit transfers, including standing orders;

- Issuing and/or acquiring of payment instruments;
- Money transfers;
- Execution of payment transactions where the consent of the payer to execute a payment transaction is given by means of any telecommunications terminal equipment, digital or IT device and the payment is made to the telecommunications network or IT system operator, acting only as an intermediary between the supplier of the goods or services and the payment service user;
- Payment Initiation Service (PSD2 implementation);
- Account Information Service (PSD2 implementation)<sup>47</sup>.

Electronic Money Institutions, in turn, has one more additional service to provide - the issuance of e-money and, accordingly, e-wallet and IBAN accounts for customers. What does it mean? It means that EMIs in contrast to PIs can store funds of users which gives the privilege for creating e-wallet infrastructure and issuing of payment cards either real ones or virtual cards.

The difference seems to be small but is very significant. If the end-user would like to keep funds in the account for indefinite use and receive the transactions into the account, for instance, to receive salary, to make day-to-day purchases, or make payments connected to the daily life (utility bills payment, subscription payments etc.), send funds to other accounts in other financial institutions, so the account holders can use the funds deposited as they wish to do.

At the same time, in case of Payment Institutions users depositing funds should predefine the purpose (some exact transaction; could be transfer of funds operation or credit card transaction). So, the funds deposited to the Payment Institution from the customer must be immediately in use and the account cannot be used to hold the funds and receive a salary, for example.

One point in the service list can make such a big difference. Electronic Money Institutions in this term are more independent and operate similarly to bank account services while Payment Institutions are more like digital money transfer services.

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<sup>47</sup> ANNEX I of 'DIRECTIVE (EU) 2015/2366 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 25 November 2015. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32015L2366>

Obviously, Electronic Money Institutions have less scope of services than credit institutions. Restrictions include credit services (including provision of interest rates for holding e-money in the account for the user), insurance services and usage of clients' funds in terms of investments on financial markets<sup>48</sup>.

Passporting is required to operate in the Member state of the EU. Passporting is the mechanism by which the license which is covered in a specific geographic area is extended out to other geographic areas. It means that a license obtained in one Member State with the help of passporting can be the license to operate in other Member States. Regulatory authorities of each Member State should authorize, in our case, Electronic Money Institution as a service provider in the territory of that particular Member State<sup>49</sup>.

Management board of Electronic Money Institutions must be competent, especially an authorized person which usually is a director of the company and also, it refers to MLRO (Money Laundering Responsible Officer) who is responsible for effective Anti-Money Laundering and Combatting the Financing Terrorism. First of all, none of the persons responsible for the activities of the company should be 'convicted of offences relating to money laundering or terrorist financing or other financial crimes. Also, there are requirements on education and experience in the field are of high importance.

What point should also be touched in regulations analysis is anti-money laundering and countering the financing of terrorism. All of the EMIs must have such policies. From the existing regulations, we can highlight the following points:

- KYC (Know-Your-Customer) check before opening an account. As Electronic Money Institutions are able to provide the service of online account opening, all of the required documentation for proof of personality must be requested before giving the access to the account. Currently, more and more entities start using technical tools to scan the documents and potential customers' faces. So, during the KYC process the person should be checked for the criminal notes to make the operations as low risky as possible. In case of business entity on-boarding, all of the authorized persons must go through proper due

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<sup>48</sup> DIRECTIVE 2009/110/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 September 2009. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32009L0110>

<sup>49</sup> **European Banking Authority**, Passporting and supervision of branches, Available at: <https://eba.europa.eu/regulation-and-policy/passporting-and-supervision-branches>

diligence process and ultimate beneficial owners of the company must be determined until physical person (in some companies UBO can be a legal entity);

- EMI should have a division of industries and jurisdictions into risk levels (low, medium, high) and must have policies for each type of the risks;

- Transaction monitoring (automated or manual) must be in use to avoid money laundering and countering the financing of terrorism. Source of funds, purpose of payment and proving documents should be requested for big amount payments (usually, starting from 10 000 EUR) and for high risk accounts.

- PEP (politically exposed person) screening is important as the regulations pay attention on PEPs<sup>50</sup>.

### **2.3. EU EMIs by country analysis**

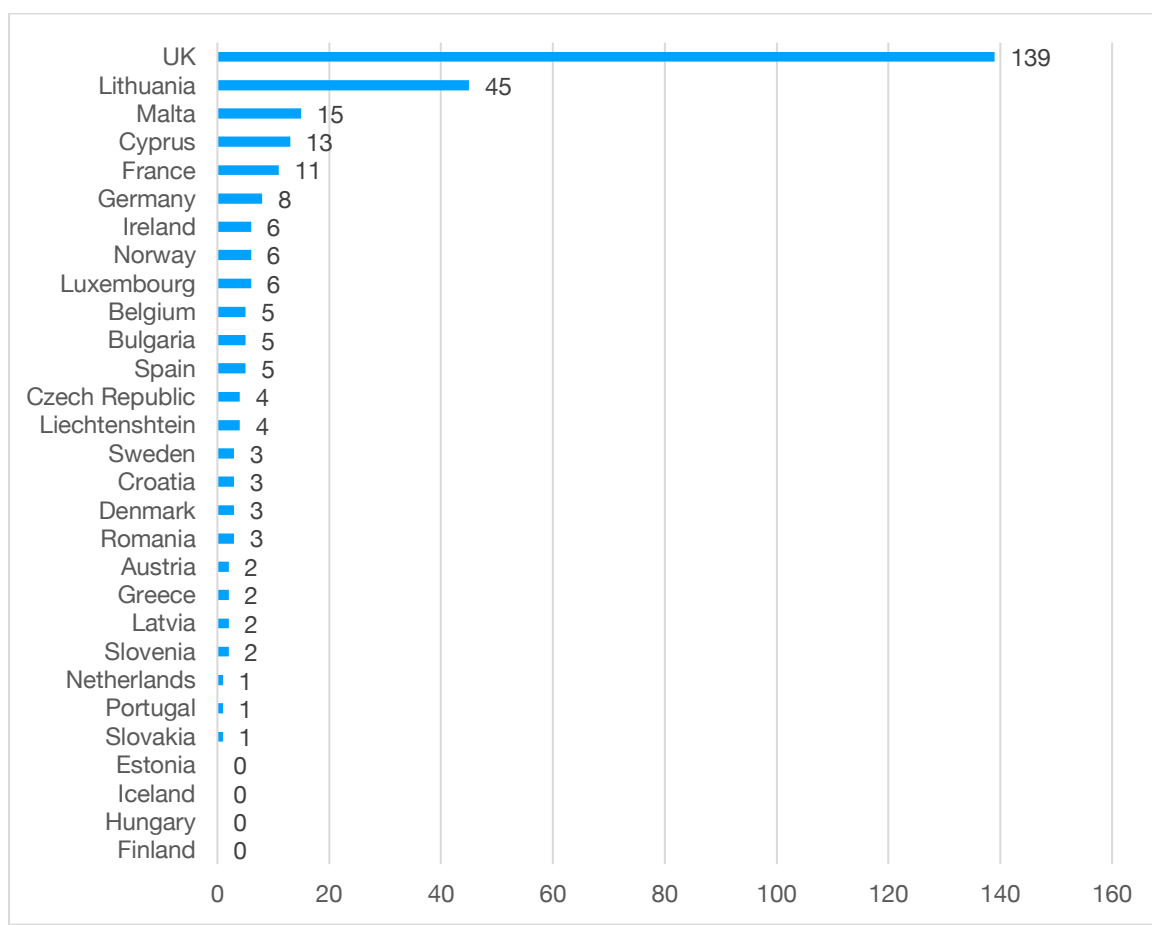
Each Member State has its own advantages and disadvantages on issuing Electronic Money Institutions. It can be connected with specific regulations, costs, human capital and so on. As Electronic Money Institution license can be obtained in each member state, the statistics of the amount of EMI licensed entities in the countries are reviewed at this subchapter.

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<sup>50</sup> DIRECTIVE (EU) 2015/849 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 20 May 2015. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32015L0849>

Figure 2.3.1.

**Number of EMI licensed entities in the EU by country (till March 2019)<sup>51</sup>**



Source: EBA

As we can see that by March 2019 more than 60% of EMI licenses were obtained in Lithuania and the United Kingdom. The UK being a financial center of Europe is in the first place in the number of EMI licensed entities registered. Also, from the banking side it seems to be beneficial as the UK banks have the access for CHAPS (Clearing House Automated Payment System), Faster Payments and SEPA (Single European Payment Area) - major real-time payment systems. Also, what is beneficial is that in the UK it is easier to have multi-currency solutions, especially working with two major currencies - GBP (Great British Pound) and EUR (Euro). So, being finance oriented with having a loyal and reliable

<sup>51</sup> **European Banking Authority**, Register of Payment and Electronic Money Institutions under PSD2. Available at: [https://eba.europa.eu/risk-analysis-and-data/register-of-payment-and-e-money-institutions-under-psd2?fbclid=IwAR2aCZIIktwAxNxgBYJyGD0LVmW-KdtqOqXHZu\\_GO4oQrIo9IfubdhzsVz0](https://eba.europa.eu/risk-analysis-and-data/register-of-payment-and-e-money-institutions-under-psd2?fbclid=IwAR2aCZIIktwAxNxgBYJyGD0LVmW-KdtqOqXHZu_GO4oQrIo9IfubdhzsVz0)

regulator, the UK gives an opportunity to have qualified workforce on-board and this is why it is an attractive place for fintech business.

Lithuania is one of the most fintech oriented states in the European Union these days. Lithuanian regulator creates favourable conditions for obtaining a license as we can see there unicorn fintech Revolut, Google Pay at one hand and at the other hand - companies with head offices in Turkey, Greece etc. Open borders and media marketing of attractiveness is playing a big role for the influx of entities planning to obtain EU EMI licenses. Additionally, Bank of Lithuania offers Electronic Money Institutions to directly connect them to SEPA payment gateway through CENTROlink (payment system operated by the Bank of Lithuania)<sup>52</sup>. It means that EMIs have the possibility to hold the funds in the Bank of Lithuania, which minimizes the risks for its customers which is 100% beneficial as in the financial field trust is a very important component. Considering the costs and human capital, there are also advantages at these points as the first is objectively lower than in most of the EU states and the other factor is also beneficial because of the qualified workforce as Baltic States are quite finance oriented countries.

On the other hand, one of the most IT-advanced in Europe - Estonia, which is also a part of finance oriented Baltic States has 0 EMIs. The main reason for that, in my opinion, is regulatory limits that have been set by Payment Institutions and E-money Institutions Act. It states that 2500 EUR can be stored in an e-money device each calendar year which tiny amount for the financial institutions<sup>53</sup>. So there is no motivation for fintech companies to obtain a license in Estonia because of such limitations for the government which is quite logical.

If the time scale will be limited to the last 6 months, we can find the changes in trends<sup>54</sup> (see Fig. 2.3.2.).

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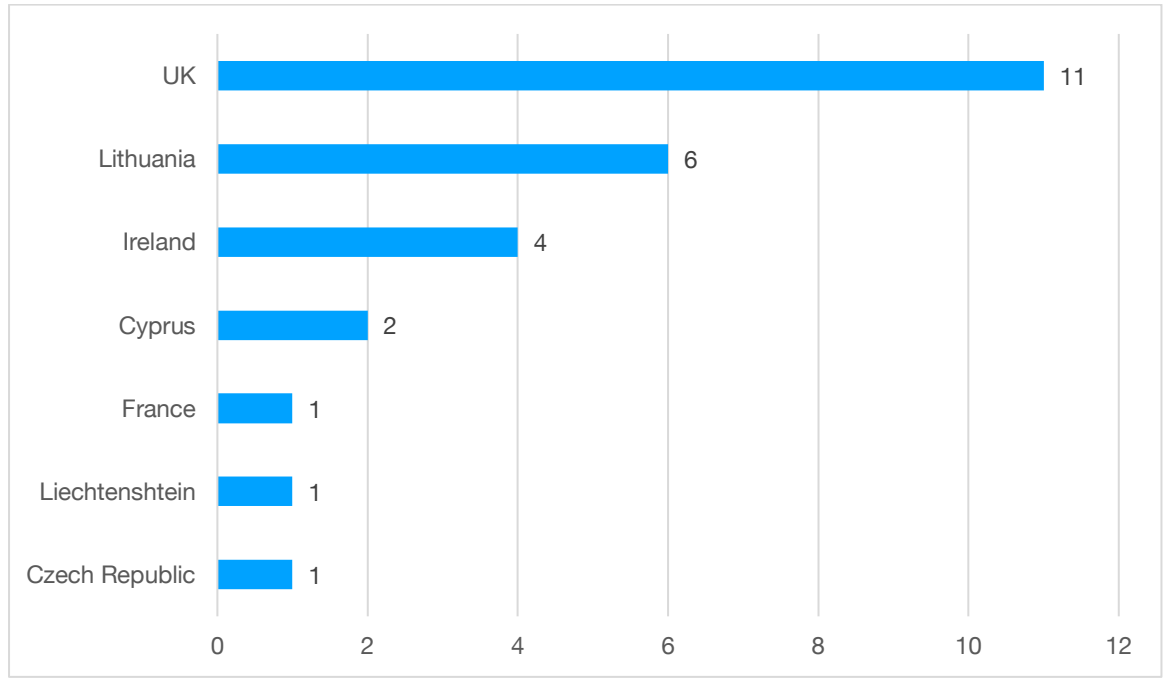
52 **Lietuvos Bankas**, CENTROlink. Available at: <https://www.lb.lt/en/centrolink#ex-1-1>

53 **Riigi Teataja**, Payment Institutions and E-money Institutions Act. Available at: <https://www.riigiteataja.ee/en/eli/ee/514052014002/consolide>

54 **Finextra**, European fintech in the era of Brexit, April 2019. Available at: <https://www.finextra.com/blogposting/16973/european-fintech-in-the-era-of-brexit>

Figure 2.3.2.

**Number of EMI licenses obtained from November 2018 to March 2019 by country**

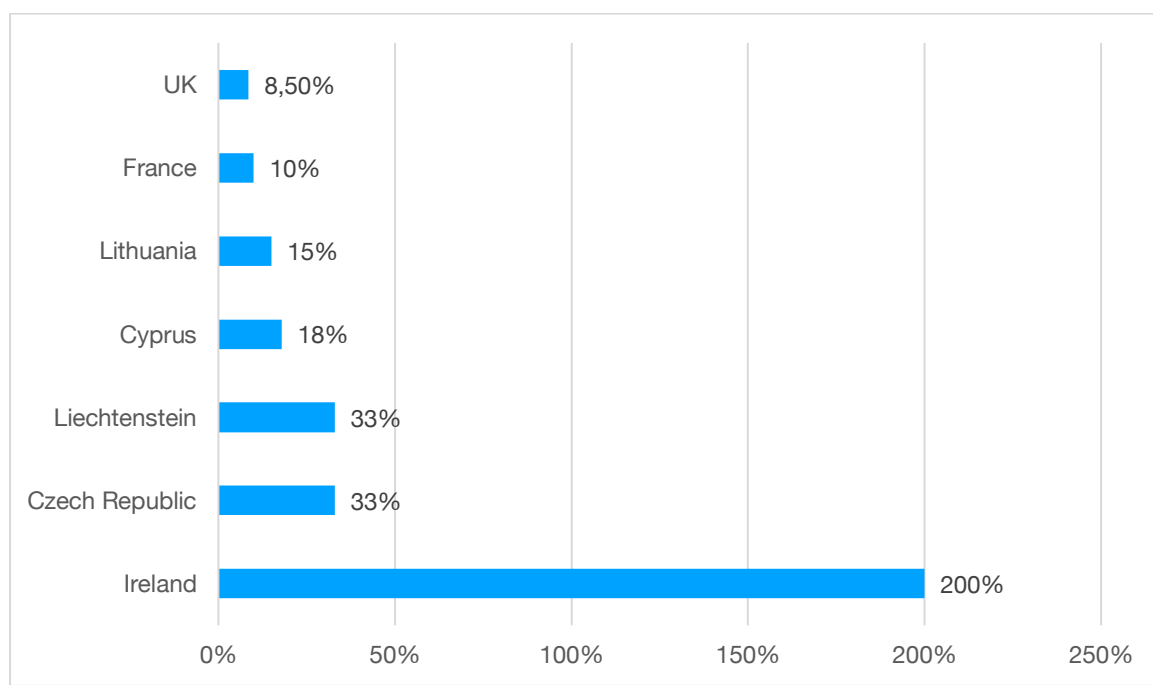


Source: Finextra

UK and Lithuania are again at the top of the list of the countries. But for 6 months from November 2018 to March 2019 there is a rapid increase in EMI licensed entities in Ireland. Overall number of Irish based EMIs is 6, so there is a 200% increase in the number of EMIs in Ireland. In second place in terms of percentage increase in the frame of 6 months in number of Electronic Money Institutions is Czech Republic in the same row as Liechtenstein with 33% increase. Then, Cyprus with 18% increase and Lithuania with 15% increase in numbers of Electronic Money Institutions.

Figure 2.3.3.

**Percentage change in EMI licenses obtained from November 2018 to March 2019 by country**



Source: Author's illustration based on quantitative analysis

As can be seen from the percentage change in number of EMI licenses obtained in 6 months from November 2018 to March 2019, Ireland is a leading state with huge breakaway from the second places states. There are several reasons for that:

1. **Brexit.** First and the main reason for that is uncertainty caused by the exit of the United Kingdom from the European Union. It is unknown what will be the output from Brexit for Electronic Money Institutions, so getting 100% guarantee to have the possibility to continue serving European clients all EMIs are searching for new jurisdictions in the EU to obtain licenses in. As the market of European customers is the majority compared to the customers which are only United Kingdom residents for most Electronic Money Institutions regulated by the Financial Conduct Authority (regulator of Electronic Money Institutions and Payment Institutions in the United Kingdom) are afraid of losing their market share in the EU market.

2. **Language, culture and law.** If there are 28 members of the European Union to choose for EMIs escaping the possible negative effect of Brexit, why is Ireland facing rapid increase of interest from Electronic Money Institutions? One of the main factors is language. According to the 8th Article of Constitution of Ireland, English is the second official

language in Ireland<sup>55</sup>. 99% of the population of Ireland speaks English, so there is no language barrier even at an official level that is advantageous for the UK companies. Additionally, cultural and legal similarities let the UK companies adapt faster. Irish law that is based on English law has also been affected by EU laws and directives. It is hard to predict how it will be after Brexit but so far both states have the same legal basis in comparison to other states' legal frameworks. For instance, one of the biggest UK based Electronic Money Institutions "Revolut Ltd" is obtaining licenses in Lithuania to serve Eastern and Central Europe customers and in Ireland to serve Western Europe customers due to Brexit. The company already got 1 million users from Ireland as Irish license gives more confidence for Irish population in using Revolut services.

**3. Favourable fintech environment.** Ireland is one of the leading IT states in the European Union. U.S. multinational giants like Facebook, Google and Microsoft have operations offices in Ireland. In terms of financial technologies, there can be advantages for crypto-friendly businesses as Dublin has Bitcoin ATM from 2014.

**4. Taxation policy.** Ireland has the lowest joint corporation tax in the European Union and one of the lowest corporate taxes which can create competitive advantage for Electronic Money Institutions as low tax rate will increase the profits.

In terms of choosing an EMI license in the European Union, Lithuania, Ireland, Cyprus and Czech Republic can be taken into consideration on the basis of analysed statistics provided above. But there are significant differences in regulations of Electronic Money Institutions and regulators' reputations in the market. For instance, Czech Republic is oversaturated with money laundering news, plus, it sets the limit for electronic money institutions up to 5 million EUR of electronic money issued overall which is a tiny amount if the services are planned to be passported and provided for the whole European Union customers<sup>56</sup>. Cyprus is associated with offshore companies as there are a big amount of offshore activities in that region which undermines trust from consumer point of view. Lithuania is in a grey area of Baltic States that are also overwhelmed with experiences of banks liquidations, but still, Lithuanian government is doing its best to bring positive conditions for fintech development in the country. Ireland should be taken into consideration

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<sup>55</sup> **Constitution of Ireland**, Article 8, January 2020

<sup>56</sup> **Czech National Bank**, DECREE of 13 May 2011 on the pursuit of business of payment institutions, electronic money institutions, small scale payment service providers and small-scale electronic money issuers.

with higher focused, in my opinion, as it seems that it is planning to be the second UK in terms of Electronic Money Institutions center in European Union. As described, there are some similarities between the UK and Ireland and that factor with combination of high interest and the number of Electronic Money Institution licenses obtained in the past few months with a good reputation of regulator allow us to make such a conclusion that Ireland seems to be the best option so far.

### **3. RESEARCH ON FACTORS INFLUENCING COMPETITIVENESS OF ELECTRONIC MONEY INSTITUTIONS IN THE EUROPEAN UNION**

This research is based on quantitative analysis based on expert interviews that have actively been working in Electronic Money Institutions for the past few years. Additionally, public questionnaire was organized to evaluate the factors from the customers perspective.

Factors influencing competitiveness of Electronic Money Institutions are the following:

- Price factor;
- Technological development factor;
- Human capital factor;
- Regulations factor.

During the interviews and in questionnaire all of the factors were included to the questions.

Companies participated in expert interviews:

- xpate (XPATE LTD);
- Violet (Via Payments UAB);
- Royal Pay (Royal Pay Europe Ltd);
- Cardpay (Cardpay Limited).

One expert per company participated in the interview. All of the experts are professionals in customer support and business development fields, so the expertise and experience of each of them are connected with Electronic Money Institutions and e-commerce market as whole. In day-to-day operations they are facing each of the factors examined in the paper in the communication with customers and partners. So, the field of operation of the experts allows to evaluate the factors in the closest to correct result. In the conclusions, the average mark to each factor was given as a result of calculation of average number depending on the number of experts (which is 4).

Additionally, public survey has been organized. All of the factors were evaluated by respondents, number of which is 156. The same principle of the calculation of average mark is used to define the most important factor influencing customer decision on Electronic Money Institutions and bank accounts as whole. Survey has been made online in Google Forms.

**Hypothesis:** Price is the most significant factor that influences competitiveness of Electronic Money Institutions in European Union.

Hypothesis is based on principles of management of each company as price has a significant factor being the part of 4Ps of marketing.

Questions for the experts are the following:

1. Please evaluate each factor influencing the competitiveness of Electronic Money Institutions in the European Union from 1 (the lowest) to 5 (the highest):
  - Price (from 1 to 5);
  - Technological development (from 1 to 5);
  - Human capital (from 1 to 5);
  - Regulations (from 1 to 5).
2. What impact has pricing factor on competitiveness of EMIs in the EU?
3. What impact has technological factor on competitiveness of EMIs in the EU?
4. What impact has regulations factor on competitiveness of EMIs in the EU?
5. What impact has human capital factor on competitiveness of EMIs in the EU?
6. What impact has customer support factor on competitiveness of EMIs in the EU?
7. How you evaluate all these factors in terms of your organization?

All of the experts were asked the same questions.

Questions of public survey are the following:

1. Do You have an account in bank?
2. Do You use internet bank service to have 24/7 access to your account?
3. Do You use the services of any Electronic Money Institution (e.g. Revolut, Transferwise, Monese)?
4. What are the main reasons for opening an account in Electronic Money Institution?
  - Cheaper price;
  - Mobile application;
  - User-friendly software;
  - Other (please suggest)
5. Please, evaluate the factors that influence your decision in making a choice where to open a bank account:
  - Price (1-5);
  - Technological development of the financial institution (1-5);
  - Bank's or EMI's jurisdiction (1-5);

- Please, suggest the factor;
6. Personal information (age, gender, country of residence).

Based on the results of empirical research the most influential factor will be known and hypothesis will be approved or disproved. Only human factor was not analyzed during the public survey as in the context of competitive advantage theory, it can be analyzed by the experts as decision-making in company is experienced internally.

### **3.1. Companies participated in research**

**XPATE LTD.** XPATE LTD is a UK registered Authorised Electronic Money Institution regulated by Financial Conduct Authority. Obtained a license on March 2020. Already passported in 31 countries and started just started operation.

Before obtaining European license, company was providing services for the clients from all around the world through Singaporean entity with Stored Value Facility status and was regulated under the Monetary Authority of Singapore<sup>57</sup>, so the company already has its own quite a big portfolio of the clients. Most of the clients are based in the European Union (61%), some are from Commonwealth of Independent States, South America and Asia. In terms of industries IT-services (20%), online education (20%), online retail (15%), travel (10%) and others.

Company work in cooperation with partners from all around the world as in international financial field there is a need to have as many local payment solutions in different geographies as possible. So, the company has a strong partnership portfolio in Europe, including several banks and other Electronic Money Institutions as there is a high demand from European based merchants of xpate.

Company has electronic wallet systems for the clients to be able to open accounts to receive and send funds internationally. The company is focused on business entities and by 2020 has already got the portfolio of more than 200 clients from all around the world. Expert opinion from this company will be interesting in the way of entering the market as xpate is a young fintech startup, even if it unites the team of professionals with more than 10 years of experience in the market in managerial positions.

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<sup>57</sup> MAS, Stored Value Facility Guidelines, March 2006. Available at: [https://www.mas.gov.sg/-/media/MAS/resource/publications/consult\\_papers/2006/Consultation-Paper-on-Stored-Value-Facility-Guidelines-final.pdf](https://www.mas.gov.sg/-/media/MAS/resource/publications/consult_papers/2006/Consultation-Paper-on-Stored-Value-Facility-Guidelines-final.pdf)

The company has several offices including head office located in London, UK, operational office in Riga, IT-development office in Moscow, Russia and office in Singapore.

**Table 3.1.1.**

**XPATE LTD Company Profile**

<b>Legal Name</b>	XPATE LTD
<b>Registration number</b>	11920779
<b>Date of registration</b>	02.04.2019
<b>Registered Address</b>	Level 18 40 Bank Street, Canary Wharf, London, England, E14 5NR
<b>Legal form</b>	Private Limited Company
<b>Brand name</b>	xpate
<b>Website</b>	<a href="https://www.xpate.com">https://www.xpate.com</a>
<b>Nature of business</b>	64999 - Financial intermediation not elsewhere classified (SIC)
<b>License</b>	Authorised Electronic Money Institution (License number 901021)
<b>Capital</b>	320 000 GBP (by May 2020)

Source: Companies house

The expert that participated in the interview from xpate is head of customer relations – German Juferov.

**VIA Payments UAB.** Vialet is Lithuanian Electronic Money Institutions licensed by Lithuanian Central Bank. Company is a part of VIA SMS Group and was launched in 2017 and has been in the market for 3 years. The company provides different payment solutions for the individual and business clients. It has its own banking solutions with a dedicated IBAN and MasterCard bank cards connected to the account.

Company has the head office in Vilnius, Lithuania as well as branch in Riga, Latvia. By 2018 VIA Payments UAB reached a turnover of more than 2 million EUR and net profit of the company was 185 000 EUR.

The company has a direct connection to SEPA payments with the help of integration to CENTROlink in Bank of Lithuania. Also, the European partnership portfolio is strong that allows Vialet to provide quite cheap payment solutions to its clients.

Clients portfolio of the company mostly consists of business entities operating online: marketing services, advertising, digital platforms, logistics, air and ships building companies. In terms of jurisdiction of the clients most of them are based in the European Union, being more specific, UK, Cyprus, Estonia and others, as well as Latin American region and Asia (Singapore and Hong Kong).

**Table 3.1.2.**

**VIA Payments UAB Company Profile**

<b>Legal name</b>	VIA Payments UAB
<b>Registration number</b>	304531663
<b>Date of registration</b>	15.11.2018
<b>Registered Address</b>	Konstitucijos pr. 7, LT-09308 Vilnius, Lithuania
<b>Legal form</b>	Public Limited Company
<b>Brand name</b>	Vialet
<b>Website</b>	<a href="https://www.vialet.eu/">https://www.vialet.eu/</a>
<b>Nature of business</b>	64999 - Financial intermediation not elsewhere classified (SIC)
<b>License</b>	Authorised Electronic Money Institution (License number 16)

Source: Rekvizitai.lt

The expert participated in the interview from Vialet is a key account manager – Vadim Kovalov.

**Royal Pay Europe.** Royal Pay is the company that is registered in Latvia and operates in the name of Authorised Electronic Money Institution under the Financial Conduct Authority and which is registered in the United Kingdom CFS Zipp Limited.

Royal Pay is more specialized in acquiring services for the clients. Again, the company provides its services only to business entities. They provide online payment gateways for the merchants to be able to receive the payments from their clients online. The services include:

- Visa and Mastercard bank cards processing;
- Payouts to cards (OCT);
- Card to card payments;

- Multi-currency payment gateways.

Most of the clients of Royal Pay are based in mostly Europe, but the major part of outside Europe clients is from CIS states and Latin America. In terms of industries, the majority of businesses entities are from IT-solutions industry, marketing, travel and e-gaming.

Royal Pay has a strong partnership portfolio as for the acquiring there are cross-border regulations from Visa and Mastercard, so the acquirers are quite limited in terms of regions to serve and process funds from or to bank cards.

**Table 3.1.3.**

**Royal Pay Europe Company Portfolio**

<b>Legal name</b>	SIA Royal Pay Europe
<b>Registration number</b>	50103973661
<b>Date of registration</b>	01.03.2016
<b>Registered Address</b>	Smilsu street 18, Riga, LV-1050, Latvia
<b>Legal form</b>	Limited responsibility company
<b>Brand name</b>	Royal Pay
<b>Website</b>	<a href="https://royalpay.eu/">https://royalpay.eu/</a>
<b>Nature of business</b>	Other activities auxiliary to financial services, except insurance and pension funding (SRS, CSB)
<b>License</b>	Authorised Electronic Money Institution (CFS Zipp, License number 900027)

Source: Lursoft

The expert participated in the interview from Royal Pay is business development manager – Jekaterina Lungina.

**Cardpay Limited.** Cardpay is Electronic Money Institution licensed under Central Bank of Cyprus. Cardpay is in the market for more than ten years previously known as CARDPAY EUROPE LIMITED that started its operation in 2009. The company has 10 offices around the world including the head office in Limassol, Cyprus; London, United Kingdom; Bengaluru Bangalore, India; Singapore; Hong Kong and Malaysia and other branches.

Cardpay provides more than 300 payment solutions worldwide. Company has its own iBanking solution. Cardpay provides its services only for business entities. It is a direct member of SEPA and SWIFT systems. Clients portfolio is wide as the company is the oldest from taken for the research.

**Table 3.1.4.**

**Cardpay Ltd Company Profile**

<b>Legal name</b>	Cardpay Limited
<b>Registration number</b>	HE 328641
<b>Date of registration</b>	14.01.2014
<b>Registered Address</b>	Georgiou Griva Digeni 125, 3101, Limassol, Cyprus
<b>Legal form</b>	Private Limited Company
<b>Brand name</b>	Cardpay
<b>Website</b>	<a href="https://www.cardpay.com">https://www.cardpay.com</a>
<b>Nature of business</b>	64999 - Financial intermediation not elsewhere classified (SIC)
<b>License</b>	Electronic Money Institution (License number 115.1.3.7)

Source: Cyprus Department of Registrar of Companies and Official Receiver

The expert participated in the interview from Cardpay is business development manager – Dmitrijs Pokatovs.

**3.2. Expert interviews results**

**Table 3.2.1.**

**Factors evaluation during the interview**

<b>Experts</b>	<b>Factors</b>			
	Price	Technology	Human capital	Regulations
German Juferov	3	5	2	4
Vadim Kovalov	5	3	2	5
Jekaterina Lungina	5	3	2	4
Dmitrijs Pokatovs	5	3	4	5

Source: Author's illustration based on interviews results

As we can conclude from the results of the interviews, hypothesis was tested and disproved, as we cannot say that pricing is the most influential factor among others. The results show that regulations have the same impact on competitiveness of Electronic Money Institutions in the market as pricing factor.

**Price factor.** Price factor has the highest grades from 3 of 4 experts. Violet evaluated pricing factor with the highest grade – 5 in the row with Royal Pay and Cardpay. However, xpate gave to pricing factor 3. Calculations of the average mark:  $18/4 = 4.5$ . German Juferov from xpate explains his point with an explanation that pricing is always important and could be an advantage of EMI, but currently, there are too many players with different pricing models and good opportunities to provide low pricing models, thus, it has no crucial impact on competitiveness. He stated that in highly competitive environment, company should more focus on the additional features that gives more value to the product that company offers. That is why in the factors' evaluation, technological development was chosen by xpate's head of customer relationships as technology creates more value for the clients and gives the possibility to integrate with more partners to provide more payment solutions to the clients. Expert from Royal Pay commented the pricing in almost opposite way, stating that because of high competition in the field, customer will choose those EMIs, which have the lowest prices. In terms of pricing policy of Electronic Money Institutions there is an advantage of innovative infrastructure with cheap and fast payment solutions. European financial field is one of the most developed and government role in this is crucial.

As, currently, marketing activities are highly developed, companies are making very different pricing policies using different strategies, so price is getting more complex factor by time. The point of two experts can be understandable as different companies have different strategies. At this point, the fact that xpate has highest prices on average from all the companies participated in the interview should be added.

**Technological development factor.** The highest grade to this factor was given by only by one expert from xpate, the rest evaluated this factor with grade 3. Calculating the average:  $14/4 = 3.5$ . As mentioned in theoretical part, innovations and technology are in the core factors that assist companies to achieve competitive advantage. On the long-run technological development creates significant benefits and Electronic Money Institutions should invest in research and development for sure, agreed all experts. On the other hand,

expert from Violet stated, that IT-production and IT-development requires a lot of resources including capital and time frame which should be carefully evaluated with the outcome of additional value for the clients. And as Royal Pay expert says, the clients can be with different technological background, especially in a very different regions if considering the global scale of services which influences the demand for some new solutions, that is why, the factor is not so crucial nowadays. As expert from Cardpay explained the grade 3 for technological factor, all of the infrastructure can be outsourced, especially at the beginning for startups. As technological features are very money and time consuming and more advantageous for individual new generation clients as millennials and generation-Z adore innovative add-ons. As for now, especially when targeting business entities, this is not the most important factor.

**Human capital factor.** Human capital was evaluated as the least influential factor from all four. Average mark:  $10/4 = 2.5$ . Why is that so? One expert said that currently the market is more reliable on technologies rather than on human capital. It was xpate's expert. Algorhythm substitute people and useful links and FAQs can substitute, for instance, customer support (Revolut is a great example for that). But still there is a need in professionals especially in decision making positions. In answer for the demand of professionals Royal Pay expert added that in highly globalised world, in the era of online education and huge amount of specialized courses, with the help of LinkedIn and other people recruitment online services there is a possibility to get particular knowledge and experience, so range of specialists in any given profession is wider than ever before and firms can search and hire employees from all around the world. The other option is opening the branches in cheap labour states to have an advantage on this factor, but at the same time, it is allowable for each company. Creating better conditions for the employees and provide regular trainings is important as high speed of staff turnover can increase the losses of the company.

**Regulations factor.** Regulations factor received the highest grades from two of interviewed experts. The other two experts gave 4 for this factor. Calculating the average mark:  $18/4 = 4.5$ . It scored 4.5 on average which is in the same level with price factor. Regulations are the point that is responsible for Electronic Money Institutions' range of services. Some of the regulators in the European Union set the limits like the amount of electronic money that may be issued by the entity (Czech Republic example given previously), amount of electronic money issued for one account (Estonian example given

previously) or even limits in additional features like online account opening, so some regulations give a gap for development, some harm it. In the very new field of business it mostly relies on regulations and this factor is truly crucial. The more licenses EMI has (or if the one/-s EMI has are enabling more possibilities comparing to other licenses), the wider range of possibilities for the customer may be offered, therefore more customers are willing to have the cooperation. In terms of partnerships, it is also a very important point because for cooperating with more valuable correspondent partners the full due diligence process should be passed. The regulator can give additional reputation benefits which will allow to receive cheaper offer and faster on-boarding as confidence and trust are quite decisive in terms of deals closes. AML/CFT and risk policies are also dictated by separate regulators. For instance, different regulators assign different risk categories for the same jurisdictions and industries which set the limits on Electronic Money Institution policies and big part of clientele can be cut.

**Factors ranking.** Based on expert interviews results the Electronic Money Institutions should be focusing on pricing policy as well as regulations to choose the best regulator to obtain a license from.

Pricing factor with regulations factor got the highest marks – 4.5 out of 5 on average. Technological factor is followed with 3.5 mark and the least influential factor as a result of empirical research is human capital with the score 2.5.

### **3.3. Public survey results**

156 respondents participated in the public survey. All of the respondents are private individuals which will give us more clear vision as experts were mainly focused on business entities.

Concluding demographic data, 46.8% of all respondents were from Latvia (73 respondents). The second country of residents by the number of respondents is United Kingdom (13.5%) with 21 respondents. UK is followed by Germany (10.9%) with 17 respondents, Netherlands (5,8%) with 9 respondents and Uzbekistan (4.4%) with 7 respondents.

60.3% of all respondents were male and the majority of respondents were from 18 to 25 years old (61.5%). Almost all of the respondents do have bank accounts (98.1%) and 59% of respondents do have account in Electronic Money Institution. However, there was no respondent with the account only in Electronic Money Institution as all the individuals had

account in banks also. 122 out of 156 respondents have answered “Yes” to question about internet bank which is 78.2%.

Moving forward to the factors, all of the respondents evaluated the factors from 1 (the lowest) and 5 (the highest) that influences their decision on opening an account with financial institution.

**Table 3.3.1.**

**Factors evaluation during the public survey**

<b>Grade</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Number of respondents for pricing factor	2	0	16	41	97
Number of respondents for technological development factor	15	27	44	44	26
Number of respondents for regulations factor	16	41	39	24	36

Source: Author’s illustration based on the results of the public survey

After the calculation of the average number for each factor the results are the following: pricing factor – 4.5 on average out of 5; technological development – 3.25 on average; regulations factor – 3.15.

Even if the majority of the respondents are the millennial generation, the first priority is given to the pricing policy of the company, technological development is evaluated in the second order. However, looking at the main reasons of having an account in Electronic Money Institution the most popular mix was all three given to the respondents – cheaper price, mobile application and user-friendly software (35 responses). It is 33% of all respondents, that have an account in Electronic Money Institutions.

Additionally, one of the most popular suggestions of the factors from respondents was the number of users that respondent can interact with, so it makes more sense to open an account where the relatives, friends or other people to whom the funds can be sent and from whom the funds can be received, also have the accounts. That raises the conclusion, that Electronic Money Institutions should be more focused on creation of comfortable infrastructure for fast payments in the system between users and more focused on attracting as many individual customers as possible, to have a strong client base that will create additional competitive advantage.

### 3.4. Empirical research results

Average numbers based on the results of evaluation of factors from both, interview and public survey results, are the following:

Pricing factor:  $9/2 = 4.5$  out of 5.

Technological development factor:  $6.75/2 = 3.4$  out of 5;

Human capital factor:  $2.5/1 = 2.5$  out of 5;

Regulations factor:  $7.65/2 = 3.8$  out of 5.

**Hypothesis:** Price is the most significant factor that influences competitiveness of Electronic Money Institutions in European Union.

Based on the results of empirical research, hypothesis was proved. Price is the most significant factor in terms of competitiveness of Electronic Money Institutions in the European Union, however, it is not the only one factor as competitiveness is a complex concept and consists of several factors.

## CONCLUSIONS AND SUGGESTIONS

**Conclusions.** Thesis is focused on a very young field of financial services – Electronic Money Institutions and competitiveness of those entities in the European Union. From the one side, we can see that European Union creates equal rules for all Electronic Money Institutions, from the other side, each jurisdiction has its own specifics. It is connected with the conditions of economic integration in the EU.

First of all, we can conclude that EMIs field is at its early rise and already has a highly competitive environment in the European Union.

Secondly, the impact of electronic money in the turnover is quite low but increasing with from year to year and had 18.05% increase on average from 2014 to 2018 in the European Union. However, the impact of it in cashless turnover is still insignificant.

Electronic Money Institutions are more focused on business entities operation internationally and online. For instance, online account opening is a huge advantage for foreign companies to save funds and time. As the demand and volumes generated by business clients are higher than from individual clients' side, in terms of greater return on investment, such companies are more specialized in business clients portfolio.

Ireland is a potential point for the number of Electronic Money Institution licensed entities rapid increase. Brexit is a reason for more than 130 EMIs to search for new jurisdictions to obtain a license in.

Passporting is another important point to provide the services in all the state in the European Union.

The most influential factors of competitiveness of Electronic Money Institutions are pricing factor and regulations factor. Because of the high competition, customers are in search for the lowest rates possible. There are different pricing strategies that are and can be used by Electronic Money Institutions. Possibilities to decrease the costs to offer cheap prices to customers are created.

Regulations factor directly affects the services that Electronic Money Institutions are legally allowed to provide and most importantly for which type of clients. Regulations play a decisive role to customer choice and partnership offers.

Technological factor is of high importance, especially for individual clients of younger generation that are interested in cheaper and faster payment solutions.

Human capital market is on the decrease in European fintech market, but still talents play a huge role in a decision-making process.

**Suggestions.** In order to be more competitive in EMIs market in the EU should:

Carefully choose the jurisdiction for license obtaining. In thesis the analysis of EMI friendly jurisdictions was made and Ireland with Lithuania seems to be the best choices currently.

Focus on pricing strategy and lower the costs. Location of branches with most employees in cheap labour capital states will provide additional advantage for the companies to optimize the costs to offer cheaper solutions for the clients in the market. To set a productive partnership portfolio is also important to provide effective pricing for the services.

Importance of technological development should not be decreased. Technological development allows companies to be more competitive and to decrease the costs in the long-term perspective. It also affects the integrations with partners that will allow the EMI to provide more tailored solutions to the clients. The same regulatory requirements are changing with time and request the newest IT-infrastructures from Electronic Money Institutions.

Electronic Money Institutions should be more focused on individual clients to create greater community for attracting more customers. Strong clients portfolio creates competitive advantage that will influence not only individual clients' decision but also business clients' decision as both are interested in cheap and fast solution in receiving and sending the funds.

Regulators are suggested to decrease the limits to have more demand on obtaining of EMI licenses. The certain limits and absence of additional features like in Lithuania creates competitive disadvantage for such jurisdictions.

Trainings are anyway is an important element to create competitive advantage in the market. Core human capital needs special attention and investments as in the long-term it can help the companies to be more competitive. Ideas and innovations are made by people.

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## **Appendix 1**

Name, surname and positions of the specialists the were interviewed during the empirical research:

1. German Juferov – Head of customer relations (XPATE LTD);
2. Jekaterina Lungina – Business development manager (Royal Pay Europe SIA);
3. Vadim Kovalov – Key Account Manager (VIA Payments UAB);
4. Dmitrijs Pokatovs – Business Development Manager (Cardpay Limited).

## Appendix 2

Questions of the experts' interview are the following:

1. Please evaluate each factor influencing the competitiveness of Electronic Money Institutions in the European Union from 1 (the lowest) to 5 (the highest):
  - Price (from 1 to 5);
  - Technological development (from 1 to 5);
  - Human capital (from 1 to 5);
  - Regulations (from 1 to 5).
2. What impact has pricing factor on competitiveness of EMIs in the EU?
3. What impact has technological factor on competitiveness of EMIs in the EU?
4. What impact has regulations factor on competitiveness of EMIs in the EU?
5. What impact has human capital factor on competitiveness of EMIs in the EU?
6. What impact has customer support factor on competitiveness of EMIs in the EU?
7. How you evaluate all these factors in terms of your organization?

### Appendix 3

Questions of the public survey are the following:

1. Do You have an account in bank?
2. Do You use internet bank service to have 24/7 access to your account?
3. Do You use the services of any Electronic Money Institution (e.g. Revolut, Transferwise, Monese)?
4. What are the main reasons for opening an account in Electronic Money Institution?
  - Cheaper price;
  - Mobile application;
  - User-friendly software;
  - Other (please suggest)
5. Please, evaluate the factors that influence your decision in making a choice where to open a bank account:
  - Price (1-5);
  - Technological development of the financial institution (1-5);
  - Bank's or EMI's jurisdiction (1-5);
  - Please, suggest the factor;
6. Personal information (age, gender, country of residence).

The bachelor paper “Factors that influence the competitiveness of Electronic Money Institutions in the EU” is worked out at the faculty of Business, Management and Economics of University of Latvia in the study program “International Economics and Commercial Diplomacy”.

With my signature I certify that the research is made by myself, the information sources shown in the work are truly represented and the electronic copy corresponds to printed version.

Author: Azimkhon Askarov \_\_\_\_\_ . \_\_\_\_ . 2020  
(signature)

**I recommend/ I do not recommend** the work for the presentation

Supervisor: professor Dr.oec.Erika Šumilo \_\_\_\_\_ . \_\_\_\_ . 2020  
(signature)

Reviewer: professor Dr.oec.Baiba Šavriņa

The work is submitted at the Study Center on \_\_\_\_ . \_\_\_\_ . 2020.

Person authorized by the Dean: methodologist Astra Zaļkalne \_\_\_\_\_  
(signature)

Work is presented in the meeting of bachelor`s final probation committee on \_\_\_\_ . \_\_\_\_ . 2020. protocol N. \_\_\_\_

Secretary of committee: \_\_\_\_\_  
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