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**The European E-commerce market: Digital
Single Market**

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Abstract

This study provides an overall insight into the various aspects of the ongoing e-commerce situation in the territory of European Union simultaneously measuring the impact of “Digital Single Market” Strategy both on e-commerce sector and on digital platform in general.

The thesis is composed of three chapters, where the first one is dedicated to the disclosure and revelation of e-commerce field by making a market analysis, taking into consideration its trends, growth opportunities, obstacles impeding its expansion and productivity. This part of the research provides an assessment of obtained results and gains not only for the EU economy, but also for relationships created between two main counterparties of the sector: e-shoppers and e-sellers.

The second chapter provides deeper highlights into core issues of nowadays’ e-commerce sector, namely cross-border delivery and geo-blocking questions. Main complications are brought into light demonstrating their possible solutions and future evolution in the framework of “Digital Single Market” Strategy.

Finally, the third chapter is presenting the comprehensive description of Digital Single Market, changes made till now, new regulations, legislations and their direct effects on digital economy of the EU. In conclusion, there is provided a questionnaire which totally reveals the approach of citizens and companies regarding the above mentioned strategy.

Introduction

This thesis discusses the topic of European e-commerce market with highlights of “Digital single market strategy” proposed by Juncker’s commission in 2015. It is beyond shadow of a doubt that nowadays, the technological progress is pushing forward the economy providing new opportunities and options both for e-shoppers and e-retailers.

The first chapter is tackling with such issues as trends of the online market in the territory of the European Union and the most demanded product categories. As well as, through numerous researches and reports provided by European Commission it is the impact of e-commerce on conventional stores and its overall impact on economy at all. As a matter of fact, being representatives of the generation Z, it was impossible to discount the influence of mobile technologies in the same sector. According to PayPal research M-commerce is going to have a 42% of annual growth in the EU. Additionally, in this part of thesis are presented e-shoppers and e-retailers, their needs and interconnectivity, which is making the chain of e-commerce in general.

The second chapter is dealing with questions like cross-border e-commerce and geo-blocking. 16% of individuals in the 28 countries of Europe purchased goods and/or services from sellers outside of their residence country. For the sake of ending the unjustified geo blocking and cancel the barriers, on 29th of November European Parliament adapted the “Geo-Blocking regulation” with the collaboration of EU ambassadors. This regulation again is making part of Digital Single Market Strategy.

The last chapter is describing the nature of “Digital single market”, its characteristics and impact on each relative sector. The above mentioned strategy is composed of three pillars and each of them includes particular points touching such important issues as e-consumers’ rights, privacy, cybersecurity etc. Being in use already a couple of years, European Commission already provided the mid-term review on the implementation of DSM and the results achieved during these years. For example,

from 15th of June 2017 all the roaming charges are cancelled for the Europeans travelling in other Member states. From early 2018 Europeans are given the chance to access freely their subscriptions to films, TV canals, e-books, video games or music services during their travelling. Another significant achievement can be considered the end of geo-blocking and discrimination among member states. At the end of last chapter will be presented the questionnaire spread among companies having activities connected to e-commerce and/or online services, that in a way are witnessing the changes in the framework of Digital single market strategy. The results represent mostly a positive feedback about the project till now, in this way proving the positive impact of the project.

CHAPTER 1

THE EUROPEAN ECOMMERCE MARKET

1.1 An Overview of Ecommerce in Europe

With the extensive application of the Internet in 1992, European e-commerce got a late start started in 1995. In 2005, actively promoting the EU, including each member state has enacted the relevant electronic commerce including operations, payment, legal documents and other aspects of the contract and guidance outline.¹ European e-commerce information management has been a very good legal guarantee and standardization of operations. E-commerce environment has changed dramatically; the customer's trust in online shopping has also been greatly improved, so that the European B2C achieved considerable development.

The EU is in prime position when it comes to global trade. The European Union is one of the most economically developed regions in the world, and the gradual deepening of economic integration has promoted the further prosperity of the region's economy. 2013, the EU's 28 member countries GDP reached 12 trillion euros, per capita gross domestic product was 23100 euros.² As the world's largest exporter of goods and services, the European Union is the world's most important economic force. In 2016, 28 countries with an area of 4 million 380 thousand square kilometres and a population of 510 million, and the EU's economic strength has surpassed the United States ranks first in the world. With the enlargement of the EU, the EU's economic strength will be further strengthened.

1.2 The trends of Online Market and popular product categories in Europe

Because of the development of the market the online shoppers now have much more opportunities and options for shopping online which is leading to the inevitable

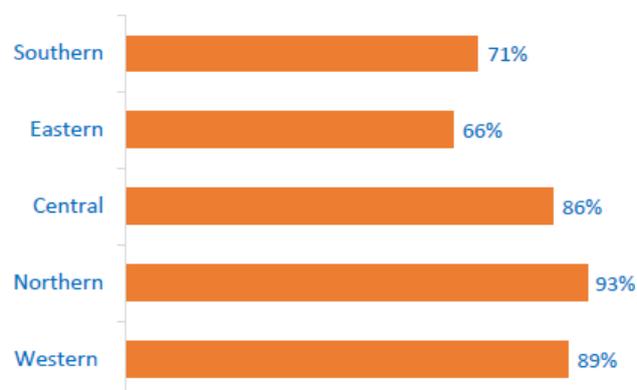
¹ (Schniederjans & Cao 2002) – “E-commerce Operations Management”

² Eurostat 2017

increase in the value of goods bought online. For example, for Germany, the United Kingdom, France, Spain, Poland, Belgium, The Netherlands, Italy, Norway, Denmark, Norway and Finland the total amount of products purchased online is 170 billion Euros during 2013. One of the conclusions expressed by PostNord, which is usually managing reports only for Nordic region, this time made a survey for European market as well, stating the following: “The reason why we are now, for the first time, publishing an European ecommerce report is the rapid growth in ecommerce and an increase in interest in the Nordic region and Europe from ecommerce companies in Asia and the USA”³, says Håkan Ericsson, President and CEO of PostNord.

Currently, the Northern Europe has the most prominent Internet penetration level in Europe, in other words 4 out of 5 made an online acquisition. The Figure 1 below is showing the exact Internet penetration levels in different parts of Europe.

Figure 1. Internet penetration in Europe per region 2016



Source: Eurostat 2016

As a matter of fact, among Nordic region the Norway is demonstrating the highest level of Internet penetration having 100% Internet access, Iceland and Denmark are following with a very little difference in percentage.

³ PostNord Ecommerce Report 2015

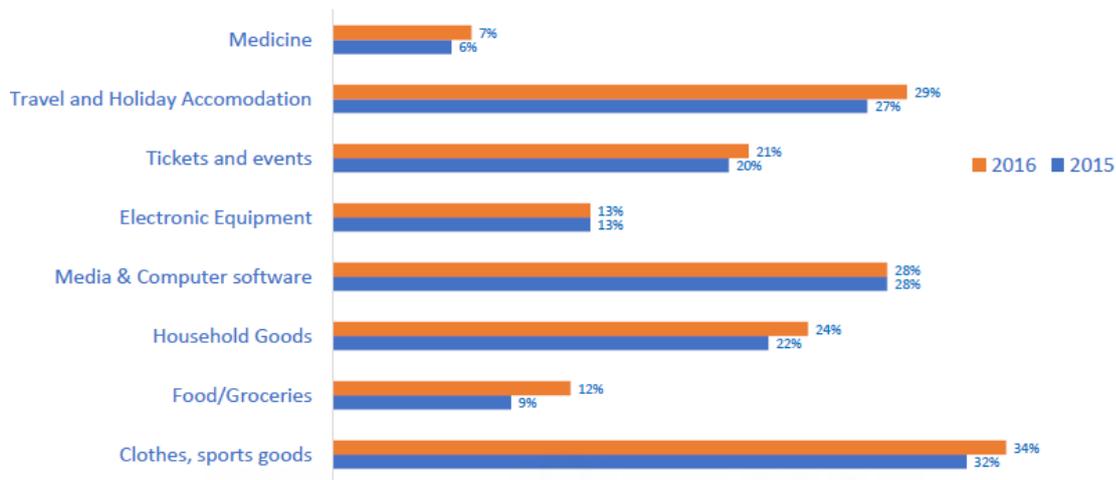
Table 1. Internet penetration as share of total population

<u>Countries</u>	<u>Internet Access</u>	<u>Online population</u>
Europe	77%	631.3 mn
EU28	83%	434mn
Top 12	92%	187.44mn
Norway	100%	5.27mn
Iceland	99%	0.328mn
Denmark	98%	5.57mn
Estonia	96%	1.25mn
Netherlands	95%	16.13mn
Sweden	93%	9.16mn
Finland	93%	5.13mn
United Kingdom	93%	60.6mn
Luxembourg	92%	0.53mn
Switzerland	90%	7.54mn
Germany	89%	71.8mn
Ireland	89%	4.2mn

Source: Worldbank 2016, Eurostat 2016

The most popular product categories in Europe are clothing and footwear, home electronics and books. In the Nordic region, Spain and Italy home electronics are on the top of the list. Sport and leisure articles are also a category that has seen an increasingly rapid level of growth online in recent years. In Germany about 14 million consumers bought these kinds of goods online last year. In second place was France, with 5.4 million shoppers.

Figure 2. Online shoppers per product/service category



Source: Eurostat 2016

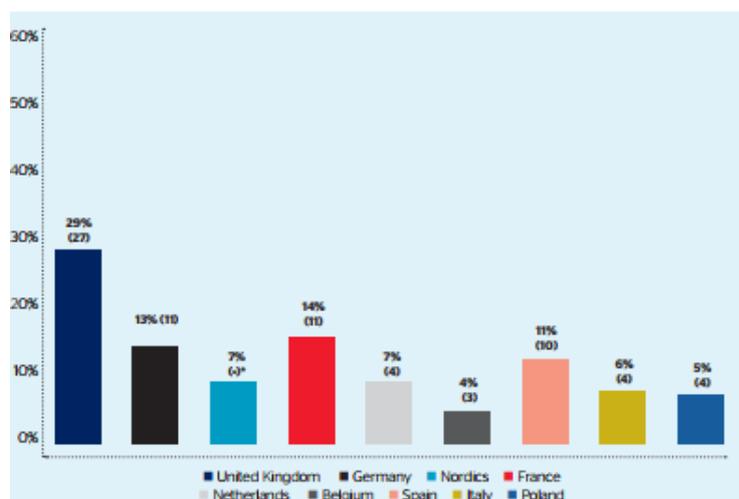
According to PostNord “E-commerce report 2015” another product which has promising growth possibility is cosmetics which is forecasted to have serious growth rate. Over the last year, it was mainly the ‘big three’ (online shoppers from Germany, the United Kingdom and France) who bought skin care and cosmetics via the Internet.

As regards Sport and leisure category, the growth is noticeable especially in Netherlands. The absolute leader is of course Germany, since at least 1 out of 4 leisure goods and sport items are purchased online.

Nonetheless, it can be noticed as well that some countries like the United Kingdom and Spain are showing promising results as well.

Another category which is very interesting to put light on is the food sector which is getting more and more popularity and again we are witnessing the UK being the leader in the list. British people seem to be more mature making even their daily grocery spending online.

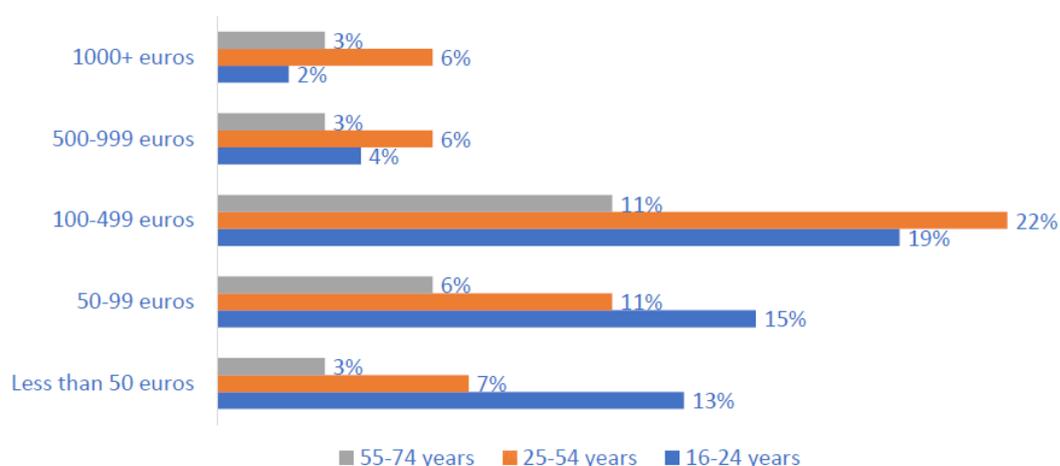
Figure 3. Buying food online



Anyway, in the comparison with previous categories this one is still the less trendy group (after medicine) among people. However, this can mean also that the bigger potential is achievable especially in this sector.

The results taken from Eurostat show that the less popularity among shoppers on online platform is has medicine products, which by the way is showing some increment of 1% compared with 2015.

Figure 4. Money spent € 100 - € 500 in last 3 months



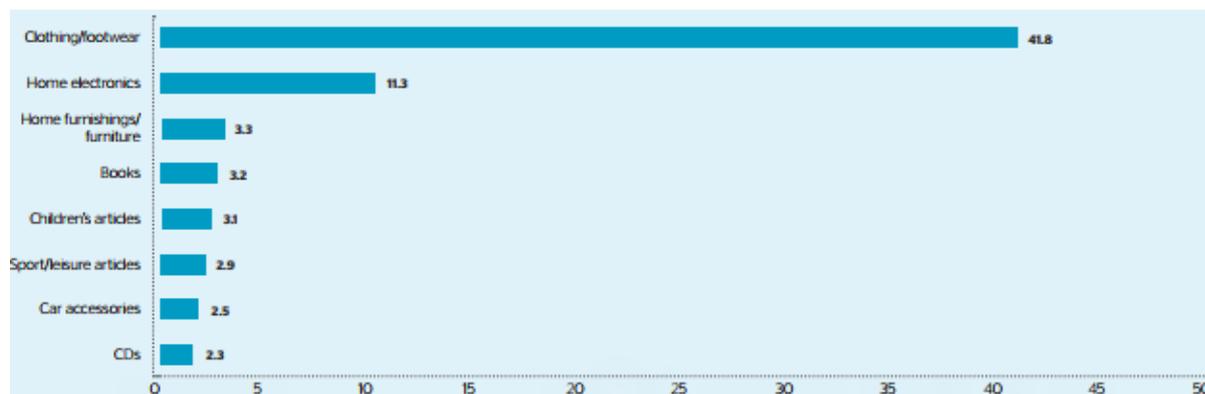
Source: Eurostat 2016

1.3 Delivery preferences and the process of returns

As a matter of fact, the delivery preferences and requirements noticeably alter among European countries. So, in terms of e-commerce deliveries, the Dutch have the highest expectations hoping to receive their purchase within 1-2 days⁴. Whereas Nordic and Spanish market seems to be more patient since they are willing to wait 6 working days. The most common by far is 3-5 days.

It is well known that nowadays one of the most important and principal criteria for online shoppers is so called “easy and no trouble returns”. Without doubt, in this part we are going to have diverse data and levels among EU countries since each of them is demonstrating various behaviors regarding this issue. In mature markets (like in Germany, the UK and Netherlands) the proportion of returns are higher. Among frequently returned items are cloths and footwear, while the second place takes home electronics.

Figure 5. Number of millions of online consumers who have returned an item



For example DHL Express, which is a well-known German logistic company providing international courier, parcel and express mail services, has developed an easy returns labels to make online shoppers' experience smoother with return process. B2C distance sellers can manage their return volumes comfortably and flexibly. They can provide their customers with return labels via the DHL Global

⁴ Postnord: E-commerce in Europe 2015

Mail web portal or have customers create and print labels by themselves. Consumers can post their return shipments easily and usually free of charge at any local postal outlet in most countries. “DHL Easy Return “provides access to a huge number of postal outlets as drop-off points, with currently more than 80,000 drop-off points within Europe.⁵

1.4 Payment preferences

Credit/debit cards are still the leaders in online market and are considered the most common way of making payments. But this does not mean that the alternative methods are not progressing. On the second place definitely comes PayPal, being common for all Europe, besides Northern region and Belgium, where it takes only 5th or even 6th place.

So, in Poland and Germany other payment “habits” are also prevailing. In Poland, direct payment through banks is the most accepted; followed by cash on delivery (COD), while German pay for their purchases by invoice in arrears.

Research organization yStats.com published its latest report named “Europe Online Payment Methods: First Half 2014” and it demonstrates that card account for the largest share of business-to-consumer ecommerce transactions in Europe, while digital wallets are second best.

Online payment is the largest contributor to card payment growth in the UK, with annual growth of over 10%.⁶ The use of contactless cards is on the rise: in early 2014, the monthly value of payments by contactless cards in the UK exceeded GBP 100million for the first time. In France, credit card remains the most preferred payment method in B2C E-Commerce, followed by PayPal and similar services. The year-on-year growth of online credit card payments in France slowed to a single-digit percentage in early 2014. Online card spending in Italy was growing year-on-year in

⁵ DHL easy returns – www.dhleasyreturn.com

⁶ “Europe Online Payment Methods: First Half 2014”

every month of 2013, while in Spain; the two payment methods most used in online shopping in 2013 were Bank Credit Card and PayPal.⁷

Another noteworthy aspect outlined by Ystat.com researchers is that COD (Cash on delivery) is one of the most used methods Czech Republic. Online shoppers in Turkey predominately use a credit card for purchases. E-Commerce transaction with cards in Turkey reached a value of over EUR 10 billion. As well as in Estonia B2C E-Commerce transactions with bank cards are on serious level, with cross-border transactions by far outweighing the domestic ones.

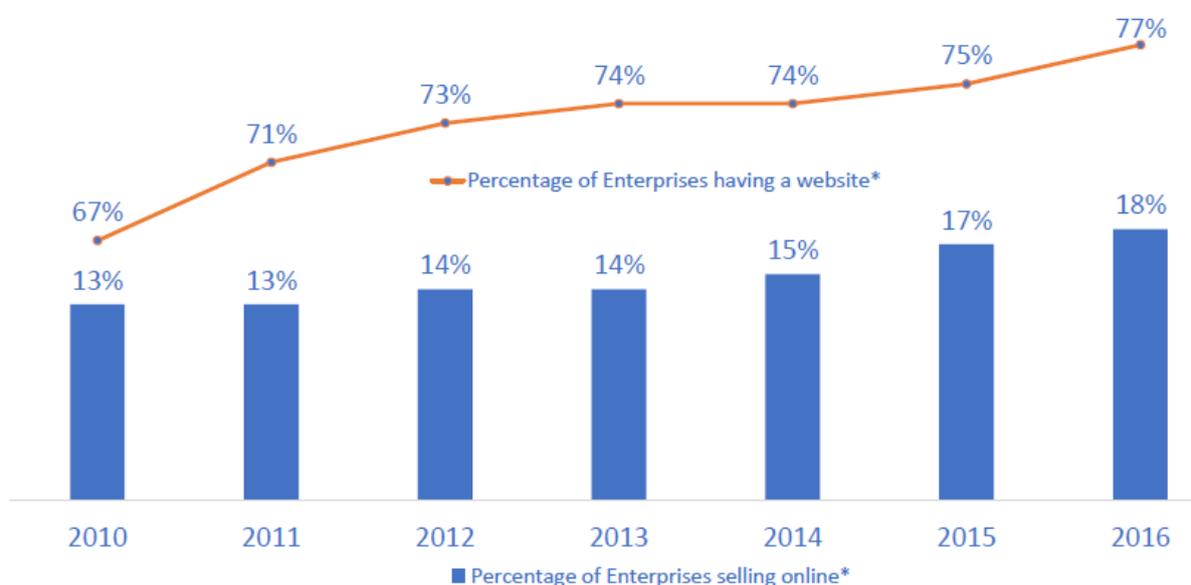
Taking a look on Nordic region, it is very interesting to mention that for Sweden credit cards and almost equally popular both for Ecommerce and M-commerce, dominating as well in Norway and Denmark. By the way as regards Finland, in this case bank transfers are the true leaders.

1.5 Effects on Conventional Shops

Evidently the continuous growth of online markets will obviously lead to negative effects on conventional shops. For example, in Europe during 2017 was expected a growth of online retailers by 14.2%. Unfortunately, this can lead maybe to fewer physical stores and reduction of employment rates.

⁷ "Europe Online Payment Methods: First Half 2014

Figure 6. Companies selling online



Source: Eurostat 2016

According to Center for Retail Research there are 3 stages in Market Development:⁸

- **Maturity** - market share of 9.5% or above, 55%+ of the population are internet shoppers, rapidly developing mobile use (15%+ of all online in 2014), multiple online providers throughout each sector and 12+ purchases pa by each shopper.
Examples: US, the UK, Germany and (from 2017) France, are expected to grow more slowly, recruiting a percentage of non-users but mainly growing because existing e-shoppers place more orders or buy more expensive items. However, online growth in Germany is continuing at a very high rate, so maturity is a tendency rather than a scientific law.
- **Mid-range** - market shares of 6.5% to 9.5%, a wide range of suppliers, more than ten purchases pa per shopper, 45% are online shoppers and a smaller mobile use.

⁸ Center for Retail Research - www.retailresearch.org

Examples: France, The Netherlands, Sweden, Switzerland and Austria, will grow by recruiting more users as well as persuading shoppers to buy more frequently.

- **Immature** - online market share below 6.5%, patchy take up (regionally or demographically) of online retailing, fewer than ten purchases pa, and some trade sectors are comparatively less developed.

Examples: as Italy, Spain and Poland, have to overcome structural issues in the quality of their telecommunication networks, but can be expected to develop rapidly by increasing the number of e-shoppers in their population and then inducing them to purchase more regularly.

Below are presented some of European countries demonstrating their main e-commerce features:



Belgium



Population - 9.3 mln 15+



E-commerce share – 4.5%



Internet users – 86%, 8.0 mln



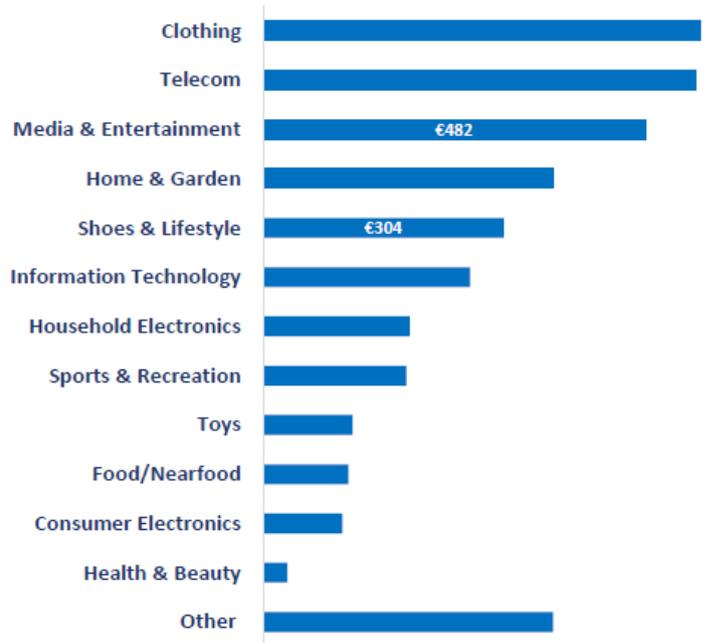
VAT – 21%



E-shoppers – 6.9 mln, 74%



1 in 4 Belgians shop online on a



Logistics Performance Index



Ease of Doing Business Index



eGDP ranking

“Belgium is an open multi-language community, with Dutch, French and German regions, and Brussels as an International European hub; this is why Belgian people are top cross-border EU e-shoppers.” **Carine Moitier, CEO of BeCommerce in Belgium**





France



Population - 9.3 mln 15+



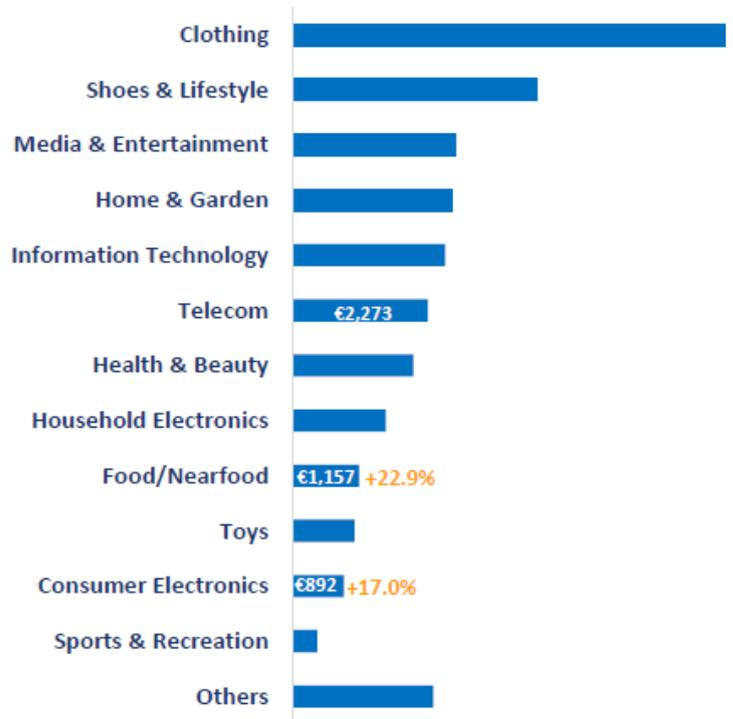
Internet users – 87%, 47 mln



VAT – 20%



E-shoppers – 36 mln, 67%



Logistics Performance Index



Ease of Doing Business Index



eGDP ranking

“94% of all French web shops offer a mobile site. It is a must have.

French love click & collect”

Marc Lolivier
Director General FEVAD





The United Kingdom



Population - 53.6 mln 15+



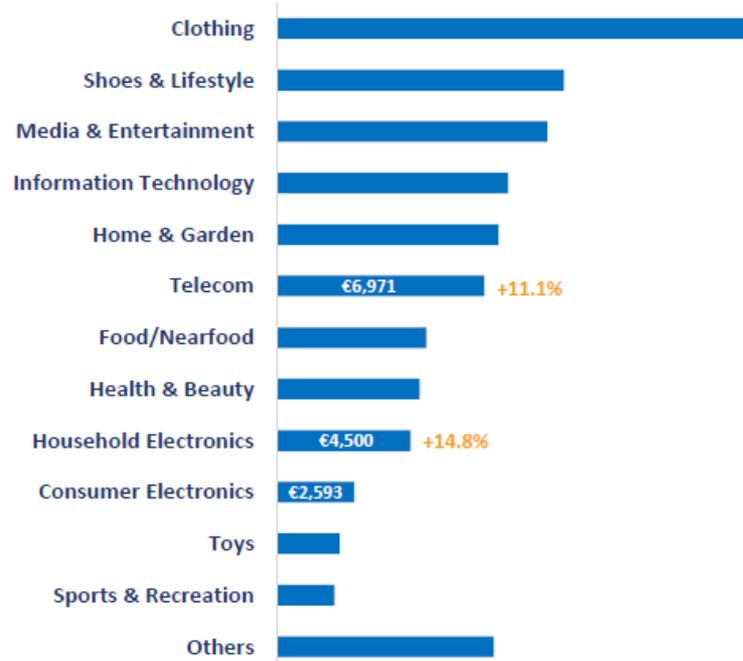
Internet users – 93%, 49.8 mln



VAT – 20%



E-shoppers – 43.44 mln, 81%



“Black Friday has become huge in the U.K.
Over two-thirds of retail site visits are through mobile devices (smartphones and tablets)”

James Roper, Chairman of IMRG



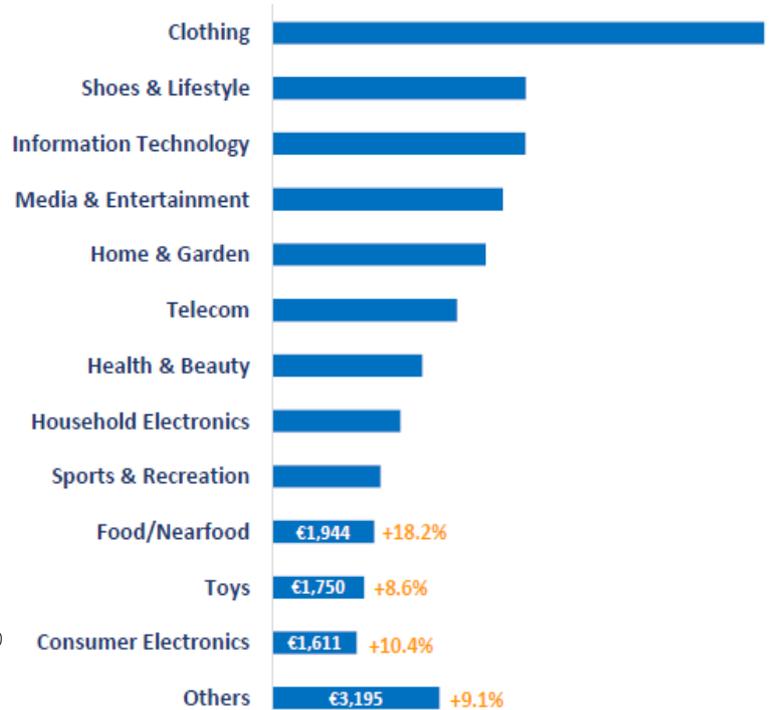


 Population – 70.7 mln 15+

 Internet users – 89%, 63 mln

 VAT – 19%

 E-shoppers – 51.6 mln, 73%



“In Germany, free returns are expected amongst most customers; a seller is usually expected to accept returns as a gesture of goodwill.”

Tim Artl
CMO of Händlerbund





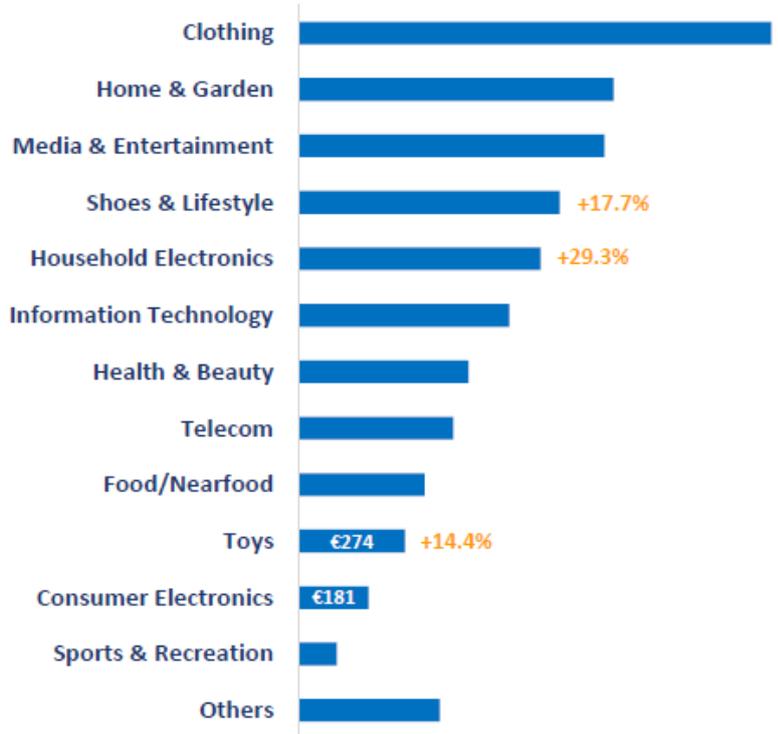
 Population – 52.5 mln 15+

 E-commerce share 2.6%

 Internet users – 68%, 35.7 mln

 VAT – 22%

 E-shoppers – 17.7 mln, 34%



“Home delivery is the standard, but advanced logistics services such as pickup points and same day delivery are becoming popular

Mobile is more and more relevant in online purchases.”

Roberto Liscia
President of ConsorzioNetcomm





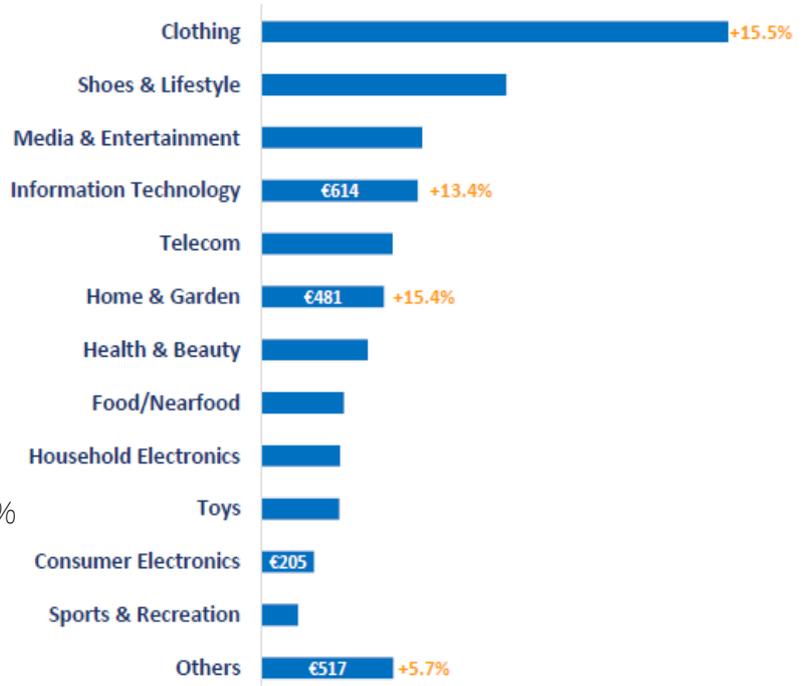
 Population – 39.3 mln 15+

 E-commerce share 3.6%

 Internet users – 80%, 31.4 mln

 VAT – 21%

 E-shoppers – 16.6 mln, 42%



 **12th**
Logistics
Performance Index

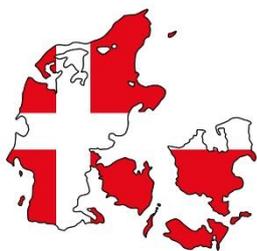
 **21th**
Ease of
Doing Business Index

 **18th**
eGDP ranking

“The availability of delivery options is more important than price.
Create a good mobile experience, as mobile e-commerce is 26% of total e-commerce”

José Luis Zimmermann
CEO of Adigital





Denmark



Population – 4.7 mln 15+



E-commerce share 24.0%



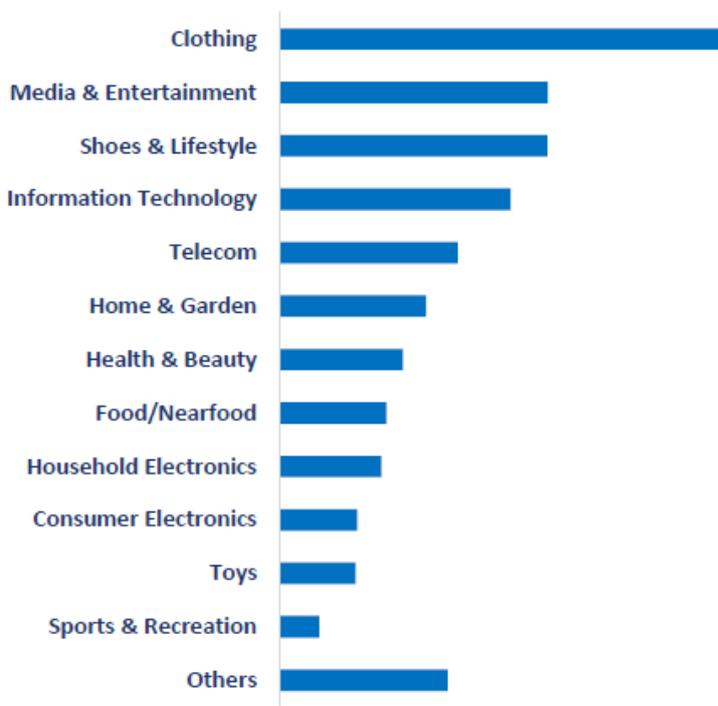
Internet users – 97%, 4.6 mln



VAT – 25%



E-shoppers – 3.7 mln, 42%



Logistics Performance Index



Ease of Doing Business Index



eGDP ranking

“Mobile First –Tablets and smartphones account for 15% of all ecommerce purchases in 2016.

Average return rate is 3.8%”

Niels Ralund
CEO of FDIH





Romania



Population – 17 mln 15+



E-commerce share 3.1%



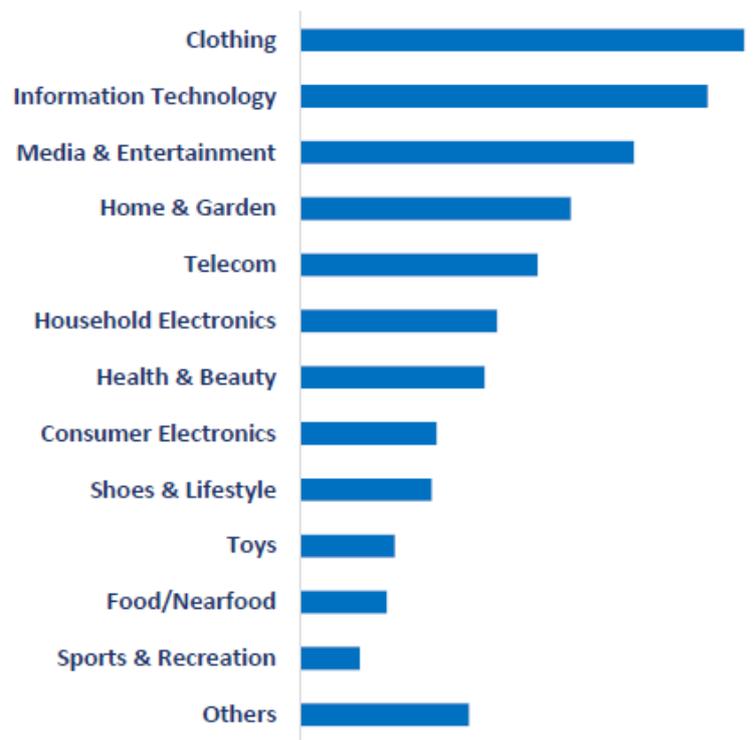
Internet users – 62%, 10.5 mln



VAT – 19%



E-shoppers – 1.9 mln, 11%



Logistics
Performance Index



Ease of
Doing Business Index



eGDP ranking

“Black Friday in November is the main shopping event
“Cash on delivery is the preferred payment “

Florinel Ioan Chis
Director Armo



1.6 Mobile E-commerce

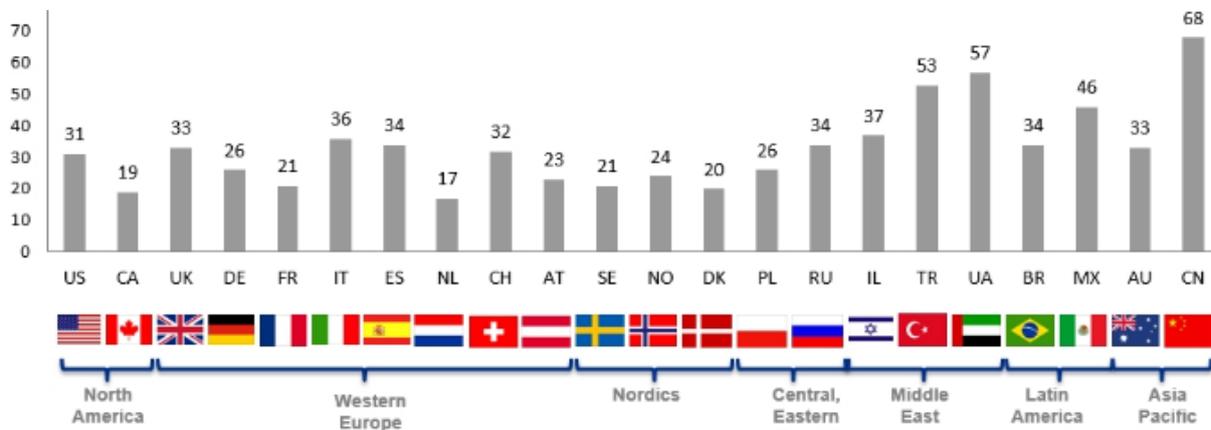
Day by day the current mobile e-commerce is taking a more solid position in nowadays e-commerce market having different popularity among different countries. Compared with usual e-commerce industry in this case we deal with another factor which is defining the eventual result. Mobile e-commerce intends people who has in possession a Smartphone and use it for such kind of activities like online shopping. In most of the cases the mobile is used to look for the product information and price comparison, as well as to have a look on consumers' feedbacks and recommendations. As a matter of fact, the PayPal, an American online payments system largely recognized and credited in all over the world, decided to make a research aimed to discover more details. The survey was conducted by IPSOS, which is a global market research and consulting firm founded in 1975 in Paris. 17,500 consumers were interviewed across 22 markets and here are the main findings provided for PayPal:⁹

- 1 out of 3 online shoppers do their online purchases using their Smartphone
- Age group of mobile shoppers is 18-34 years
- Forecasted compound annual growth of 42%
- More popular among in Eastern and Southern Europe

As it was mentioned before the percentage of mobile shopping is greatly varying among countries, for instance in Turkey 53% of online shoppers is actively using the Smartphone, whereas in Netherlands only 17%.

⁹ "PayPal Cross-border Consumer Research 2016"

Figure 7. % of online shoppers who made an acquisition using a mobile phone



Source: PayPal 2014. IPSOS global research

In a global image of course China is the leader, followed by United Arab Emirates and Turkey. As regards the Europe, in Nordic countries mobile shopping is not as widely accepted, by the way a promising growth is forecasted for those countries.

Another American multinational company named RetailMeNot (founded in 2006, headquarters in Austin, Texas) dedicated a research to Mobile E-commerce based on a report carried out by Center for Retail Research in January 2015, which is revealing a lot of notable facts.



In Europe the percentage of Smartphone adoption differs significantly, in Sweden 75% of population has a Smartphone, whereas the country with the lowest percentage is Poland 42%.¹⁰

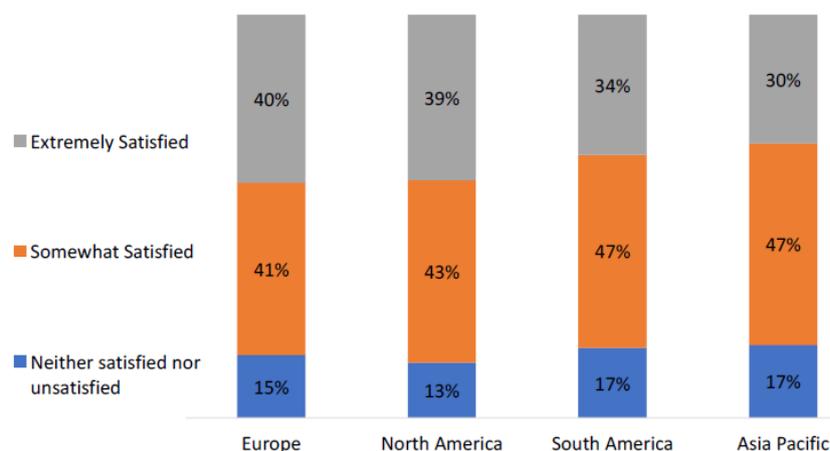
According to this research another fact is that Americans are visiting ecommerce websites more often than Europeans. 74% of surveyed Americans have checked the product webpage, and only 46% of Europeans did. The figure below shows the detailed results both for the USA and Europe:

Table 2. Users who visited the retail's website

Great Britain	72%
Sweden	62%
Germany	60%
Netherlands	59%
France	49%
Spain	28%
Poland	24%
Italy	15%
Canada	59%
Europe	46%
USA	74%

RetailMeNot also focused on the forecasted growth for M-commerce in Europe. It shows that in Europe the biggest growth can be found in Poland (Smartphone: +100%, tablet: +121%), Spain (Smartphone: +73%, tablet: +132%) and Germany (Smartphone: +108%, tablet: +96%).¹¹

Figure 8. Satisfaction of online consumers by their shopping via mobile.¹²



Source: IAB "A global perspective of mobile commerce"

¹⁰ Centre for Retail Research "Online Retailing in Europe, the U.S. and Canada 2015-2016 ~ A Research Report for RetailMeNot, Inc."

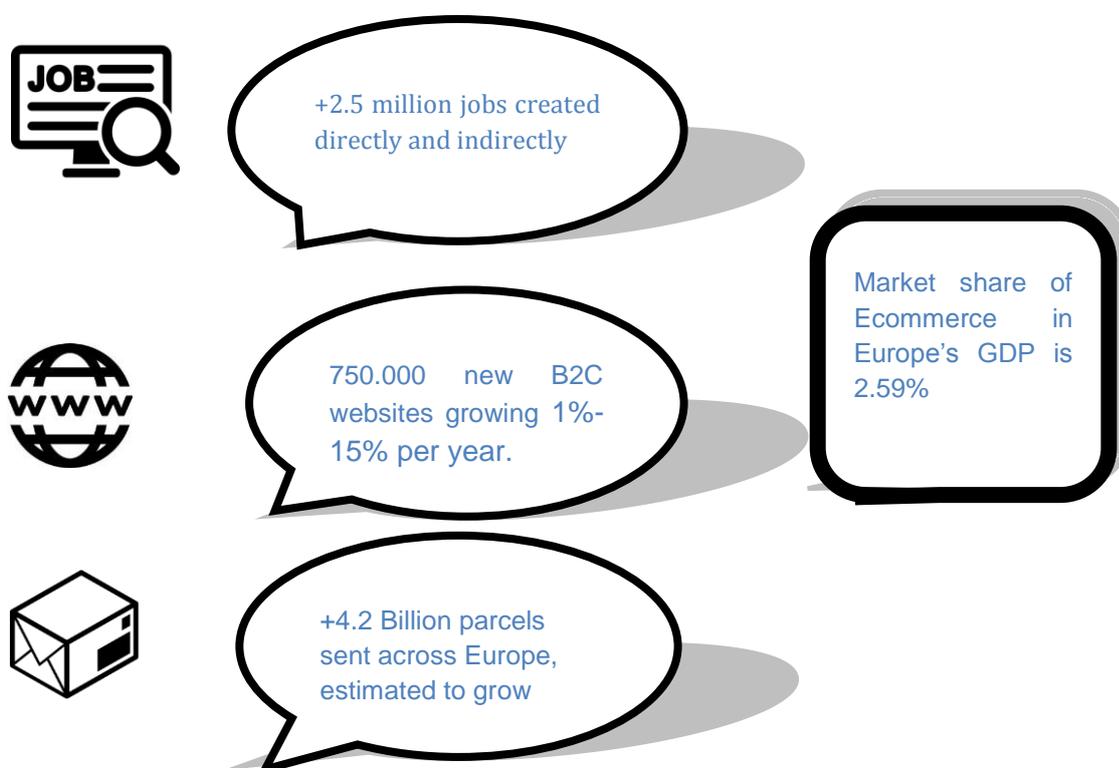
¹¹ Ibid

¹² IAB "A global perspective of mobile commerce"

1.7 Impact of E-commerce on the Economy

For the sake of understanding how the ecommerce nowadays affects the entire economy the GDP data (Gross Domestic product) will be a perfect illustration.

Europe's Gross Domestic Product amounted to approximately 14.6EUR trillion in 2015 and the share of European ecommerce in that number is 2.59% which according to some estimation is going to be doubled by 2020. Definitely this number created both new jobs in ecommerce sector and B2C active websites.



According to European Ecommerce Report 2017 presented in Brussels by Ecommerce Europe and Ecommerce foundation, it can be clearly detected the tendency of turnover increase (15% to 530 EUR billion in 2016).¹³ As well as, the forecast for the 2017 are promising the continuous growth reaching around 602 EUR billion having a 14% growth rate.

¹³ European Ecommerce Report 2017

Figure 9. E-commerce growth

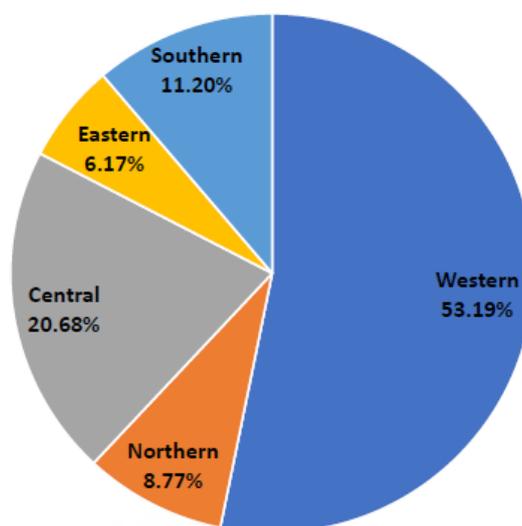


Source: Ecommerce Foundation 2017

As stated by Markus Tuschl Global Director of Digital Retail “Ecommerce in Europe is very dynamic and we observe very distinct stages of this development by country, impacting on the overall retail environment. E.g. in some South Western European Countries the early growth phase of online shopping drives the markets. In other more mature online markets a second impulse can be observed, triggered by the results of the disruptive impact that ecommerce had during the last decade on the retail scene”. The statistics collected from Eurostat proves that online shopping significantly differs from one country to another. The predominant parts of online shoppers are in the UK composing 87%, whereas the smallest share belongs to Romania with 18%. Based on this consequently the UK is the one having the highest E-GDP.

The analysis includes different parts of Europe and it can be clearly outlined that Western Europe covers the largest Ecommerce sector taking more that 53% of the total turnover. Later on Central and Southern Europe follows with 20.68% and 11.20% as illustrated on Figure 10 below.

Figure 10. Percentage of total e-commerce sale per region, Europe 2016



Source: Ecommerce Foundation 2017

As we can see from Figure 10, Western Europe is the leader in e-commerce market. By the way, taking into consideration the growth rates of Southern Europe, it is on its rise and in 2016 demonstrated 15% of augmentation and is forecasted 18% of rise in 2017. Whereas the forecasted increase for Western Europe in 2017 is only 13%.

1.8 E-shoppers' and E-retailers

1.8.1 E-shoppers in Europe from 2015 to 2021

The statistics done by Statista, one of the leading statistics companies on the internet, provides not only the number of e-shoppers but also the forecast till 2021. The increase is quite promising since according to the data the increment will reach to 377.5 million in 2021¹⁴.

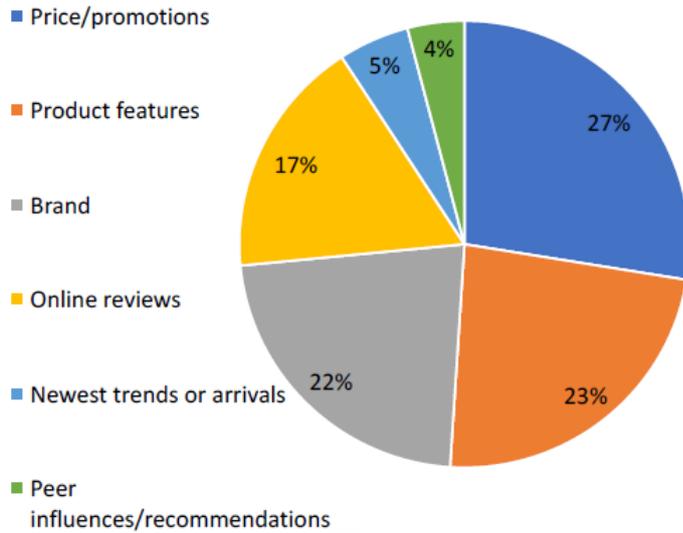
Nowadays the e-shopping is well spread among different age groups, but of course the youth is the most active.¹⁵

¹⁴ Statista "Number of e-commerce users in Europe from 2016 to 2021"

¹⁵ Digital economy and society in EU <http://ec.europa.eu/eurostat/cache/infographs/ict/bloc-2a.html>

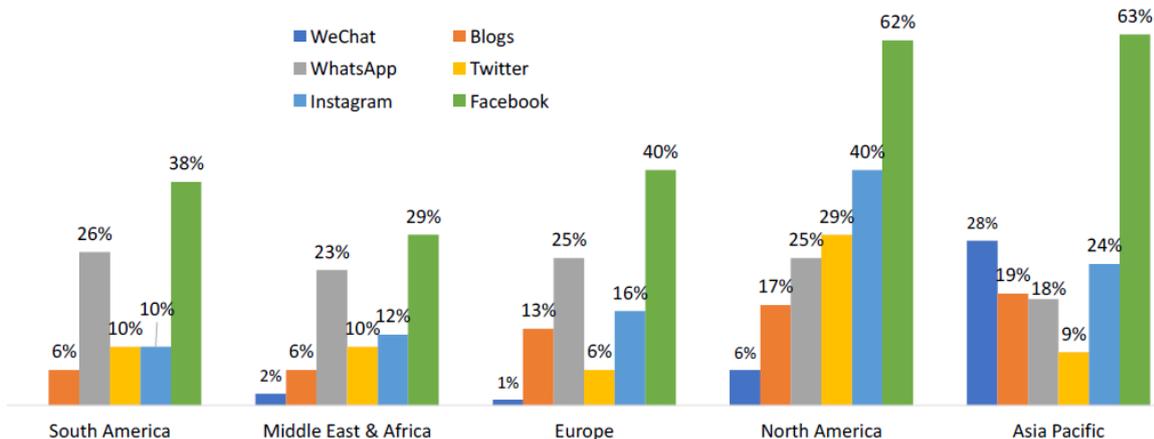
- 16-24 years old – 68% active e-shoppers
- 25-34 years old – 75% active e-shoppers
- 35-44 years old- 64% active e-shoppers

Figure 11. Factors driving purchase decisions, 2017



So, as it can be seen from Figure 11, the price and new trends play a crucial role in making decisions while shopping. Feedbacks also can have a significant effect, which makes many e-retailers to pay a lot of attentions to the reviews that they are receiving from their clients. Below, as presented in Figure 12, are demonstrated most popular platforms for feedbacks.

Figure 12. Feedback and social media



Source: KPMG, Global Online Consumer Report, 2017

In this section of the study will be demonstrated number of aspects regarding needs of e-shopper with a special emphasize on each of them. The survey conducted by Copenhagen Economics “E-shopper survey” among 3,000 e-shoppers in Germany, Sweden, the UK, Poland, Spain and Estonia shows all the needs of nowadays’ users on the online platform. ¹⁶

1.8.2 Delivery prices

It can be truly considered the aspect having the biggest influence on the decision of the e-shopper. As a matter of fact, this feature is closely connected to the consumer fidelity. Once purchasing from an e-retailer who is offering the most convenient delivery prices, the e-shopper definitely is going to add it in its list for preferred e-retailers. By the way, it is worth mentioning that in most of the cases delivery prices are not totally on charge of e-retailers, but on delivery operators. Obviously, each e-retailer is deciding itself whether to make changes or not in product price for the sake of not losing clients in future. According to the “E-shopper survey” here are some other features related to price-delivery scheme:

Figure 13. Importance of delivery features



Source: Copenhagen Economics

¹⁶ Copenhagen Economics “E-commerce and delivery”

As it can be seen, almost half of the users give their preferences to fast and convenient delivery options, even if more expensive.

However, the overall image is changing while the comparison is done between delivery options in urban and rural locations. Big cities, where are present numerous physical stores are offering a variety of products with more or less similar prices, creating a strong competition for e-retailers. Hence, it is expectable that online stores eager to deliver the items as soon as possible for the sake of being equal with physical stores in terms of obtaining the product in shorter terms.

1.8.3 Return options

Each e-retailer is quite aware that online purchases can sometimes delude consumers' expectations for a number of reasons, consequently creating a need to send it back. So, returns are making a significant influence on the purchasing decision. By the way, return options have their own peculiarities and can be classified as follows:

- Return to a post office/collection point
- Tracking a return parcel
- Possibility to return immediately at the moment of delivery
- Returning to a physical store

According to the "E-shopper survey" which was applied in 5 different EU countries represent the following level of importance of each return characteristic mentioned above:

1. Return product immediately at the moment of delivery
2. Take the return parcel back to a physical store
3. Organize a specific pick with the delivery operator
4. Track and trace of return parcel
5. Take the parcel to a post office/collection point

1.8.4 Speed of delivery

Taking into consideration the competition nowadays, e-retailers are making each and every effort possible to satisfy the e-shoppers' needs. Currently, it became already a common thing to have the ordered object in 2-4 working days. E-retailers are offering a variety options of delivery time: standard, express delivery, evening delivery, Saturday delivery, etc.

In all 5 countries participating to the survey, express and Saturday deliveries are preferred more.

1.8.5 Delivery point

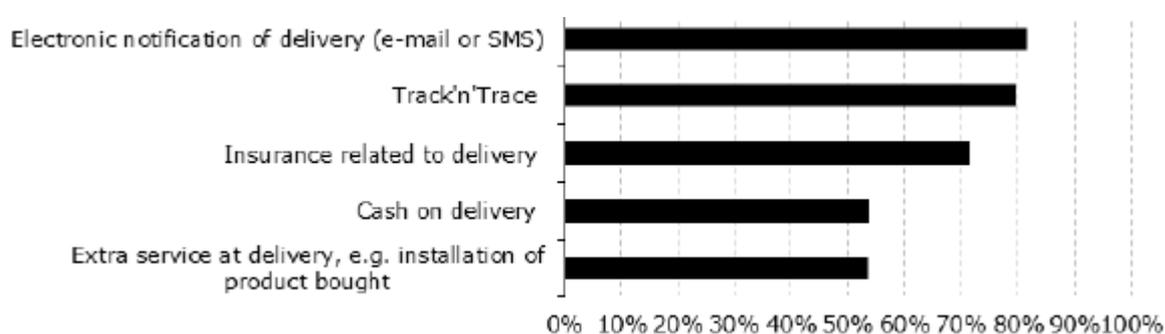
In most of the cases, as delivery place is mentioned home or post office. Other available possibilities are as follows:

1. Delivery to home address
2. Delivery to post office
3. Having the ability to redirect the parcel to a different delivery point
4. Delivery to neighbor in case that no one is home at the time of delivery
5. Delivery to work address
6. Delivery to parcel kiosk

1.8.6 Extra services

There are number of extra services widely offered by online companies in order to facilitate the purchasing process, as well as to have a control till the last minute. For example, nowadays in extensive usage we witness the service of "track and trace" and "electronic notifications". Besides, a consumer can also order an insurance for his/her order, hence being sure that in case of damages he/she will get a reimbursement. The figure below illustrates the main preferences of e-shoppers for existing services:

Figure 14. Preferences of e-shoppers



Source: Copenhagen Economics, E-shoppers' survey

Another interesting fact can be cited from another research conducted among 10.000 international e-shoppers by Pitney Bowes, 2011, where 21% of respondents definitely highlight the possibility to check the itinerary of their order as the most important service. In a study about cross-border e-commerce in 2010, done by International Post Corporation, it was found that e-shoppers in six Member States consider delivery notifications important when shopping online. However, the relative importance of delivery notifications was found to differ across countries. ¹⁷

1.8.7 E-retailers' needs

In this section each and every features described for e-shopper is converted and presented from the e-retailers' point of view.

All the characteristics of delivery having a serious effect on e-retailers' activity are as follows:

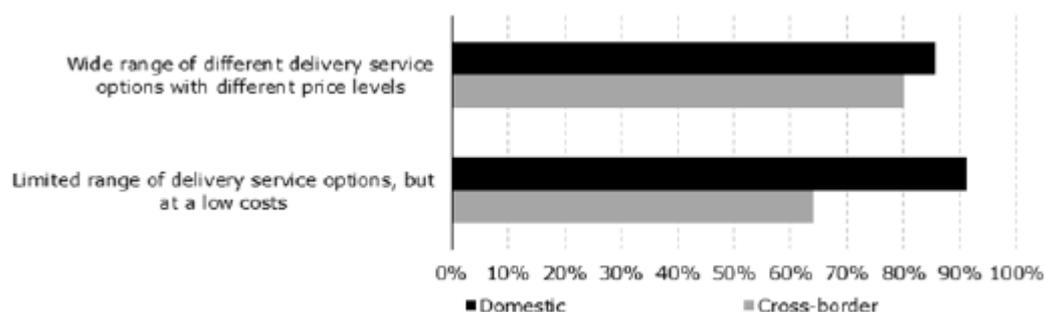
- Delivery to home address
- Tracking the order
- Electronic notification of delivery
- Delivery within 2-4 days

So, as it can be seen the features are equal with those presented in the section of e-shoppers' needs. By the way, in their case it is very important to take into

¹⁷ International Post Corporation, IPC (2010, p.28) <https://www.ipc.be/>

consideration the domestic and cross-border delivery features. So, as we can witness from the figure below, e-retailers pay more attention on their home country delivery processes rather than cross-border.

Figure 15. Delivery price – domestic vs cross-border delivery



Source: Copenhagen Economics: E-retailer survey

This behavior is usually explained by the fact that they know better their home consumers, their requirements and especially expectations. Additionally, they tend to attract their domestic users, in this way not letting them to use cross-border e-retailer services.

1.8.8 European E-Retailers

Based on different researches it is defined that most of the shoppers prefer more to buy online rather than the traditional method. Of course, significant aspects making them to choose online shopping is the easiness of choice and time saving. Consequently, online retailing is becoming more attractive some a large number of products. Everyday growing and developing mobile technology is on the center of online retailers.

The Study

The Center for Retail Research has conducted a study which was funded by “RetailMeNot” as a contribution to discussion on trends within the sector. RetailMeNot is a leading digital savings destination, providing hundreds of thousands of digital coupons and offers on its websites. There were more than 675 mn visits to

its websites in y/e 30 September 2016 and 19.2 mn unique mobile visitors in 2016,Q2. The portfolio of coupon and deal websites includes RetailMeNot.com (U.S.), VoucherCodes.co.uk (UK), Ma Reduc (France) and the French cashback service Poulpeo.¹⁸ The Centre for Retail Research has forecast the trends in online retail sales for Europe (and the US for more than ten years).

Here are the parameters of the research:

First of all, the definition used as a being “online” by Center for Retail Research is as follows: *the final transaction is made over the internet or at a distance, irrespective of whether the internet has been used for browsing and price comparisons.*

Project Details:

- Calculation based on the sales of goods (excluding fuel for vehicles and sales of prepared food in cafes and restaurants).
- Excluded tickets, holidays, gambling and insurance (because they are not classed as retailing). Sales made using mobile phones and tablets are included in figures.
- One thousand shoppers in each country (a representative demographic cross section)
- 100 online traders in each country (although 600 consumers and 60 retailers in the smaller countries)

Main Findings:

- Europe Growth Rates
2015 – 18.2% 2017-14.2%

2016-15.6% 2018-13.8% expected growth
- Dominating countries: the UK, Germany and France responsible for £152bn online sales, equivalent to 75.1% of European online sales.

¹⁸ Center for Retail Research - www.retailresearch.org

Table 3. Online Retail Sales and growth rates 2016 and 2017

	Online Sales (£bn) 2016	Growth 2015-16	Online Sales (£bn) 2017	Growth 2016-17	Online Sales (€bn) 2017
UK	£60.43	12.6 %	£67.38	11.5%	€ 77.63
Germany	£54.21	18.3%	£63.09	16.4%	€ 72.69
France	£37.00	16.7%	£42.11	13.8%	€ 48.51
Spain	£9.94	18.8%	£11.85	19.2%	€ 13.65
Italy	£7.62	16.9%	£8.78	15.2%	€ 10.11
Netherlands	£7.11	16.5%	£8.32	17.0%	€ 9.58
Belgium	£4.83	15.3%	£5.46	13.2%	€ 6.29
Austria	£4.77	13.5%	£5.41	13.4%	€ 6.23
Switzerland	£5.78	11.6%	£6.38	10.3%	€ 7.35
Sweden	£4.98	11.6%	£5.70	14.5%	€ 6.57
Poland	£5.23	17.8%	£6.14	17.2%	€ 7.07
Europe	£201.90	15.6%	£230.62	14.2%	€ 265.68

As it can be concluded from above stated numbers the regular and unceasing growth is noted starting from 2015.

The annual growth rates for all types of retailing (from stores and online) have ranged between an average of **1.5% and 3.5%**.

Market shares

Since this study included also the USA, it is worth mentioning that anyway the United States are prevailing in the online market and are considered true leaders of the current situation. There are 11 countries in the European Union composing all together 414mn, whereas in the US there are 316mn. In average every European spends annually €1,062.02 compared to €1,702.43 in the US (during 2016).

Global Retail Index and The Largest E-Retailers in Europe

The Global retail development Index has started its investments since 2002. Annual reports are being published by AT Kearney which is an American global management and consulting firm founded in 1926 by Andrew Thomas Kearney. The

company has 60 offices in more than 40 countries over the world generating \$1.1 billion of revenue.

To rank the countries, the company is using 4 main categories:

- Online Market Size
- Consumer Behavior
- Growth Potential
- Infrastructure

Making an accent only on European countries evidently the United Kingdom and Germany are the true leaders (after USA and China). Below is presented the table of Global E-Retail Development Index 2015 with all abovementioned categories.

The Belgian and Danish markets are progressing in leaps and bounds having a positive change in global rank by 15 and 13 points correspondingly. This positive position change is providing countries with high growth potential scores as presented on the table.

Figure 16. Global Retail E-commerce Index (global online market attractiveness)

Rank	Change in global rank	Country	Online market size (40%)	Consumer behavior (20%)	Growth potential (20%)	Infrastructure (20%)	Online market attractiveness score (100%)
1	+1	United Kingdom	87.9	98.6	11.3	86.4	74.4
2	+1	Germany	63.9	92.6	29.5	83.1	66.6
3	+1	France	51.9	89.5	21.0	82.1	59.3
4	+5	Russia	29.6	66.4	51.8	66.2	48.7
5	+15	Belgium	8.3	82.0	48.3	81.1	45.6
6	+6	Netherlands	8.9	98.8	8.1	84.6	41.8
7	+13	Denmark	8.1	100.0	15.1	75.5	41.4
8	0	Sweden	8.8	97.2	11.8	77.7	40.9
9	not ranked	Spain	13.2	73.1	20.2	80.1	39.9
10	+6	Norway	8.2	99.4	5.6	76.3	39.5
11	-7	Italy	12.3	71.6	27.8	70.7	38.9
12	+6	Switzerland	7.1	89.6	7.4	82.5	38.8
13	-4	Finland	6.4	98.3	3.8	77.3	38.4
14	not ranked	Austria	5.9	85.3	19.0	74.8	38.1
15	-3	Ireland	4.9	74.4	27.6	74.1	37.2

Source: A.T. Kearney 2015

Another study regarding e-retailers is conducted by British company Deloitte which is one of “Big Four” accounting organizations and the largest network for professional services. According to their research, in all over the world there are 50 big online retailers and 19 of them are from Europe. Deloitte listed them in the report conducted

in the framework of 20th annual Global Powers of Retailing which identified the 250 largest retailers around the world based on publicly available data for FY2015 (encompassing companies' fiscal years ended through June 2016).

In the report Deloitte analyzed the ranking of top 50 e-retailers and as stated in the same report the passage to online platform makes retailers to think twice about their future development and enlargement strategies.

For FY2015, e-commerce sales information was available for 182 of the Top 250 retailers (either as reported by the company or estimated by Planet Retail, Internet Retailer, or other sources).¹⁹

Below are presented the highlights from the report which outline the most crucial and critical points relative to e-retailers:

- Rapidly increasing number of retailers establishing online stores for their companies. Around 220 out of 250 big retailers have their online website providing their services. The others are mostly operating in the sector of supermarket, convenience stops, etc.
- 18.3% growth rate of online sales. This compares with e-commerce growth of 20.3% in 2014 and 21.1 % 2013. If Amazon.com, JD.com, and Vipshop—the three web-only retailers among the Top 250—are excluded from the analysis, 2015 e-commerce growth drops to 15.5% and total growth falls to 3.5%.
- In 2015 online sales guaranteed 35.3% of revenue growth for 151 companies out of 250 (excluding 22.5% of Amazon, JD and VipShop). That's why nowadays for majority e-commerce is strongly considered as a unique engine to accelerate the growth process.
- Only for 41 companies the newly established websites have brought negative retail results. For 33 companies it obviously assisted to offset contracting sales. For 12, it saved them from having negative retail revenue.

Dominating E-50

As it was mentioned before, Deloitte listed the top 50 e-retailers among 250 retailers, and some interesting facts are following:

- 80% of e-50 companies are among Top 250 retailers

¹⁹ Deloitte "Global Powers of Retailing 2017. The art and science of customers"

- 19 companies are based in Europe, 26 in the USA, the remaining 5 from China and Brazil (third-party marketplaces are excluded from the e-50)
- 12 of top 50 are non-store companies, not having any physical representation. Such as Wayfair and Bluestem Group.
- Because of currency depreciation in dollar-denominated ranking some companies (5 from top 50) dropped from the high ranked e-retailers list. Such as French Auchan, and Russian Ulmart
- In 2015 e-50 retailers provided pace growth of 19.6% (compared to 2011 it was 22.0%)

Taking into account the arguments highlighted in the analysis done by Deloitte, uncompromisingly it is leading to the conclusion that the majority of retailers are contemplating about their status in online landscape and making efforts to have a solid presence in e-commerce market.

Table 3. Top 19 European e-retailers

e-50 sales rank FY2014	Top 250 retail revenue rank	Name of company	Country of origin	FY2014 ecommerce retail sales (millions of \$)	FY2014 ecommerce retail sales % of total retail revenue	FY2014 ecommerce growth rate	FY2011-2014 ecommerce CAGR
5	76	Otto	Germany	8,397	65.4%	5.6%	6.7%
6	5	Tesco	UK	6,504	6.5%	20.0%	14.6%
9	15	Casino	France	4,606	7.1%	20.1%	15.8%
15	115	Home Retail Group	UK	3,241	34.9%	8.0%	8.4%
17	n/a	Zalando	Germany	2,943	100.0%	25.7%	63.1%
18	63	John Lewis	UK	2,854	18.0%	24.1%	29.4%
21	22	E. Leclerc	France	2,605	5.4%	33.3%	69.1%
24	155	Next	UK	2,488	38.1%	13.3%	11.8%
27	n/a	Shop Direct Group	UK	2,331	86.0%	3.6%	5.7%
28	n/a	Vente-Privée	France	2,311	100.0%	8.0%	17.5%
30	75	Dixons Carphone	UK	2,081	16.0%	19.4%	29.7%
31	8	Metro	Germany	2,036	2.4%	20.2%	56.9%
35	28	J Sainsbury	UK	1,775	4.7%	7.0%	12.9%
36	6	Carrefour	France	1,728	1.8%	n/a	n/a
38	24	Ahold	The Netherlands	1,684	3.9%	16.7%	40.6%
39	n/a	ASOS	UK	1,579	100.0%	26.7%	25.6%
40	n/a	Ocado	UK	1,57	100.0%	19.8%	16.6%
41	13	Auchan	France	1,534	2.2%	1.7%	11.3%
45	n/a	Ulmart	Russia	1,3	100.0%	50.0%	63.2%

Source : Deloitte Touche Tohmatsu Limited. Global Powers of Retailing 2017. Analysis of financial performance and operations for fiscal years ended through June 2016 using company annual reports, Planet Retail database and other public sources.

The most popular company is the UK, where 9 companies are based. By the way, the 1st e-retailer in Europe by the sales ranking is Germany with the company “Otto”, following by Tesco from the UK and Casino from France.

Illustrations below fully reveal the current situation in each EU country, highlighting the peculiarities and important data about each of them.

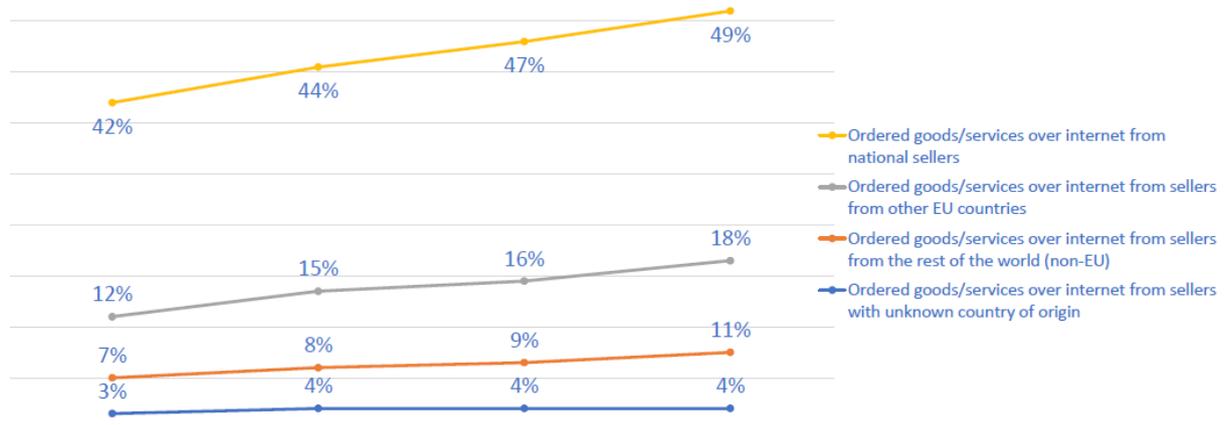
CHAPTER 2

CROSS-BRODER E-COMMERCE AND GEO BLOCKING

2.1. Cross-border B2C E-commerce

If speaking about e-commerce globally, it should be mentioned that in a global scale cross-border trading has matured and increased quite enough. According to Payvision’s report 2016 cross-border e-commerce makes up for 21% of total Global Online Trade.²⁰ Payvision is one of the fastest expanding global acquiring networks in the world, offering banks, PSPs, ISOs and merchants one global acquiring platform which significantly simplifies the complexity of cross-border ecommerce. Cross-border ecommerce is a percentage of e-commerce obtained on overseas sites, which is getting more and more popular among e-shoppers in EU. 18% of them are making a cross-border purchase from another European country.

Figure 17. Cross-border purchases

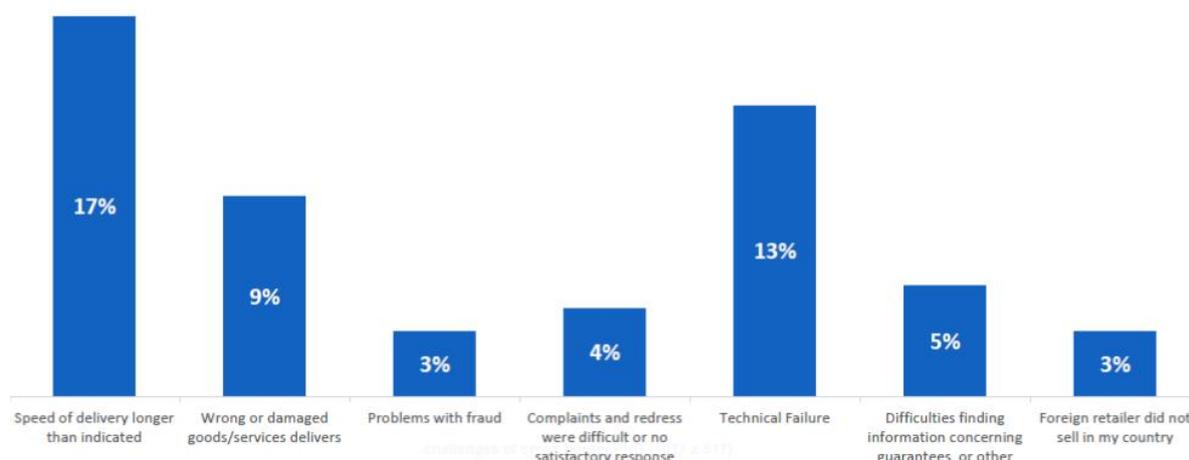


Source: Payvision Report 2016

²⁰ Payvision Report 2016 “Key Business Drivers and Opportunities Cross-Border Ecommerce 2016”
https://www.payvision.com/sites/all/themes/payvision/images/key_business_drivers_and_opportunities_2016_c.pdf

By the way, there are still some barriers which prevent e-shoppers to trust totally to cross-border and to shop lot. One of those reasons is that compared to national markets, in case of returns it will be much complicated and time consuming, the troublesome procedures hamper cross-border e-shopping. The figure below shows some main reasons which in some way impede the boosting of cross-border e-commerce.

Figure 18. Main problems of cross-border e-commerce



Source: Eurostat 2016

Two biggest obstacles are the speed of delivery and technical failure.

Evidently the United Kingdom is the most preferred country for cross-border shopping followed by Germany and France²¹. Nordics and France notably are mostly inclined to shop from German online market. As mentioned in the report of Research and Markets 2017, the Germans mostly spend their money for British, American and Chinese markets, whereas in Austria more than 78% of online shoppers make orders outside from their country.

International Post Cooperation (IPC) is an association including 24 national postal offices (in Europe, Asia Pacific and North America) who offers services helping to manage businesses who include parcel, express, mail, retail, etc. Every year IPC is publishing the survey regarding the global e-commerce presenting the main findings

²¹ Research and Markets (The world's largest market research store), Europe Cross-Border B2C E-commerce report 2017

and tendencies. In “Cross-border E-commerce Shopper Survey 2017” 28,892 cross-border consumers participated from 31 countries.²² The study was done on a global level and demonstrates the global view of e-commerce around the world. So, particularly here are the main cross-border purchase countries among European countries:

UK	
China	40%
USA	24%
Germany	10%

Germany	
China	33%
UK	17%
USA	13%

Denmark	
China	28%
Germany	21%
UK	18%

Netherlands	
China	47%
Germany	17%
USA	9%

Slovenia	
China	40%
Germany	19%
UK	14%

France	
China	31%
Germany	19%
UK	15%

Switzerland	
Germany	46%
China	19%
France	13%

Austria	
Germany	77%
China	10%
USA	3%

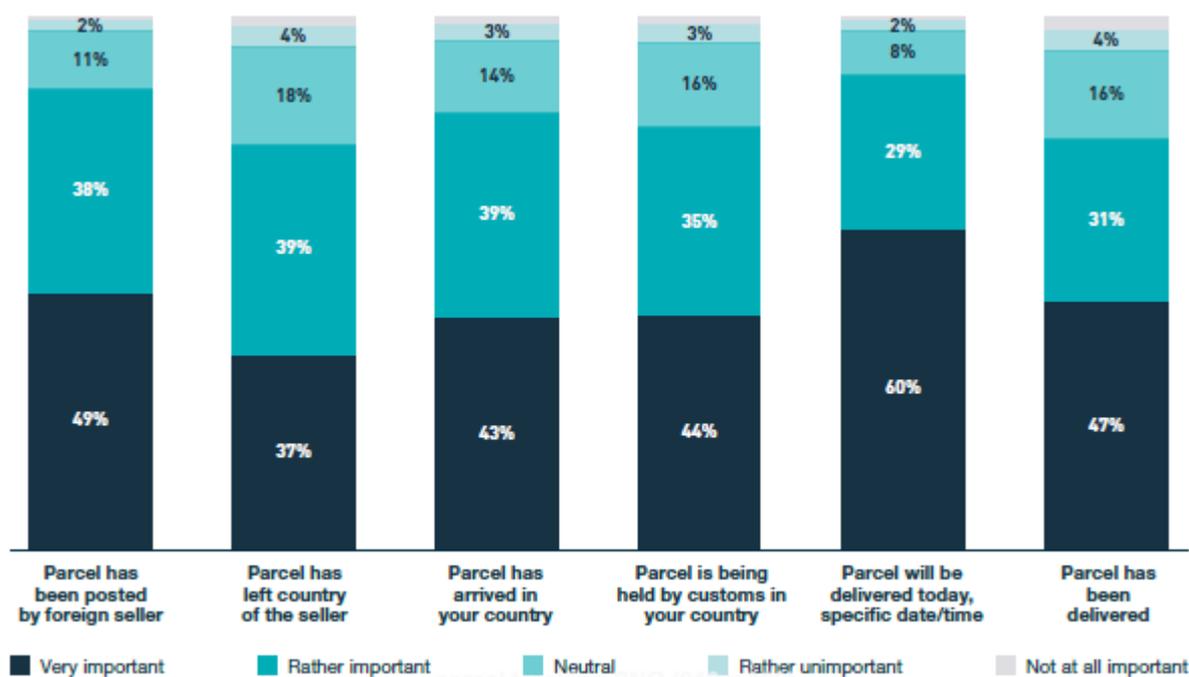
Hungary	
China	60%
Germany	9%
USA	7%

China is having a great popularity among EU countries, followed by the USA and the UK.

The delivery process and its stages are considered crucial for e-shoppers and make a huge part of consumer satisfaction while evaluating the provided service. According to IPC results there are six stages of delivery which were surveyed and asked about their importance. The figure below illustrated the results:

²² International Post Cooperation (IPC) “Cross-border E-commerce Shopper Survey 2017”

Figure 19. Stages of delivery and their importance



Source: IPC "Cross-border E-commerce Shopper Survey 2017"

2.2 Cross –border E-commerce in the UK: What does BREXIT mean for online business?

In June of 2016 by a small difference 52% to 48% The United Kingdom decided to leave the European Union, which was quite a surprising decision both for pollsters and voters. Obviously this couldn't leave its impact on the overall economy. As it is known, the UK was the absolute leader in Europe's ecommerce for a long period of time (more than USD 150 billion of revenue). Moreover, on the global image the UK was the third largest contributor to ecommerce after China and the USA, whose share is expected to rise up to 19.3% by 2019.²³

After the Brexit the opinions of retailers fall out into two big categories. Over half of retailers are inclined to believe that after the Brexit cross-border e-commerce (and generally trading) will become more complicated and complex, whereas the

²³ "Key Business Drivers and opportunities in cross-border e-commerce 2016" - Payvision

remaining 44% is convinced that it will not have any significant impact on their activity. And only 23% is planning to start a new business outside of the UK.

As far as all the world is concerned and interested about the future of retailers in the UK, the Global-E conducted a research to uncover retailers' expectations and feelings about their future development and enlargement after the Brexit. Almost half (48%) of retailers questioned said they expected the economy to weaken after the UK triggers Article 50, but 62% feel confident or very confident that their businesses will flourish.²⁴

“As the Brexit bill moves through Parliament, retailers are facing up to the reality of what Britain’s exit from the EU might mean, although some retailers have revised their plans, our research suggests that most are taking a wait-and-see approach, before considering whether to change course. In the months since the EU referendum took place, most retailers have already felt some impact, with many of those that operate internationally seeing an increase in sales from online shoppers worldwide due to the weakened pound and growing trend for cross-border ecommerce.” said Nir Debbi, co-founder and CMO, at Global-e, which works with UK retailers including WoolOvers, Prezzybox, and Crabtree and Evelyn.

As well, two other attitudes are noticed among retailers: preference for “hard” Brexit or “soft” Brexit. Those who are willing for “soft” solution (46%) are hoping for at least some access to single market, whereas “hard” Brexit supporters (36%) are in favor of being totally distracted from the European Union and think that it will be noticeably better for British retailers.

According to Global-E findings only 16% of retailers will be considering setting their headquarters outside of the UK for the purpose of having access to single market. Surveyed decision makers (71%) are assured that in the UK consumers will be impacted significantly after triggering Article 50. 43% of them is convinced that British consumer will reduce his/her expenses, whereas 23% is thinking totally vice-versa.

²⁴ Global-E (Europe’s leading provider of comprehensive cross-border solutions) –internetretailing.net

Nir Debbi added: *“Our research suggests that the effects of Brexit on UK retail may be less black and white than some commentators anticipated. While many retailers that sell imported goods to UK shoppers have seen prices rise due to the weakened pound, those that sell to international shoppers on the web appear to be reaping the rewards of cross-border ecommerce, with 32% seeing sales increase. However, relying on currency fluctuations will not be enough for long-term success. To make a success of cross-border e-commerce in Brexit Britain, retailers should review the experience they offer to shoppers in Europe and around the world. With the right preparation, technology and processes in place, retailers can seize new opportunities and tackle any challenges created by Brexit, to drive online sales internationally.”*

2.3 Geo-blocking in Europe

According to the Council of the European Union the Geo-blocking is a **discriminatory practice** that prevents online customers from accessing and purchasing products or services from a website based in another member state.

The survey carried out by European Parliament through “mystery shopping” on over 10000 e-commerce websites in European Union showed that there are numerous obstacles the consumers are dealing with during their cross-border purchases on the online platform.²⁵ 63% of websites inhibit online shoppers to make orders from other European country. The table 4 shows the geo-blocking by most common categories of online shopping:

Table 4. Categories of geo-blocking

Electrical household appliances	86%
Electronics and computer hardware	79%
Computer games and software	73%
Clothing, shoes and accessories	65%
Cosmetics and healthcare products	63%
Books	60%

²⁵ European Council - Council of the European Union “Infographic - Geo-blocking in the EU”

Online reservations of offline leisure	40%
Travel services	33%

Source: European Parliament, Geo-blocking in the EU Infographic

As widely known, when making registration on foreign websites consumers are asked to fill out some data, including email address, physical address, and cell phone number. But 27% of registrations are refused because of the delivery address. And even if the registration is completed successfully the 32% of them are denied on other stages. The refusal to deliver the selected item is more popular among these two categories:

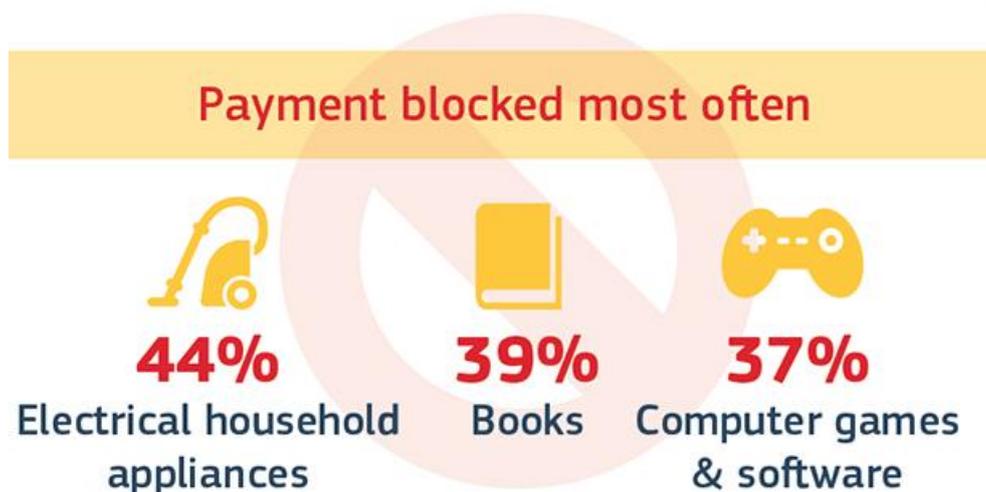
- Household electrical devices 58%
- Electronics and computer hardware 51%

Another misleading fact is that during shopping the e-retailers are not mentioning about the delivery restrictions and in 44% of cases information is not placed on the websites.

Table 5. EU28 online retailers overall

Allow access to the website and show the same product	95%
Allow registration	72%
Deliver to shoppers' country	49%
Accept shopper's payment method	42%
Accept shopper's payment card details	37%

Consequently, only 37% of e-retailers accept payments freely from e-shoppers.



For the sake of ending the unjustified geo blocking and cancel the barriers on 29th of November European Parliament adapted the “Geo-Blocking regulation” with the collaboration of EU ambassadors. This regulation again is making part of Digital Single Market Strategy.

On September 2017 Digital Summit was organized in Tallinn where the main issues that were tackled was the termination of unjustified geo-blocking, which in its turn was the fundamental and principal goal for the year of 2017. Successfully a political agreement was made for the name of ending all the boundaries and restrictions for those consumers who wish to purchase goods and services online within European Union. The aim of this regulation is to make European e-commerce to grow in leaps and bounds letting to benefit both buyers and sellers.

Andrus Ansip, the responsible for Digital Single Market said for this occasion: *“Today we put an end to unjustified discrimination when shopping online. This is excellent news for consumers. With the new rules, Europeans will be able to choose from which website they wish to buy, without being blocked or re-routed. This will be a reality by Christmas next year.”*²⁶

“The end of unjustified geo-blocking will greatly enlarge the choice available to citizens when shopping online and will give a major boost to e-commerce.

²⁶ Press Release Database of European Commission- “Digital Single Market: EU negotiators agreed to end unjustified geo-blocking”, Brussels, 20 November 2017

Consumers will be able to shop around for the best deals within the internal market. I want to thank the Parliament and the Commission for helping the Estonian presidency to bring the digital single market closer to reality."

Kadri Simson, Minister of Economic Affairs and Infrastructure of Estonia

Mariya Gabriel, responsible Digital Economy and Society, concluded: "*Ending unfair geoblocking is a great step forward for consumers and the building of a real Digital Single Market working for all. Along with the end of roaming charges and portability, EU citizens will be able to buy their new furniture online, book hotel rooms or use their credit card across borders, like at home.*"

New rules were established in the framework of this agreement which outline three substantial satiations where all consumers within EU are going to be treated as equals, having equal rights independently from their country of residence. Here are those cases mentioned in the agreement:

1. **The Sale of goods without physical delivery** -> Implying that if the delivery option is not provided by the seller, the buyer is freely entitling to organize the delivery to his home on the premises of the trader
2. **The sale of electronically supplied services** -> Implying that the consumer can register and get the chosen service without any additional fee compared with local consumer
3. **The sale of services provided in a certain location only** -> Implying that, there will be no need to be redirected to your home country website in order to get a certain service.

These new rules are going to be implemented after 9 months after the publication in the EU official journal, letting e-retailers some time for adaption. The evaluation of mentioned rules will be done after 2 years.

The main reasons boosting this escalation are:

- ✓ Better competitive prices

- ✓ Wider offer of goods and services

In order to have a clear understanding of Single European Market (SEM) it is better to take into account the growing share of cross-border online purchases. The data taken from Eurostat (December 2015) displays that 16% of individuals in the 28 countries of Europe purchased goods and/or services from sellers outside of their residence country (but in EU28). Compared with 2013 it is an increment of 33%.

CHAPTER THREE

DIGITAL SINGLE MARKET

3.1 The Strategy of “Digital Single Market”

Digital Single Market is a strategy adopted by European Commission on 6th of May 2015 is a project proposed by Juncker’s Commission. The primary goal of this concept is to assure equal rights and opportunities for all businesses and consumers operating/residing in the territory of the European Union. In this way unbiased and objective competition will be guaranteed for all parties.

16 initiatives were included in Digital Single Market which was carefully discussed by co-legislators, Council and European Parliament.

The benefits from this strategy will be

- Contribution of 415 billion per year to EU economy
- Creation of new jobs
- Transformation of public services

To get a better understanding of the essence of Digital Single Market it is necessary to outline the 3 principal pillars on which is based this concept:

- I. *ACCESS*: better access both for sellers and buyers in the EU
- II. *ENVIRONMENT*: equal and fair conditions, objectivity and opportunity to expand
- III. *ECONOMY AND SOCIETY*: augmentation of digital sector and its development

3.2 1st Pillar - Access

Nowadays the single market without borders and barriers already exists in offline world, and the target of Digital Single Market is to eliminate the limits in online world as well. The 1st pillar of DSM is dedicated totally to this purpose.

The European Commission adapted a number of rules which will contribute to the creation of new online world.

a) E-Commerce Directive updated by EU

The new directive proposing new procedures and rules is making a huge contribution for the DSM. The newly accepted rules include:

- i. The Internal Market Clause – One of the most important and key points of the updated Directive is the Internal Market Clause. This point is outlining that companies which are offering online services are subject to the law of their home country (where the business is based and settled) and not where the activity is taking place.
- ii. *Basic Rules* – Obligatory information, guidance for commercial communication available for buyers.
- iii. *Liability of Intermediaries* – The new Directive is absolving from a responsibility the intermediary agents from the content that they handle in two cases: 1) if they erase the content as soon as they realize the illegality of the provided material 2) if they play a fair-minded and unbiased role regarding the hosted material
- iv. *Expert Group* – Established on 24th of October 2017 they pursue the following goals:
 1. to simplify administrative co-operation between Member States and the Commission
 2. to examine problems in the application of the directive
 3. to examine emerging issues in the area of e-commerce.²⁷

b) Enforcing Consumers' rules

The points included in Consumer rules are numerous regarding Shopping, Internet, Unfair Treatment, and Energy Supply, etc. For instance, according to the rule "*roam like at home*" roaming in the territory of the European Union is already without any additional charges. The consumer is paying exactly the same price for SMS, calls,

²⁷ E-Commerce Directive <https://ec.europa.eu/digital-single-market/en/e-commerce-directive>

Internet if he/she were at his home country (if the consumer has a contract with mobile operator including roaming service).

If you use your mobile phone abroad permanently, your mobile operator may charge you for your roaming use. These charges are capped however.²⁸

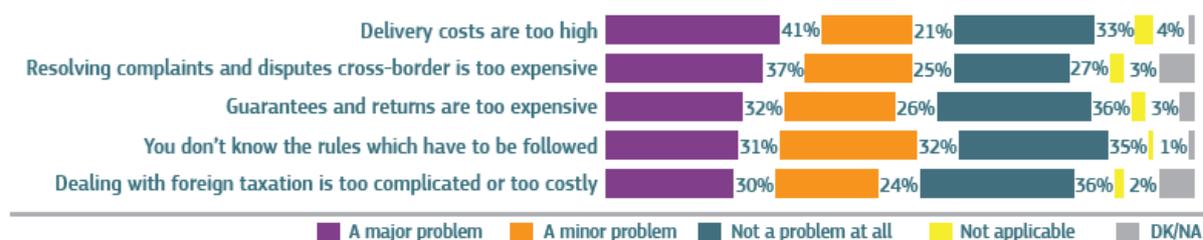
According to another policy of Internet connection in the area of EU one will have an access to Internet service with. This rule is named “*universal service*” principle according to which there will be at least one Internet provider who will guarantee the access with a good quality and affordable price plus the basic Internet access.

Another noteworthy rule to outline regards the VAT (Value Added Tax), which implies that the shopper should pay VAT only and only in the country where the purchase is done. One is free to buy goods for himself and his family (not for resale) without paying double taxes. By the way, things change when the same situation regards the online shopping. In this particular case, if the company you buy from sells goods over a certain value to your country, where the goods are delivered, they cannot charge VAT in the country where you make your purchase.²⁹ So, the VAT is paid according to the delivery destination and most of e-retailers apply this rule. The maximum amount of VAT paid can range from 35.000EURO – 100.000EUR³⁰.

c) Efficient and affordable Parcel Delivery

Approximately 62% of e-retailers mention as one of the obstacles high delivery costs which at the end become a big disadvantage for the e-shopper as well. The figure below illustrates the main categories creating obstacles for businesses:

Figure 20. Business problems for delivery services



²⁸ Roaming in the EU – Europa.eu – Your Europe

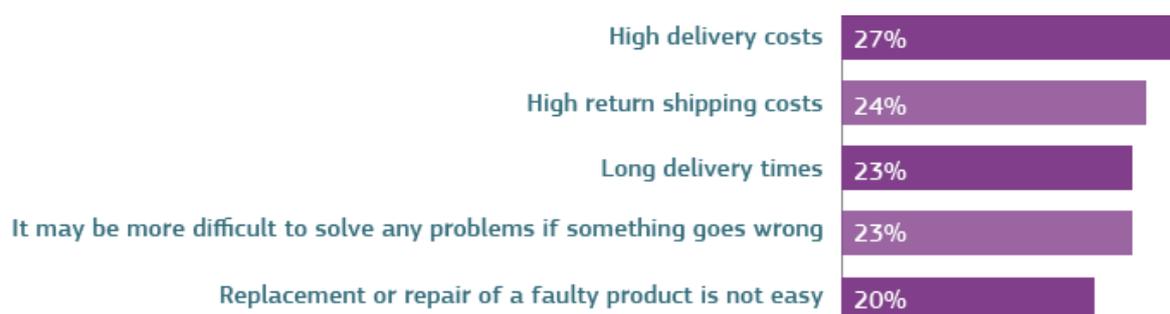
²⁹ VAT – Europa.eu – Your Europe

³⁰ Annex VAT Thresholds

Source: Digital Single Market “Affordable Parcel Delivery” Factsheet

As regards consumers, they have more or less the same situation since in the first line of delivery problems again high delivery costs are mentioned.

Figure 21. Consumers’ problems for delivery services



Source: Digital Single Market “Affordable Parcel Delivery” Factsheet

For the sake of facilitating the process in May of 2016 the Commission came up with new rules to make parcel delivery more efficient and affordable. The new rules are the following:

- I. *Improvement of price transparency* – Domestic and cross-border prices will be published for a set of basic services. In this way national regulators will assess the **affordability** of each service and can require operators for some explanations for their prices.
- II. *Strengthen role of national regulators* – More information will be provided them regarding the delivery process
- III. *Encourage the competition*

d) Ending Unjustified geo-blocking

New rules were established also for the geo-blocking issues which outline three substantial situations where all consumers within EU are going to be treated as equals, having equal rights independently from their country of residence. Here are those cases mentioned in the agreement:

4. *The Sale of goods without physical delivery* -> Implying that if the delivery option is not provided by the seller, the buyer is freely entitling to organize the delivery to his home on the premises of the trader
5. *The sale of electronically supplied services* -> Implying that the consumer can register and get the chosen service without any additional fee compared with local consumer
6. *The sale of services provided in a certain location only* -> Implying that, there will be no need to be redirected to your home country website in order to get a certain service.

e) European Copyright framework

53% of Europeans (15-45 years old) watch their favorite serials and TV several times during a week. Nowadays the copyright is widely used but sometimes it limits our access while travelling to other member state of the EU. This implies that TV series and other contents will not be available and for that reason the Commission is proposing a wide range of modernizations in order to provide a fair share of copyright in each Member State.

The modifications include:

- Principle of “country of origin” – implying that broadcasters will have a chance to access other member states of EU and make available their content to all their consumers
- Extension the system of compulsory collective management currently applicable to cable retransmission to other equivalent digital retransmissions.³¹

These rules are a pledge for

- ✓ Better choice and access to online content
- ✓ Fair conditions for owners and press

³¹ “Proposal for a Regulation laying down rules on the exercise of copyright and related rights applicable to certain online transmissions of broadcasting organisations and retransmissions” - ec.europa.eu

✓ Improved copyright regulations for health, education, disabled people

f) revision of cable and satellite regulations

The principle of “country of origin” will be expanded for cable and satellite distribution cases as well. The activities that will be applied include both licensing facilitation and mediation arrangements from Member States. For the cable retransmission rights the mandatory collective management system will be applied. The overall goals to be reached through these changes include a better access to TV/radio programs and broadcasts from Member States.

g) reducing VAT taxes

Depending on the country different VAT (Value added tax) schemes are used. In the framework of Digital Single Market single interaction point and single audit will be implemented.

h) launching an antitrust inquiry into e-commerce

Due to this inquiry it is possible to detect suspicious competition within the European Union which can badly influence the e-commerce market. The focal point will be to get as much data as possible from cross-border trading (especially in most popular categories like clothing and electronics) in order to create better competition laws for e-commerce sector.

3.3 2nd Pillar - Environment

The second pillar of Digital Single Market is pursuing a target of shaping an environment where digital sector will have the best conditions to expand and strengthen its position. As in case of 1st pillar here as well the European Commission is presenting a number of reforms in the framework of DSM strategy to improve the current environment.

a) Telecom rules

It is beyond shadow of doubt that nowadays Internet is a clue to every problem and it is impossible to imagine the current world without its existence. Consequently, there

is a huge need to ensure everyone being provided with this vital resource. Owing to Commission efforts the acceleration of 5G and free Wi-Fi points in public places will be available in near future. Moreover, on 14th of September Juncker's commission presented a set of new proposals to guarantee the best Internet connection for EU residents by 2020. This approach will assure the development of digital economy and society. So, the aforementioned proposals are presented in connectivity package which includes:

- 5G wireless technology

According to some forecasts from the EU commission mobile operators' revenue on a global level is going to reach €225 billion annually by 2025. To implement the proposed plan 5G infrastructures and services will be set all across the Europe in the framework of DSM by 2020. Here are the actions included in the Directive of "5G for Europe: Action Plan" (Brussels 14/09/2016):

- I. By 2018 – early network introduction among EU countries by adjusting roadmaps and priorities for 5G implementation
- II. By 2019 – make provisional spectrum bands for 5G (the list should include frequencies in at least three ranges of the spectrum: below 1 GHz, between 1 GHz and 6 GHz, and above 6 GHz, to account for the diverse application requirements of 5G)³²
- III. Organize a quick formation in large urban areas as soon as possible – at least one major city in each Member state will be enabled for 5G
- IV. Band together the global players of 5G promotion
- V. Facilitate the application of an industry-led venture fund to assist 5G-based innovation – Innovative start-ups will be appraised, those who tend to develop 5G technologies in order to apply it in across industrial sectors.

All these abovementioned actions are aimed to boost the digital progress and innovation at European scale, beyond connectivity.

- European Electronic Communications Code

³² European Commission - "5G for Europe: An Action Plan"

Internet evolution brings with itself new market players, which actively compete with usual telecom companies creating hard conditions for them. These new comers are known under the name of “over-the-top players” (OTTs). Their main activity includes providing numerous services based on the Internet usage. Simultaneously with Internet evolution the electronic communication, M2M (Machine2 Machine) communication, content services are moving forward as well and for that reason in the light of DSM a new *rule book for communication services* was proposed by the Commission in order to guarantee fair conditions both for businesses and individuals. Furthermore, the framework will concentrate its attention on following points:

- I. A steady single market approach to policies and management
 - II. Effective protection of consumers
 - III. Strong encouragement in investments and financing the broadband networks
 - IV. Effective regulatory institutional framework
- Broadband Europe: Gigabit Europe by 2025

The successful implementation of previous two points will certainly lead to a so called “Gigabit Society”. The main characteristics of this society will be:

- ✓ 5G in most of urban areas
- ✓ Connection between all major socio-economic drivers
- ✓ Minimum 100Mbps for EU residents

These are the principal goals of the strategy that was adopted in September 2016 called “Connectivity for European Gigabit Society”. Reaching the above vision by 2025 is estimated to require an overall investment of c. EUR 500 billion over the coming decade, representing an additional EUR 155 billion over and above a simple continuation of the trend of current network investment and modernisation efforts of the connectivity providers.³³

Public Support to Investment

³³ European Commission - “Connectivity for a Competitive Digital Single Market - Towards a European Gigabit Society” ec.europa.eu

The actions offered by Commission are able to encourage the competition on fair conditions, reduce the obstacles and give better opportunities to make forecasts for businesses, but anyway the public support is also very important in order to ensure the best implementation of the project. So, the mix of grants and financial instrument both on national level and among Member States will be incentivized through numerous financial programs. According to the Directive:

“The Commission, in cooperation with the European Investment Bank, will launch by the end of the year a Broadband Fund, building on CEF and EFSI, and is exploring an initiative on financing options for the activities related to the Digital Single Market strategy, including on blending various sources of funding for European Internet connectivity projects of common interest up to 2025.

In the context of the financial programming post 2020, the Commission will weigh up the need for adequate budgetary resources for efficient broadband financing in underserved areas under CEF, and the need to dedicate ESI funds support, possibly with an indicative share, to the digital transformation of European economy and society.”

CEF-Connecting Europe Facility - EU instrument specifically dedicated to support trans-European networks

ESI- European Structural and Investment Bank

EFSI – European Bank for Strategic Investments

- Wi-Fi for Europe

For the progressive growth of Digital Single Market, the Wi-Fi in public places and for services is a must. For that reason, by 2020 in museums, health centres, parks, squares, schools, libraries and in many other places the option of totally free Wi-Fi will be provided. Public authorities will be given Wi-Fi voucher schemes which in order to set up in their communities.

b) Audio-visual media rules

Nowadays it became possible to watch every program not only by television, but also by using other our devices due to the Internet. All the services of broadcasts and on-

demand options are managed in the framework of “Audio-visual Media Services Directive” which was adopted on 25th of May in 2016.

Audiovisual Media Services Directive (AVMSD)
a media framework for the 21st century

Why?
For a better balance of rules

TELEVISION + VoD App + Video sharing platforms

- Better protection of minors
- Promoting European works
- More independence for regulators

Context

Before **Now**

Average TV viewing time is decreasing.
Young people's TV viewing time has **dropped by 7.5%** and is **half** that of the average viewer

Videos on the Internet
64% 2014 → 80% 2019
Internet video share in consumer internet traffic is **expected to increase** from 64% in 2014 to 80% by 2019

TV channels target more and more foreign markets
Foreign markets: 28% 2009 → 38% 2013

On average 31% of VoD services available in one EU Member State are established in another Member State

In 2013, ±20% of broadcasters revenues was invested in original programming vs 1% for on-demand services.

Industry faces fragmented rules on the share of European content across the EU
Mandatory shares of EU works in EU Member States

Need for more independence of regulators from government & industry

Source: Revision of the Audio-visual Media Services Directive

There are some new changes, which are the following:

- I. COO principle (Country of Origin) – Now it became much easier to define which country have a right for the jurisdiction over the service provider
- II. Commercial Communication – This new rule puts 20% of limit on advertising time, but simultaneously gives them a freedom to decide when will be inserted
- III. European works promotion – requiring from players to promote and push European content to a limited level by imposing a minimum quota obligations (20% share of the audio-visual offer of their catalogues) and an obligation to give prominence to European works in their catalogues.³⁴
- IV. Taboo on hate speech – This is pursuing a goal to protect minors from negative influence.

³⁴ European Commission – Revision of Audio-visual media services directive” AVMSD – ec.europa.eu

- V. Protection of minors – Detailed description should be provided about the content in order to correspond to the regulation
- VI. ERGA (European Regulators Group for Audio-visual Media Services) – This body will be the main regulator and will take part in every procedure regarding audio-visual content in the territory of European Union. It will be officially inserted in the EU legislation.

c) Online Platforms

Most of us are quite familiar with Skyscanner and BlaBlaCar, which nowadays are considered very popular among Europeans. Undoubtedly, the sector of online platforms is more developed in the USA and Asia rather than in Europe (4% of the total market capitalization).³⁵ By the way, since nowadays in Europe start-ups are flourishing reaching up to 30% of global revenue in the area of application distribution platforms, it becomes essential to develop better conditions for online platforms. So, for the sake of supporting this blooming of this sector the following measures are taken into consideration:

- **Financial investments** – EUR 50 billion in world-class data and computing sphere. These investments are going to be a base for Europe’s digital innovation, as well as for cross-border interoperability.
- **More researches and studies for platform-based ecosystems** – The aim of this investment is to create an environment for Internet’s future, which will be evidently more user-centric, potent. Moreover, the European Commission adapted another project named “Horizon 2020” the aim of which is to assist the above mentioned goals including also public consultations.
- **“Start-up Europe”** – The project aims to sponsor and fund start-ups in the territory of Europe.

Table 6. Main principles for Online Platform Development in the EU

1) Guaranteed and secure field for digital services	-more competition, more motivation for improvements -better service quality for users
---	--

³⁵ European Commission - Commission Staff Working Document “Online Platforms” ec.europa.eu

2) Responsible performance of platforms	-Protection of minors from child abuse -fair revenue allocation for content creators and end-users who upload the copyright protected content -collaboration with IT companies for controlling the hate speech and terrorism content online
3) Transparency of actions and trust creation	-Users' protection from data collection by providing more information (principle named " <i>data protection by default</i> ") -better presentation of the product's nature that the consumer is going to purchase
4) Creating data-driven economy	-intense usage of API's (<i>Application Programming Interface</i>) which facilitates the transfer of personal and non-personal data to another platform

d) Security in digital services

In order to recreate a trust in the Digital Single Market the European Commission decided to reissue a new framework regarding e-Policy (adapted in May 2016).

The new updated regulation includes the following points:

- *Stronger rules*: both users and businesses will be ensured by the same level of protection
- *New players*: platforms like WhatsApp, Messenger, Skype and Facebook will also be treated by the same regulation as the others and will be obliged to keep the confidentiality of their users' data
- *Metadata and Communication content*: this rule regards issues like call time and location of the user. The information can be revealed strictly upon the permission of users (like and exception can be considered billing cases)
- *New options and alternatives for businesses*: having under their usage all the data collected from users, businesses can provide wider range of services to their clients
- *Easier rules for cookies*: user-friendly mode of accepting and refusing cookies, no need of consent.

- *Spam protection*: in order to avoid undesired emails, SMS and calls new option is provided to users like *do-not-call list* or even by default configuration. Special prefixes will indicate on marketing calls.
- *Productive enforcement*: “General Data Protection Regulation” as a mean for better protection of personal data.

e) Partnerships with industry of cybersecurity

The contractual partnership was set up on 5th of July 2016 by European Commission. In this way there are better chances to have stronger protection in first stages of studies and researches regarding different sectors; health, education, economy, etc.

The total amount of financial investment provided by EU Commission is 450 million EUR (again in the framework of Horizon 2020)³⁶. Moreover, other financial investments are going to be provided from cybersecurity market players (approximately three times more). These players are listed in European Cyber Security Organization (ECSO).

3.4 3rd Pillar - Economy and Society

The 3rd and the last pillar of Digital Single Market Strategy puts its full concentration on Europe’s Digital Economy and Society. This part is absolutely dedicated to increase to a maximum the growth potential of digital economy, aimed to reach the benefit of each and every single user in Europe.

In the scope of technology development and progress, in near future one of the most important criteria to get employed will become being digitally educated and skilled, having all the capacities to in the digital area. Unfortunately, nowadays the 47% of overall population is digitally illiterate, which is a very high ratio.

³⁶ European Commission - Commission Staff Working Document “Online Platforms” ec.europa.eu

As far as the European Commission is concerned, it took the following measures to ameliorate the future of Digital Economy and Society:

- Address barriers in European Data Economy
- Define priorities for standards and interoperability
- Support an inclusive and interoperability

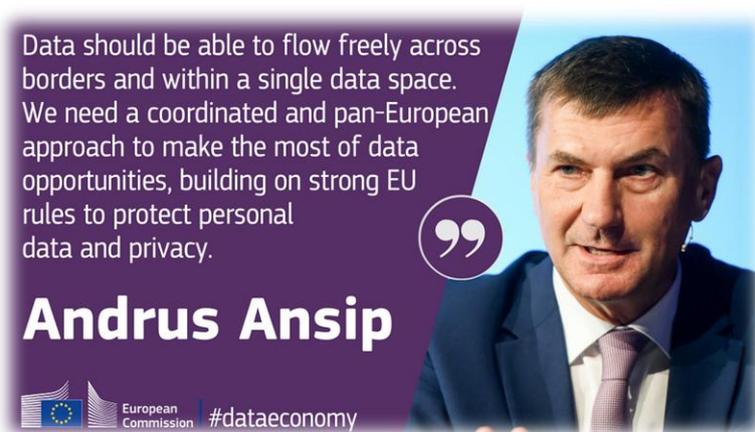
3.4.1 Address Barriers in European Data Economy

First and foremost, for the sake of distinguishing the barriers of data in the EU, the Commission offers two proposals:

1. Free flow of non-personal data
2. European Cloud Initiative

1. Free flow of non-personal data

Since our reality is mostly based on data, it became indispensably necessary to ensure the data protection, in the same time giving a push for the technology and support development of new business models. A new legislative proposal was published regarding the free flow of non-personal data, aimed to facilitate the services of cloud providers.

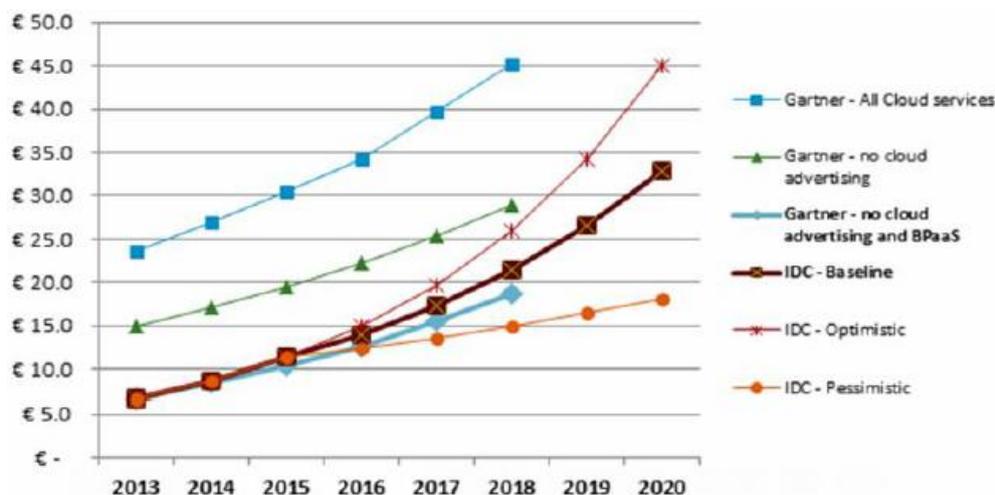


According to the report conducted by Deloitte “*Measuring the economic impact of cloud computing in Europe*” from December 2014 to April 2016, wider adoption of cloud services could add cumulative total revenue of EUR 449 billion to the EU28

GDP with significant impact on employment and business creation. Implementation of security certification and removal of data localisation requirements could increase benefits by EUR 19 billion between 2015 and 2020.³⁷ Cloud computing is considered a very strong resource for revenue generation. It is anticipated the accumulation of EUR 449 billion to the EU28 GDP over next five years. Obviously, besides the above mentioned GDP growth there are other advantages to be gain due to computing cloud:

- ✓ New jobs – approximately 1.6million of jobs will be formed in the period of 2008-2020
- ✓ New businesses – 303,000 new businesses (mostly SMEs) will be created in the period of 2015-2020
- ✓ Additional net benefit – in the period of 2015-2020 EUR 14 billion for professional users (thanks to new users). EUR 3.8 billion for providers of cloud computing services. EUR 1.8 billion for society (thanks to profits generated due to higher taxes and savings on environmental costs)
- ✓ IT costs will be changed from capital expenditures to operating expenses
- ✓ Diminution in ICT (Information and communication technologies) costs
- ✓ Scalability and adaptability
- ✓ Better IT infrastructure

Figure 22. Expenses on Public Cloud (billion)

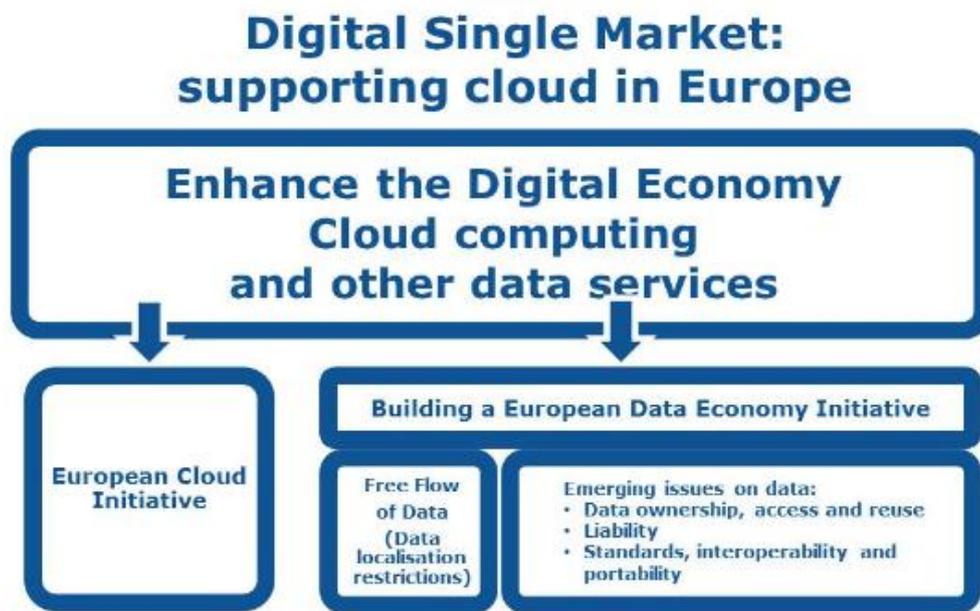


³⁷ Study reference: Smart 2014/0031 European Commission - “Measuring Economic impact of cloud computing in Europe” ec.europa.eu

As it can be clearly seen from Figure 22 the increase of expenditure is expected up to 2020. A previous study estimated take-up at 70% (public cloud) and 48% (private cloud), while Eurostat estimated that only a fifth (19%) of EU companies used cloud computing services in 2014.³⁸

2) European Cloud Initiative

There are two key points on which the European Cloud Initiative is making its accent: **European Open Science Cloud** and **European Data Infrastructure**. Obviously, the first one is chasing a goal to be a space where scientists can freely and unlimitedly share and use the data for scientific purposes, whereas the second one is aimed to contribute to the secure movement of data in the EU.



Certification, cloud service providers and security are the primary actors if the initiative, through which the Digital Economy is supposed to become stronger. Evidently, there are other initiatives included in this project, like internet connectivity package, digitization of industry and Communication of building European Data

³⁸ "Measuring Economic impact of cloud computing in Europe" Deloitte

Economy. As mentioned in previous parts, the programme Horizon 2020 also includes researches having the target to boost the cloud computing in the EU.

Based on the data taken from Eurostat “Cloud computing - statistics on the use by enterprises” it can be declared that:

1. 21 % of EU enterprises used cloud computing in 2016, mostly for hosting their e-mail systems and storing files in electronic form.
2. 51 % of those firms used advanced cloud services relating to financial and accounting software applications, customer relationship management or to the use of computing power to run business applications.
3. In 2016, almost twice as many firms used public cloud servers (15 %) as private cloud servers (8 %), i.e. infrastructure for their exclusive use.
4. Compared to 2014, the use of cloud computing increased particularly in large enterprises (+10 percentage points).³⁹

Define priorities for standards and interoperability

This part is dedicated to the definition and regulation of standards for health, transport, energy and planning sector. Standardisation is playing a crucial role, since it is setting a legal framework for every actor, in this way assuring the competitiveness.

Support and inclusive digital society

It is beyond shadow of a doubt, that the strategy of Digital Single Market itself is collection of new regulations which are coming to change the actual society, leading it to a more developed and technology open era. As a matter of fact, new digital society is being formed through digital devices and installed systems. E-Government is becoming more and more reachable to its citizens than before.

³⁹ EUROSTAT “Cloud computing - statistics on the use by enterprises”

3.4.2 European E-Government Action Plan 2016-2020

“The industrial revolution of our time is digital. ... As companies aim to scale up across the Single Market, public e-services should also meet today's needs: be digital, open and cross-border by design. The EU is the right scale for the digital times.”

Andrus Ansip, Vice-President for the Digital Single Market

Here below are presented the main areas with specific action plans that digital society puts its attention:

- eHealth and ageing – eHealth Action Plan

Evidently the target of this Action Plan is to bring on light more opportunities and privileges of newest medical technologies and telemedicine. As a matter of fact, as it can be tracked millions of Europeans have already diverse apps in their smartphones, in order to follow their health condition. Nowadays the healthcare sector is one of the blooming and progressing ones. The 21st century is bringing a lot of innovative solutions in order to facilitate humans' life, leaving behind the traditional ways of medicine and walls of hospital. More and more companies are interested in the future development and investment in this sector, which is strictly connected also to the change of population's mentality. These days' people are more concerned about their health condition and their life style, which is of course providing a ground for businesses and investors. It became greatly popular to have a healthy lifestyle, special devices for controlling essential data of your body, etc.

From the financial point of view, according to Deloitte's report by 2020 global health care expenditure is expected to reach 8.7 trillion dollars.⁴⁰ The main reasons causing this augmentation are the following ones:

- 1) Emerging market expansion
- 2) Growing population
- 3) Significant progress in medical treatments

⁴⁰ Deloitte “2018 Global Healthcare Outlook”

4) Rising labor costs

For example, people aged 65+ are composing 11.5% of total population, which in its turn has its own reasons, like:

- ✓ Better medical care
- ✓ Reduction in infant mortality rate
- ✓ Reduction in most of communicable diseases and viruses

Below is presented the vision of e-Health Action Plan:⁴¹

- ✓ to improve chronic disease and multi-morbidity (multiple concurrent disease) management and to strengthen effective prevention and health promotion practices
- ✓ to increase sustainability and efficiency of health systems by unlocking innovation,
- ✓ enhancing patient/citizen-centric care and citizen empowerment and encouraging organizational changes
- ✓ to foster cross-border healthcare, health security, solidarity, universality and equity;
- ✓ to improve legal and market conditions for developing eHealth products and services.

There are many initiatives in the framework of Horizon 2020 like “Health, demographic change and wellbeing” that propose various projects in different areas: For example:

- an ICT and computational science and engineering framework for digital, personalized, and predictive medicine, including advanced modeling and simulation⁴²;
- innovative instruments, tools and methods for unlocking the value of data and for advanced analytics, diagnostics and decision making;

⁴¹ European Commission - E-Health Action Plan 2012-2020

⁴² Virtual Physiological Human - Economic Impact of Interoperable Electronic Health Records & e-Prescription in Europe

- new digital media, web and mobile technologies and applications, as well as digital instruments that integrate healthcare and social care systems and support health promotion and prevention;
- eHealth systems and services with strong user involvement, focusing on interoperability and the integration of emerging patient-centric technologies for cost-effective healthcare

Nonetheless the European Commission has budgetary limits; it tries to respond all of the challenges like ageing population, availability of public medicine, providing the best options for those who have problems with movements.

Development of self-driving cars

Another interesting sector which is greatly supported and financed by EU is self-driving cars, because in its turn it supposes also the smart usage of energy, in this way having positive impact on the environment.

CCAM (Cooperative, Connected and Automated Mobility) is a structure which is creating the sector where the mobility platform will be much easier, safer and obviously leaving a positive impact on nature. It is beyond shadow of doubt that robotics and artificial intelligence are making a solid part of nowadays science.

Figure 23. Artificial intelligence market in healthcare apps 2014-2021 (millions)



Source: Frost & Sullivan 2016 "Transforming healthcare through artificial systems"

This means that AI is going to have its impact on every sector of healthcare. Based on the numbers presented above there are a number of companies that are getting huge investments for their business operating with AI.

As regards robotics, it's a sector which is thriving as well, growing by 17% of compound rate on early basis (11.4bn\$ by 2019). It is beyond shadow of a doubt that Asia, Japan and China are the countries where the robotics is raising more. The robotics is becoming popular among surgery sector, in the sense of minimising the invasive surgery nowadays. ⁴³

By the way, robots are moving towards home health and end of life care space. According to Frost and Sullivan, since nowadays the overall population keeps growing faster, consequently the need of taking care about the elder people is considered quite a serious problem, where robots (sometimes called also care-bots) are acquiring a solid position.

Japan is leading the way with one-third of the government budget on robots devoted to the elderly. The Japanese 'care-bot' market alone is estimated to grow from US\$155m in 2015 to US\$3.728 billion by 2035.⁴⁴

Below are presented companies who are developing robots for various sectors:

- VERB SURGICAL – Developing generation of surgical robots. Is working with Johnson & Johnson's Ethicon and Alphabet Inc's Verily to develop the generation of surgical robots, incorporating advanced visualisation, machine learning, data analytics and connectivity.
- MAZOR ROBOTICS RENAISSANCE – This company transforms spine surgery from freehand procedures to guided procedures. Mazor's ADSs trade on the NASDAQ under the symbol MZOR. The company reported a 54% year-over-year Q4 2015 revenue increase to US\$8.8m.
- TRANSENERIX – Developing devices for non-invasive surgery. They are already commercializing ALF-X system (a robotic surgery system). This is a system which enables 4 arms control to robotics, plus a camera.
- TITAN MEDICAL - developing its SPORT (Single Port Orifice Robotic Technology) Surgical System composed of a surgeon-controlled robotic platform with 3D vision and interactive instrument control for performing

⁴³ PWC "What doctor? Why AI and robotics will define New health" June 2017

⁴⁴ Source: Ministry of Economy, Trade & Industry

minimally invasive surgery. The company believes SPORT will enable surgeons to perform procedures within small- to medium-size surgical spaces for general abdominal, gynaecologic, and urologic indications. The company is pre-revenue. The company recently raised CAD\$15.1m through a public offering.

- HANSEN MEDICAL – Developing and selling medical robotics designed for the positioning, manipulation, and control of catheters. The company’s Magellan Robotic System controls the proprietary Magellan Robotic Catheter, a telescoping and robotically steerable catheter. In 2016 the FDA approved Hansen’s Magellan Robotic Catheter eKit and a few days later, the company announced its first clinical procedure with the Magellan in the US.
- STEREOTAXIS - designs, manufactures, and markets robotic systems and instruments for the treatment of abnormal heart rhythms. Its products include the Niobe ES robotic system and Vdrive system. Stereotaxis has strategic alliances with Siemens and Philips Medical Systems. The company recently reported its first quarter of positive free cash flow – of US\$1.6m – which management indicated helped drive a 71% reduction in 2015 annual cash burn, For FY 2015, Stereotaxis registered total revenue of US\$37.7m, which represented an 8% year-over-year improvement.

As a matter of fact, it is known that in 2060 one out of three Europeans will be over 65. From the EU’s point of view, between the period 2010-2060 pensions, healthcare, education expenditures will increase by 20% (or 4.1% points of GDP).

As it can be referred Commission is actively financing a lot of projects connected with healthcare, especially if in its turn it is connected with the development of robotics or artificial intelligence. One of the brightest examples implemented in the territory of Italy is the “GiraffPlus” project funded by EU. The aim of GiraffPlus, an FP7-funded project led by researchers at Örebro University, Sweden is to promote safer and healthier ageing at home using technological assisting devices which enable to monitor an older people’s health on a continuous basis. Information such as blood pressure, body temperature, movement, fall, are collected through sensors and analysed by a ‘intelligent’ system which alerts the caregivers in case of

emergencies. This system can also be used for long-term assessment of the patient's health and for virtual visits of relatives or caregivers at an older person's home. At the heart of the system is a unique telepresence robot, Giraff, which lends its name to the project. The robot uses a Skype-like interface to allow e.g. relatives or caregivers to virtually visit an elderly person in the home.

The system has already been tested in a demo apartment in Örebro, but the next step is for researchers in Sweden, Italy and Spain to evaluate the new technology in real homes. The GiraffPlus system will be tested in 15 different homes in the three countries.⁴⁵

3.4.3 Common Well Project

Initially this project started with 10 partners in 2008. The goal was to strengthen the link between social services and healthcare. The experiment was done in 4 areas of European Union: The United Kingdom, Netherlands, Germany and Spain.

The services implemented were the following ones:

- I. Spain (Andalucia) – emergency care through telecare
- II. Germany (Bielefeld) – better hospital admissions
- III. The United Kingdom – telehealth and early intervention (especially for Chronic Obstructive Pulmonary Disease (COPD) patients)
- IV. Netherlands (Veldhoven) – Better support for heart failure patients

According to the final reports provided by each area CommonWell project have had a largely positive impact on their job satisfaction, leading to efficiency and productivity in everyday work. For example, regarding COPD patients in the United Kingdom it can be truly stated that the life quality was obviously improved and there are less visits to the hospital.

Another example regarding the telecare in Spain, Andalucia proves that the patients get only positive impact from the above mentioned project. A questionnaire was released among 500 patients and staff. Here are the biggest achievements mentioned by them:

⁴⁵ Age Platform Europe - The Voice of older persons at EU level

- ✓ Less anxiety during the emergency
- ✓ 84% of staff declared their satisfaction for their job and balanced their work schedule
- ✓ Reduction in the average time per call
- ✓ The staff members outline that in 91% of cases users got a huge benefit from changes

So, Common Well system implemented showed a reduction in costs, due to the reduction of number of calls and average duration per costs, as well as an increase in user's safety and reduction in anxiety in a health emergency.

3.5 Mid-Term Review on the implementation of the Digital Single Market Strategy

"Digital technologies and digital communications are permeating every aspect of life.

We need to work for a Europe that empowers our citizens and our economy. And today, both have gone digital."

President Juncker in his State of the European Union speech on 14 September 2016

Having described the Digital Single Market strategy in the territory of European Union it is compulsory as well to present the relevant report demonstrating the achieved results in numbers and respectively the impact that they had on economy.

Consequently, it is available the mid-term review on the implementation of the project with all details presented. The report includes as well European Digital Progress Reports 2017, where is mentioned the individual success in each Member State, the areas where more exercised and forces are needed to achieve the goals.

1ST PILLAR – ACCESS

1. “Triple Win” – Concrete Benefits

- a) No retail roaming charges in the EU – from 15th of June 2017 all the roaming charges are cancelled for the Europeans travelling in other Member states.

As the researchers and statistics shows that 34% of Europeans are travelling to other EU Member State at least once a year, hence there is a huge need to use the cellphone data during the trip. In 2014 a survey was done among Europeans which showed that most of them don't use mobile data during their travelling because it is very expensive.

- b) Portability of online content – from early 2018 Europeans are given the chance to access freely their subscriptions to films, TV canals, e-books, video games or music services during their travelling

Another aspect that affected to take care of this sector is that 60% of young Europeans put a huge attention to the portability aspect while subscribing to one or another service. In this way they are enabled to choose any services with an opportunity to use it everywhere in the Member States.

- c) End of Geo-blocking - Currently there is no inequity and discrimination between Member States for purchases

Before only 37% of online acquisitions from other Member states were having success, because of many different reasons. Now without any firm and unjustified reason none of the purchases will be blocked or limited.

2. Internet Connectivity

High Quality 700MHz band – in 2020 it will be totally real use 700MHz band on broadband. First of all, this initiative is closely linked to the implementation of 5G networks and services that they bring (smart cities, remote healthcare, connected cars, etc.). Without this it will be practically impossible to realize the above mentioned projects. That's why Member states pay so much attention to this spectrum.

Unfortunately, taking into consideration the current situation there is a deficiency of € 155 billion to arrange the broadband for everyone by 2025 (the total amount needed is € 500 billion). European Structural and Investment Fund, European Fund for strategic investments are making investments in their turn in order to enable millions

of households with high speed broadband access (respectively € 6 billion and € 3.2 billion).

3. Marketplace for consumers and businesses

As already mentioned before the thriving of cross-border e-commerce is considered as the core mission of the strategy, hence a number of regulations are taking place for the sake of bettering the future development of e-commerce. Digital contract rules and cooperation between national consumer protection authorities are already operating using newly adopted rules guaranteeing the users' and businesses' protection while dealing on cross-border. There are two main points that should be always monitored and improved in order to guarantee best conditions for all: *easier VAT declaration procedures and cost-effective/reasonable delivery services across Member States.*

4. Privacy and Personal Data

General Data Protection Regulation (GDPR) – In the framework of this regulation businesses and consumers are assured to have the personal data safe and secure. Additionally, it is motivating new businesses to take on for innovations and go on for new opportunities. Besides, the European Commission is collaborating with every Member State's Data Protection Supervisory Authorities for creating the application on Regulation starting from 25th of May 2018. This Regulation supposes to expand more the legal certainty and strengthen users' privacy online (*ePrivacy*).

5. Distribution of content in digital age

- a) *Audiovisual Media Services Directive* – This is a regulation aimed to establish harmony between competitiveness and consumer protection simultaneously stimulating the Commission's works. According to Eurostat, 67% of Europeans used to read news online, 51% plays video games, listen to music, download media materials, and 31% listen to Internet radio. ⁴⁶

⁴⁶ Eurostat Culture Statistics 2016, p.138.

- b) *Copyright rules* – The proposed copyright regulation will provide a unique chance to spread the knowledge through digital content all around the Member states, for education, research, healthcare purposes, etc.

2ND PILLAR – ENVIRONMENT

1. Promotion of Online Platforms

Nowadays online platforms are playing a crucial role in many sectors, especially for those businesses (particularly SMEs) who are still in their first stage of development. Online platforms have revolutionary effect on the progress and transformation of current World Wide Web path. The majority of them (82%) rely on search engines of Internet, and 66% of them confirm that the position in the list is directly influencing their sales. Anyway, being users we can witness that almost each and every business is making its own webpage even on social media, which is already considered a part of their marketing strategy.

Communication on Online Platforms – On May 2016 the Commission put an accent on two important points: safe business environment and safe content, without any illegal materials. Currently there is a guide on liability rules and support to online platforms how to deal with illegal content.

2. European Data Economy

Autumn 2017 – legislative on free flow of data within the European Union. In the framework of this regulation the personal and non-personal data is fully protected even if stored in other Member State.

May 2018 – accepted regulation about re-use of public and publicly funded data having public interest.

3. Cyber Ecosystem

2013 – Cybersecurity Strategy. Accepted in early 2013 the project is dedicated to the collaboration between Member States to set up a solid connection among private

companies, Internet connection providers and international companions. A continuous assistance is provided for each Member state in case of cyber incidences and emergencies, accompanied by investments in order to guarantee the partnership “Trust in Digital Life”.

2014 – Cybersecurity championship in partnership with ENISA (European Union Agency for Network and Information Security).

*‘The importance of the European Commission’s active involvement in getting on board policymakers in Member States, the expertise of the EU’s cybersecurity agency, ENISA, in involving the best experts in the field and the responsibility of public and private stakeholders in understanding that the target is set very high and that they should engage to the best of their ability’.*⁴⁷

The goal was to acknowledge about the current cyber challenges and to find out the solutions for them. In this competition were involved teams from Austria, Switzerland, the United Kingdom, Spain and Romania. Additionally, there were organized workshops in April 2014 in Brussels.

3rd PILLAR – SOCIETY AND ECONOMY

1. Digital Skills

Taking into consideration that with the start of digital era, there was a revolution in the criteria of jobs and employment level changed dramatically. 90% of job positions are requiring digital skills and knowledge in order to be employed.

June 2016 – New Skills Agenda for Europe. This includes a normative indicating that digital skills are now considered as an indispensable part for our future (later on this was registered officially in European Pillar of Social Rights).

2018 – Scheme “Digital Opportunity”, which is fostering cross-border internships.

⁴⁷ European Union Agency for Network and Information Security – “Cyber security competitions — the status in Europe”

2. Digitisation of services, Start-ups

April 2016 – “Digitizing European Industry” is another project for European Start-ups aimed to provide a platform to learn and exchange knowledge from each other. In the framework of this project in

April 2017 Rome – “Digital Day”, an event organized on high level, where participants were confronting questions regarding industrial competitiveness.



Four crucial issues were included in the agenda of the event:

1. Europe as a global player in high performance computing
2. European industry digitization
3. Automated mobility
4. The influence of digitization on employment rates

The most important outcome of the above mentioned event was the signing of the declaration by ministers to concrete the progress in “High performance computing” and in “Automated mobility”.

Digital innovation hubs – This is a project included in “Horizon 2020” that implies investments in start-ups with innovational ideas in the sphere of technologies. According to “Horizon 2020” budget more than € 300 million will be dedicated for the development of local start-ups. A specific role plays digital industrial platforms since they are the ones who will create in future smart factories and services. Besides, owing to smart services financial sector will have a significant rise as well, since it will provide its consumers with better services earning their trust and loyalty.

4. Public Services

2nd of May 2017 – Single digital gateway. This is known also like “once-only” principle which can save € 5 billion a year. The meaning of this principle is the following: if one wants to expand his/her business across the Single Market he/she will not need to pass again the major part of administrative stuff already done before. Moreover, every procedure will be available online, facilitating the work of both parts. E-Government Action Plan is already in its full use, making Member States to use the “once-only” principle as a default for each country in the EU.

5. Development of healthcare

Robotics and Artificial Intelligence – By 2020 AI and robotics market will have a rise of € 142 billion. The European Commission is actively financing projects where robots and human are interacting and working together, since in near future almost every hospital will be equipped with artificial intelligence devices and robots.

3.6 Questionnaire “Digital single market”

The questionnaire “Digital single market” was conducted among 30 companies that have an activity in the e-commerce sector and/or are offering online services. Hence, obviously all these companies are witnessing the direct effects of the DSM strategy and can give their objective feedback. Below are presented the questions included in the survey and the summary of their responses.

1. Please mention recently realized reforms that had brought to positive impact till now?
 - a) No retail roaming charges
 - b) Portability of online content
 - c) End of geo-blocking
 - d) Promotion of digital skills of EU citizens
 - e) Other (please mention)

The vast majority of respondents (20 out of 30) has chosen first three answers. The fact that major part of companies recognizes the end of geo-blocking in the territory of European Union, speaks about the obvious progress in collaboration among member states. The promotion of digital skills of EU citizens was mentioned only by 3 respondents.

2. Do you prefer more e-shopping/e-selling from your home country or cross-border?
 - a) Home country
 - b) Cross-border

Almost all respondents (26) have chosen the option “home country”. As explained before in previous chapters, while ordering from your home country, there are less obstacles connected to delivery process, delivery time and return procedure in case of eventual problems. By the way, since the project is already starting to demonstrate its fruitful incomes, it is highly probable that this image will be change in near future. Only 4 out of 30 mentioned “cross-border” as a preferred way of online shopping.

3. Which are the main problems which stop you from shopping/selling cross-border (outside from your home country)?
- a) High delivery costs
 - b) Technical problems linked to the delivery
 - c) Companies refusing to deliver to your home country
 - d) Payment problems
 - e) The websites of the e-retailer not available in your country
 - f) Other (please mention)

The dominant view amongst all respondents pointed “high delivery costs” as the biggest problem (27 out of 30). This was expectable, since in many other reports presented before this answer is always in the first line. On the second place (15 out of 30) respondents have chosen payment problems and delivery point. Evidently, these two are strictly related to geo-blocking issues, which is currently in the phase of elaboration and will require some time to disappear definitely. Only 3 out of 30 mentioned that the website of the e-retailer is not present in their home country.

4. Which are the main problems while shopping/selling online from your home country?
- a) Some products are not available in your home country
 - b) Sometimes the product does not have the same quality, as if e-shopping from other country
 - c) Other (please mention)

The vast majority (25 out of 30) mentioned both of the answers. 3 respondents mentioned option a) and 2 option b).

5. Do you find that parcel delivery services in EU (between member states) are affordable?
- a) Yes
 - b) No
 - c) More Yes than No
 - d) More No than Yes

19 out of 30 gave a positive answer mentioning “more yes than no”, which is a very good vote for the project. In the framework of Digital single market strategy, parcel delivery and postal services are considered as one of important issues to deal with. 5 out of 30 answered “more no than yes”, 3 out of 30 answered “yes” and other 3 out of 30 “no”.

6. What kind of impact to you expect from The General Data Protection Regulation (GDPR) being into effect from May 25, 2018?
- a) Positive
 - b) Negative
 - c) None

Almost all respondents (27) agreed that General data protection regulation will bring a positive impact for their activity. Truly, GDPR is being into effect from May of this year, and it is very soon to make judgements about eventual effects, but in fact expectations are positive. 2 out of 30 mentioned “none” and only one respondent expects a negative impact from the new regulation.

7. Could you please provide examples of technological improvements and/or suggestions that can facilitate the connection between Member States of EU?

One respondent suggested the organisation of forums among member states on annual basis, aimed to spread the information about new regulations and their practical usage.

8. Do you find that EU’s cybersecurity and privacy regulations provide a strong protection?
- a) Yes
 - b) No
 - c) More Yes than No
 - d) More No than Yes

This question resembles more to the question about the General Data Protection Regulation, because in this case as well most of respondents (26) are considering the option “more yes than no”.

9. Do you find that the oversight usage of robotic process automation (RPA) nowadays became indispensably important and needs further development?
- a) Yes
 - b) No
 - c) More Yes than No
 - d) More No than Yes

18 out of 30 consider robotic technologies as a vital part for the future progress and mentioned “yes” as their answer. Surprisingly answer “no” was chosen by 10 of respondents, whereas 2 out of 30 answered “more yes than no”

10. Are the existing regulations and legislations sufficient for satisfying the further development of EU’s online platform between member states?

Rank from **1** to **10**

According to the ranking provided by respondents the medium satisfaction level is corresponding to “5”.

Conclusion

In conclusion, it would be fair to question the effectiveness of “Digital single market” strategy and to state the results obtained from the date of its implementation. Obviously, taking into consideration that till now we are witnessing positive changes such as the annulment of roaming charges, more scrupulous data privacy rules, no borders for media subscriptions, make us feel on daily basis the fruitful outcome of the strategy. Having a unique online platform for all member states of the European Union, makes it more feasible and approaching for further collaboration and communication among countries.

Moreover, as an important part of the strategy there is presented “Horizon 2020” which demonstrates the further direction of Digital single market. By 2020 member states will be enabled to utilize the high-quality band 700 MHz, which is directly going to provide with a solid digital background for numerous innovations and modernizations. Digitizing industry and services, having high performance computing and artificial intelligence is becoming an indispensable part of our reality. Hence, having a project which is assuming all these aspects and providing balanced solutions, is a pledge for the growth of a single online platform.

As regards, the e-commerce sector in particular, evidently it is flourishing and parcel delivery is becoming more and more important for the EU economy. Cross-border deliveries became more affordable and from May 2016 with a new regulation adopted by the Juncker’s Commission both companies and consumers are provided with significantly better conditions to sell and buy on the online platform across the EU. Additionally, step by step the unjustified geo-blocking is getting replaced by clearness and strong consumer rights.

In the long run, it can be stated that until now various decisive improvements can be noticed, which proves to meet the challenges set up from the very beginning in the framework of the strategy.

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