FORECAST OF E-COMMERCE GROWTH IN BOSNIA AND HERCEGOVINA

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Abstract: E-commerce is growing faster than traditional forms of commerce. The expansion of the internet, mobile networks and the use of smartphones have increasingly driven consumers to online shopping. The convenience of buying from home and possibilities to compare products are key benefits for consumers. Changes in consumer behavior have implications for traders and their business models. They are switching the entire business to e-commerce. The relatively lower costs of doing business and promotional activities are key reasons for such business transitions. For traditional traders (Brick and mortar), the greater challenge is that big players in this sector become those who do not have physical stores. The implementation and expansion of e-commerce are of varying intensity in the economies of the world. E-commerce can significantly increase competitiveness and strengthen the position of B&H companies in a wider market. This paper deals with the current and future trends of e-commerce in Bosnia and Herzegovina. The paper forecasts e-commerce trends for the period from 2019 to 2021. Based on available data for the period from 2015 to 2018, by the trend extrapolation method, the forecast for the next three years is given. A trend represents the movement of a process or occurrence that prevails over some time. The business activity under code 47.91 was analyzed, that is, retail trade via mail or internet. Business activity under code 47.91 is compared with the same at global and European level. Besides, basic business performance was analyzed both at the level of activity 47.91 and at the level of five domestic e-commerce companies (Pik d.o.o., E-kupi d.o.o., Kupi tehniku d.o.o., Fact cool d.o.o. i Dopi grupa d.o.o.). The following indicators were used in the analysis of business performance: sales revenue, net profit, number of employees and return on total assets. The paper aims to identify the growth rates of e-commerce in the period 2015-2018 in this market, to determine what this trend is relative to the trend of e-commerce development in the world and the region. Further, the aim is to extrapolate the trends of the analyzed indicators to predict the growth of e-commerce in Bosnia and
Herzegovina in the next three years. Based on an extrapolation of trends in sales revenue, net income, and headcount, it was concluded that the growth rate of e-commerce in BiH will be significantly lower compared to the global level, but should also be higher than the growth at the level of European Union. Research has shown that e-commerce is very profitable and that an increasing number of companies are joining it.

Key words: e-commerce, business results, trend extrapolation, competitiveness, growth forecast

JEL Classification: C1, M21

INTRODUCTION

E-commerce means that a company offers the possibility to transact or sell products and services online. Apart from an online perspective, Kalakota and Whinston (1997) defined e-commerce from perspectives of business processes, communications, and services. E-commerce enables fast and efficient communication on products and services, payment, online interaction with customers. From a business process standpoint, automation of business transactions and workflow allows for increased efficiency. The e-commerce service perspective helps reduce the cost of services, increases the speed of delivery and quality.

By saving on physical space, employees' wages, and inventory, online retailers can profitably sell products and services to niche markets. They compete in three key aspects of the transaction: customer interaction with the website, delivery, and ability to solve problems when they arise (Kotler et al. 2014, p.438). Commerce has long been considered a labor-intensive branch with low technology penetration. This was one of the reasons for the slower growth of labour productivity than in other industries. However, modern business is characterized by the transition from the traditional to e-commerce. The result is a significant improvement in efficiency and labour productivity (Lovreta and Petkovic, 2010; Criscuolo and Waldron, 2003). The most important is the ability of e-commerce and information technology to transform non-tradable services into tradable, by opening markets that were previously closed (Nuray Terzi, 2011). E-commerce is being imposed on companies not only because of competitive pressure also because of changing consumer habits in the digital age. The Global online consumer report (KPMG, 2017, p.4) points out that the growing trend of online shopping is geographically uneven. Per capita, online purchases are less frequent in Eastern than in Western Europe, or in Latin America than in North America. According to the same source (p.27) consumers’ top reasons to shop online are the ability to shop 24/7; the ability to compare prices; online better prices and
time-saving. According to Ovum report, The Future of E-commerce: The Road to 2026, (2017, p.3), consumer e-commerce today is mostly driven by price, convenience, a good deal on products and quick delivery. By 2026., consumers will expect more from e-commerce, such as intensified shopping experience, treating shopping as a leisure activity in its own right (p.4).

Many authors dealt with the advantages and disadvantages of e-commerce (Duan, 2012; Schneider, 2011; Chaffey, 2011; Stockdale and Standing, 2004; Strauss and Frost 2001). The advantages and disadvantages of e-commerce are changing with the development of technology and changes in consumer behavior but can be grouped into those consistent until today. The advantages of e-commerce are related to connecting sellers and buyers globally; availability of the offer at any given time; convenience as it enables the buyer to access the offer without having to make physical visits to the outlets; transaction processing speed; more efficient and flexible information processing; database-based sales management capability; lower costs; real-time communication. Disadvantages of e-commerce are lack of contact with the product and the ability to test quality on-site; lack of shopping environment and physical space; non-possession of the product at the time of payment; a large number of e-shops confuses end-users who cannot always manage this amount of information; internet traffic congestion; dissatisfaction with secondary purchasing motives such as the need to play the role of the buyer, to communicate with people, to maintain social status (to be seen), the need to bargain. Issues preventing more rapid e-commerce growth are logistics, ie. expensive delivery and underdevelopment of the market. Some customers do not own a credit card or are concerned about the security of online payments. The possibility of misuse of an e-card is higher in other environments than on the internet (Zavisic and Lovrekovic, 2016, p.16-26), since the technology for secure payment is advancing.

E-COMMERCE DEVELOPMENT AND TRENDS IN THE WORLD AND EU

There is no exact information on what constitutes the beginning of e-commerce. The simple form of B2B commerce was launched in the 1970s by the pharmaceutical company Baxter Healthcare (Milosavljevic and Miskovic, 2011, p.15), using a telephone-based modem that allowed hospitals to order medicines from this company. This system was later expanded into a PC based remote ordering system in the 1980s. According to Schneider (2011), the development of e-commerce is split into the first wave and second wave. The first wave of electronic commerce was predominantly the U.S. phenomenon, while the second wave
is characterized by its international scope (p.11). With all the advantages and disadvantages of e-commerce, today’s companies cannot count on a significant international presence unless they apply e-commerce business models.

The book Marketing Channels (Lovreta et al. 2013, p.139) states: “Online retailing through electronic marketing channels has increased dramatically from about $25 billion in annual sales at the beginning of 21st Century to over $175 billion in the Year 2010. Continuous significant growth in online retail is expected to continue to $279 billion in the Year 2015. In the said period, the annual growth rate of online retail sales is forecast to decline from 12.1% in the Year 2010 to 7.7% in the Year 2015. Still, it is three times more annual growth rate of 2.5% compared to the forecasted annual retail growth through traditional marketing channels. The accuracy of previous forecasts can be seen in Graph 1. Instead of the projected USD 279 billion in the Year 2015, the value of e-commerce, according to the data provided by Statista, was $1.548 billion, or 5.5 times more.

According to Graph 1, growth in the period from the Year 2015 to the Year 2018 was 83.6% (from $1.548 billion to $2.304 billion). Forecasts show that growth will be 171.6% in the period from the Year 2018 to the Year 2021 (from $2.842
billion to $4.878 billion). One can conclude that e-commerce will grow 315.1% globally in the period from the Year 2015 to the Year 2021., respectively, tripled compared to the base year 2015.

**Graph 2.** Worldwide E-commerce sales growth forecast 2015-2020

*Source:* e-Marketer (2016), Worldwide Retail Ecommerce Sales: The eMarketer Forecast

**Graph 3.** Worldwide E-commerce sales growth forecast 2017-2023

*Source:* e-Marketer (2019), Global ecommerce forecast
The e-Marketer forecasts (2016; 2019), shown in Graph 2 and Graph 3, also confirm the accelerated development of e-commerce.

The e-Marketer forecasts (Graphs 2 and 3) are similar to the Statista forecast (Graph 1). E-commerce is increasing its share of total commerce. Compared to the base Year 2015, participation of e-commerce in total commerce increased from 7.4% to 12.2% by the end of the Year 2018. In the Year 2021, it will increase to 18.1%.

Analyzing eMarketer forecasts from Graphs 2 and 3, there are differences for the period from the Year 2017 to the Year 2020:
- 2017 - in Graph 2 it is 10%, in Graph 3 it is 10.4%;
- 2018 - in Graph 2 it is 11.5%, in Graph 3 it is 12.2%;
- 2019 - in Graph 2 it is 13%, in Graph 3 it is 14.1%
- 2020 - in Graph 2 it is 14.6%, in Graph 3 it is 16.1%

Forecast adjustments over a relatively short period suggest that e-commerce globally is increasing its participation at an increasingly rapid pace, although there is a trend of slowing trade growth overall.

Graph 4 presents the forecast for the growth of e-commerce in the EU, as published in the Ecommerce Report: Global 2019 (Ecommerce Foundation, 2019).

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**Source:** Ecommerce Foundation (2019), European Ecommerce Report: Global 2019
E-commerce has increased by 41.7% in the European Union from the Year 2015 to the Year 2018. Over the same period, the growth was 83.6% globally. The growth of e-commerce in the European Union was twice as low as it was globally. E-commerce growth rates are expected to slow in this market, as well as globally, but they are still significantly higher than commerce as a whole. Globally, e-commerce growth rates fell from 25.5% to 22.9% in the period from the Year 2015 to the Year 2018 (Graphs 2 and 3). Over the same period, the growth rate of e-commerce in the European Union has fallen relatively slightly, from 13.54% in the Year 2015 to 13.22% in the Year 2018 (Graph 5). The data for the Year 2018 on Graph 5 are given as forecasts, so this should only be taken as a guideline since there is no official data for the indicated year.

![Graph 5. Trends in E-Commerce Sales Growth Rate 2014-2018](source)

**Source:** Ecommerce Foundation (2018), European Ecommerce Report 2018 Edition

The growth rate of e-commerce in the EU is much lower in the Year 2018 (13.22%) compared to the global level (22.9%). From the Year 2015 to the Year 2018, e-commerce in the world is continuously growing and increasing its share in total commerce. Besides, there is a global tendency to reduce the growth rate. In contrast to the global level, the growth of e-commerce in the European Union market is almost half lower but has a relatively stable growth rate.

**METHODOLOGY**

The common indicators of business success: sales revenue, net profit, and headcount were used as the criteria to forecast e-commerce growth in Bosnia and Herzegovina. Performance indicators’ data for the period from 2015 to 2018 are taken from the LRC Kreditni Biro d.o.o. Sarajevo. By the extrapolation of the trends of the analyzed indicators forecast of e-commerce growth in Bosnia and Herzegovina is given for the period from the Year 2019 to the Year 2021.
RESULTS AND DISCUSSION

E-commerce growth indicators in Bosnia and Herzegovina 2015-2018

Unlike the European Union and the global market, there is no accurate data on the volume and trends of e-commerce in Bosnia and Herzegovina for the observed period 2015-2018. Available official statistical publications do not differentiate the latter from other forms of trade. It is possible to track only the trade as a whole. Taking into account the limitation, the authors of this paper sought to reconstruct the development of e-commerce in the domestic market in the observed period as follows:

1. According to the 2010 industry classification, there is only one activity that can be directly linked to e-commerce, which is retailing via mail or internet (industry classification 4791). Based on the balance sheets of all companies registered in this industry, it is possible to determine the development performance and business success of this industry as a whole. Based on the data of the LRC Kreditni Biro d.o.o. Sarajevo, the authors have identified growth trends for the period from the Year 2015 to the Year 2018.

Table 1: Performance indicators for industry 4791 for the period 2015-2018

<table>
<thead>
<tr>
<th>Category</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>sales revenue</td>
<td>25.659.253</td>
<td>14.761.820</td>
<td>39.918.085</td>
<td>46.014.796</td>
</tr>
<tr>
<td>net profit</td>
<td>1.284.271</td>
<td>587.515</td>
<td>2.477.767</td>
<td>2.852.679</td>
</tr>
<tr>
<td>headcount</td>
<td>79</td>
<td>103</td>
<td>102</td>
<td>140</td>
</tr>
<tr>
<td>ROA</td>
<td>16,9%</td>
<td>10,1%</td>
<td>39,9%</td>
<td>17,8%</td>
</tr>
<tr>
<td>profitable companies</td>
<td>16</td>
<td>27</td>
<td>26</td>
<td>35</td>
</tr>
</tbody>
</table>

Source: Authors- based on data from LRC Kreditni biro d.o.o. Sarajevo

2. In addition to the previous analysis, to increase the relevance of e-commerce growth forecasts, business performance trends were analyzed for five companies
in Bosnia and Herzegovina. The analysis use the aggregate data for Pik d.o.o. Sarajevo (web portal pik.ba); Ekupi d.o.o. Knight (web portal ekupi.ba), Buy technique d.o.o. Sarajevo (web portal kupitehniku.ba), Fact Cool d.o.o. Sarajevo (web portal ba.factcool.com) and Dopi grupa d.o.o. Banja Luka (web portal e.Bay.ba). Business performance indicators used as criteria for assessing e-commerce growth are: sales revenue, net profit, and headcount.

Table 2 gives business performance indicators for the selected five companies for the period 2015-2018.

Table 2: Performance indicators for five companies for the period 2015-2018

<table>
<thead>
<tr>
<th>Category</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>sales revenue</td>
<td>15,179,343</td>
<td>17,023,158</td>
<td>20,385,588</td>
<td>22,109,058</td>
</tr>
<tr>
<td>change compared to the previous year</td>
<td>12.1%</td>
<td>19.8%</td>
<td>8.5%</td>
<td></td>
</tr>
<tr>
<td>net profit</td>
<td>500,351</td>
<td>1,136,859</td>
<td>1,983,484</td>
<td>3,005,232</td>
</tr>
<tr>
<td>change compared to the previous year</td>
<td>127.2%</td>
<td>74.5%</td>
<td>51.5%</td>
<td></td>
</tr>
<tr>
<td>headcount</td>
<td>58</td>
<td>65</td>
<td>64</td>
<td>71</td>
</tr>
<tr>
<td>change compared to the previous year</td>
<td>12.1%</td>
<td>-1.5%</td>
<td>10.9%</td>
<td></td>
</tr>
</tbody>
</table>

Source: Authors- based on data from LRC Kreditni biro d.o.o. Sarajevo

Sales revenue at the industry level increased by 79.3% in 2018 compared to 2015. At the level of the selected five companies, this growth was 45.7% from the same period. One of the possibilities is that revenue growth is a result of new companies entering the industry. The number of companies has increased from 16 to 35, while the ROA in 2018 is 17.8%. Net profit at industry level 4791 increased by 122.1% in the period from the Year 2015 to the Year 2018. As for selected companies, net profit increased by 600%. Net profit in the industry is increasing faster than the sales revenue, attracting new companies.

The increase of headcount at the industry level was 77.2%, and for selected companies, this growth was 22.4%. At the industry level, the growth of headcount is approximately equal to the growth in sales revenue, while at the level of selected companies, the growth of headcount is twice less than the growth in sales revenue. This indicates a significant increase in productivity at selected companies, especially given that they have increased their net profits by as much as six times.
As for revenue generated in the sector 4791 (+ 79.3%), e-commerce growth in Bosnia and Herzegovina is much closer to the growth at the global level (83.6) than in the EU (+ 41.7%). There was initially low turnover value in Bosnia and Herzegovina, resulting in higher growth rates in the period 2015-2018. The attractiveness of the industry as well as the net profit growth contributed to it.

**E-commerce growth forecast in Bosnia and Herzegovina 2019-2021**

Past data and extrapolation of trends provide an answer to the question of what will be the trends of the e-commerce growth rate in Bosnia and Herzegovina in the next three years. Based on trends in sales revenue, net profit and headcount, projections for the period 2019-2021 have been made.

![Graph 6: Sales revenue trend (in million BAM)]

*Source: Authors* processing in the SPSS program, based on data from LRC Kreditni biro d.o.o. Sarajevo

Graph 6 shows the sales revenue trends of companies dealing with e-commerce in Bosnia and Herzegovina. The forecast for the next three years is based on the following function:

\[ Y = 8,0733X + 3,6065 \]

The representativeness of the model is quite high (74.16%). There is a high degree of accuracy of the model. Expected values for the next three years are:
Table 3. Sales revenue forecast for 2019-2021

<table>
<thead>
<tr>
<th>Year</th>
<th>Forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019</td>
<td>52,046,630</td>
</tr>
<tr>
<td>2020</td>
<td>60,119,600</td>
</tr>
<tr>
<td>2021</td>
<td>68,192,900</td>
</tr>
</tbody>
</table>

Source: Authors

Table 3 shows that sales revenue is expected to grow by 48.2% in the period 2019-2021. This is quite lower than 79.3% achieved in the period 2015-2018. According to the forecast, there will be a slowdown in growth, which is in line with global trends.

Graph 7 shows the net profit trends of companies dealing with e-commerce in Bosnia and Herzegovina.

![Graph 7: Net profit trend (in million BAM)](image)

Source: Authors - processing in the SPSS program, based on data from LRC Kreditni biro d.o.o. Sarajevo

From Graph 7 it can be concluded that for the analyzed period the net profit of the companies was growing. The forecast for the next three years is based on the following function:

\[ Y = 0.6427X + 0.4404 \]

The representativeness of the model is quite high (78.5%). There is a high degree of accuracy of the model. Expected values for the next three years are:
Table 4. Net profit forecast for 2019-2021

<table>
<thead>
<tr>
<th>Year</th>
<th>Forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019</td>
<td>3.861600</td>
</tr>
<tr>
<td>2020</td>
<td>4.459.300</td>
</tr>
<tr>
<td>2021</td>
<td>5.084.000</td>
</tr>
</tbody>
</table>

Source: Authors

The net profit growth in the period 2015-2018 was 122.1%. According to the forecasts in Table 4, net profit will increase by 78.2% in the period 2019-2021. As in the previous revenue forecast, net profit growth is expected to slow in the period 2019-2021.

The analysis of headcount in e-commerce in recent years shows a significant growth, which can be seen in Graph 8. According to the obtained function of the linear trend, one can assume that the growth will continue in the period 2019-2021. The forecast for the next three years is based on the following function:

\[ Y = 18.3X_i + 41.9 \]

The representativeness of the model is high (92%).

Graph 8: Headcount trend

Source: Authors - processing in the SPSS program, based on data from LRC Kreditni biro d.o.o. Sarajevo
Table 5. Headcount forecast for 2019-2021

<table>
<thead>
<tr>
<th>Year</th>
<th>Forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019</td>
<td>152</td>
</tr>
<tr>
<td>2020</td>
<td>170</td>
</tr>
<tr>
<td>2021</td>
<td>189</td>
</tr>
</tbody>
</table>

*Source:* Authors

Headcount in the e-commerce sector is expected to increase by 11% annually over the next three years. Compared to the period 2015-2018, when this growth amounted to 77.2%, for the period 2019-2021 the growth of the number of employees will be 35%.

The above analyses show that there will be growth in sales revenue (+ 48.2%), net profit (+ 78.2%) and headcount (+ 35%) in the period 2019-2021. Given the different growth rates in these performance indicators, it is necessary to check the correlation between them. Examples for identifying the correlation between the indicators are the business results of the two largest, among five selected companies (Pik d.o.o. and Ekupi d.o.o.).

Table 6. Correlation of performance indicators of Pik d.o.o.

<table>
<thead>
<tr>
<th>Correlations</th>
<th>Sales revenue</th>
<th>Net profit</th>
<th>Headcount</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PIK</td>
<td>PIK</td>
<td>PIK</td>
</tr>
<tr>
<td>Sales revenue PIK</td>
<td>Pearson Correlation</td>
<td>.922*</td>
<td>.902</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.048</td>
<td>.098</td>
</tr>
<tr>
<td>N</td>
<td></td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Net profit PIK</td>
<td>Pearson Correlation</td>
<td>.922*</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.048</td>
<td>.314</td>
</tr>
<tr>
<td>N</td>
<td></td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Headcount PIK</td>
<td>Pearson Correlation</td>
<td>.902</td>
<td>.686</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.098</td>
<td>.314</td>
</tr>
<tr>
<td>N</td>
<td></td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

*Correlation is significant at the 0.05 level (2-tailed).

*Source:* Authors- processing in the SPSS program

Table 6 shows the correlation between performance indicators of Pik d.o.o. The analysis shows that there is a strong correlation between sales revenue and net profit and that it is statistically significant, while other links between business
parameters Pik d.o.o. although they exist, they are not statistically significant and cannot be considered reliable. Similar to Pik d.o.o., there is a strong correlation between sales revenue and net profit at Ekupi d.o.o. Pearson Correlation value is .992 *, while there is a weak and insignificant statistical relationship between other performance indicators.

If we compare the e-commerce forecasts for Bosnia and Herzegovina with the once at the global level, there will be slower growth in Bosnia and Herzegovina in the next three years. There are no official forecasts for the European Union market except estimates that e-commerce in Western Europe should reach 11% of total trade in the Year 2021, and in Eastern Europe, it should reach 5% (International Post Corporation, 2017). In the Year 2017, it was 12% of total trade in Western Europe and 4% in Eastern Europe. Given these forecasts, it is realistic to expect that the growth of e-commerce in BiH will be higher than in the EU. A potential problem for BiH is the slowdown in growth rates, while the EU market already has stable growth rates, which should continue in the next three years.

**CONCLUSION**

The benefits of e-commerce are significant to both companies and the modern consumer. E-commerce growth is significantly higher than the growth of traditional trade. At a global level, it was primarily thanks to the growth in Asia and North America. The forecasts of eMarketers and others indicate that this growth will continue but at a slower rate. Unlike the global market, e-commerce in the European Union has stabilized its growth rates. Although the growth is half that of the global level, it is stable. E-commerce in Bosnia and Herzegovina has strong growth over the past few years. It should be borne in mind that the participation of e-commerce in total trade is relatively small and that even high growth rates can not significantly change its status in the short term. Monitoring trends and forecasting e-commerce growth in Bosnia and Herzegovina is influenced by the lack of relevant statistics. For these reasons, the authors used the available database to forecast e-commerce growth in Bosnia and Herzegovina. Based on the extrapolation of trends in sales revenue, net income, and headcount, it was concluded that the growth rate of e-commerce in Bosnia and Herzegovina will significantly be lower than the global level, but should also be higher than growth in the EU. The research showed that the industry is very profitable and that an increasing number of companies are joining the same, especially new companies with fewer employees. Forecasts say that as well as globally, a slowdown in e-commerce growth is expected over the next three years. Because e-commerce
in Bosnia and Herzegovina has a small share in the overall trade, this slowdown in the growth rate is a signal that Bosnia and Herzegovina will lag in e-commerce growth, compared to the EU and the rest of the world. The policymakers should take this into account and strive to create a favorable economic environment for the development of this type of trade. The faster they make adjustments, the faster e-commerce will evolve.

REFERENCES


