ATLANTIS PRESS
Advances in Economics, Business and Management Research, volume 83
2nd International Scientific Conference on 'Competitive, Sustainable and Safe Development of the Regional Economy' (CSSDRE 2019)

Regional Companies' Assessment Features in the Digital Economy Era

Irina D. Anikina
Volgograd State University
Institute of Economics and Finance
Volgograd, Russia
anikina@volsu.ru

Natalya G. Glazkova
Volgograd State University
International Education Institute
Volgograd, Russia
glaskova@volsu.ru

Yulia A. Marchukova
Volgograd State University
Institute of Economics and Finance
Volgograd, Russia
marchukova-yuliya@mail.ru

***Abstract* — The assessment of existing electronic commercial systems and the features of the companies' assessment are modern topical issues. This can be explained by the increasing e-commerce, in which it is hard to choose appropriate development strategies and to apply efficiency optimizing systems. The research goal is to elaborate a model for assessing regional companies' efficiency, to define the traditional key indicators, reflecting the financial activity and specific indicators, characteristic of the electronic commerce. The e-commerce's dynamics and innovativeness determines the difficulties in choosing an assessment method and in evaluating the total initial investments. This research presents the assessment of an e-commerce system, based on estimating the company's value by the example of an online store. The researchers estimate the company's value by means of the discounted cash flow method, view the company's current performance indicators and specific e-commerce indicators, analyze the results of the company's performance and compare them to the same indicators of the main regional competitor. Finally, the research authors assess the efficiency the e-commerce system being investigated and give a set of recommendations, facilitating the company's value increase in the region and the e-commerce system' effectiveness in general.**

Keywords* — *e-commerce, efficiency evaluation, valuation of the company, profitability, electronic commerce system

I. INTRODUCTION

The efficiency assessment – is process, which includes both technical and economic organizational aspects of a company's performance.

It is important to define the efficiency criteria in order to analyze the effect, caused by various e-commerce systems' application ways.

Let's consider the following directions and ways to analyze the economic efficiency.

The economic efficiency of the e-commerce system organization method is subdivided into three basic groups:

1) the ratio of its use to the costs, associated with the system's development and operation in general. The indicators for evaluating the effectiveness of creation are attributed.

2) Indicators of performance efficiency.

3) Indicators of company valuation.

The first group includes the following:

- initial investments (can be one-time and spread in time);
- maintenance costs, within the financial amount necessary for the online store's operation in the normal mode;
- the indicators designed to evaluate investment projects in general. These indicators include net present value, discounted payback period, internal rate of return, profitability index and etc.

Let's consider the assessment of the economic efficiency of an online store's e-commerce system from the company valuation point of view.

Company valuation and companies' values management methods are presented in the academic literature by A. Damodaran [1], T. Copeland [2], R. Brealey [3], and others. The evaluation of companies in new markets was studied by such authors as P. Boer [4], E. Black [5].

It becomes important to expand and adapt the existing assessment models, covering the new emerging risks to the maximum due to the development of the so-called "high-tech" economy and the emergence of new types of companies.

Thus, e-commerce is one of the elements of a modern high-tech economy. In general sense, it conducts all forms of

financial transactions, using digital currency. Nowadays, e-commerce is inseparable from the "classic" one and is the trade deals and operations' growth accumulator.

Difficulties in evaluating companies in the digital sphere, i.e. leading mainly electronic form of commerce, are determined by several reasons.

The most obvious challenge or difference are tangible assets, which make up a small turnover share [6]. For most online stores, tangible assets are only the goods, which was not produced, but purchased from the suppliers, tangible assets may imply a company's computers. In some cases, the property may include office space for employees and warehouses. Specific stores and stores special goods (products) (for example, software sales, advertising etc.) do not need a warehouse or office space, the employees can work remotely. That is why there is no basis for valuating a company, basing its assets' value [4].

The second point is goodwill assessment. In general, such assessment includes many nuances, and concerning the Internet it is even more complex, because it is very difficult to estimate and predict the cost in future [7].

What can be attributed to goodwill [8]? The answer is - the contemporary a company's position in the market, the company's business relations, its reputation and the existing customer database. This is an intangible asset, which combines the company's image, management and trade mark.

The third point which demands special attention is that the predicted consumption volume is important for an online store in future. However, due to the fact that consumer orientation is complicated, and as the e-commerce market is, it is extremely difficult to predict this figure. And minimizing the forecast figure fault is not always easy. For example, for small and medium-sized Internet companies, which have a fixed budget, which can be spent on advertising, it becomes important not to increase the number of new customers but to maintain the existing ones and stimulate not only first purchases, but also repurchases [9].

The fourth point is a small number of deals with the purchase and sale of Internet business in the market as a whole [10].

Therefore, a comparative method for estimating the cost is even more difficult in implementing, because it is almost impossible to value a company by comparing it to a similar competitor, which was previously sold. Over time, this difficulty can be eliminated, but now the issue of price when it comes to selling an online business [11], or rather its validity is difficult to settle between the seller and the buyer.

Any Internet project can be viewed from various points of view. So, on the one hand, an Internet project implies venture investments, but, on the other hand, most of these projects are a combination of media and entertainment content, where the main income sources is advertising and an online store. In addition, the e-commerce market is rapidly growing on its own.

II. Materials and Methods (Model)

The following groups of company valuation features can be distinguished in the digital economy (Internet companies) [12]:

1) the specificity of venture projects valuation;

2) evaluation nuances of the mass-media projects;

3) differences and specificity of valuating a store;

4) the specificity of evaluating companies in a fast-growing market.

Theoretically, each company has its own unique valuation methodology.

The authors have used the income method to analyze the effectiveness of the company (the "UchMag" (original "УчМаг") online store), i.e. the authors discounted the online store's expected cash flows. The cash flows are discounted by the discount rate, correlating with the required rate of return.

The researchers found out that the market value of the "UchMag" online store is 25.5 thousand rubles with the help of valuation.

The authors used the method of discounted future cash flows and the following calculation formula to evaluate the company's cost:

$$PV_{TV}=\frac{TV}{(1+R_{CK})^{t}} \quad (1)$$

This cost indicated is the most likely price at which an online store can be sold in the market, provided there is competition.

The volume of gross profit in 2017 amounts to 7.36 thousand rubles, and the net profit volume was 6.26 thousand rubles. In 2017 comparing to 2016 the profit's growth rate was negative and amounted to 53% in gross profit and 55% in net profit.

The sales profitability gross profit in 2017 was only 7%, and in net profit – only 5%. The sales profitability also decreased in the reporting period compared to the previous one.

Such a negative trend is determined by the creation of a subsidiary online store. The equalization of profits was taken into account in the projected indicators. The projected indicators include the equalization of profits. Additionally, when evaluating the cost and efficiency, special attention should be paid to a rapid prime cost growth. Presumably, it is worth diversifying the range of suppliers. Thus, it necessary to move from the policy of own production only to selling more products purchased from third-party organizations in the online store [13].

Apart from using the traditional valuation, it is necessary to take into account a number of other factors that influence the efficiency of the e-commerce system and the company as a whole. It is essential to understand how the e-commerce system works, how effective it is - that is, whether it is able to

return the investments and bring in an acceptable volume of net profit [14].

The method of assessing the main indicators of the system's functioning can be used for a more adequate evaluation of the e-commerce system's effectiveness. In this case we can distinguish and use the indicators characterizing the current activity and indicators evaluating the final results of activity [15].

Under the current activity indicators we understand:

1) The total number of the store visitors by time intervals;
2) The number of repeated visitors by time intervals (the indicator is achieved and assesses the level of service, attractiveness, prices, etc.)
3) The share of visitors who had transactions in the total number of visitors;
4) The share of visitors of repeated visitors who had transactions in the total number of repeat visitors;
5) The volume (in monetary terms) of transactions per customer;
6) The maximum and minimum level of purchase volume per customer (on average);
7) Dynamics of sales volume over the last 2 years;
8) Dynamics of net and gross profit over the last 2 years.

III. Results and Discussion

When assessing the final results of an online store's performance, the study authors use the indicators that reflect the final economic and financial results of the company:

1) Market liquidity indicators;
2) Financial stability indicators;
3) Solvency indicators;
4) Profitability indicators;
5) Business activity indicators.

As a result of estimating the indicators of current activity and end results, it is possible to evaluate the overall effectiveness by the performance of the e-commerce system.

These indicators allow concluding on the electronic store's economic efficiency, as well as indicating interesting aspects that need to be worked out to improve the e-commerce system's efficiency in future. Thus, the maximum level of purchase volume per person is very high, what indicates the wholesale buyers' interest in the products provided by the online store.

TABLE I. The total number of visitors and number of unique visitors of the "UCHMAG" online store in dynamics (number of people).

Category [a]	**Year (2017)**	**Month (November 2017)**	**Week (3rd week of October, 2017)**	**Day (01.09.2017)**
Visitors, (people)	2 112 099	242 242	68 637	20 290
Repeated visitors, (people)	1 500 378	169 101	40 896	10 324
	Year (2016)	**Month (November 2016)**	**v (3rd week of October 2016)**	**Day (01.09.2016)**
Visitors, (people)	2 088100	236 780	55 738	25120
Repeated visitors, (people)	1 500 378	169 101	40 896	10 324

[a.] Resource: authors' calculations

The result of analyzing the dynamics of the number of visitors, allows to speak of a positive trend, which generally indicates the consumer's interest in this store and the effectiveness of the e-commerce system.

TABLE II. Indicators of the e-commerce system's current activity (the number of people in % and thousands of rubles)

№	***Indicator*** [b]	***Figure***
1	The total number of the store's visitors (people)	2 112 099
2	The number ofrepeated visitors, (people)	1 500 378
3	The share of visitors who had transactions, (%)	54
4	The share of visitors of repeated visitors who had transactions, (%)	88
5	The volume of purchases, (thousands of rubles)	15 175
6	The volume (in monetary terms) of transactions per customer, (thousands of rubles)	13,3
7	The maximum level of purchase volume per customer, (thousands of rubles)	140
8	The minimum level of purchase volume per customer, (thousands of rubles)	0,1

[b.] Resource: authors' calculations

It is necessary to pay more attention to regular and wholesale customers in future. The strategy of developing a cumulative discount or bonus program chosen by the company in the previous paragraph should include aspects of working with the specified categories of customers (permanent and wholesale).

TABLE III. INDICATORS OF THE FINAL E-COMMERCE SYSTEM'S ACTIVITY RESULTS.

№	*Indicator* [c]	*2016*	*2017*	*Dynamics*
1	To absolute market liquididty, (%)	17	0,2	A sharp decline, but in 2017 the indicator was within the normal limits. This indicates a change in the policy of using financial resources.
2	To quick market liquididty, (%)	18	1,3	The indicator is higher than the recommended level (0.5), the downtrend has positive dynamics, indicating a change in the liquid assets management
3	Receivables time of turnover, (days)	157	135	Business activity indicators, turnover and duration of the operation and financial cycles show a positive trend, i.e. decrease in the reporting period compared with the previous one. This indicates an increase in the production efficiency in general.
4	Payables time of turnover (days)	21	92	the indicator's increase dynamics shows the company's negative state
5	Current assets time of turnover, (days)	173	57	The turnover reduction demonstrates irrational work organization
6	Operation cycle, (days)	157,3	134,9	The trend to reduce the duration of the operating cycle increases the intensity of receivables use
7	Financial cycle, (days)	156,4	42,49	This indicator's decrease positively affects the company's state.
8	To financial dependence, (units)	0,05	0,5	Significantly higher than the normal limit in 2017, what reflects the loss of financial independence
9	To the ratio of own and borrowed funds (units)	0,5	0,02	Decreases due to attracting additional funds in the reporting period.
10	Production profitability (%)	51	15	All profitability indicators illustrate a decrease in the capital use efficiency and the production process. The negative dynamics can be explained by the capital flow into a "subsidiary" company (online store)
11	Sales profitability, (%)	31	6,1	
12	Profitability on the capital and its parts, (%)	220	55	

[c.] Resource: authors' calculations

In general, not counting profitability indicators, the final results indicators indicate the potential of the e-commerce system, [16]. That also speaks about the company's system's effectiveness.

But let's turn back to the evaluation of the "UchMag" company's e-commerce system's economic efficiency on the cost value basis.

According to the forecast (based on the visitors number growth and the proportion of visitors moving to the category of buyers) the profitability will increase in the forecast periods, even despite the subsidiary online store and profitability decline in 2017 compared to 2016. Since the subsidiary online store will gradually change its assortment (after promoting and occupying the target market) and will not overlap with the "UchMag" online store's assortment, which already brings a stable income, as well as the revenue, gross profit and net profit forecasts.

TABLE IV. THE COMPARISON OF THE FINAL ACTIVITY RESULTS INDICATORS OF THE "UCHMAG" AND "KASSANDRA" E-COMMERCE SYSTEMS

Indicator [d]	**Indicators comparison**	
	LLC "UchMag" 2017	***LLC "Kassandra" (naib regional competitor) 2017***
1. Financial stability		
1.1. The autonomy ratio (financial independence), (in units)	0,5	0,3
1.2The own capital ratio, (in units)	0,4	0,2
1.3. Investments coverage ratio, (in units)	0,6	0,3
2. Solvency		
2.1.Current liquidity coefficient,(in units)	2	1,3
2.2. Quick liquidity coefficient,(in units)	1,3	0,2
2.3. Absolute liquidity coefficient,(in units)	0,2	0,08
3. Activity efficiency		
3.1. Sales profitability, (%)	6,1%	2,7%
3.2. Net profit margin, (%)	2,7%	1,6%
3.3. Assets profitability, (%)	5,7%	3,2%

[d.] Resource: authors' calculations

It is worth noting that, the own capital cash flow increases in 2017 and 2018 at a slow, but maximum possible pace.

The discount rate, according to which the cash flows are adjusted, takes into account all factors and risks to the maximum [17]. Including the risk because of the company's small size, in relation to the entire e-commerce space and the risk of transition to a new business model.

Let's pay special attention to the country risk (relevant in case of entering international markets, which is quite an achievable goal in the globalization process), because like any other Russian business sphere, the Russian e-commerce market contains additional risks for an investor. These risks (these risks are minimized in any other developed country,) include: corruption, legislation gaps, companies' accounting policies, inappropriate government regulation, etc.

The country risk in Russia's e-commerce is significantly higher than in other countries, the study applied 9% country risk (in comparison to the European countries and the USA this risk is lower 1.5%) [18,19,20].

So, according to the company's valuation, the increase of the online store's visitors and buyers is stable. This indicator mainly affects the company's revenue. To estimate the company's cost the research does not consider a possible crisis, as the goods are not in the top priority, but are in a stable demand, despite a seasonal component (for example, during the summer holidays the demand from educational

institutions decreases, but at the beginning of a new school year, quarter, semester the demand rises sharply).

As a result, basing on the cost valuation, it can be concluded that the e-commerce system of the "UchMag" online store is economically efficient.

We will compare the final activity results indicators to the main regional competitor of "UchMag" online store, which is the LLC "Kassandra".

As we can see by the indicators in table 4, the financial condition of the "UchMag" online store roughly corresponds to that of a competitor, the indicators of financial stability, solvency and profitability are in general slightly lower for the competitor company, which means that the "UchMag" online store's e-commerce system is more complete and efficient.

IV. CONCLUSION

The features of evaluating regional companies in the digital economy imply the following predicted profit calculation indicators accounting characteristic of the region:

- the absence of positive dynamics in the increase in the region population number;

- the tendency of the retail trade's turnover increase per capita;

- positive dynamics in the age category number, recognized as the most subject to making Internet purchases.

The comparison of final results indicators to the main regional competitor showed a positive trend and situation in the industry as a whole.

Basing on the cost evaluation, it can be concluded that the "UchMag" e-commerce system is economically efficient. The following strategies can be used to increase the economic efficiency and a company's value increase:

1) innovative products' invention;

2) own delivery service launch.

The discovered features of companies' business valuation should be applied to the analysis of the companies, operating in e-commerce markets. This will increase the objectivity and management decisions evaluation quality.

References

[1] Damodaran A. Investment Valuation: Tools and Techniques for Determining the Value of any Asset, University Edition, Wiley, 2012,992 p.

[2] Kouplend T. Stoimost kompaniy: otsenka i upravleniye [Company Value: Evaluation and Management] M.: Olimp-Biznes, 2005. 576 p.

[3] Breyli R. Printsipy korporativnykh finansov [Corporate Finance Principles], M.: Olimp-Biznes, 2007. 1008 p.

[4] Boyer P.F. Prakticheskiye primery otsenki stoimosti tekhnologiy [Practical examples of technology valuation], M.: Olimp-Biznes, 2012. 256 p.

[5] Blek E. Voprosy stoimosti. Ovladeyte noveyshimi priyemami upravleniya. investirovaniya i regulirovaniya. osnovannymi na stoimosti kompanii, [Cost issues. Master the latest management techniques. investment and regulation. based on company value], Olimp-Biznes, 2009

[6] Carev V.V., Kantrovich A.A. Jelektronnaja kommercija.[E-commerce] Sankt-Peterburg. Piter, 2012.503 p.

[7] Rodin D. Kak ocenit' internet-proekt? /Telnews.ru [How to evaluate internet project?] Ezhednevnoe jelektronnoe izdanie o rossijskom Internete. Rezhim dostupa: http://telnews.ru/Dmitrij_Rodin/c36385 Reference date: 12.01.2018.

[8] Shherbakov V.A., N.A.Shherbakova Ocenka stoimosti predprijatija (biznesa). [Valuation of enterprise (business)] Moskva. Omega-L, 2010. 288 p.

[9] Degtjarenko I.A., Leonova A.B. «Ocenka udovletvorennosti pol'zovatelej rabotoj internet-sajtom», Nacional'nyj psihologicheskij zhurnal.["Assessment of user satisfaction with the work of the website", National Psychological Journal] 2012. № 1. p. 95-103.

[10] Shapkin A.S., Shapkin V.A. Jekonomicheskie i finansovye riski: ocenka, upravlenie, portfel' investicij. 9-e izd. M. Dashkov i K,[Economic and financial risks: assessment, management, investment portfolio] 2013. 543 p.

[11] Lysenko Ju. G., Andrienko V.N., Ivanov I.I. Jelektronnaja Kommercija[E-commerce], Doneck: OOO "Jugo-Vostok, Ltd", 2004. 187 p.

[12] Ponachugin A.V., Snezhkova Ju.D. «Problemy i perspektivy razvitija jelektronnoj kommercii v Rossii», Nauchnoe soobshhestvo studentov XXI stoletija ["Problems and prospects for the development of e-commerce in Russia", Scientific community of students of the KSHI century], 2014. №26. p. 329-333.

[13] Trifilova A.A. Ocenka jeffektivnosti innovacionnogo razvitija predprijatija. [Evaluation of the effectiveness of innovative development of the enterprise] M.: Finansy i statistika, 2005, 304 p.

[14] Holodkova K.S. «Analiz rynka jelektronnoj kommercii v Rossii» Sovremennye nauchnye issledovanija i innovacii ["Analysis of the e-commerce market in Russia" Modern scientific research and innovation] 2013. № 10. Rezhim dostupa:http://web.snauka.ru/issues/2013/10/26760 Reference date: 12.01.2018.

[15] Smigel'skih D.A. «Metodologicheskie osnovy ocenki jekonomicheskoj jeffektivnosti sistem jelektronnoj kommercii» Nauchnoe soobshhestvo studentov XXI stoletija. Jekonomicheskie nauki: sb. st. po mat. XLII mezhdunar. stud. nauch.-prakt. konf. ["Methodological basis for assessing the economic efficiency of e-commerce systems" The scientific community of students of the XXI century. Economics]№ 5(42).

[16] Khartman A. Strategii uspekha v internet-ekonomike ["Strategies for success in the Internet economy."] M. Lori, 2001. 276 p.

[17] Reyli R. Otsenka nematerialnykh aktivov [Valuation of intangible assets], M.: ID «Konsalting»., 2005. 192 p.

[18] Damodaran A. «Information Transparency and Valuation: Can you value what you cannot see?», adamodar@stern.nyu.edu. 34p.

[19] Damodaran A. «Research and Development Expenses: Implication for Profitability Measurement and Valuation», adamodar@stern.nyu.edu. 25p.

Morgan J.P. «Nothing but Net», 2013 Internet investment guide, 2013. 340 p.
.