Accounting problems in e-commerce

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**Keywords:** e-commerce, accounting, EU, Europe

**Summary.** The purpose of the paper is to summarize the accounting problems in e-commerce and to propose some solutions. The lack of clear and worldwide acceptable harmonized juridical norms, concerning e-commerce accounting and taxation; insufficient competence in the cross area of e-commerce and accounting; e-commerce opportunities on the edge of tax evasion and shadow economy; not enough research for accounting problems in e-commerce; opportunity of a real time electronic based audit, accounting, management, analysis; the need of proper reliable software and ethical competent staff- these are part of the problems in our focus sphere. The proposed solutions are adequate to the problems. But if it is more profitable to act in a non-harmonized ambiguous environment and there is no pressure for a change, it is more likely the status to be kept.

**Introduction**

Europe is not the largest e-commerce market, but around half of its population over the age of 15y. are e-commerce shoppers and e-commerce in retail has a steady high growth rate (E-commerce foundation, 2016; European Commission, 2017). The share of business to customers (B2C) and business to business and government (B2BG) e-commerce is almost equal in EU; the total e-commerce turnover of companies is around 18% and growing; the number of companies using e-commerce is expanding too (Eurostat, 2017). Meanwhile the share of e-commerce vary in wide range among countries in EU: from more than 30% of companies actively involved in e-commerce in Ireland, Sweden and Denmark to less than 15% of companies using e-commerce options in Romania, Bulgaria, Poland, Latvia, Greece, Italy, Cypress, Lithuania (Eurostat,
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Online shopping ranges from over 80% in the UK, Denmark, Germany, Luxemburg, and Sweden to less than 20% in Romania (Ecommerce Europe, 2017).

Any business activity should be accounted. There is a trend of harmonization of regulations in EU, regarding accounting. It is obligatory public companies to use International Accounting Standards (IAS) as accepted by EU; the other companies to use (by statutory or individual decision) either IAS or local national standards and regulations, based on Directive 2013/34/EU on annual and consolidated financial statements and related reports (EUR-Lex, 2013). Regulation 537/2014 on specific requirements regarding statutory audit of public-interest entities is the fundament for independent financial audits of public interest entities in EU (EUR-Lex, 2014). Council Directive 2006/112/EC on the common system of value added tax (EUR-Lex, 2006) aims to harmonize VAT in EU to keep it within a certain range and avoid double taxation. Double VAT taxation is considered successfully avoided through national jurisdiction efforts of EU member states, based on the above directive. But VAT tax rates in EU are still varying from 17% (Luxemburg) to 27% (Hungary). Intra EU trade is encouraged by the full abolishment of custom tariffs, but custom tariffs apply for the international trade exchange with countries out of EU. The European Commission has proposed in the beginning of 2018 „new rules to give Member States more flexibility to set Value Added Tax (VAT) rates and to create a better tax environment to help SMEs flourish“ (European Commission, 2018). There is not EU harmonization in income taxation—both personal and company. Although EU has a policy of harmonization of legislation, there are a lot of divergences in tax, accounting and commerce regulations and practices among countries. This diversity is even greater considering the non-harmonized business world reality, despite the decade lasting attempts of organizations like OECD to progress in tax harmonization or of IASB and IFAC/IAASB to progress in accounting and audit harmonization. Differences magnify by the speedy development of e-business and especially e-commerce, as in market society sales are the most important instrument to reach the ultimate aim of profit growth.

The cross area of accounting and e-commerce is not well researched, although it is an everyday concern of an expanding community of interested parties: business people, accountants, auditors, tax authorities and indirectly—customers and the whole society. The purpose of the paper is to summarize the accounting problems in e-commerce and to propose some solutions. Despite it is concentrated on EU accounting problems in e-commerce, we consider it has a wider range of validation, as EU is so diverse that any type of problems in the specific area might be detected here. Limitations of the research are linked to the focus of it—EU and the volume of the paper. The methods used are logical analysis, literature review, quality research, and statistic data.

1. E-commerce perception

There is not a unified definition for e-commerce worldwide, although it is accepted as a common term in business, scientific research and everyday social life. What
is e-commerce? There are multiple definitions, the essence of which might be summarised to the following statements:

- any electronic order of goods or services, mainly through Internet, electronic delivery and electronic payment of them,
- any electronic order of goods or services, any delivery and electronic payment of them,
- any electronic order of good or services, any delivery and payment for them.

The first definition is the most limited one and intuitively most often associate with e-commerce by nonprofessional users of the term. The last definition is a wide-screen one and preferably used by researchers, marketing and statistic agencies. It might be arguable did electronic trade existed before the epoch of mass Internet usage. Still, it is accepted that e-commerce started to develop in the 70s of 20 century with the appearance of mail order catalogue trade, credit card payments, and the use of electronic networks for commercial purposes (Czaplewski, 2016; Hicks, 2004). Although modern science acknowledges the broadest definition of e-commerce, it is inevitably performed today partially or fully through Internet. Similar in meaning is the EU definition, which we will use in the paper: “E-commerce refers here to the trading of goods or services over computer networks such as the Internet” (Eurostat, 2017).

2. Types of e-commerce and their influence on Accounting

The abundance of business models and trade ideas lead to a multiple classifications of e-commerce. It is important to have in mind their profusion, because each one of the classification subcategories might have a different effect on the accounting and upraise unique problems. Types of e-commerce by different criteria might be summarized to be easier to elucidate accounting problems emanating from them (Ecommerce guide, 2017).

2.1. According to the items sold e-commerce might be for:

- physical goods (production or merchandise),
- services,
- digital goods (production or merchandise).

There are specify in calculation cost of the goods produced and sold; cost of the services; cost of the merchandise purchased and stored, cost of the merchandise purchased and sold or merchandise and service just sold, without being ever owned by the business seller; cost of delivery; cost of the software and host service; cost of licenses, copyrights and similar; purchase returns and allowances, selling returns and allowances. Each one of this items and business scenarios require different contracting, documentation, recording, reporting and control. In addition different items under multiple e-commerce schemes have quite deviating from traditional trade physical and documen-
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In the last decades, the growth of e-commerce has led to the emergence of new problems related to accounting. The quick turnover with a small margin, influenced by factors such as fashion, cultural, national or religious preferences, seasonality, and sales cycles, affects accounting policies, especially in the re-evaluation of items that have remained in stock and should be reported. Often, items that are no longer assets (physically present) may not bring future economic benefits due to the rapid changes in e-commerce trends.

Security and control approaches differ for each product type. The primary goods sold in EU e-commerce are clothing and sports goods, travel and holiday accommodation, and household goods. Physical goods prevail in e-commerce in the EU, with significant growth in other categories as well.

2.2. According to the parties involved, e-commerce might be:

- B2B (business company to business company),
- B2C (business to customer) and C2B (customer to business),
- C2C (customer to customer),
- G2B and B2G (government organization to business and business to government organization),
- G2C and C2G (government to customer and customer to government),
- NPO2B,C,G and B,C,G2NPO, and NPO2NPO (non-profit organizations to business, customer, government; and business, customer, government to non-profit organizations, and non-profit organizations to non-profit organizations).

All types of participants, with the exception of customers (C), are obliged to have their accounting records. However, the accounting requirements for business (B), government organizations (G), and non-profit organizations (NPO) differ. Their regulations, standards, and auditing requirements are not identical. E-commerce is integrated into the legal and organizational accounting network of each structure, which might be a minor question of the previous decades, but a growing concern of modern times. For government (G) and non-profit organizations (NPO) it could be a special challenge, as they are not as flexible in business life as business (B). Both G and B should adapt their settings for expanding electronic business life. For B2C and C2B relations, it is vitally important to keep up to date and full information secured records for individual customers. Usually their number is enormous, the income from them is small and there are multiple problems, including customer fraud. However, individual customers provide the greatest share of sales for e-commerce business and it is worth not only to have customer-friendly software trade presence, but to sustain a business-friendly database for customers. It could be used both for detailed accounting re-
cording of receivables and payables, and for reporting, analysis, data mining and forecasting of business activity in different management aspects and levels.

2.3. According to the e-commerce software platforms used in e-commerce:

- online storefronts (company’s website, including apps, built on e-commerce platform),
- online market places for multiple companies (with own storages or without any storage – different types of drop shipping),
- EDI type sales (electronic data interchange, usually compatible between sender and receiver),
- social media (presenting and leading to company web page; special trade platform or forum for trade; individual trade announcement on personal profiles).

It is possible to find companies using all electronic selling options in addition to traditional trade. The accounting job in such companies might be a nightmare, without a proper software relating sales and accounting to report automatically for sales, to write off the items sold, to record the electronic cash inflow, to accrue VAT and keep a trace of the orders, receivables and payables in details and summarized. Unfortunately, not so rare are the cases in which business software is not well balanced to serve both commercial, accounting, tax and reporting purposes. This is a harder task if all possible e-commerce software platforms are used and accounting has the ambition to be financial, management and tax one, using one and the same database and software. An increasing number of companies use multiple software platforms for e-commerce. Still online market places like Amazon have the greatest share of sales for Europe and Jeff Bezos, founder and CEO of Amazon was reported in July 2017 and in October 2017 the richest person in the world (Hartmans, 2017).

2.4. According to the way of payment in e-commerce:

- electronic cards,
- electronic bank transfer,
- other electronic ways of payment (like cryptocurrency),
- cash,
- barter,
- combined way of payment (two or more from above enumerated).

Payment alternatives affect the time period for cash collection, the price of cash transfer, the security of cash transaction and last, but not least – the transparency of e-commerce flows. From the viewpoint of tax authority accountants and forensic accounting the first two payment approaches are preferable. All the rest payments might be associated at least partially with shadow or dark economy. Meanwhile electronic payments might have greater security and privacy issues. Less developed countries with a smaller share of e-commerce like Hungary, Romania and Bulgaria prefer as a payment
method for e-commerce „cash on delivery“ (Ecommerce Europe, 2017) and prevailing
electronic payment is just a good wish. For financial accounting it might be hard to
trace all possible payments, using different methods in order to summarize cash flows.
For management accounting cash optimization becomes a real challenge in such a pay-
ment variety. Some of the payment methods like barter, combined payment or exotic
new ways of electronic payment might not even be realized as such intentionally or by
mistake, and hence not recorded. For cryptocurrency and for foreign currency regular
re-evaluation is needed. For barter exchange proper evaluation for the items exchange
is necessary and potential VAT requirement should be checked.

2.5. According to the jurisdictions involved in e-commerce:

- one,
- two,
- three or more jurisdictions.

It is possible different jurisdictions to be used for: 1) place of a customer order;
2) place of delivery for the customer; 3) place of a business selling department; 4) place
of the business headquarter; 5) place of a producer; 6) place of the merchandise storage;
7) place of the deliverer; 8) place of the server used to host the web page used by the
seller (Brandas, Megan, Graciunescu, 2013). The greater the number of jurisdictions
involved in e-commerce – the more the legal, tax and accounting problems to be solved.
Often these problems are multidisciplinary, very complicated and require worldwide
knowledge and reference of the problem.

2.6. According to the jurisdiction of a permanent establishment
of the e-commerce company or a place of residence for a person
involved in e-commerce:

- with clear e-commerce juridical norms or not,
- tax heaven or not,
- part of a larger union (like EU) or not,
- with multiple double tax treaties or not,
- with flat taxation or not.

Problems of primary importance for clarifying are to define permanent establish-
ment of the business and place of residence of an individual for tax and double tax trea-
ties purposes. Who, how much, in what way, when and where exactly should apply
VAT, income taxation, excise duty taxes and import/ export tariffs in e-commerce
transactions? The answer of these questions might change the whole business model
and future development of e-commerce business. Unfortunately juridical norms are
vague or missing in some aspects of e-commerce and in certain jurisdictions; tax regula-
tions are mostly targeting traditional business; e-commerce regulation is far from being
harmonized worldwide; and tax heavens although socially condemned are not legally
banned ubiquitously and excluded of the world business scene. It is a constant struggle of tax accountants to be adequate. Accountants are always solving a heuristic problem, concerning e-commerce multiple taxation aspects, as e-commerce is with very dynamic growth rate, information streams, goods flows and legal regulations. The dark side of the process is that e-commerce might be used for tax avoidance, tax evasion, international tax mitigation, tax sheltering in tax heavens, shadow and dark economy.

3. Accounting and company perspective for e-commerce problems

The previous logical construction of the paper was based on e-commerce classifications and their possible influence on accounting. The alternative is to apply logical analysis from the viewpoint of accounting, concerning e-commerce problems.

3.1. Types of accounting

There are several types of accounting:
- financial accounting,
- management accounting,
- tax accounting,
- forensic accounting,
- internal audit,
- independent financial audit.

There might be potential problems linked with e-commerce for each of the enumerated accounting subcategories. E-commerce is both good news and bad news for financial and management accounting. E-commerce software solutions (online storefronts, online market places and social media) should be fully and wisely integrated with the accounting system and total business software for best results. If the e-commerce system is not well integrated with accounting software, the financial accounting work multiplies several times for repetitive recording. Management accountants could not do proper budgeting, analysis, sector reporting, costing, forecasting, if they do not have correct data through business software access. The immanent feature of e-commerce is that it is using electronic processes. The management accounting for e-commerce is useful, if performed in real time. It is possible with a well build ERP system, including integrated e-commerce operations and all necessary accounting data. In this case, both management accounting and financial accounting could profit – different reports might be generated any time they are needed. Big data collection and processing becomes increasingly important for e-commerce (European Commission, 2017). Part of this growing analysis must be performed by financial and management accounting. Their integration with the other management functions should be greater and more fluent.

Accounting problems related to e-commerce are multiple. A brief summary of them include 1) possible greater share of intangible assets with all following conse-
sequence (evaluation problems; inability to recognize and record some self-created intangibles; shorter useful life and amortization period); 2) disclosure of revenue sources and expense specificity might be complicated, as it is not always clearly distinguished by nature or origin in e-commerce (Livnat, 2012); 3) complicated properly matching revenues, expenses, cash flows in time and nature; 4) evaluation and estimation problems for the stock sold, stock in store or stock in delivery; 5) lack of clarity concerning provisions for possible claims and reaction of fraudulent customer behaviour; 6) difficulties to keep track on individual receivables and payables, reseller commissions and fees, delivery costs, cost of the goods sold and revenues by different items and orders.

If active e-commerce is not complimented by an adequate accounting and business software (often in the last years – ERP systems), and clear controls on places of responsibility, the company control is practical impossible. Both for internal auditors and for independent financial auditors, it is essential to be competent in software applications, to be able to track the information and detected potential pitfalls. It is not anymore one sphere of competence required, but at least two: traditional auditor’s qualification and information technology qualification. It is especially inforse for forensic accountants in e-commerce. Financial and IT expertise separately rarely could lead to proper investigation conclusions. The security and reliability of Internet and software solutions are with a growing importance for any type of accounting. But as it is hard to reach that level of combined competence, both internal and external auditors should use the service of trusted expert organizations to certify the reliability of the electronic platform and processing system of the audited company (Law, 2012). Any type of digital shadow economy is possible in connection of e-commerce. The variations and incentives of e-crime are growing with the e-commerce expansion (Gaspareniene and Remeikiene, 2015).

3.2. E-commerce business by size, type and relation with accounting

E-commerce business by size, type, relation with accounting and possible responsibility of accounting might be grouped to:
- small companies,
- middle size companies,
- big companies,
- multinational companies,
- public companies.

Many starting e-commerce companies have the assumption they could manage their accounting on their own, using a standard accounting software. It is possible in minor cases, because there should be combined e-commerce peculiar features, accounting requirements and tax constrains. Often there are no special accounting or tax instructions for e-commerce, but there is an increasing interest of tax authorities to e-commerce, parallel to the rapid growth of the industry.

It is hardly possible for the small and medium sized enterprises (SMEs) to have ERP systems for most efficient software based management of multiple accounting
problems in e-commerce. SMEs are more than 99% in EU (Eurostat, 2015), but with limited resources. Although we could not assert it is the major problem, the lack of a proper multifunctional software and competence is one of the reasons for SMEs’ smaller share in e-commerce (Eurostat, 2017). Very often small companies are not competent enough to lead their proper financial accounting and hardly have any management accounting. Small and even medium sized companies prefer to hire an external accounting company for their financial and tax reporting. The external accounting company processes the documents provided by the SMEs companies to prepare their financial accounting reports or tax declarations. But if a document for certain operations is missing, it is not included in the report. The accounting company, being separate from the business one, is neither able nor obliged to check if all the operations are presented by the documents delivered by the client company. In the case of e-commerce part or all the documents could be electronic. It is a matter of competence and ethics all operations to be documentary reported (electronically or on hard copies) by the business company to the accounting company, in order the accounting company to prepare proper financial reports and tax declarations. It is a problem of competence and ethics too what kind of electronic and other documents the accounting company would require from the e-commerce client company.

In case of a big company it is inevitable to have a proper ERP system. It is more likely for big companies accounting and e-commerce data to be usefully arranged by an efficient software solution. Any e-commerce company might outsource accounting and provide a limited or (rarely) full access to its electronic database to the accounting company hired. It involves always resources, competence, security and confidential issues.

Most multinational companies (MNC) use e-commerce in a vast range. MNC have different activity areas geographically, industrially, organizationally and juridical. It gives them the advantage to apply the most useful delivery rout, storage place, price, trading and juridical framework. Very often they use transfer pricing for tax avoidance through e-commerce. As they have business in diverse places, MNC should combine in financial reporting different accounting and tax frameworks. It requires reclassification, recalculation and complicated accounting presentation for their activity internationally. Usually MNC use intensively tax planning, management accounting and internal auditors’ teams. Their external auditors most often are multinational companies as well.

Public companies have special requirements for their reporting by the stock exchange they are registered and traded. The specific reporting requirements of the stock exchange might differ from the accounting, tax or e-commerce reporting requirements. It is a matter of both high accounting competence and good software to fulfil the multi-task reporting in time.

Accounting problems, concerning e-commerce might differ according to the type of business entity chosen: sole proprietorship, partnership, corporation. But these are topics overviewed in traditional accounting books and their interpretation in e-commerce aspect is not much different. That is the reason not to be discussed more in the paper.
Conclusions

Research conclusions are diverse as are the aspects of the problems:

1. The e-commerce information models and merchandise routes are infinite. Accounting processes business information and should be able to facilitate the communication and even to predict business information in the most efficient way. Consequently, there is not one model of accounting for e-commerce.

2. Accounting problems and solutions depend on the concrete type of e-commerce, type of business organization and jurisdiction, management and marketing strategies, operational and information relations, software choices.

3. Accounting problems in e-commerce are directly associated with the size and type of the company, the competence and integration between accounting and other specialists, the type of responsibility accounting shares with management.

4. E-commerce is researched systematically in the last decades, but rarely concerning specific accounting problems. Meanwhile manifold accounting problems might be crucial for the existence and expansion of e-commerce business. If in the beginning of e-commerce expansion technical, organizational and marketing problems were dominant, now juridical, tax and accounting problems are on the agenda.

5. Problems associated with e-commerce vary, having in mind the different types of accounting: financial accounting, management accounting, tax accounting, forensic accounting, internal audit and independent financial audit. Some of them are specific only for one of the enumerated categories. But there are problems that crystallize as common for all accounting spheres: a) lack of clear and worldwide acceptable harmonized juridical norms, concerning e-commerce accounting and taxation; b) lack of competence in the cross area of e-commerce and accounting; c) e-commerce huge opportunities are often on the edge of tax avoidance, international tax mitigation, tax evasion, tax sheltering in tax heavens, shadow economy, black economy; d) lack of enough research for accounting problems in e-commerce; e) all accounting e-commerce problems are connected with the opportunity of a real time and electronic based audit, accounting, management, analysis, taxation which might be provided by proper reliable software and competent staff; f) the heavy dependence in e-commerce on electronic media and software requires they to be additionally tested and certified as part of financial audit, assurance tasks, tax audit or forensic inquiry; g) e-commerce is one of the first to introduce and accept new instruments like cryptocurrencies, which magnify the above enumerated problems.

The solutions are adequate to the problems: further research in the area needed, including case study; more specialized e-commerce accounting education is necessary; tax and accounting juridical and market harmonization should be initiated and supported by the political class, by customers and by business; possible uniform unique interna-
tional coding for electronic and physical label tracking of all e-commerce activities might ease the solutions of most cases. Often common sense could be shadowed by prevailing political and business interests. The reasonable arguments for e-commerce accounting problems solutions might have a positive development if all interested parties recognize their incentives in doing so. If it is more profitable to act in a non-harmonized, ambiguous, only partially computerized environment and there is no pressure for a change, it is more likely the status to be kept. Obviously the topic needs further research and real life activities.

Literature


**PROBLEMY RACHUNKOWOŚCI W E-COMMERCE**

*Słowa kluczowe:* e-commerce, księgowość, UE, Europa

**Streszczenie.** Celem artykułu jest podsumowanie problemów księgowych w e-commerce i zaproponowanie pewnych rozwiązań. Brak jasnych i akceptowalnych na całym świecie zharmonizowanych norm prawnych dotyczących księgowania i opodatkowania handlu elektronicznego, niewystarczające kompetencje w dziedzinie handlu elektronicznego i księgowości, możliwości handlu elektronicznego na granicy uchylania się od opodatkowania i działanie w tzw. szarej strefie, niewystarczające badania problemów księgowych w e-handlu, możliwość audytu elektronicznego w czasie rzeczywistym, księgowości, zarządzania, analizy, potrzeba odpowiedniego i niezawodnego oprogramowania jak też kompetentnego personalu etycznego – to tylko część problemów znajdujących się w polu naszego zainteresowania. Propozowane rozwiązania są adekwatne do problemów.

_Tłumaczenie Maciej Czaplewski_

**Cytowanie**