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The Life and Work of Luca Pacioli

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Abstract

Why is Luca Pacioli called „the father of accounting”? Did he really invent the double-entry system of bookkeeping? Why can Luca Pacioli’s impact on the development of accounting be viewed as revolutionary? These are only some of the questions this research intends to answer. The aim of the research is to organize, summarize and compare the different – primary and secondary – sources that can be found on the subject in order to provide a clear understanding of the life and work of Luca Pacioli and his effect on the different kind of disciplines, especially on the field of accounting. The main goal of this research was to fill a gap as there had not been any significant writings or theses in Hungarian that would analyze this specific subject comprehensively and thoroughly. As a result of organizing, summarizing and comparing the different available sources it becomes unequivocal why Luca Pacioli’s impact is so significant and why it would be essential for both pupils and masters of accounting in Hungary and all around the world to know and honor his legacy.

The original research which was written in Hungarian and which this paper is based on was published as a ‘TDK’ paper in 2020 and later as an ‘OTDK’ paper which won its author 1st prize in the 2021 ‘OTDK’ conference in Hungary in the category of economic history. The paper was later published in a study titled ‘Litera Oeconomiae III.’ in 2021.

Keywords: Luca Pacioli, Pacioli, accounting, double-entry bookkeeping, double-entry, the history of accounting

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1. Introduction

Luca Pacioli's name is known all over the world: he is respected by mathematicians, architects, painters and chess masters for Pacioli's influence on their craft. Practitioners of the accounting profession refer to him as the "father of accounting" or the "father of double-entry bookkeeping". Many foreign researchers deal with him as a topic of their research – mainly in English, German, Italian, Spanish and Japanese. In Hungary and probably in most of Central-Europe, however, the name of Pacioli is unfortunately much less known or almost unknown – unfortunately even among accounting practitioners.

As a result, only a handful of people of our region know about Pacioli, and therefore we could even say that the profession seems to have forgotten its roots. There is no flag under which the profession can unite, which makes it even more difficult for young people in our region to grasp the profession's essence which could contribute to the phenomenon that the arguably not-too-popular profession seems to be even more distant for some.

This paper is a shorter, summarized version of the original paper with the same title and topic, but unlike the original paper it focuses mostly on Pacioli's work and professional achievements and less on his life.

2. Theoretical background

This difference in Pacioli's reputation and recognition in Hungary and Central Europe compared to the rest of the world can be traced back to two main reasons. On one hand, the topic is not part of the mandatory curriculum in the education system, and on the other hand there is no truly comprehensive dissertation or other scholarly literature in Hungarian or other Central European languages.

The main goal of both the original research and this summarized version is filling a gap regarding this specific topic, especially among Hungarian and Central European researches – by organizing, summarizing and comparing the different available sources – and at the same time answering the following question: What is the significance of Luca Pacioli in terms of the development of accounting and was he really the father of double-entry bookkeeping? Which is arguably a relevant question regardless of what language we speak and what region of the world we live in.

I think that it is an obligation of a profession to know its roots and its historical figures, especially if a historical figure of a profession did as much for the development of the profession as Luca Pacioli. This obligation is something this paper is intended to meet, at least to some extent.

3. Methods

Most of the source literature used for this paper was gathered from the internet and many of them were provided by Dr. János Barancsuk and Prof. Dr. János Lukács from their personal collections of books and papers and also their own works. The first part of the research which focused on the life of Luca Pacioli was mostly based on Argante Ciocchi's work titled *Luca Pacioli – La Vita e le Opere*. I compared the statements written in this work to other papers and biographies I could find in order to provide the most authentic description of the life of the Franciscan monk. As for the second, main part of the paper regarding the work of Pacioli I mostly used and compared McCarthy's and Sangster's papers and presentations but also the works of Pacioli himself, mainly the *Summa* and its chapter on double-entry bookkeeping. Regarding Pacioli's contribution to the development of double-entry bookkeeping – whether he actually invented the method or merely gathered all information on the topic and why his contribution is considered to be so significant – I found it especially difficult to draw a final conclusion as there were many viewpoints regarding this issue.

4. Results

Luca Bartolomeo de Pacioli (who can be seen on a portrait of his – Figure 1) was born in 1447, in the Republic of Florence in a small town called San Sepolcro. He was a true Renaissance personality and humanist: a mathematician, an accountant, a typographer, a calligrapher, a linguist and a chess master, just to mention a few of his field of interest. He was also a school and university lecturer. He held lectures at the University of Perugia, University of Florence, University of Bologna and at the University of Rome as well, the latter of which was a result of the invitation of Pope Leo X himself. He was also really well-connected, as he knew the most influential people of his age in Italy, and he was adviser to princes and popes.

Pacioli was a student of another famous renaissance personality, Piero della Francesca, and he later became a close friend and instructor of Leonardo da Vinci. Pacioli was also a Franciscan monk who lived by the creed “pax et bonum”. As a Franciscan monk he was also a pilgrim: he visited at least 10 major Italian cities taking thousands of kilometers, mostly on foot. Luca Pacioli was also author of at least 10 books, the two most famous of which are *Summa de arithmetica* (Venice, 1494) and *De divina proportione* (Venice, 1508). He lived quite a long life compared to the average lifespan of his time, as he died at the age of 70 in 1517, in his hometown San Sepolcro. (Ciocchi, 2017)

Figure 1: A portrait of Luca Pacioli



Source: de' Barbari, 1495

One of Pacioli's most significant and well-known works is *Summa de arithmetica, geometria, proportioni et proportionalita* (in English: *Summary of Arithmetic, Geometry, Proportions and Proportionality*). The work was published in Venice in 1494 which made this book one of the first printed books in human history. Its size was 615 pages which would be 1500 pages in today's measures. It consisted of two volumes, the first of which was about arithmetic, algebra and commerce – including the chapter called *De computis* on double-entry bookkeeping – and the second volume on geometry and trigonometry.

To summarize Summa's significance we could highlight first of all that it collected, captured and conserved the classic achievements of both the Greeks and the Romans that could be gathered by Pacioli. Another significant factor is that it was written in the common language of Italy, which was of course Italian which made it possible for the „average person” to read and understand its content, as Latin, the more common language used for books up until that time, was the language of the higher classes of society.

Summa is one of the most significant writings in the history of the development of economics, mathematics, and the arts and its chapter on double-entry bookkeeping called *De computis* is the ultimate work in the history of accounting. Though there are some arguments on what the target audience of Summa and especially *De computis* was, the most viable answer is that it was mostly merchants and their children. (McCarthy – Sangster – Stoner, 2008)

The *De computis* (unlike the rest of Summa) does not identify any external sources, so there has been a lively debate among researchers about its possible sources. That's why it is debated whether Pacioli actually is the father of accounting at all. The situation is not clear. Some argue that the entire work was written by Pacioli, collecting, recording, systematizing, and further developing his early practice. According to others, the primary source of Summa is the curriculum of contemporary *abbaco* schools which would be roughly equivalent to today's vocational high schools. Pacioli studied at a young age and later taught in such schools, so this is a very likely assumption. Still others claim that the primary source for the chapter is a few-page manuscript of a merchant from Ragusa, Bendetto Cotrugli, written in 1458 (i.e. before Summa) about double-entry bookkeeping. It is possible that Pacioli had read this manuscript and was influenced by it, but it is a much shorter and less complex writing than Pacioli's work so it could not have been its only source.

What can we say about this debate? That probably all of the above are true at the same time, as all of it can be possible at the same time, nothing contradicts that. (Sangster, 2012, Barancsuk, 2016)

Before *De computis* presents „the Venetian way of double-entry bookkeeping” through examples, general and specific descriptions, Pacioli names the 3 main rules for successful businesses. If there's no business, we can't even talk about bookkeeping, so it's understandable that Pacioli starts his work with this aspect.

The three rules are as follows:

- the entrepreneur must have a financial security, which is the basis of trust,
- have a good accountant who keeps up-to-date accounts,
- have order in the internal accounts, the means of which is double-entry bookkeeping.

The basis of the whole enterprise can therefore be described by the proverb of the time: „Where there is no order, there is a mess.”

Of course, De computis also gives a specific description of how to perform day-to-day accounting tasks. When starting a business, an inventory (inventario) must be made which means that the various elements, items of the business must be counted from the smallest to the most valuable (cash, jewelry, other assets). This represents the financial security that was discussed earlier. The transaction then is first recorded in the reminder (memoriale): we outline the most important information, especially the financial value of the transaction, as if we were really just writing in a diary. The transaction in the reminder is then transferred to the journal (giornale) by converting it to debit and credit values.

All items from the journal are then entered in the general ledger (quaderno), in the corresponding general ledger line and general ledger account – debit-type items on the left-hand side of the general ledger and credit-type items on the right-hand side of the general ledger. Each economic transaction always affect both sides of the general ledger (hence the name double-entry bookkeeping) and the two pages always have to be in balance. According to Pacioli no closing is required, it is only recommended and only at the end of the year or when the books are physically full. The closing procedure consists of 4 steps which I would not discuss here. (Pacioli, 1994; Lauwers – Willekens, 1994)

Finally, I would like to describe the broader context of Luca Pacioli's work on double-entry bookkeeping, presenting the development of accounting before *Summa*, highlighting the 15th century influences, what changed and why the "Venetian way of bookkeeping" was recorded by the Franciscan monk for posterity, and also showcasing the main details about how accounting developed after Pacioli.

Bookkeeping is a method that is roughly the same age as civilization itself. Up until the 15th century, the simplest accounting was characterized solely by monetary transactions, which method is called single-entry bookkeeping that focuses on cash and cash flow. During the 15th century, with the development of long-distance trade, the emergence of frequent and high-value transactions (for example huge and high-value ship cargo), the development of banks and banking transactions, and the resulting increase in risks, the need for accurate information gradually and significantly increased. Venice was right in the middle of the „global" trade routes during this century, for Venetian merchant each shipload was counted as a separate business, so it was natural that they wanted to know all the information about this business: who would expect the next shipment, how much tax is to be paid to the next cargo to the warehouse, etc.

The principles Pacioli laid down were essential and up-to-date up until the 19th century. Then during the 19th century two main branches of accounting came to existence, mostly because of the appearance of big corporations and the separation of ownership and management functions: financial accounting which is the field of accounting concerned with the summary, analysis and reporting of financial transactions related to a business to the public, and management accounting which is concerned with the identification, measurement, analysis, and interpretation of accounting information for managers. And of course today there are even more modernized ways of accounting that developed because of global trends in business: globalization, internationalization, digitalization etc. These are indeed new trends, but their roots originate from Luca Pacioli's work, *Summa* and its chapter *De computis*. Although his work was written for people, especially merchants, of his age, his influence can still be felt even today and will be relevant in the future as well, whatever the future holds for the accounting profession. (Lauwers – Willekens, 1994; Barancsuk, 2016; Ciocchi, 2017)

5. Discussion and recommendations

Even if Pacioli didn't invent "the Venetian way of accounting", he was the first to write and record a scholarly dissertation on it. Whether he invented double-entry bookkeeping or just recorded it, he developed the roots of the profession, and therefore we can rightly call him the father of accounting". And what is probably the most important conclusion that we can draw from getting to know Pacioli's life and work is that Luca Pacioli is a good example of diligence, human versatility, resourcefulness and precision. He can be a role model for practitioners and students of the accounting profession and every other related professions as well, and all of us can be and should be grateful to him for his legacy.

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