

AccountAble™

History of Accounting

Issue # 76; Feb- 02; Released: Jul-02

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Many people think that accounting started with the industrial revolution. However, in recent times, a new specialisation has emerged: accounting historians. These people have been digging up the past, side by side with archaeologists. This circular tries to give an overview of their work.

A bit of History

The backbone of modern accounting is the double-entry system of book-keeping. The present form of double-entry system has been around for an estimated 700 years. The story of double-entry book-keeping takes us back to an Italian monk during Renaissance.

1494 CE: Luca Pacioli

This system was first publicised by a Franciscan monk, Br. Luca Pacioli in 1494 CE¹. Luca Pacioli²

described the system in his book called "The Collected Knowledge of Arithmetic, Geometry, Proportion and Proportionality³".



The book dealt mainly with arithmetic and geometry. Only a small chapter, added almost like a bonus or free gift, described double-entry accounting⁴. This book was printed on the new

Gutenberg press⁵ and became an instant hit. Pacioli's book caused this system to be widely adapted all over the world, over the next 500 years.

Most of the system remains unchanged even today. This may be because accountants have not been very inventive or because the system itself was very robust to begin with⁶.

Br. Pacioli did not claim⁷ to be the inventor of double entry book-keeping. He gave credit for this to one Mr. Benedetto Cotrugli (Benedikt Kotruljevic of Dubrovnik, Croatia).

1458 CE: Benedetto Cotrugli

Mr. Cotrugli had written about double-entry system in his book called "Of Trading and the Perfect Trader⁸". This book was written around 1458 but not published for more than a hundred years.



Modern Numerals and Accounting

ACAUS⁹ makes an interesting observation regarding development of double-entry accounting. It suggests that double-entry accounting became possible due to introduction of Arabic numerals to Europe, which were a big improvement over Roman numerals (I, II, V, IX...L, C..).

been most unlikely to spend time studying geometry!

⁵ Before the Germans invented printing presses, books were copied laboriously by hand. This automatically made books very expensive and limited their availability severely.

⁶ We naturally subscribe to the second theory.

⁷ Source: 'Accounting: A Virtual History', www.acaus.org

⁸ Original title: '*Delia Mercatura et del Mercante Perfetto*'

⁹ Association of Chartered Accountants in the US

¹ Common Era. We are now in 2002 CE.

² Pronounced pot-CHEE-oh-lee

³ Original title: '*Summa de Arithematica, Geometria, Proportioni et Proportionalita*'

⁴ Curiously, academic mathematicians would have had very little interest in book-keeping. At the same time, traders and merchants of the time would have

What are Arabic numerals? The numerals (1,2,3, ...0) used throughout the world today are often called Arabic numerals. This is because Arabs introduced these numerals to Europe towards the end of first millennium CE¹⁰. However, the Arabs themselves call these as Hindu figures (*Al-Arquan-Al-Hindu*). There are also visual similarities between the current *Devanagari*¹¹ numerals and the modern numerals used internationally¹². According to Mr. Ginsburg:

“The Hindu notation was carried to Arabia about AD 770 by a Hindu scholar named [Shri] Kanka who was invited from Ujjain to the famous court of Baghdad by the Abbaside Khalif Al-Mansur. [Shri] Kanka taught Hindu Astronomy and Mathematics to the Arabian scholars and with his help, they translated into Arabic the *Brahma Sphuta Siddhanta* of [Acharya] Brahmgupta. The recent discovery by the French savant [Mr.] M. F. Nau proves that the Hindu numerals were well known and much appreciated in Syria about the middle of the seventh century AD¹³.”

Some more history

It is also believed that traders and bankers in Venice were using some concepts of double entry book-keeping a hundred years before Mr. Cotrugli wrote his book. Both Mr. Cotrugli and Br. Pacioli have *described* an existing system rather than having suggested or invented a new one. How did double entry concepts develop in Venice so quickly, though the modern number system had just reached Europe¹⁴?

Some scholars believe that Indian merchants may have taken this knowledge across. For

¹⁰ 800-1000 AD

¹¹ Script used for some of the Indian languages such as Sanskrit, Hindi, Marathi, etc.

¹² Article 343 of The Constitution of India refers to these as ‘the international form of Indian numerals’. Not knowing this, many Indian call these ‘English numerals’.

¹³ Ginsburg, ‘New Light on Our Numericals’, *Bulletin of the American Mathematical Society*, Vol.25, 1919, pp.366-9. Quoted in *The Dawn of Indian Civilization*, ed. G.C. Pande, pp.672-3, ISBN 81-87586-00-1

¹⁴ The modern number system came in general use in Europe only in mid-1400’s when the digit symbols were standardized.

instance, Mr. Alexander Hamilton F.R.S. wrote 200 years ago:

“We would remark that the *Banias*¹⁵ of India have been, from time immemorial, in possession of the method of book-keeping by double-entry, and that Venice was the emporium of Indian commerce at the time at which Friar Lucas’s (Pacioli’s) treatise appeared.¹⁶”

This line of argument has been further developed by Shri B. M. Lall Nigam recently¹⁷, when he called the *bahi-khata* system a precursor to Pacioli’s double entry accounting. What is the *bahi-khata* system?

The *Bahi-Khata* System

The *Bahi-Khata* system, used even today by Indian traders, is commonly referred as single-entry system in all standard text-books. These books stop at that, without bothering to explain the system at all. As a result, modern accountants know very little about traditional Indian accounting.

Curiously, the *Bahi-Khata* system makes a double-entry for all transactions affecting real or personal accounts. These transactions are first entered in the *rokad-bahi* (cash book), and then posted into the *khata-bahi* (ledger).

The system also uses the concept of *naam* (debit) and *jamaa* (credit) for maintaining the books. It differs from the modern double-entry system in two significant aspects only:

1. Transactions, which affect nominal accounts, are not posted to the ledger. Thus, we cannot draw up a Profit and Loss Account¹⁸.
2. A trial balance cannot be prepared, as double entry is not completed for all transactions.

¹⁵ Traders of *Vaishya varn* (caste). The term is sometimes used as a pejorative.

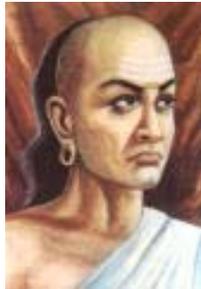
¹⁶ Monthly Review 26 (1798) page 129, quoted by Shri G. P. Kapadia in ‘History of Accountancy Profession in India – Volume I’, ICAI, 1973, page 27.

¹⁷ Lall Nigam, B.M. (1986) ‘*Bahi-Khata*: the pre-Pacioli Indian double-entry system of book-keeping’, *Abacus*, 22(2): 148-62

¹⁸ However, there are clear references to a Profit and Loss Account in *Mahabharat* (*Van Parv - Teerthyatra Parv*; III.VII.98.5-17). Pages 1233-34, *Mahabharat*, Geeta Press, Gorakhpur. 11th edition Vikram Samvat 2058 (2001 CE)

It should be noted that most Indian traders follow cash basis of accounting. Credit sales are recorded by debiting personal accounts directly. The significance of a journal is, therefore, somewhat diluted.

Accounting and Arthashastra



About 2,400 years ago, the Prime Minister of the Maurya Empire wrote *Arthashastra*, literally, the 'Manual of Means'¹⁹. Among other things concerned with administering the state, a section of the manual discusses state accounting also. Surprisingly, some of the concepts are very close to modern notions of accounting.

This has been discussed in some detail by Shri Choudhury²⁰ and Shri Bhattacharyya²¹. Reviewing Shri Bhattacharyya's book, Mr. Mattessich²² comments: "...the *Arthashastra* is the very first treatise on accounting, as far as present historical documentation goes... *Arthashastra* [is] a treatise dealing with theoretical accounting aspects and [foreshadows] concepts that were systematically dealt with [only in] the twentieth century. [There is] reason enough to put [Acharya] Kautilya's *Arthashastra* beside [Br.] Pacioli's *Summa*, and reverse both of them as the most crucial landmarks in the early history of [accounting] discipline."

While agreeing with Shri Bhattacharyya's overall thesis, Mr. Mattessich has also pointed out important shortcomings in the analysis. He has also lamented the fact that neither Shri

Shamasastry nor Shri Kangle²³ had any accounting training, and thus their translations may not be very reliable for accounting research.

A new translation of Acharya Kautilya's *Arthashastra* by Shri Rangarajan²⁴, provides more systematic treatment and has devoted a separate chapter to 'Budget, Accounts and Audit'. Rangarajan has also attempted a reconstruction²⁵ of the form of accounts²⁶ specified by Kautilya. These appear to be very similar to some of the modern accounting records:

FORM OF ACCOUNTS

Income Side {2.7.31}²⁷

Place	Period of accounting	Date and time of receipt	Head of Account	Classification current year or outstanding dues	Quantity received	Name of payer	By whose order	Received by	Recorded by
1	2	3	4	5	6	7	8	8	10

Expenditure Side {2.7.32}²⁸

Place	Period of accounting	Date and time of payment	Head of Expenditure	Counter value received	Occasion	What was paid	Amount paid	For what use	Authority ordering payment	Withdrawn from store	Delivered by	Received by
1	2	3	4	5	6	7	8	9	10	11	12	13

¹⁹ resources

²⁰ Choudhury, N. (1982) 'Aspects of accounting and internal control, - India 4th century B C.,' *Accounting and Business Research*, 46 (spring): 105-10

²¹ Bhattacharyya, A. K. (1988) *Modern Accounting Concepts in Kautilya's Arthashastra*, Calcutta: Firma KLM Private.

²² Richrad Mattessich, "Review and extension of Bhattacharyya's Modern Accounting Concepts in Kautilya's Arthashastra", *The Beginnings of Accounting and Accounting Thought*, 2000, p.144-145, ISBN 0-8153-3445-1. Also published in *Accounting, Business and Financial History*, Volume 8, Number 2, 1998. Routledge

²³ Shri R. Shamasastri discovered the text and translated it first in 1915. However, Shri R. P. Kangle's 1965 translation forms the basis for most of the later commentaries.

²⁴ Rangarajan, L. N. ed. 'Kautilya - The Arthashastra', 1992, Penguin Books India (P) Ltd.

²⁵ In all probability, accounting records in Chanakya's times did not look like this. But then you can be also sure that real dinosaurs did not look like anything shown in Jurassic Park!

²⁶ Ibid, p.277. References are to paragraph numbers in Shri R.P. Kangle's three-volume translation of *Arthashastra*. ISBN 81-208-0040-0

²⁷ व्युष्टदेशकालमुखोत्पत्त्यनुवृत्तिप्रमाणदायकदापकनिबन्धकप्रतिग्राहकैश्चायं समानयेत्

²⁸ व्युष्टदेशकालमुखलाभकारणदेययोगप्रमाणाज्ञापकोद्धारकविधातृकप्रतिग्राहकैश्च व्ययं समानयेत्

Balances Columns

{2.7.33}²⁹

Place	Date and time	Head of account	Dues left outstanding	Form in which balance received into the Treasury	Quality	Amount received	Details of container	Delivered to (name of Treasury official)
1	2	3	4	5	6	7	8	9

Accounting concepts in Mahabharat

The accounting trail does not stop with *Arthashastra*. We see references to it in Indian history as contained in *Ramayan* and *Mahabharat*.

The *Adi Parv*³⁰ of *Mahabharat* is particularly interesting and contains a clear illustration of the concept of 'nominal pricing'³¹.

This occurs in a dialogue³² between King Vasuman and King Yayati. Yayati refuses to accept a donation of good deeds from Ashtak and then again from King Pratardan.

At this King Vasuman says: 'O King. I give all my worlds to you. If you are hesitating to take these as a donation, then you can buy these for a handful of grass.'

King Yayati responds: 'This sale-purchase is a complete fiction. I have never entered into such transactions. Why should I do this, when no true person does it?'

Token accounting in Middle-East

Can we stop with *Mahabharat*? No. Accounting historians take us back further to Mesopotamia. In Mesopotamia, archaeologists have discovered proto-cuneiform tablets containing distribution records of barley. On these tablets,

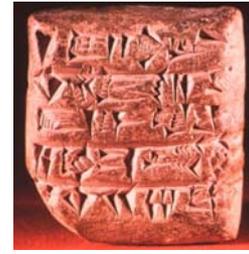
²⁹ व्युष्टदेशकालमुखानुवर्तनरूपलक्षणप्रमाणनिक्षेपभाजनगोपाय कैश्च नीर्वी समानयेत्

³⁰ Mahabharat war is currently estimated to have occurred around 1400 BCE. Adi Parva relates to period much before that.

³¹ Concluding a transaction for a nominal book price. For example, land occupied by *Pragati Maidan* was sold to Trade Fair Authority of India for one Rupee, when its market value was in crores.

³² 'वसुमानुवाचः...क्रीणीष्वैतांस्तृणकेनापि राजन् प्रतिग्रहस्ते यदि धीमन् प्रदुष्टः ॥ ययातिरुवाचः न मिथ्याहं विक्रयं वै स्मरामि वृथा गृहीतं शिशुकाच्छडकमानः ॥...' (I.VII.93.3-4) Page 280. *Ibid*

debit entries appear on one side and the credit totals appear on the other side.



This type of accounting appears to be a successor to something

called token accounting, which evolved in the Middle-East from 8000 BCE to 3000 BCE. Token accounting used clay pouches (called *bullas*) to seal tokens, such as pebbles. Each token represented actual objects. For example, a pebble may mean ten goats or sheep. To record 50 goats, five tokens were placed inside the pouch, which was then closed and baked. To find out the number of goats in stock, you had to break open the pouch.

Later on, the accountants started making impressions of the pebbles (tokens) outside the pouch as well, before baking it. The main benefit of this



was that you did not have to break the pouch to check

the accounts! This double representation (a pebble inside, and an impression outside) is currently believed to be the origin of double-entry system of book-keeping!

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