

# The Diffusion of Western-style Accounting as Social Knowledge in 19th Century Japan

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## 1. Introduction

There are various ways that technology or technique is transmitted from a person to a person. However technology is common to a process it is become “knowledge” and is transferred through some kind of “education system”. For example, in an apprenticeship, when a boss is going to teach a technology to a pupil, the education medium is the “person” (Tsujiimoto 2010). There are diverse methods that technology is expressed as knowledge in such a communication, and the technology rarely is turned into a manual. Besides it is not easy to communicate at once for many people in this way. On the other hand, if the technology is expressed in some form of writing, it can become general knowledge. The medium is a textbook, and if it is used in an educational institution, it becomes the huge diffusing device of the knowledge.

In Japan, Western-style accounting was introduced in the second half of the 19th century as the new government was set up to replace the Tokugawa regime which had enforced a closed-nation policy for over two hundred and sixty years.

In Japan at that time, Western-style accounting technique was recognized as an important element for modernizing the nation. But it can be observed that Western-style accounting was first disseminated as knowledge along with the firm establishment of the school education system, rather than actually being put into practice as accounting techniques. In this paper we describe the peculiarity of this process in modern Japan, wherein the knowledge of these accounting techniques was popularized, before the social diffusion of the accounting techniques being put into practice, by comparing it to the case of the Italian commercial cities in the period from the late Middle Ages through the Renaissance.

## 2. Accounting Techniques Becoming Knowledge and Its Popularization in Italy from the Late Middle Ages through the Renaissance

In the commercial cities of Italy after the mid-13th century, the merchants began to keep accounting records by themselves (Oguro 1995, p.265). Of course, even before that accounting records were requested by the society. From the period of economic ascendancy known as the 'Commercial Revolution' (Lopez 1976) onwards, not only merchants but even the inhabitants of farming villages, in order to preserve their property and rights and to prevent in advance disputes that might arise in the future, began to keep records of everything that was happening. In other words, keeping accounting records was a practice that was undertaken with the expectation that they could function as written evidence of what they had done.

### (1) The Education of Merchants and the Emerging of Schools

The appearance of merchants who kept accounting records meant that 'belief in writing,' or in other words the thinking that emphasized writing down merchant activities, had penetrated deeply into merchants' society. This is baldly expressed by the saying, "The merchant's finger should always be stained with ink," (Alberti 1994). In this way, in the Italian commercial cities of the late Middle Ages, one should say that there existed a state in which merchants and writing had become inseparably tied together (Bec 1967, Keller, *et al.* 1992, Clanchy 1993, Britnell 1997, Oguro 2010). Before the merchants kept their own accounting records, notaries (*notarius*) filled that role (de Roover 1941, Martinelli 1974, 1977ab, Epstein 1996, Oguro 1995, Kudo 2011). Notary formed a specialized profession belonging to the judiciary whose main work was making up documents needing the power of public authentication. That the writing of accounting records was carried out by notaries shows that it was necessary to draw up written records that had the power to serve as an evidence, and at the same time reveals the background in which merchants did not have the ability to read and write (Shimizu 1982, Oguro 2010). Naturally, in order for the merchants to begin keeping their own accounting records, it became necessary for them to acquire the ability of reading, writing and calculating.

In the cities of medieval Europe, the merchant citizens could study the skills and knowledge they were required to acquire in order to support their livelihood, (Manacorda 1914, Kodama 1993). Of course, even before, there existed institutions

that provided education for the citizens. They were the church schools that were run by the Catholic Church. In the church schools, religious workers such as priests also served as teachers and gave education to merchants and other citizens. However, in these kinds of church schools, they were unable to respond to the demand for the teaching of the knowledge and skills necessary for the lives of the merchants such as reading and writing, calculating, keeping account records, and preparing official documents. It was what could be called ‘secular schools’ that arose for the education of merchants in order to demand their needs.

What we should additionally note here is the existence of the teaching side, the teachers. As just mentioned, the teachers in the church schools were churchmen and were not teachers by profession. In contrast, the teachers in the secular schools were people who made their living from teaching. That is, they were merchants who were selling their knowledge as merchandise (Kodama 1993). These merchant teachers in many cases gathered their pupils in their own homes and used those as schools. Or, in some cases where they were operating on a larger scale, they might borrow a house or a corner of a church.

Then there is the question of how was education for the merchants carried out in these secular schools. It might be sometimes to be misunderstood that the language that were taught in these schools, was the ‘vernacular,’ not Latin. Vernacular is the language that was spoken in daily life in the local region. However according to recent research,<sup>1)</sup> what the children of the merchants first began to study around the age of 5 or 6 was not the vernacular, but in actuality an elementary and simplified form of the Latin language (Black 2007).

Why then did they learn Latin? Of course, for all the citizens of Italian society at that time it was important to be able to understand the documents being drawn up by notaries, the laws, and other official documents, and because these were all written in Latin. It is necessary knowledge for making a living in the towns to be able to read Latin language.

However, regarding this question, one can also offer an explanation from the following very interesting point of view, which is that, “Latin was the entryway to the world of letters and the written word,” (Oguro 2010). In other words, in learning of reading and writing, it was first of all vital to study Latin, the written language. The

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1) For example, according to Black (2007), it was only during the 15th century that the vernacular was introduced into reading and writing education.

reason being that the vernacular "...until the 11th century only existed in the world of the oral word (except for Old English). In contrast, Latin, which had ceased being a spoken language in the 9th century, thereafter ruled consistently as the king of written languages. For that reason, from the 12th century onwards, when the vernacular language, which had long existed in the world of the oral word, began to enter into the world of written languages, it was a natural development to seek for models from Latin. Beginning with the writings, and extending to all the different techniques of writing, Latin showed the vernacular every undertaking necessary for writing," according to Oguro's explanation (Oguro 2010). Originally the vernacular was just a oral language, and was not associated with writings. This is the inference is that when the merchants were acquiring writing skills, they started by studying Latin which for them meant virtually the same thing as written form.

## (2) Commercial Arithmetic and the Creating of Textbooks

What the children of the merchants who had acquired the ability of reading and writing studied at the next stage was *abbaco* and *algorismo*. *Algorismo* was arithmetic using Arabic numerals. And what *abbaco* meant, more than using an abacus as a specific calculating tool, was in a broad sense the kinds of tools used for written calculation, and in an even broader sense, the calculating techniques using Indo-Arabic numerals for commercial purposes (van Egmond 1976, Grendler 1989).

The knowledge and techniques of calculating that the merchants' children of this period studied had a close relationship to Indo-Arabic numerals. Europe's encounter with Indo-Arabic numerals began with its interaction with the world of Islam (Yamamoto 2007). The decisive turning point however was the appearance of Leonardo Pisano, better known as Fibonacci.

In 1202, Fibonacci or Leonardo Pisano (which means Leonardo of Pisa) wrote the book *Liber Abaci* (*Book of Arithmetic*) which is made up of 15 chapters. Generally in the branch of mathematical history this book attract the attention of what is known as the Fibonacci sequence, but more than anything else, what is the focus of our concern here is his adoption of Indo-Arabic numerals and his explanation of the notation with them. Chapters 1 through 7 of this book explain the methods of writing numbers with Indo-Arabic numerals, that is to say an introduction of decimal notation and how to perform the four arithmetic operations with integers and with fractions. Chapters 8 through 11 as listed here are more important for accounting:

Chapter 8: Purchasing and Selling Merchandise and Equivalent Goods (*De emptione et venditione rerum venalium et similium.*)

Chapter 9: Exchanging Merchandise, Buying Coins, and Rules Related to Them (*De baractis rerum venalium et de emptione bolsonalie, et quibusdam regulis similibus.*)

Chapter 10: Partnership Made Up by Investors (*De societatibus factis inter consocios.*)

Chapter 11: Rules for Metal Alloys in Currency (*De consolamine menetarum atque eorum regulis, que erraticas appellamus.*)

These four chapters, as their titles imply, are explanations of issues that are only related to commerce. Just how useful Indo-Arabic numerals are in carrying on business is related here. Fibonacci was opening up new fields that should be called ‘practical mathematics’ or ‘business arithmetic.’<sup>2)</sup>

Where the new field of commercial arithmetic that Fibonacci broke ground in Europe really was developed was in the secular schools for educating the children of merchants from the late Middle Ages through the Renaissance. The teachers who taught commercial arithmetic were called *abachista*. The knowledge that the *abachista* were teaching satisfied the realistic educational demands of the sons of merchants who were urban residents.

The important thing here is the fact that as a means for instructing the knowledge of commercial arithmetic, ‘textbooks’ were created.

According to van Egmond, an enormous number of as many as 300 surviving commercial arithmetic textbooks from the 13th through the 15th centuries have been discovered and examined in Italy (van Egmond 1988). Most of them are hand-written manuscripts. However, judging from the *abachista* who were professional arithmetic teachers and the textbooks which they probably wrote, it is easy to imagine that commercial arithmetic utilizing Indo-Arabic numerals had penetrated widely and deeply in the society of merchants.

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2) Nowadays, there is ceaseless praise for him, such as, “the new age of Western mathematics begins with Fibonacci,” but in the higher education of this time he had a low reputation and was practically ignored. In fact, his *Book of Arithmetic*, published in 1202, came out in a revised edition in 1228, but it was not printed with moveable type until 750 years later in 1857.

### (3) The Appearance of DEB Textbooks and the Turning into Knowledge of Accounting Techniques

Nevertheless, strangely enough, in these numerous textbooks on arithmetic, certainly not to the double-entry bookkeeping, “None of the abacus manuscripts, for example, treat any aspect of bookkeeping, accounting, or record keeping.” (van Egmond 1976, p.190). That is probably due to the confidential and secretive nature of accounting practices. Regarding family businesses, there are all kinds of techniques, skills, and wisdom that a merchant would not make public even within the organization, and certainly not to outsiders. We could say that the practice of accounts keeping might also be one of those things. But more than that, accounting practice is an activity that turns into information and accumulates the nature of what a merchant has done. Consequently, because the keeping of account records means recognizing a merchant’s activities in the past and reproducing them, it is natural that accounting would be highly secretive. For that reason, it can be inferred that knowledge about accounting techniques has been passed on not by means of textbooks but from one particular person to another person.

In the commercial cities of Italy, the textbooks with descriptions of accounting techniques, so far as has been discovered at present, did not appear until the 15th century. The oldest still-surviving work is the *Libro dell’arte di mercantura* (*Book of Mercantile Techniques*) by Benedetto Cotrugli which he completed in Naples in 1458.<sup>3)</sup> It is a well-known that there is a description about double-entry bookkeeping in this *Libro*. That was about 50 years before the Luca Pacioli’s *Summa de Arithmetica, Geometria, Proportioni et Proportionalita* (referred to below as the *Summa*) was printed and published. The book written by Cotrugli was the earliest work in the world about double-entry bookkeeping. However, the Cotrugli’s *Libro* did not only deal with double-entry bookkeeping. This book consists of 4 volumes, and double-entry bookkeeping is only mentioned as part of volume one which begins with a definition of commerce and treats of in detail commercial techniques such as credit transactions and money exchange. From the following volumes, Cotrugli writes about a merchant’s religious duties, i.e. his ethical sense, home economics, etc., and on the whole these books could be characterized as works that treats of what a merchant’s persona should be like. These are works that today could be called *La practica di mercantura* (the practice of business) or *Il Manuela di mercantura* (manual of

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3) Cotrugli’s book was “the first systematic commercial manual in the history of Europe.” (Oguro 2010).

business). In the same as Cotrugli's books, those works covered a broad range, bringing together all the knowledge and information needed by a merchant and his attitude, specifically, according to Oguro (Oguro 1983), "conversion and comparison tables for weight balances and currencies which were extremely complicated in the Middle Ages, inventories of merchandise, means for the transport of merchandise and indications of routes and expenses, a travel guide, descriptions of the commercial areas and markets of various places, tables of taxes to be levied such as transit taxes and market taxes, the payment terms for handbills, the elementary arithmetic needed for transactions, the calendar, and additionally the ethical precepts that a merchant should follow."

Although regarding accounting techniques which up until that point had not been mentioned in the textbook materials on commercial arithmetic, in Cotrugli's book they are described. We should take important note of the fact that these highly confidential and secret business techniques were expressed in writing. In particular, description about double-entry bookkeeping was highlighted is proof of the fact that the merchants of the time had generally come to keep accounts that utilized the techniques of double-entry bookkeeping,<sup>4)</sup> and it means that as one of the techniques that a merchant should be well practiced in, double-entry bookkeeping had been turned into a more universal kind of knowledge.

#### **(4) Typography and the Diffusion of Knowledge**

According to Oguro (Oguro 1983), there are 13 surviving copies of "business instructions" that have been discovered which were published till the end of the 15th century that should be called "merchants' manuals," including Cotrugli's *Libro dell'arte di mercantura*. Among these is also included Luca Pacioli's *Summa*. Whether the *Summa* should be seen as "instructions for business" or as a commercial arithmetic textbook, or perhaps be characterized as something else, is not relevant in the present context.

What we should pay attention to here is the decisive difference between Cotrugli's book which describes the accounting technique of double-entry bookkeeping and Pacioli's *Summa*. And that is whether or not the book was published in printed form.

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4) It is fact that double-entry bookkeeping was practiced from several surviving accounting ledgers (see for example Kudo 2011, Chap. 4), but the fact that it spread to become normal accounting practice after being described in Cotrugli's textbook can be said to be certain.

Here we will attempt to consider the relationship between printing technology and socially diffusing of accounting techniques and its knowledge.

The fact that double-entry bookkeeping as a technique for keeping accounts was practiced in the Italian commercial cities from the late Middle Ages onwards has already been confirmed. However, it is not clear to what extent that knowledge and those techniques were generally in use by the merchants of that era. In the surviving double-entry bookkeeping account records of that era, we can see a variation between regions with regards to the passage of time (Kudo 2011). From the end of the 13th century through the first half of the 14th century, the places in which it can be confirmed that accounting records were kept with double-entry bookkeeping are limited to the region of Tuscany, for example, Florence, and there are no traces of the practice that can be confirmed until after the middle of the 14th century in the northern Italian commercial cities of Genoa, Venice, and Milan. Of course, one could probably explain this phenomenon as being due to the time lags in the flourishing of commerce in the different places, but the important point is the fact that during this period the techniques of account keeping using double-entry methods had not expanded beyond a particular region and become standardized.

Concerning this point, the invention of moveable-type printing technology was to bring about a revolution.

In Europe, the making of books employing moveable-type printing technology, as is well known, is said to have begun with the “42-line Bible” that Johannes Gutenberg printed in 1455. Even when limited to what today are referred to as the ‘incunabula,’ works printed before the 16th century (or up until December 31, 1500), the number of books that were printed with moveable type is so enormous as to exceed the imagination.<sup>5)</sup>

When a technique is written down in words, it becomes objective knowledge. Subsequently, it becomes possible for knowledge that has been printed with moveable type to diffuse explosively. And it does not only mean that knowledge is diffused. Certainly, through using moveable type technology it becomes possible to print a large volume of books, the speed of book production increases, and the unit cost per copy becomes cheaper. As a result it becomes possible for far more people

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5) By verifying them in the *Incunabula Short-Title Catalogue*, an international project to list and information-process the world's surviving incunabula, mainly those in the British Museum, there are about 30,000 items in the list, and in fact “By the year 1500, in all of Europe from 15 million to 20 million copies of books had been printed.” (Man 2002).



to acquire books. But the societal value of moveable-type technology that we really should appreciate is the fact that by producing a large volume of books, which are a medium that transcends geographical barriers, it standardized and spread the knowledge of people from many different regions (Burke 2000). In other words, this meant that the ‘dislocating of knowledge’ (Burke 2000) became easy. Needless to say, the dislocating of knowledge acted in the same way as the transmission of moveable-type printing technology.

After publishing the *Summa*, which was a work printed with moveable type, descriptions of double-entry bookkeeping, which had hardly received mention in the commercial arithmetic textbooks and merchants’ manuals up to that point, started appearing one after another in locations all over Europe. Luca Pacioli’s *Summa* needs to be appreciated precisely for the fact of its enormous significance in turning into objective knowledge the accounting techniques that had been secreted away deep in each of the merchant families and making them public, that is to say in socially diffusing them.

### **3. The Socialization and Characteristics of Accounting Knowledge in Modern Japan**

In the previous section, we have observed the process leading to accounting techniques being turned into socialized knowledge and then diffused in the merchant society of medieval Italy’s commercial cities. In that context, we have discussed the practical literacy that merchants needed to have, being able to read and write and use an abacus, education for that and the social system around it, the metamorphosis of these skills into knowledge, and the media for its transmission such as textbook materials and the invention of printing technology. In this section we will turn our attention to consideration of how accounting techniques and the knowledge of them were socially diffused in modern Japan.

Japan (the Tokugawa shogunate government) from the beginning of the 17th century until the mid 19th century adopted a policy of prohibiting trade and intercourse with most other countries. The new government of the Meiji Restoration, which arose to replace the Tokugawa shogunate, reversed the course of the closed country policy and rejected feudalism and sought to build a modern nation that would resemble the nations of the Western world. As a result, around the time of the Meiji Restoration, the new government was greedy to absorb things from the West, and

many new things were introduced, from Western technology and its social system to culture and thought. For Japan, modernization and Westernization had roughly the same significance. Western-style accounting techniques can also be placed in this context.

Consequently, generally speaking, much of the research on accounting techniques and the diffusion of knowledge about them in Japan begins with the Meiji period. However, it can be seen that the economy in Japan was well developed even before the modern period, so that, it is quite natural that highly sophisticated accounting systems adapted for the purpose of managing organizations were functioning quite well in a number of merchant houses.<sup>6)</sup> This means that merchants, who belonged to the commoner class, during the early modern era already had been instilled with the ability to read and write and to do calculations and they had their own unique accounting techniques. In which case, there was a distinct problem that we should consider in the transmission from the West of accounting techniques and the knowledge about them in the modern period.

In this section, while keeping in mind the relationship between the early modern and the modern period in Japan, we shall begin by considering the literacy of merchants and the education system which supported it.

## **(1) Education and the Early Modern Era As a Society of Writing**

During the late Edo Period (the first half of the 19th century) the literacy rate among Japanese was higher than anywhere else in the world. This did not only apply to the samurai families who formed the ruling class, nor was it only true of merchant families that lived in urban areas. Already before the modern era, even farmers of the middle strata and above had some ability to read and write. The society was awash with all kinds of books, and the commoners read them both in order to study wisdom to apply to their lives and for enjoyment as well. From the 17th century, Japan was already a “society of writings,” (Tsujiimoto 2010).

There was a swelling volume of textual materials that were written during this era. There is a great variety of types of surviving materials, especially among those that are lumped together as *minshu bunsho* or ‘people’s writings’: documents related to lawsuits, deeds, receipts, and promissory notes for things such as buying and selling,

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6) For example, see Ogura 1962, Kawahara 1977, and Nishikawa 1993.

lending and borrowing, contracts, etc., household account books, commercial ledgers, diaries and letters, memoranda, etc. This resembles very much the case of the merchant society that existed in the culture of a “belief in writings” in the Italian commercial cities of the late Middle Ages. And the factors which can be cited as having given rise to this kind of literate society as well were the same as those in the case of the Italian cities: the development of the economy and the formation of cities which accompanied that.

Indeed, a direct factor which gave rise to early modern Japan’s literate society was education for the common people. Society demanded of merchants that they have the ability of reading and writing, and as a result an education system came into being in order to respond to that. These were the centers for learning to read and write that are generally called ‘*terakoya*’<sup>7)</sup> or temple schools. Among what are generically referred to as *terakoya* however, there was a great variety in their actual condition regarding the quality and content of education, the level of the learners, the status of the teachers, their operation and scale, etc. However, what they all more or less had in common was that they instilled in their pupils the beginning steps toward literacy, being able to read, being able to write, and being able to do simple calculations with an abacus. The pupils who studied this normally elementary education which appeared in early modern Japan were for the most part the children of the commoner class from the age of 6 or 7 to the age of 12 or 13 years old. The *terakoya* existed all over Japan,<sup>8)</sup> and from the 17th century until the 19th century their total number expanded to more than 15,000 (Umehara 1988).

Where the societal demands on *terakoya* education were highest was in the cities. In Edo (present day Tokyo), Osaka, and Kyoto, the *terakoya* were large in scale, and most of the teachers who taught there were full-time professionals. In this aspect as

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7) *Terakoya*, as the name implies, can be thought of as originating in the secular education carried out at temples in the medieval period. Also, according to Dore (1965), the name of *terakoya* was used mostly from the Kansai westward, and in Edo they were called *tenaraijo*.

8) While it is true that *terakoya* spread across the country, there were of course differences in their number by region. The figures that Umehara (1988) used are based on the *Nihon kyoiku-shi shiryō* that published the results of a survey by the Ministry of Education during the Meiji period, but it has been pointed out that there were regional disparities in the precision of the survey itself. Of course, it is possible explain the fact that there were a great many *terakoya* in Nagano, Okayama, and Yamaguchi, even though they are provincial towns, by saying they had a passion for education, or the fact that the number was very small in the case of Kagoshima, even though it was a powerful *han*, might be due to the high proportion of the samurai class who occupied the entrance there, so that there were very few commoners who were the object of the *terakoyas* to begin with.

well, they resembled the teachers in the medieval Italian commercial cities who acted as merchants selling knowledge as their merchandise.

In these *terakoya* that functioned as educational institutions for the common people, what was taught, and in what manner? The educational content was of course reading and writing, but what we should note here are the means used when teaching, in other words the textbook materials. Ones that were particularly important are what are called *ourai-mono* (Ishikawa 1988). *Ourai-mono* were written from the very beginning as textbooks for elementary learning. At the next stage beyond learning the basic written characters education was carried out using these as textbooks. The children learned characters using the *ourai-mono* as a model, by reading them studied about vocabulary and usage, written expression, writing style, etc., and at the same time learned from the contents that was written in these books. Thus the contents that were written out in the *ourai-mono* pertained to all the different knowledge necessary for daily life and the necessary manners and virtues needed to live in society.

Entering the 17th century, *ourai-mono* has new contents began appearing one after another. The ones that we are concerned with looking at here are the ‘business-*ourai*.’ In these, there were lists of the vocabulary and enumerations of names of merchandise that one should know for actually conducting business, and along with these there were descriptions of the life that a merchant should lead and the proper attitude and mindset (Ishikawa 1988). One may venture to say that these were very similar in character to the ‘business instructions,’ including Cotrugli’s *Libro dell’arte di mercantura*, that appeared in Italy during the Renaissance.

Additionally, as a textbook on the arithmetic skills necessary for becoming a merchant, there was the *jingo-ki*. Most of the contents of the *jingo-ki* were related to everyday life, particularly to commercial life, and it was precisely a textbook of business arithmetic. This book was reprinted in multiple editions over a very long period of time.

In this way, already in the early modern period educational media for merchants, i.e. textbook materials that were a vehicle for diffusing of the knowledge, were generally available in the society. Supporting this reality, in early modern Japan a commercial publishing industry already existed as part of the society’s infrastructure. The earliest example in Japan by specializing in the publishing of books was in Kyoto in the first half of the 17th century. Then by the latter half of the 17th century this had spread to Osaka, and by the mid 18th century to Edo, and by the 19th century

this had diffused even as far as some provincial cities (Nagatomo 2002). Along with the spread of *terakoya*, through commercial publishing becoming firmly established, the transformation of 'knowledge' into 'merchandise' was rapidly advanced.

The spread of *terakoya* that were centers of education and the textbooks that became standardized in early modern Japan formed a valuable legacy that was passed on modern times. By being written down in words in textbooks, knowledge about technology, culture, and morality became standardized, and moreover it became possible to transmit it to a large audience. The national infrastructure investment of the education system that will be described later was able to develop onward while inheriting much from the accomplishments of the early modern period.

## **(2) Modernization and the Transfer of Western Accounting Techniques**

Along with the Meiji Restoration, Western-style accounting techniques and the knowledge of them were introduced into Japan. To begin with, they were put into practice as accounting systems in some of organizations. However, these were special and unusual organizations.

In order to reform the system of currency, the Meiji government began building the Mint Bureau in Osaka in 1868. The coin minting and other machines that were installed there were purchased from the former British Mint in Hong Kong where they had been previously installed. And at the same time as the machines were purchased, in order to supervise the minting technology, a number of foreigners were brought in and employed, from Thomas W. Kinder down, who had been director of the British mint in Hong Kong. Vicent E. Braga was one of these foreign employees. Braga was a Portuguese who was born in Hong Kong and was employed as the supervisor of accounting. In the accounting records at the Mint, transactions were recorded using double entries, and as a result the two financial statements were drawn up, a profit-and-loss statement and a balance sheet.

In 1875, Braga was employed at the headquarters of the Ministry of Finance and he set to work on reforming the accounting system of that ministry. In order to inject discipline into the national finances through accounting, from the very beginning the Ministry of Finance had carried out repeated reforms, but he realized that a thorough-going reform, especially of the methods of making ledger entries, would be necessary. And so from 1876 onwards double-entry bookkeeping was adopted for the Ministry of Finance's accounting system. Thereafter, the adoption of double-entry

bookkeeping for government accounting was not adopted in the Ministry of Finance, but expanded to all of the ministries and agencies and as far as the regional governments. Thus, the accounting of the Japanese government adopted the double-entry bookkeeping system until the enactment and enforcement of the Accounting Law along with the Meiji Constitution of 1889.

The above examples all refer to accounting practices in government-related organizations, but on the other side, let us look into some examples of Western-style accounting techniques being transferred to private enterprises.

The first one we should look at is the *Daiichi Kokuritsu Ginko* (First National Bank). In trying to set up a modern banking system, in 1872 the National Bank Act was promulgated, modeled after the national bank system of the United States. Beginning with the First National Bank which was established in 1873, by 1879 the number of banks established under this law had amounting to 153. The government carried out strict supervision and guidance of all of these banks' business. In particular, it insisted on firmly establishing a uniform system for accounting (Nishikawa 1982, p. 21). The government hired the Scottish banker Alexander Shand and had him draw up a proposal concerning an accounting system for the operation of banks.

The First National Bank was the first commercial bank in Japan, and was the first joint-stock company financed through private capital. Nevertheless, the organization itself of the bank's system was planned under the direction of the Meiji government, and even the accounting system that was adopted was deeply affected by the government's guidance.

After the modern period began, the institutions that adopted Western-style accounting techniques as their accounting system were government bodies and banks, etc., in a sense a special type of organizations. These organizations were new ones that had been established since the beginning of the Meiji era, and naturally did not have already customary indigenous accounting practices. Consequently, in adopting Western-style double-entry bookkeeping as their accounting system, there was little friction or resistance. However, it shouldn't be thought that when these organizations adopted Western-style double-entry bookkeeping it was a decision made after deliberate and serious consideration within the organization. It is natural to assume that for both the Osaka Mint and the First National Bank, the Western-style accounting techniques were simply introduced as no more than one part of a comprehensive management system.

In contrast, at many of the merchant houses that had existed since before modern times, as will be related below, even after knowledge about the Western-style accounting system had become common and widespread in Japanese society, it took a very long time before they altered the old inherited accounting customs which each merchant house had been practicing (Nishikawa 1996, 2004).

### **(3) The Publication of Accounting Textbooks and the Establishment of the School System**

Japan's modern period holds an important meaning for the universalizing of knowledge about accounting techniques or their societal diffusion. That is because accounting methods were described in textbooks that were used in schools. We have already mentioned about how in the early modern era books like the 'business-*ourai*' and the *jingo-ki* that were used as textbooks, particularly in the *terakoya*, functioned advantageously in the education of merchants. However, what we must not overlook is the fact that in them there are absolutely no descriptions of accounting techniques. This is similar to the fact that there were no descriptions of accounting techniques in the many business arithmetic textbooks that were published in the Italian commercial cities from the late Middle Ages to the Renaissance. We can surmise from this that regardless of whether it was in the East or the West, accounting techniques were things of a highly secretive and confidential nature.

In 1873 the leading thinker of Japan's modernization, Yukichi Fukuzawa, translated an American beginner's-level accounting textbook into Japanese and published it as *Choai no Ho*, (*Method of Accounting*). A proper appreciation of this book lies in the fact that it was the very first book on accounting techniques to appear in Japan.<sup>9)</sup> Fukuzawa was able to accomplish the universalization of knowledge about accounting techniques in Japan. Moreover, the book Fukuzawa translated was not only used at the school which he founded, *Keio Gijuku*, but later was used widely as a textbook in the school education which was being rapidly instituted all over Japan. Fukuzawa's greatest contribution is in the societal diffusion of accounting knowledge.

In 1872 the *Gaku-sei*, which means the school system, was promulgated and it was the first modern school education system in Japan. Within that system, *Kibo Ho* (Method of Bookkeeping and Accounting) was established as a course of study in

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9) Kurosawa (1994) sees the *Choai no Ho* as one symbol of Fukuzawa as a modernization thinker, and considers it from the standpoint of literary history and the history of thought.



upper elementary and middle school.<sup>10)</sup> Actually, the specific contents of what kind of accounting education was carried out in these schools is unclear, but according to the Ministry of Education Yearbook that was published each year after the promulgation of the school system in 1873, from 1876 on for a number of years, among the books adopted by elementary schools, Fukuzawa's *Choai no Ho* and several other textbooks of bookkeeping and accounting can be confirmed. Also, especially from the end of the 1870s for a number of years, many beginner's level bookkeeping textbooks were published.<sup>11)</sup> That means, in other words, that from early on, accounting education was being carried out, not as specialized education within commercial education, but at the level of elementary education. What made such things possible was the fact, as previously mentioned, that substantial education for commoners was being practiced, and the technology for publishing textbooks in large volume and a system for supplying them on a nation-wide was already sufficiently in place even before the modern period.

Thereafter, in 1879 the specifications for commercial schools were laid down in the Education Ordinance, and additionally in the General Regulations for Commercial Schools of 1884 the systematization of commercial education became solidified the the school education system related to education in accounting techniques developed from entry level general education into specialized education at the middle level and above.

The knowledge of accounting techniques in modern Japan, by being incorporated into the school education system by the government, strongly took on a societal character. Through the institution for diffusing knowledge as schools, accounting techniques came to exist in the society as part of the curriculum put together by the nation, or in other words as established knowledge. On this point, we can say that there are important differences between the diffusion in social of accounting knowledge that was seen in the Italian commercial cities from the late Middle Ages through the Renaissance and that of modern Japan. As modernization was seen to be

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10) The *Gaku-sei* divided schools into universities, middle schools, and elementary schools, and further divided elementary schools into the lower four years and the upper four years, and the middle schools into the lower three years and upper three years, and assigned the subjects that should be studied in each. "Bookkeeping Methods" in the upper level of elementary school could be given as an augmented course in cases where it was expanded by information.

11) For example, there were many such as Ishii's *Fukushiki Keimo Kibo Kaitei*, Morishita's *Bokigaku Kaitei*, Endo's *Shogaku Kibo Ho*, Abe's *Shogaku Hikkei Tsuzoku Kibo Ho*, Joya's *Shogaku Kibo Ho Dokugaku*, Kure's *Bokigaku Seiri*, Tsukada's *Shogaku Kibo Ho*, Yoshida's *Shogaku Kibo Ho*, and Yamada's *Shogaku Kibo Ho*.



equivalent to Westernization, Western-style accounting was seen in the same context as other advanced technologies and the social system, and as a result, by it being incorporated into the modern school education system that was designed under government leadership, the knowledge of Western-style double-entry bookkeeping came to have a societal existence and so it ended up taking root in 19th century Japan.

## 4. Conclusion

We have considered the issue of the universalization and socialization of knowledge with the purpose of clarifying the characteristic points of how this happened in modern Japan against with comparing of the Italian commercial cities from the late Middle Ages through the Renaissance.

As a result, we observed that in the Italian commercial cities, accounting techniques and in particular double-entry bookkeeping were already being practiced among merchants, but with the appearance of bookkeeping textbooks printed with moveable type, as represented by Luca Pacioli's *Summa*, these techniques were turned into knowledge that was universalized in concert with the diffusion of those textbooks. This was a process in which already practiced techniques were turned into knowledge.

In contrast, in modern time Japan, Western-style accounting techniques were one symbol of modernization and were adopted as part of a transfer of technology. In other words, they were more than simply industrial techniques. Western-style accounting techniques were seen by the leaders of the government at that time as necessary elements for the building of a modern nation. The fact that Western-style double-entry bookkeeping was introduced so early on along with the establishment of government organizations and a modern banking system is evidence of this.

At the same time, knowledge of Western-style accounting was able to secure a clear position in the modern system of school education. Especially in the early days, it was incorporated into the formal curriculum even at the level of elementary education. In this way, in modern Japan, Western-style accounting had penetrated the society as general knowledge.

Accounting is a technology that should be practiced in industry. However, from before modern times at most of the merchant houses that were passing down their operations, they already were utilizing from before their own unique accounting practices, adapted to function according to their own purposes, and so there was no

pressing necessity to adopt the newly introduced Western-style accounting techniques even if they were a symbol of modernization. In modern Japan the knowledge about Western-style accounting techniques spread widely and rapidly through the society by means of the school education system, but it was not until some time afterwards that they were widely accepted in actual practice. In this sense, the technology transfer of Western-style accounting in modern Japan happened through an unusual process.

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