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Changes of Accounting Profession in the Digital World: The Cases of Small and Medium Enterprises in Hanoi, Vietnam

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Abstract:

In recent decades, accounting profession has significantly changed thanks to the impacts of information technology. Those changes come from the advent of countless accounting software and the development of internet and cloud computing. Apply comparison analysis methods, with the evidence collected from the survey of 150 small and medium enterprises (SME) in Hanoi capital-Vietnam, this research aims to prove that technologies have changed accounting profession in SMEs in many aspects, from the nature to the products of accounting works; enhancing the capacity of financial system in controlling frauds and errors; and eventually changes the position of accountant in a company. In a word, digital technology will break out the border of traditional accounting systems, in term of both literal and figurative meaning. Considering those changes, there are some implications should be taken into account, including from policy to business management practicing and training in accounting as well.

Keywords: changes, accounting profession, digital accounting

1. Introduction

For a long time, since when Luca Pacioli (1494) described “the systems of debits, credits, journals and ledger”, accounting and information have a constant companion because the science and artistic nature of accounting are based on benefits of information. Recently, in the modern world, the speedy development of information technology has been reducing the distance between these two fields remarkably (Deshmukh, 2006). The significant reasons here are the invention of the Internet, cloud computing and the advent of thousand accounting software, which have been changing accounting in both its nature and performance, not only reducing accounting workloads but also enhancing its role in management activities.

With the function of recording and communicating economic information to decision makers, accounting plays a crucial role in the running process of an enterprise as an essential factor of internal control system. Financial accounting is a methodology for recording and classifying a firm's financial transactions, including reporting and analysis of these transactions. Accounting transactions are encompassed by the general ledger, which is a complete record of financial transactions over the life of a company. For hundreds of years, this recording task in each book was done manually until the advent of accounting software. Manual accounting is very detailed, since accountants must carefully enter information into physical books while accounting software automates transactional record, keeping processes in each of these areas so that accounting transactions can be completed and tracked more efficiently and more accurately. As such, accounting software is essential back-office software dealing with record maintenance and regulatory compliance. This is quite distinct from corporate finance, which focuses on “front office” tasks like financial and strategic planning to maximize shareholder return.

The Internet has opened many doors and made the life easier in many ways, especially in the accounting area, where documents can be shared, research can be conducted and taxes can be filed-all online. Connection to the Internet can be wireless and simple. Businesses do not have to buy software to run some programs; instead, some sites host the programs online, where files also can be saved (Sheila Shanker, 2015). Today's accounting professionals who understand the importance of the Internet will use the Internet for e-business. They use the Internet to execute major business processes in the enterprise. Electronic business (e-business) allows accounting firms to coordinate activities for internal management and combines the clients' relationships with the use of digital networks. Enterprise applications can be used on a small internal network called the Intranet. The Intranet can distribute information to employees such as corporate policies, and programs (Jantz, 2016).

Besides, cloud computing is one of the other important developments in information technology in the past 10 years which runs applications online rather than on customers' own premises. It is called cloud computing because data is stored distributedly on different Internet servers in different region, like a cloud of servers. Such a service is provided over the internet to permanently store data and use business applications over remote servers. Software-as-a-service (SaaS) is a web-based service. The data is permanently stored in huge data centers shared by many other users. However, an accountant should be aware of the security issues involved when

making a decision to use this technology(Laudon & Laudon, 2011). Cloud service providers are obliged to provide a safe environment to store the organizations sensitive information and accountants are obliged to understand the risks. According to many specialists of MISA company (one of the big accounting software in Vietnam), about 25% of the hi-tech applications will be implemented base on cloud computing technics(MISA, 2016). Similarly, its predicted by the analytic accounting team that accounting functions are rapidly migrating to the cloud, with the evidence of an increase of 41% in subscribers for QuickBooks Online (per its 2016 fiscal report) and Xero experienced 51% growth on its subscriber (base in the year ending March 2016)(AnalytixAccounting, 2017).

And not being out of the common trends, Vietnam is one the earliest Asean countries to apply the cloud computing technics (FAST, 2016). The survey of Vietnam Chamber of Commerce and Industry (VCCI) also revealed that information technologies had its high impact in the Vietnamese enterprises, with 95% of Vietnamese enterprise had used internet in their business activities in 2015(P.A.T, 2016). However, this survey also found that 60% of them had found difficulties in the process of applying information technology. Besides, the survey VForum Vietnam Business carried out by VMware firm with 64 IT managers and directors of Vietnamese Enterprises had showed that 44% of Vietnamese enterprises wondered about the cost of IT application in their business, 21% worried about the complication of hi-technologies and 18% founded the constraints with other issues such as the synchronization or resource distribution and so on...(VMware, 2015).

These above facts raising questions about the trend of accounting professional changes and its benefits to the SMEs in Vietnam as well as people in this career. Focusing on the Small and Medium Enterprises (SMEs) as the research subjects (SMEs accounted for 97% of the total number of enterprises in Vietnam (GSO,2015) cited in (Le, 2016)), based on literature review method and forecasting analysis method, this article discussions two issues, including (1) the changes of accounting professional in Vietnam because of the impacts of information technology and (2) the benefits of those changes in Vietnamese SMEs and the accountants. This paper also aims to suggest some relevant implications to the policy makers, researchers and lecturers involving in education in accounting field, in order to make the necessary adjustments which support to build up accountant capacity and legal framework for the development of accounting activities in the future.

2. Research site and Methodology

2.1. Research Site

As the research object is SMEs, this study has chosen Ha Noi capital as its research site. This is capital city of the Socialist Republic of Viet Nam, the country's political, cultural, scientific and technological center, and plays an important role in economy and international trade. After expanding administrative boundaries in 2008, Ha Noi now covers an area of 334,470.02 hectares and has population of over 7 million(Phuong, 2015). The gross regional domestic product (GRDP) of Hanoi in 2016 is estimated to rise by 8.2% against year 2016, according to the municipal statistics department. More than 22,900 new enterprises were established in Hanoi in 2016, with total registered capital of nearly VND204 trillion (US\$8.97 billion). The total number of enterprises in Hanoi in 2016 increased up to 200,000; and 97% of those are Small & Medium Enterprises, which created jobs for 2 million workers in this area(NhatDuy, 2016).

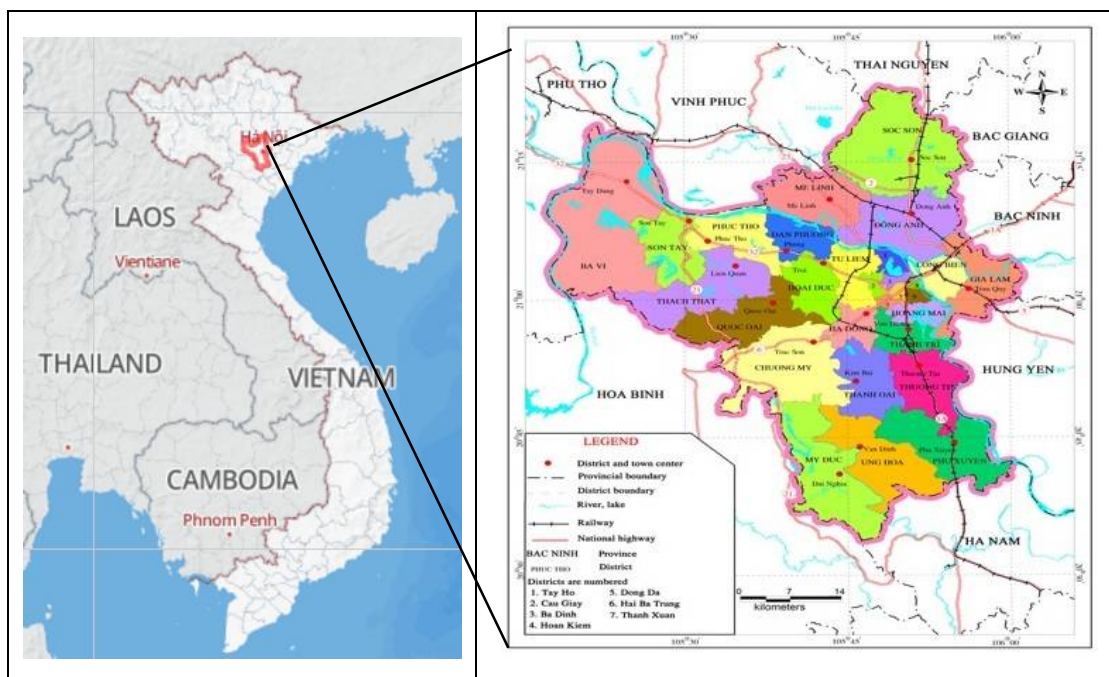


Figure 1: Map of Hanoi (Hanoi Map, 2017)

For a good sampling, among the SMEs which have already been operating for more than 5 years, 150 directors and 50 accountants of 150 SMEs in Hanoi were chosen randomly for collecting information. The reason of choosing the SME with more than 5 years' operating was it needed the appropriate length of time for both the directors and the accountant to assess the changes of accounting professions as well as its impacts to the enterprise and to the accountants. After collecting and checking the correctness of information, there were only 148 samples of answers of directors and 49 samples of answers of accountant used for this research.

2.2. Research Methodology

2.2.1. Data Collection

- Secondary data: This research uses the secondary data presented in the report of Vietnam E-commerce and Information Technology Agency (VECITA) 2014; VMware 2015; VCCI 2016, Computerization Agency - Ministry of Information and Communication – AITA 2010, 2014
- Primary data: Primary data in this research will be collected through face-to-face interviews and by email using semi-structured questionnaire for interviewees (accountant or manager). They will be asked about the application status of digital accounting in their companies; the frequency and the scale of frauds and errors happening after using digital accounting; their opinions on impact of digital accounting on frauds and errors as well as the benefits and problems of applying digital accounting to their accounting career.

2.2.2. Data Analysis Methodology

- Quantitative methods
 - Mathematical method: This method has been applied to calculate the statistical data about the level of apply digital accounting in their business and assess the impacts of digital accounting to the errors and frauds controlling; as well as to the professional practicing of the accountants in these enterprises.
- Qualitative methods
 - Time series analysis: this method has been applied to analyze the changes of accounting over the period of time.
 - Comparative methods and Correlation comparison (such as Spearman's rho test) was applied to assess the impacts of digital accounting in the enterprise and the accounting professional practicing of accountants.

3. Changes of Accounting in the Digital World: the Cases of SMEs in Hanoi, Vietnam

3.1. Changes in the Nature of Accounting Activities

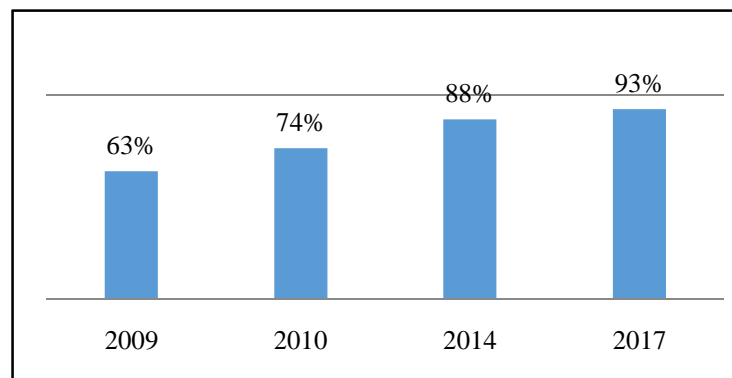


Figure 2: Percentage of SMEs applying information technology in accounting (2009-2017)
Sources: Report of AITA 2010, 2014, SMEs survey 2017

Accountants are no longer the number crunchers that they are pictured to be. Instead, they are professionals with diversified roles who have become part of strategic planning teams. Previous inefficient traditional paper-based manual accounting methods have been step by step improved through the implementation of computerised accounting information system (Zakaria, Rahman, & Elsayed, 2011). Saving labour and time for accounting work, more precise and timely information, more convenient for the related parties in taking economic transaction are the transparent benefits for not only the enterprises but also for all the users of enterprises' financial information as well as the whole community. As one of the important elements of the internal control system, the accounting system is expected to powerfully control the frauds and errors, especially with the support of the hi-technology and the concept of Business Intelligence (BI).

Traditional manual accounting was a tedious process requiring accountants to spend copious amounts of time mathematically checking numbers in the accounting information. Simple mistakes such as transposing numbers or entering information into the incorrect column could create significant errors. Computers and accounting software allow accountants to use electronic spreadsheets which eliminate the need for adding machines, calculators, and pencils and ledgers in one fell swoop, therefore allow accountants to process more information than before by creating easier review processes. Accountants can potentially spend less time looking for

errors and more time analyzing information for decision making purposes (Osmond Vitez, 2015). It became much simpler for accountants to keep track of information on a minute-by-minute basis and eliminated most mistakes. This has led to greater efficiency and accountability, and has changed the nature of accounting works considerably.

So far there is no static research about accounting software, but it can be sure that the recent accounting software can meet whatever accounting tasks require, no matter how big the size of a company is. Famous international accounting software applications are Quickbooks, Sage, Freshbooks, Less Accounting, Oracle (Symmetry50, 2014),... while in Vietnam, software like Misa, Fast, Effect are more familiar. According to the annual report of Computerization Agency - Ministry of Information and Communication, the percentage of SMEs which applied information technology in accounting in year 2009 was only 63%, but steady increased to 74% in year 2010 (*see figure 2*). Our research survey in 2017 also founds out that this trend was still keep increasing, i.e. this figure has gone up to 93%. Apparently, works of an accountant will be more focused in information quality management in receipts, books and reports, which are now produced by computer.

However, the added use of information technology has increased the rate of computer crimes such as; identity theft, e-mail phishing, computer hacking, software piracy, purposefully spreading computer viruses, stealing computer files and data, e-commerce sales scams and the list goes on and on (Kruglinski, 2009). Therefore, the nature of accounting works shifted from "data recorder" to the "accounting system information controller" because incorrect accounting system information could result in many serious problems for company, even with the help of computer. Approximately 60 percent of accounting errors are caused by "simple bookkeeping mistakes or misapplication of easily understood accounting standards," according to research by Indiana University (Tipgos, 2002). Consequently, the position of accounting professional in a business will be enhanced. Accountants now have to have a high level of computer and technical skills. These skills have become part of the knowledge, and abilities of the accounting professionals. In its report the American Institute of Certified Public Accounts (AICPA) cites that, "The knowledge, skills and abilities necessary for the entry-level accountant now include the application and integration of information technology into the accounting process, as well as financial and managerial accounting principles" (Dillon & Kruck, 2004).

3.2. Moving Toward to "Paper-Less Accounting System"

Firstly, many "paper-based products" in traditional accounting will be changed in to "electronic based products". Paper receipts, accounting ledger books, financial reports are being replaced by e-receipts, digital ledger books or online financial reports. The benefit of this paperless system is not only for the eco-friendly culture but also creates the convenience for both suppliers and customers such as saving time and easy for fraud control (Demers, 2014). At the same time, tax online system and e-payment facilitates tax payers in tax declaring, submitting tax reports and paying tax online, instead of printing hundreds of papers and submitting them in tax office. In Vietnam, the Government also issued Decree No. 51/2010 / ND-CP dated May 14, 2010 in which regulating the form of electronic invoices, and the Ministry Finance also issued Circular No. 32/2011 / TT-BTC dated March 14, 2011 guiding the creation, issuance and use of online invoices to sell goods and provide services. According to Mr. Pham Dinh Thi, Director of Tax Policy Department, Ministry of Finance, said that in order to accelerate the modernization of tax administration, the online tax system has been widely deployed nationwide. In 2015, there are more than 60% of the SMEs applying the e-tax system (L.Thanh, 2016); and in 2016, this figure reached up to 98% (Minh, 2017). Undoubtedly, the accounting systems need to be incorporated into that online software. Accountants and businesses are demanding more from their software. The online model not only supplies more interaction between an accountant and their clients, and easier access to information when out of the office but also is useful for financial information integration in the model of multinational corporations or a company that has many offices and stores in distant places. Shortening the distance of not only the time but also the space is the special advantage of the online model of accounting system, which takes great benefits from information technology.

Secondly, the accounting reports will be required more the conventional financial reports in order to meet the requirement of business intelligent system (Turban, Sharda, & Delen, 2011). The conventional reports with the structured format (i.e.: balance sheet, income statement, cash flow and notes) will be automatically written by software in a more updated manner. The prompt process at "computer speed" will shorten down the length of accounting period. The advantages will eliminate the "latency" of information in traditional accounting system (*in which, financial reports were issued annually and the deadline of issuance was the 31st of March in next year*). Moreover, beyond those standard reports, decision makers need many other information sources, from variety type of managerial accounting reports such as Key Performance Indicators (KPI's) to measure business performance; Balance Score cards in strategic management; or Cost-Benefit analysis in activities management, etc. By delivering that adequate operational information, the accounting system will effectively support the managers to understand the whole business as well as to make accurate decisions.

3.3. Impact of Digital Accounting Application in the SMEs

3.3.1. In controlling Errors and Frauds of SMEs

Most respondents of the survey agree that the more SMEs use information technology in accounting work in SMEs, the lower the level of fraud and errors. This is also consistent with the research result about the impact of accounting system in business managements in SMEs which has been carried in Hanoi since 2011 (Hãng, Son, & Dung, 2013).

However, the percentage of "agree opinion" differs in recognizing the impact of different applications. While the majority of opinions confirmed the positive impacts of accounting software and the online tax system on controlling the frequency and extent of unicorn and errors, only a few agree with this advantage of the digital signature application and electronic invoice application (*see table 1*). The reason is that applying IT to management in general and to accounting in particular will create favorable conditions for managers

in SMEs management and allowing cross checking to detect fraud as well as financial errors. Furthermore, if SMEs account accounting information using specialized accounting software, the likelihood of error appearing is reduced compared to performing "manual" accounting because of the use of modern software and tools. Besides, most of the main tax software suppliers support real-time filing of payroll information as well as regular updating of tax regulation. Taxpayers who log on to their digital account will be able easy to check about their tax duty situation at any time in the year. On the other way around, digital signature application and electronic invoice application has been considered to supports the accountants and SMEs' managers in saving time and more being convenient for their business, rather than controlling the frauds and errors. Moreover, some directors have mentioned about their worries that the frauds and errors may increase if their digital signature and electronic invoice system will be over of their control.

	To decrease the			
	Frequency of Errors	Scale of Errors	Frequency of Frauds	Scale of Frauds
Impact of Accounting Software	81%	74%	63%	57%
Impact of Digital Signature	52%	45%	40%	36%
Impact of Electronic Invoice	27%	24%	23%	22%
Impact of Tax Online	59%	51%	45%	44%

Table 1: Percentage of Director's opinion about the impact of Digital accounting in controlling the frauds and errors in the enterprise (Source: SMEs survey 2017)

3.3.2. Impact to the Cost for the Accounting Works

Undeniably, a company has to invest a lot of money in order to apply digital accounting in business activities, including the cost for computer purchasing, software installing and monthly internet connection fee as well. The level of investment varies, depending on the financial capacity of the company. Even there are some options for the company to use accounting software for free of charge, but those come with some limitation in advanced functions. However, the data from survey showed the interesting finding that the more percentage of accounting work using the computer (including both applying accounting software or using excel software to support in calculating), the lower the cost for salary payment for the accountant (see table 2). The reason could be those applications have supported to save time for those accounting works, so that the company may pay higher rate for recruitment the higher qualified person, but also the amount of time they spend for the accounting works will be reduced. Finally, the total cost has been reduced.

		Percentage of accounting work using computer	Percentage of accounting work using Internet
Salary Cost for the Accountant	Correlation Coefficient	-.543**	0.047
	Sig. (2-tailed)	.000	0.748
	N	49	49
**. Correlation is significant at the 0.01 level (2-tailed).			

Table 2: The result of Spearman's rho test about the impact of using computer in accounting work to the salary cost for the accountant in SMEs

However, the statistical result also showed that the correlation among the using internet and the salary cost was not significant (see table 2). Probably, they just used internet to adapt the tax online system as the obligation; and the benefit for the internet and the cloud computing have not been recognized in enhancing the quality of accounting works.

3.4. Impacts of Digital Accounting to the Working Time and the Total Income of Accountants

There is a strong correlation between the level of information technology and the total working time in a company, with the coefficient -0.849 (see table 3). Instead of working for one company as before, with the support of computer now, one accountant can have a choice of working for more than one company at the same time. Among the surveyed accountants, there are 47% of them work for at least 2 SMEs parallely. Specifically, there is 1 accountant working for 10 SMEs and another working for 15 SMEs.

		Total working time in 1 company	Salary rate of the accountant
Percentage of accounting work using computer	Correlation Coefficient	-.849**	0.419**
	Sig. (2-tailed)	.000	0.003
	N	49	49
**. Correlation is significant at the 0.01 level (2-tailed).			

Table 3: The result of Spearman's rho test about the impact of using computer in total working hours and salary rate of the accountants working in SMEs

Secondly, on the contrary with the decreasing trend of total working time in 1 company and the monthly salary when increasing the percentage of using computer in accounting work, the salary rate of the accountant was increased with the coefficient 0.419 and it is

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