

Digital Transformation of Accounting Firms: The Perspective of Employees from Quality Accounting Firms in Thailand

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Abstract

This research aimed to study the digital transformation of accounting firms and investigate the factors affecting it. A questionnaire was used to collect data from 260 employees of 162 quality accounting firms in Thailand. Data obtained were analyzed using descriptive statistics, Pearson's correlation analysis, and MIMIC analysis for testing hypotheses. The results revealed that successful digital transformation depended on adopting digital processes, having a digital mindset, developing digital culture, and obtaining digital knowledge and skills. Four factors that accounted for 84% of digital transformation ability were accounting firms' executive leadership, business model and organizational structure adopted, resource accessibility, and external support. Information and findings obtained from this research can benefit accounting firms and lead to the development of guidelines by agencies relevant to Thailand's accounting profession. This would improve the transition process in becoming a digital accounting firm.

Keywords: *Digital transformation, quality digital accounting firms*

Introduction

The digital transformation in the 21st century has created a change in the accounting sector. Cloud accounting has replaced traditional accounting methods because it is more efficient in terms of accuracy and speed. Automated accounting has changed the accounting profession, and accountants need to look for a way to survive in the future. The leading reason why many accounting firms have digitized their accounting services is to meet market demands. Digital transformation involves adopting new technologies, but it also is about developing new ideas. The change has provided a prime opportunity for accountants and accounting firms to use technology to offer more numerical solutions. They are now acting as business advisors to clients (Vessenes, 2016; Blueback Global, 2020).

Being a successful digital accounting firm requires not only a focus on new technology but also human participation, the strategy adopted, the culture developed, and the broader business goals set (Intuit, 2011). The real power of technology is its ability to allow professionals to connect with customers to build better and longer relationships and offer valuable services and sound advice to help businesses succeed (Maneemai et al., 2018). Therefore, accountants need to balance these matters, which will help their businesses run smarter and faster. Technology provides better access to financial information and improves interoperability.

The Department of Business Development is an agency that promotes and supports accountants to develop professionalism and good governance so that they recognize the importance of developing and enhancing accounting standards to keep pace with the profession's changes and technology. Therefore, the policies and plans adopted encourage professional accountants to be prepared to transition into the digital economy. The programs available include preparing quality accounting firms to gain access to accounting and management innovations and enable the transition from the traditional methods to a digital accounting format (Department of Business Development, 2020a).

In 2020, a few quality accounting firms in Thailand had started to adopt some new technologies, such as cloud accounting, artificial intelligence, or robots in accounting. However, there is no clear information as to what extent and in what areas quality accounting firms in Thailand are using technology. This is because the Department of Business Development and other departments involved in the accounting profession's development have not yet determined a clear set of the criteria,

structures, and formats to be recommended for adoption by digital accounting firms (Matichon Online, 2020).

Due to these issues, the aim adopted for this research was to review the literature relevant to digital transformation of accounting firms and factors affecting a successful transformation, and to place this in a conceptual framework. The findings may be useful for agencies relevant to Thailand's accounting profession in developing assessment tools to determine the success of accounting firms' transformation. They may also be helpful in developing processes best suited to assist in the transition to become a quality digital accounting firm.

Literature Review and Hypothesis Generation

Transformation to Become a Digital Accounting Firm

The process of transformation to become a digital accounting firm (DTBDAF) involves applying digital technology in operations, management, and solving accounting firm problems. This enables products to be created and services offered to be digitized in response to market demands. It enables business goals to be set for the future (Farnell, 2019). It also includes developing a new mindset and corporate culture to help businesses adapt to the digital age and prepare for changes. Digital transformation involves four elements (Khunpolkaew, 2018; Reynolds, 2019) as follows:

1. Digital Mindset (DMS)—transformation involves changes in organizational staff thinking at all levels, starting from the executive team and transmitted to people throughout the organization. It encompasses developing digital business thinking, including supporting budgets and developing an infrastructure that will aid digital development.

2. Digital Processes (DPC)—internal processes must be altered to permit the adoption of digital technologies so that there is a seamless flow of information. This can involve the development of database systems to reduce data redundancy and that assist information flow, and the implementation of processes that assist planning and decision making that benefits the organization. Training in the new systems is required to build confidence among employees in handling both old and new information.

3. Digital Knowledge and Skills (DKS)—developing organizational employees' digital knowledge and skills is a necessity. This can involve acquiring proficiency in using various computer programs to process information and make paperless reports quickly, and includes becoming familiar with everything being on a digital platform. Therefore, organizational employees must have digital skills to extract and use data to make reports.

4. Digital Culture (DCT)—a new digital culture must be developed in order to encourage organizational collaboration among employees. They need to be ready to cope with emerging technologies, innovative changes, and continual work improvements in order to increase organizational productivity and reduce problems and obstacles that cause limitations. Such limitations may involve delays in gaining an executive's signature of approval on important documents, the issue of scheduling meetings among busy working people, how to handle lots of stored paper information from previous operations, how to deal with reports that can take considerable time to produce, and lack of knowledge of the status of machinery and data production. Therefore, organizational employee selection and development are essential because they require people with vision, beliefs, and goals to meet the needs of the digital age.

Executive Leadership in Accounting Firms

Corporate executives play a crucial role in driving organizational operations to achieve goals and lead to organizational change. Digital transformation requires the presence of executives who have the essential characteristics of being knowledgeable and supportive leaders, with vision and inspirational communication abilities, able to provide intellectual stimulation, possessing organizational and personnel management skills, and able to cope with diversity (Clark, 2019; Rafferty & Griffin, 2004; Sunkphoet et al., 2017). Therefore, if the accounting firm executives have these characteristics, it will enable accounting firms to become digital accounting firms. Thus, it was

hypothesized that an accounting firm's executive leadership (AFEL) affected its ability to become a digital accounting firm.

H₁: The executive leadership provided in an accounting firm affects its ability to become a digital accounting firm.

Accounting Firms' Resources

An organization's operational success depends on crucial internal factors: people, money, materials, management, work processes or operation methods, and time. These are the organization's resources that support the organization's operations to achieve its goals. The use of resources by the administration is a science that requires discipline in allocating limited resources to achieve optimal work outcomes. The aim is to use the resources available to enable the implementation of management processes and effectively achieve the specified objectives (Pongtanee, 2009; Injun, 2009). Therefore, to enable transformation into a digital accounting firm, the organization must have the resources to support digital operations. Of considerable importance is the presence of personnel with digital knowledge and skills who meet the legal requirements related to the accounting profession, accounting standards, and ethics. Resources, innovative tools, and cutting-edge accounting technology need to be ready for use (Maneemaiet al., 2018). Therefore, it was hypothesized that an accounting firm's resources (AFRS) affect its ability to transform into a digital accounting firm.

H₂: An accounting firm's resources affect its ability to transform into a digital accounting firm.

Accounting Firms' Business Model and Organizational Structure

Organizations in the digital economy age must have a business model that emphasizes customer values and relationships, and how customer interactions and collaboration are capable of being improved (Berman, 2012; Remane et al., 2017). The organizational structure needs to be appropriate and straightforward to work in a digital environment. Business organizations must create a culture that promotes learning new things by employing knowledgeable and innovative personnel who work with the future in mind. Besides, businesses need to develop their technology and application capabilities to distinguish and deliver a superior customer experience for who choose to use their products or services (Berman, 2012; Kaltum et al., 2016; Krüger & Teuteberg, 2016; Remane et al., 2017). The changes instituted in an accounting firm's business model and organizational structure impact the overall business operations and ability to become a digital accounting firm. Therefore, it is hypothesized that the accounting firm's business model and organizational structure (AFBM) affect the ability to transform into a digital accounting firm.

H₃: An accounting firm's business model and organizational structure affect its ability to become a digital accounting firm.

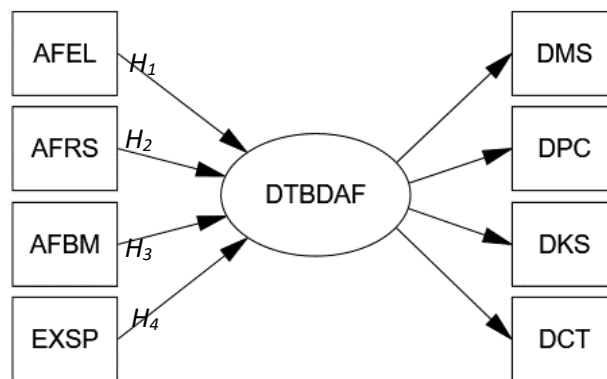
External Support

External support means having access to help and support in various fields such as knowledge of the business platform and system development, relevant regulation development, support from agencies involved in business operations, and the accounting profession (e.g., the Thailand Federation of Accounting Professions, Department of Business Development, and IT partners) to drive the accounting firm into becoming a digital accounting firm (Matichon Online, 2020). Therefore, it is hypothesized that external support (EXSP) affects the ability to transform into a digital accounting firm.

H₄: External support affects a firm's ability to become a digital accounting firm.

The information outlined and discussed above can be visualized in a conceptual research model, as shown below in Figure 1.

Figure 1 *Conceptual Research Model*



Research Objectives

The model outlined in Figure 1 was tested for applicability by collecting data to provide information relevant to the following objectives.

1. To study the digital transformation of accounting firms in Thailand.
2. To investigate factors affecting the transformation to become a digital accounting firm using perspectives given by employees of quality accounting firms in Thailand

Research Methodology

Population and Sample

The research population consisted of employees from 162 quality accounting firms in Thailand (Department of Business Development, 2020b). The sample size for structural equation modeling (SEM) was determined according to Nunnally's (1967) and Stevens's (1996) criteria, which suggested that there should be 10–20 samples per observed variable. In this study, eight observed variables were involved. The optimal samples hence should be more than 80. Two hundred sixty samples were selected by stratified random sampling. Each quality accounting firm's sample was selected by chance, and the number of employees was determined by the employee population.

Tool Construction and Validation

The tool used for this research was a questionnaire created according to the established objectives and conceptual framework. It was divided into three parts as follows:

1. General information of the respondents. It contained a checklist of six items encompassing gender, age, level of education, work experience in the accounting profession, working position, and having a professional accounting license.
 2. Digital transformation in becoming a digital accounting firm—19 items.
 3. Factors affecting digital transformation in becoming a digital accounting firm—15 items.
- In Parts 2 and 3, items were rated on a five-point scale (Likert, 1932).

The tool's content validity was examined by three experts using the index of item objective congruence (IOC) based on Hambleton's (1984) criteria ($IOC > .60$). The results showed that the IOC values of all questions in the questionnaire were between .79 and .93. The questionnaire's reliability was determined based on data collected from 30 employees (Cronbach, 1951), who were personnel from accounting firms in Lampang. The Cronbach's alpha value was .92. The questions used to collect data on the transformation to become a digital accounting firm (questionnaire part 2) and factors affecting digital transformation ability (questionnaire part 3) returned reliability values of .93 and .90, respectively.

Data Analysis

Data were analyzed as follows: (a) respondents' general information and the digital transformation of an accounting firm and factors affecting the transformation were assessed by using descriptive statistics; (b) Pearson's correlation analysis was used to assess the relationship between success in becoming a digital accounting firm and the firm's executive leadership, resources, business model, organizational structure, and external support; and (c) the multiple indicators and multiple causes outlined in the MIMIC model were assessed using various approaches recognized in the literature (Brown & Cudeck, 1992; Byrne, 2001; Kline, 2005; Schumacker & Lomax, 2004). Accordingly, the model-fit criteria adopted consisted of Chi-squared Probability Level ($p > .50$), Root Mean square Residual (RMR $< .05$), Goodness of Fit Index (GFI $> .90$), and Comparative Fit Index (CFI $> .90$).

Results

The study results were separated into four parts as follows.

General Information of Respondents

There were 260 respondents. The majority of respondents were female (74.6%), aged under 30 years old (43.8%), had graduated with a bachelor's accounting degree (68.5%), had working experience in the accounting profession of between 1–5 years (34.6%), and had positions as officers (38.5%). Most respondents (91.5%) did not hold an accounting license. Those who did were Certified Public Accountants (CPA) (6.2%) and Tax Auditors (TA) (3.8%).

Factors Affecting the Transition to Become a Digital Accounting Firm

In the firms surveyed, the pressure to become a proficient digital accounting firm was at the highest level, as shown by the total values in Table 1. In order of importance, the factors contributing to transformation success were digital processes, digital mindset, digital culture, and digital knowledge and skills.

Table 1 Factors Affecting Digital Transformation to Become a Digital Accounting Firm

Factors Involved in Digital Transformation	<i>M</i>	<i>SD</i>	Level
Digital Mindset	4.22	0.55	Highest
Digital Processes	4.28	0.54	Highest
Digital Knowledge and Skills	4.13	0.58	Highest
Digital Culture	4.18	0.60	Highest
Average	4.21	0.49	Highest

Variables Influencing the Ability to Become a Digital Accounting Firm

It was found that an accounting firm's executive leadership, resources, business model and organizational structure, and external support influenced the ability to become a digital accounting firm. All variables were statistically significant at the .01 level, and the correlation coefficients were high, as shown in Table 2.

Table 2 Variables Influencing the Ability to Become a Digital Accounting Firm

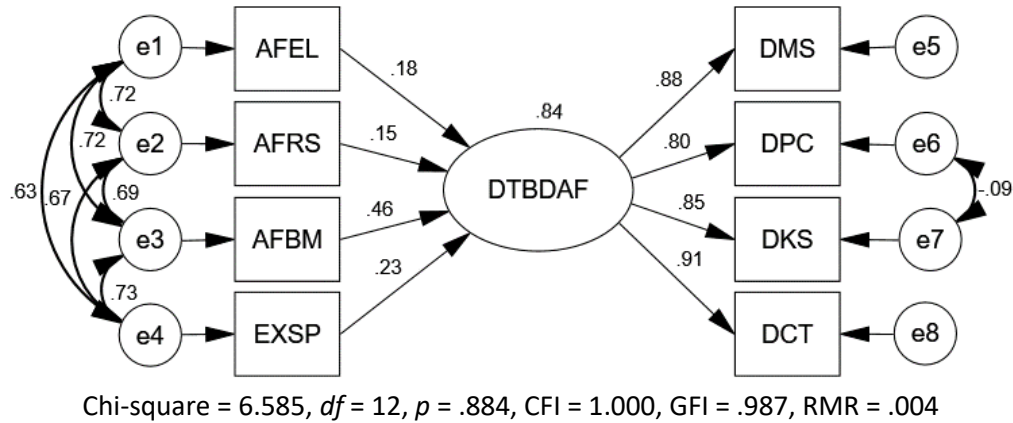
Variables	<i>M</i>	<i>SD</i>	AFEL	AFRS	AFBM	EXSP
Accounting Firm Executives' Leadership (AFEL)	4.25	0.51	1			
Accounting Firms' Resources (AFRS)	4.20	0.55	.723**	1		
Accounting Firms' Business Model and Organizational Structure (AFBM)	4.17	0.57	.716**	.691**	1	
External Support (EXSP)	4.19	0.60	.627**	.667**	.734**	1
Digital Transformation into becoming a Digital Accounting Firm (DTBDAF)	4.20	0.50	.894**	.862**	.901**	.848**

** $p < .01$

Factors Affecting the Digital Transformation to become a Digital Accounting Firm

In the analysis of the MIMIC model to assess the consistency of the model with the empirical data, it was found that the proposed model was well aligned with the empirical data. The data-model fit indices were Chi-square (χ^2) of 6.585, probability value (p) of .884, root mean square residual index (RMR) of .004, a goodness of fit index (GFI) of .987, and a comparative fit index (CFI) of 1.000. The statistical data obtained from the analysis of the structural equation model are shown in Figure 2.

Figure 2 Statistics Show the Consistency of the Proposed Model with the Empirical Data



Standardized factor loadings of observed variables are components of latent variables affecting transformation into a digital accounting firm (DTBDAF). The variables were in four areas: digital mindset (DMS), digital processes (DPC), digital knowledge and skills (DKS) and digital culture (DCT). They had component weights of .88 (β = .88), .80 (β = .80), .85 (β = .85), and .91 (β = .91), respectively. All the observed component weight values contributing to DTBDAF were statistically significant (p < .01) as shown in Table 3.

Table 3 Component Weight Values of Observed Variables that are Components of Latent Variable Affecting Accounting Firms' Digital Transformation (DTBDAF)

DTBDAF's Observed Variables	Std. Factor Loading (β)	SE	t-value
Digital Mindset	.88**	Scaling	
Digital Processes	.80**		11.632
Digital Knowledge and Skills	.85**		13.186
Digital Culture	.91**		15.234

** p < .01

Hypotheses Testing Results

The hypothesis testing results are summarized in Table 4.

Table 4 Hypotheses Test Results

Hypotheses	β	SE	t-value
H_1 : AFEL \rightarrow DTBDAF	.18	0.067	2.580**
H_2 : AFRS \rightarrow DTBDAF	.15	0.066	2.001*
H_3 : AFBM \rightarrow DTBDAF	.46	0.065	6.016**
H_4 : EXSP \rightarrow DTBDAF	.23	0.056	3.311**

* p < .05, ** p < .01

Hypothesis 1 (H_1): An accounting firm's executive leadership (AFEL) affected the digital transformation process (DTBDAF). The results showed that an accounting firm's executive leadership

ability positively affected the digital transformation process. The path coefficient of .18 was statistically significant at the one percent level ($p < .01$), indicating that Hypothesis 1 was supported.

Hypothesis 2 (H_2): The accounting firm's resources (AFRS) affected the digital transformation process. The results showed that accounting firm resources positively affected the digital transformation process. The path coefficient of .15 was statistically significant at the five percent level ($p < .05$), indicating that Hypothesis 2 was supported.

Hypothesis 3 (H_3): The business model and organizational structure (AFBM) adopted by accounting firms affected the digital transformation process. The results showed that the accounting firm's business model and organization structure positively affected the digital transformation process. The path coefficient of .46 was statistically significant at the one percent level ($p < .01$), indicating that Hypothesis 3 was supported.

Hypothesis 4 (H_4): External support (EXSP) affected the digital transformation process. The results showed that external support positively affected the digital transformation. The path coefficient of .23 was statistically significant at the one percent level ($p < .01$), indicating that Hypothesis 4 was supported.

From the data shown in Figure 2 and Table 4, it may be concluded that the four factors (executive leadership, resources, business model and organization structure, and external support) could jointly predict 84% of digital transformation ability ($R^2 = .84$). All but one factor affecting digital transformation to become a digital accounting firm were statistically significant at the one percent level. An accounting firm's resources affected digital transformation success and was statistically significant at the five percent level. In the experience detailed here, the digital transformation ability to become a digital accounting firm (DTBDAF) might be forecast using an equation in the form of a standard score (β) as follows:

$$DTBDAF_{\beta} = .18AFEL + .15AFRS + .46AFBM + .23EXSP$$

Discussion and Summary

In the present study, which considered the digital transformation of accounting firms in Thailand, it was found that transformation was being experienced at the highest level. This may have been because the 162 quality accounting firms surveyed have been developing and promoting the adoption of accounting standards to keep pace with the professional and technological changes that have occurred since 2018. In other words, they have generated policies and plans for their accounting firms to acquire both knowledge and the technological tools needed for transition into the digital economy. Such forward thinking has enabled access to accounting and management innovation, and has permitted transformation from a traditional to a digital accounting working style. In 2020, the Department of Business Development took steps to enhance knowledge and boost technological development related to accounting. These initiatives have helped businesses transform successfully into digital accounting firms and have aided in adopting artificial intelligence or using robots in accounting or data analysis processing. A suitable formulation is available for an accounting firm to facilitate adopting a digital accounting structure and layout (Matichon Online, 2020).

Factors affecting digital transformation success were enlightened executive leadership, an appropriate business model and organization structure, and relevant external support. Possible explanations follow.

Executives can be transformational leaders and can play a crucial role in driving their organization's operations to achieve its goals. Leaders can play crucial roles in imparting a vision through clear communication, giving intellectual stimulation, and supportive leadership. When employee and organizational personnel diversity recognition is forthcoming, this will drive organizations toward their digitalization goal (Clark, 2019; Rafferty & Griffin, 2004; Sunkpho et al., 2017). Therefore, if accounting firm executives are qualified and experienced in digital matters, it will drive accounting firms to become digital firms. This is in line with Maneemai et al.'s (2018) study results, which found that successful digitization in accounting firms was linked to leadership

characteristics such as vision, inspirational communication, cognitive stimulation, supportive working environment, and employee and organizational personnel diversity recognition.

Resources available to accounting firms affected their ability to implement a digital transition. This may be on account of internal factors in an organization such as personnel, money, material and management resources, and work processes, especially those involved in the time taken to reach targets and marketing. Therefore, the use of resources for administrative benefit is a science that deals with allocating limited resources to achieve the organizational objectives effectively (Injun, 2009). Developing sufficient digital resources, ensuring their availability, and developing human resources to gain digital knowledge and skills will help promote efficiency in all organizational operations (Pongtanee, 2009). At the same time, accounting firms need to develop personnel and tools to keep pace with professional and technological changes. Therefore, human resource development is vital to enable the acquisition of digital knowledge and skills (in line with legal requirements relating to the accounting profession, accounting standards and ethics), and the provision of innovation and technology resources in accounting. Such developments will help drive the firm to become an excellent digital accounting office (Department of Business Development, 2020).

An accounting firm's business model and organizational structure affects the ease of digital transformation. For example, the following features represent a forward-looking approach—the adoption of a simple structure that reduces traditional barriers to work, using innovations and available technology to solve problems, hiring people with innovative knowledge to work with an eye to the future, emphasizing value and improving customer relationships and interactions, and working together. This will enable organizations to transform their business operations in the same direction as is occurring in the advanced areas of the world in this digital age (Berman, 2012; Remane et al., 2017). It is possible to create a culture that promotes the learning of new things and inspires employees. This means that a forward-looking business model and organizational structure are essential to improving the accounting firm's chances of a successful digital transformation (Kaltum et al., 2016; Krüger & Teuteberg, 2016; Remane et al., 2017).

External support affected the digital transformation prospects. Such support may come in the form of providing business platform knowledge and system development, information of innovations and advances in technology, the development of relevant regulations from outside agencies (e.g., Federation of Accounting Professions, Department of Business Development, as well as IT partners). This type of support will help prepare accounting firms to access accounting and management innovation skills and enable businesses to keep pace with the changes and technologies available and being used by accounting firms that have already become digital accounting firms (Matichon Online, 2020).

Accounting firms that wish to become successful digital accounting firms must consider organizational change and give due consideration to factors consistent with the findings reported in this article. This means giving careful consideration to the quality of executive leadership in an accounting firm, the resources available, the business model and organizational structure adopted, and the external support available.

Recommendations

In this study, it was found that accounting firm executive leadership, accounting firm resources, accounting firm business model and organizational structure, and external support optimized the ability of a firm to make the digital transformation necessary in today's world. Therefore, accounting firms need to change their working models from traditional to digital form, and the agencies involved in the development and promotion of accounting firm businesses must realize the importance of developing various factors accordingly. In this research, the following factors were identified as affecting digital transformation ability:

1. Develop the accounting firm's executive leadership so they have essential characteristics of being a leader in the digital age. The skills required include being able to engage in inspirational

communication, giving cognitive stimulation and supportive leadership, and recognizing employee diversity within the organization.

2. Develop the accounting firm's resources, such as boosting human resources, so that the personnel possess digital knowledge and skills, including knowledge of legal requirements, appropriate accounting standards, and ethical guidelines related to the accounting profession. Also, provide accounting innovation and technology resources so that a firm can keep pace with the changing profession and technology that supports the digital approach to work.

3. Transform the accounting office's business model and organizational structure by improving work processes and seeking innovations that can help solve problems and reduce obstacles in traditional operations so that they become compatible with practices in the digital world. Further, the hiring of personnel with digital knowledge and innovative thinking is essential for successful operations in the future. Benefits will also be seen by offering better value, improving customer relationships, providing for customer interaction, and improving the ability to work together. A culture that encourages new learning is bound to inspire people to work better in a constantly changing digital environment.

4. Develop cooperative networks with external agencies as a helpful strategy. This is especially true for agencies involved in the accounting business and profession, such as the Federation of Accounting Professions, Department of Business Development, and IT partners for organizational development. Areas of emphasis recommended are those that give knowledge of business platforms, work system development, innovation and technology, and the regulations relating to the accounting firm business promotion and development.

Future research should also seek to build suitable models and indicators for assessing the transformation process into a digital accounting firm to readily prepare organizations to satisfy quality certification criteria.

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