

# Information Technology Skills and Competencies – A Case for Professional Accountants

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**Abstract.** Growing utilisation and value profile of information technologies have also forced professional accountants to upgrade their skills set so as perform their job better. As a result, there is an increasing concern about the level of competencies that accountants possess in the use of information technologies, and whether they are prepared to meet the challenges of contemporary business environment. However, the skills acquired by professional accountants are still below the minimum level drawn by the accounting professional bodies such as the International Federation of Accountants and the American Institute of Certified Public Accountants. This study focuses on information technology based competencies framework for professional accountants, specifically those operating in small to medium sized accounting practices. This study makes a significant contribution to knowledge and practice by providing theoretical base for developing information technology related competencies for knowledge workers in general and professional accountants in particular.

**Keywords:** Information technology, competencies, accountants.

## 1 Introduction

As technologies evolve, corporate world has embraced technology at a fast rate. As a result, almost entire businesses have been automated. The result of this automation has been profound on job designs of the employees of these businesses. For example, terms like ‘knowledge worker’ have been consistently used to describe contemporary business workers, since information technologies (IT) have become an integral part of their routine work. The role of accountants in modern business organisations is no exception, which has been transformed from manual to computerised accounting [1]. In fact, IT has changed the way data is collected, processed, stored, and aggregated for preparation of accounting and finance related information required by the management to control and manage business activities [2].

IT competencies are imperative for accountants to perform their tasks [3] and constitute IT skills, IT experience, management skills (in particular project management) and conceptual skills. These skills on one hand aid the routine business activities related to accountants’ work, and on the other hand help them create an

environment where these technologies operate at their optimum level for the strategic internal and external advantage of the business. However, many parties, including accounting practitioners have expressed their concern about the level of IT-related skills and competencies acquired by accountants [4, 5]. Although the demand for accounting professional arose through the need to achieve skills in IT, the skills acquired by professional accountants are still below the minimum level drawn by the accounting professional bodies such as the International Federation of Accountants (IFAC) and the American Institute of Certified Public Accountants (AICPA) [4, 5, 6 and 7]. In addition, accountants are unclear about the exact IT-related skills and competencies that need to be possessed by them. This issue inspired the researcher to explore the set of skills required by professional accountants, specifically in Malaysian small to medium accounting practices to perform the tasks efficiently. Professional accountants in these type organisations have important roles in providing business support to their clients such as corporations, small and medium organisations, individuals and other organisations. It will, however, be interesting to study the competencies developed in the use of IT in different cultural settings.

This study is structured as follows: the next section describes the concept of IT competencies and new requirement of IT competencies for professional accountants, derived from the relevant literature. The second section is the proposed framework for IT competencies and the last section outlines a conclusion.

## **2 Related Work**

Competence is defined as the state of quality of being adequately or well qualified or a specific range of skills, knowledge and abilities [8]. Competence, therefore, is the link between skills of employee and the job requirements [9]. In the accounting context, Carnaghan [10] views IT competencies as the qualities which are demonstrated by activities, such as the capacity to create a spread sheet or database for a particular purpose, or the ability to use software. According to IFAC [6], professional accountants are expected to possess necessary IT competencies. In fact, the credibility of the accounting profession in general depends on their success in fulfilling this obligation. Thus, every professional accountant is expected to act as a user, designer, manager, planner or evaluator of information systems; or in a combination of these roles [3]. It has to be acknowledged that these roles require technical skills, organisational skills, conceptual skills, and other social skills [6].

The IFAC through International Education Guideline (IEG 11) guidelines have been used by accounting educators and accounting practitioners as a guide to improve professionalism of accountants. This guideline refers to the technical skills required by accountants to be able to apply their skills in relevant accounting or business context [11]. However, the standard required of IT competencies is not specified and does not give a specific approach on how to develop the IT skills and competence. Therefore, the information systems literature has been reviewed to identify what dimensions or elements have been employed in the previous studies. Unfortunately, most of the studies have provided a list of IT skills such as the ability to use

spreadsheets, word processor, accounting packages and web browser that accountants must be proficient with [12 and 13].

These results are not consistent with the others studies stated that accountants need new skills rather than technical skills to improve their career and professionalism [10]. Although professional accountants' IT competencies are required by the professional standard set by IFAC, very little is known about their IT competencies levels, especially in developing economies such as Malaysia [1]. There are very few studies available that have investigated IT competencies for professional accountants in developing economies. These studies, however only use one dimension i.e. IT skills to measure accounting practitioners' competence in using IT.

## 2.1 New Requirement of IT Competencies for Accountants

IFAC through International Education Guideline 11 (IEG11) encourages professional accountants to have competencies in IT. However, the standard required of IT competencies is not specified and does not give a specific approach on how to develop the IT skills and competence. Therefore, the information systems literature has been reviewed to identify what dimensions or elements have been employed in previous studies. Most of the outcomes of these studies have been a list of IT skills such as the ability to use spreadsheets, word processor, accounting packages and web browser that accountants must be proficient with [13 and 14]. Information systems literature indicates that IT related competencies dependent upon a number of other dimensions or skills [10]. Modern or contemporary professional accountants are required to provide leadership and management support in addition to their routine jobs. It is therefore, essential that professional accountants must have requisite organisational, management, behavioural, and people skills. These skills provide necessary support to IT skills so that professional accountants can perform their jobs effectively. It is, however also important to note that experience of accountants, the culture of organisations, and the formal training of accountants will always have significant influence on the level of competence in accountant possesses in operating, designing and using IT [9, 6, 15].

**Table 1.** Classifications of IS abilities/knowledge/skills

Skills	Categories/ Elements
Technical Skills	Analysis and design, programming language, specific application and general IS knowledge, information system product, database and data communication, advanced applications, computer applications systems, systems theory and concepts, business functional knowledge, technology management knowledge, operating systems, network, personal computer tools.
Organisational Skills	Time management, priority, information organisation.
People Skills	Organisational skills, organisational unit, interpersonal, communication, interpersonal relationships, management, professionalism, business, management, social, society, personal trait, professional skills, business knowledge.
Conceptual Skills	Problem solving, abstraction, strategic planning.

Source: Derived from Various Authors

Table 1 illustrates multi-dimensional IS knowledge, skills and abilities derived from various authors. Literature suggests four different set of skills that are required by a knowledge worker in the contemporary paradigm [16]. These skills are technical, organisational, people and conceptual skills. Technical skills involved specialised knowledge about methods, processes, and techniques designed to carry out specialised activity. Organisational skills are skills enable employees or workers to plan and carry on activities effectively. People skills deal with human behaviour and interpersonal process and conceptual skills include analytical ability, creativity, efficiency in problem solving and ability to recognise opportunities and potential problems.

Professional accountants' skills for success are highly required to react quickly and effectively in organisations. Thus, to be an effective accountant, the right mix of skills has to be developed to sustain the implementation of skill set of IT competencies. This skill set support accountants in everything they do during the accounting processes such as, auditing, recording daily financial transactions, preparing financial statements and making decisions. For that reason, AICPA through Core Competency framework asserted the values of professional accountants as competitive by identifying skill set of IT competencies elements such as communication and leadership skills, negotiation, strategy, problem solving and critical thinking and personal improvement as well as project management cited by Institute of Management Accountants [16]. In fact, the good skill set of IT competencies is critical to the prosperity and even the survival of organisations [17].

### 3 Proposed Framework

The research framework illustrated in Fig. 1 shows foundation for this study which demonstrated the multi-layered and multi-tiered framework of IT related competencies for professional accountants. The main research question is "*How IT competency profile changes with change in job description of a professional accountant working in Malaysian small to medium accounting practices?*" followed by three sub-questions: (1) what are the IT related competencies that help professional accountants to perform their job better?, (2) what are the IT skill sets required for professional accountants at each stage of their professional lifecycle?, and (3) what is an appropriate framework for developing IT related competencies for professional accountants in Malaysian small to medium accounting practices.

The inner layer of the framework represents the first sub-question of the study which deals with the generic skill set of IT competencies. It takes a comprehensive view of IT competence for professional accountants, and investigates the issue at hand in technical, organisational, people, and conceptual dimensions. The second layer of the framework seeks to find the answers for second sub-question i.e. to identify the IT related competencies that help professional accountants to perform their job properly. The aim is to employ the above mentioned skill set in the perspective of experience, organisational culture, formal accounting education and the international standard for accounting practices. These elements are major contributing factors that set the

standard of quality of professional accountants. The third layer of the framework recognises the actual competencies of professional accountants in using IT for jurisdiction specific. For the purpose of this study, it will be focused to Malaysian jurisdiction specifically within Malaysian small to medium accounting practices. It addresses improvement of the main accounting professional regulators in Malaysia who set the national accountants standard through national accounting board. In addition, higher education has been the main education provider in generating accounting graduates in Malaysia.

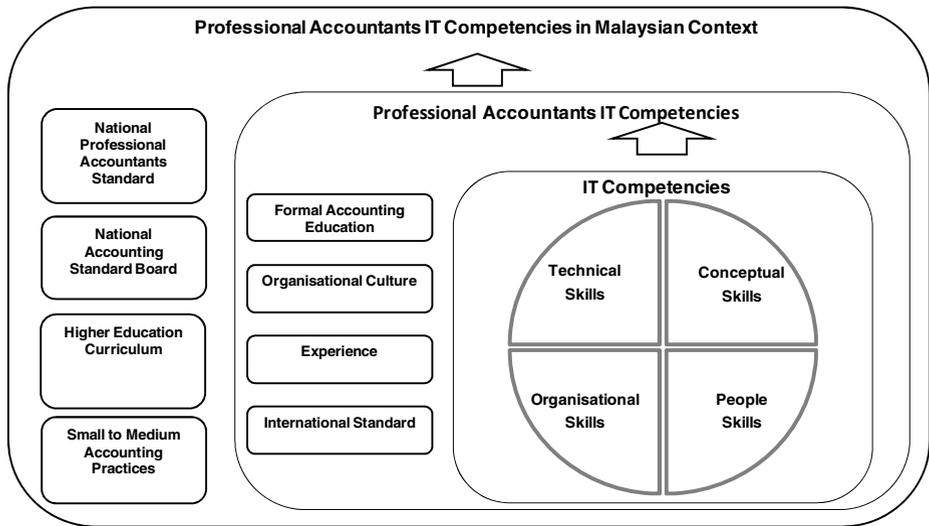


Fig. 1. Conceptual framework of the research

In order to answer the research question, this study will employ a qualitative interpretive research methodology with exploratory research study. Qualitative research methodology approach is represented by distinctive techniques and tools [18]. It involves non-numeric data to provide a deeper understanding of phenomena within its context and creates a strong relationship between the phenomena under study and the researcher [6]. This method provides the best gaining insight to comprehend the issues. Data will be collected through interviews from accountants (including junior, senior accountants and accountants who involve as managers of small to medium accounting practices), academics and representatives from accounting professional regulators in Malaysia. The range of their industry setting helped to understand the phenomena in a broader scope.

#### 4 Conclusion

This study discusses the skills and competencies for professional accountants, particularly in small to medium sized accounting practices in Malaysia, which emphasise the

importance of understanding and being competent in the use of IT. This study provides a novel view, but proposing an all encompassing view of what IT skills and competencies are necessary for contemporary accounts and how do they complement each other to enable professional accountants throughout their professional lifecycle. Through this research, therefore, the authors aim to develop theory related to IT competencies relevant to the entire life cycle of the work process of professional accountants. The outcomes of this research will be invaluable for accounting profession, particularly in Asia. At the same time, these outcomes could be used by academic institutions, i.e. university and polytechnic or business schools for curriculum design so as to incorporate different levels of competences for courses aimed at different levels of professional accountants' professional lifecycle. It is expected that the findings of this study will formalise professional accountants' IT competencies framework and will provide support to on job training and career planning for professional accountants.

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