Extended Abstract (Research-in-progress)
Information Technology (IT) Professionals’ Critical Skills Set, Its Outcome, and Implications on IT Education

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ABSTRACT

This paper is an extended abstract of the research-in-progress. Drawn from previous IS literature, this study aims to explore the most widely required knowledge and skills set for current IT professionals. In addition, the study aims to link possible end-state that IT professionals will reach when properly equipped with skills set required on their works in the form of IT professionals’ quality of work life (QWL). By identifying skills set required for today’s IT professionals, the study is expected to help current IT professionals better prepared for their future careers (which will increase the performance of the IT unit as a whole for an organization), help organizations to retain quality IT workforce (whose need-satisfactions, QWL, heightened) for a long haul, and contribute to IT curriculum at higher education.

Keywords: IT Professionals, IT Knowledge, IT Skills, QWL, IT Education

1. INTRODUCTION

There has been a growing importance of information systems (IS) in business organizations. Moreover, organizations are facing increasing challenges in managing global operations as they become more interlinked through technology and networks. Accordingly, IS activities have become more pervasive. These activities range from developing, managing and maintaining an organization’s information technology (IT) resources and applications to contributing to other business functions to meet their strategic goals [1]. Thus, the IT unit is expected to play an important role in achieving organization’s strategic goals and objectives: the IT unit should ensure an organization’s all IS resources properly aligned with its overall business strategy and core competencies (e.g., supporting an organization’s business operations and processes, incorporating an organization’s business priorities and IT needs, etc).

In so doing, ensuring a good relationship between organizational users (users) and IT unit has been recognized as one of the IT unit’s critical success factors. It has become one of the main responsibilities of IT professionals on how to utilize their technical and business competencies to create and maintain this relationship in ways to support users to achieve their goals more effectively. This organizational expectation towards the IT unit has certainly changed IT professionals’ job definitions and related roles [2], which in turn leads to the changes in critical knowledge and skills set required. However, as baby-boomers retire and a lack of interest in IT careers, it is still very challenging to find qualified IT professionals with the ‘right’ skills set to meet organizations’ such IT needs [3]. In fact, many IT leaders including Chief Information Officers (CIO) indicate that there is still a lack of well-rounded IT professionals with array of business knowledge, who speak both business and IT languages and can make a good sense of IT in the business context [3]. Previous IS literature has portrayed this emergent trend of IT professionals’ multidimensional knowledge and skills requirement encompassing technology, business and management and interpersonal relationship [e.g., 4, 5, 6, 7, 8, 9]. Overall, IT professionals are needed to have their core competencies in operations and IT management, supported by a well-rounded business foundation.

The purpose of this study is to shed light on the changing skills set demand for IT professionals and accentuate its importance and implications on attracting and retaining capable IT professionals. It is also to develop a systematic framework of how critical skills set required on today’s IT professionals affect needs satisfaction, quality-of-work-life (QWL). There are two implications: one on IT curriculum and one on skill sets needed for incoming IT workforce and incumbent IT professionals with ambition to develop their careers. So that IT professionals get their careers in IT field not just for the sake of getting a job and/or having something to do after their higher-education, but for seeking careers that fit with their skills set, provide meaningful and valuable outcomes, and eventually flourish their careers for the better future.

2. IS PERSONNEL’S CRITICAL KNOWLEDGE AND SKILLS

The IT unit typically executes activities that develop, operate, and manage IT, provides functional needs, and contributes to clients meeting their strategic goals (e.g., IT development and management) [1]. To be successful, IT professionals should have accurate specification of clients’ IT needs and business priorities. In other words, IT professionals should be multifaceted and multi-talented possessing skills in diverse areas in addition to technical skills such as communication (verbal and written), teamwork (works well with others), interpersonal (relates well to others), problem-solving (with reasoning and analytical critical thinking), creativity, selling, leadership/management (especially in project management) to name the few. This is in line with what is required for the next generation of IT professionals: to possess skills set including technical knowhow and softer, non-tech skills to get the job done [3]. These skills set generally includes the following [3,10]:

1. Problem-solving: IT is to reconcile business problems,
2. Communication (both oral and written): since, regardless of technical skills, IT professionals must be able to effectively present how IT can contribute and enhance different/idiosyncratic business operation/process,
3. Collaboration (including team and/or project management): IT professionals must be able to work with business partners, other IT professionals, and vendors,
4. Business analysis: IT professionals must understand their business and industry to successfully leverage technology to help their clients to compete,
5. Functional area/domain knowledge: in addition to technical skills, IT professionals must possess specialized skills in various business operations to effectively contribute to their organizations.

Drawn on the previous research, since these activities include gaining and structuring factual and heuristic knowledge by directly interacting with users and domain experts, they can be illustrated in the forms of knowledge acquisition (KA) and requirement acquisition (RA) because they [11]. RA and KA activities are considered as almost identical that entails acquiring, refining, and structuring declarative and procedural knowledge by communicating and interacting with users and domain experts [12]. Thus, these activities are described as KA in general in this study. Overall, aforementioned skills set can be sorted in five major categories (communication/problem solving, personal traits, control, organization, and negotiation) and require IT professionals to possess 26 essential behavioral skills and traits [12]:
3. QUALITY OF WORK-LIFE (QWL)

QWL is defined as employee satisfaction with a variety of needs through resources, activities, and outcomes stemming from participation in the workplace [13]. It is theorized to be the discrepancy between outcome and standard and the weight of each outcome [14]. Outcomes of work life such as economic rewards, promotion opportunities, challenges, and co-worker relations are the material and psychological results of evaluations of the products of organizational work. Standards encompass many different possible bases for the appraisal of work outcomes, such as expectations, values, motives, wants, and social comparisons. The differences between outcomes and standards are weighed differently by the personal value of each outcome. When desired work outcomes such as performance and satisfaction are achieved, individuals are likely to experience three psychological states of experienced meaningfulness, experienced responsibility, knowledge of results [15]. These psychological states resulting from the fulfillment of needs are regarded as QWL in this study.

Studies have shown that excessive workloads, forced overtime, and ambiguous or conflicting role demands cause emotional distress among employees and lower QWL [16]. Studies also have shown that QWL is enhanced by such factors as substantive autonomy, clear role descriptions, team work, involvement in the solutions of work problems, and learning opportunities [17]. QWL is found to be positively related to various organizational affective variables such as job satisfaction [18] and organizational commitment [19].

4. BEHAVIORAL SKILLS/TRAITS OF IT PERSONNEL AND QWL

IT professionals' skills are expected to be positively related to their evaluation of needs satisfaction at work. As their competencies are developed or improved in line with what is expected and/or required, IT professionals' self-efficacy and self-regulation of motivation to work will be increased (According to Bandura's self-efficacy [20] and social cognitive theory [21]. This will lead IT professionals to feel more confident, be more active, and seek innovative, persuasive ways to work with others. Accordingly, the enhanced skills and confidence facilitate the achievement of desired outcomes in terms of need satisfaction such as IT professionals' social, esteem, and actualization needs (e.g., IS personnel feel good about themselves by getting recognition for their work and enhancing their professional skills, competencies, and potential) [16].

5. CONCLUDING REMARKS

This research-in-progress study is in the process of collecting data via web-based survey using questionnaire consisting of items taken from previous studies. All items being used are valid with proper levels of psychometric properties as well as successful track records. For data analysis, partial least square (PLS) method will be employed, mainly because this study assumes a linear combination among latent variables including a dependent variable 'IT personnel's QWL'.

This study aims to shed lights on changing skills set required on IT professionals and its impact on IT professionals' QWL as more business organizations realize the importance of the IT unit and professional to fully leverage IT investments. As illustrated, today's business environments demand more encompassing set of knowledge and skills. IT professionals' competencies in technology, business, and interpersonal relationship are becoming a must to execute their in- and outward IT activities.

6. REFERENCES

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