SKETCHING THE RESEARCH LANDSCAPE OF THE PROFESSIONAL INFORMATION SYSTEMS PRACTITIONER IN SOUTH AFRICA

Udo Richard Averweg

Abstract—An individual who wishes to become a computing professional requires some focus for his professional life in an organisational domain. In this position paper, focus is made on the information systems (IS) professional who conducts practitioner-based inquiry research in the discipline of IS in the workplace environment in organisations in South Africa. Since the actual context for the professional IS practitioner (designated by PMCSSA) who conducts such computing research in organisations in South Africa is not well-charted, this needs clarification and investigation. The probing thereof is the objective of this position paper. The research landscape of the professional IS practitioner in South Africa is sketched by the author. The author argues that by engaging in practitioner-based inquiry research, this can contribute to the IS practitioner’s professional knowledge and elevate the PMCSSA status of practitioners engaged in the IS discipline in organisational domains in South Africa.

I. INTRODUCTION

An individual who wishes to become a computing professional requires some focus for his (or her) professional life in an organisational domain [2]. The importance of information systems (IS) and information technology (IT) to organisations and the need for well-educated professionals in the computing field is a basis for a strong link between formal educational programs (and resulting qualifications) and the professional community of IS practitioners [1,5]. A professional is a practitioner whose practice is based on a significant body of theory, has appropriate tertiary qualifications from a recognised body (in South Africa, usually a university or university of technology), is committed to undergoing continuous professional development, consults best practices before undertaking work and is held to a code of conduct. The Computer Society South Africa (CSSA) has a Code of Practice (Professional Conduct) for its registered members. The CSSA is widely recognised as a professional body for IS practitioners. In South Africa, some IS practitioners are registered as professional members of the CSSA – designated by PMCSSA.

In this position paper focus is made on the IS professional who conducts practitioner-based inquiry research in the discipline of IS in the workplace environment in organisations in South Africa. A position paper presents an arguable opinion about an issue – in this case, the context of the professional IS practitioner who conducts computing research in the workplace environment. The goal of a position paper is to ‘convince’ the reader that the author’s opinion (in the form of a short report and discussion of ideas, facts and situations) is valid and worth listening to – this approach is adopted by the author. In order to begin the discussion, the following question is therefore posed: What is the context for the professional IS practitioner (PMCSSA) who conducts computing research in organisations in South Africa? The probing of this question by sketching the research landscape of the professional IS practitioner in South Africa is the objective of this paper.

This paper is organised as follows: A background to IS practitioner research is given. The family of computing disciplines, with specific focus on the IS discipline, is then introduced. IS professionals in the IS discipline is discussed. Next follows a discussion of the CSSA and the PMCSSA professional membership status. This is followed by an outline of practitioner-based inquiry research in organisations. Finally some concluding remarks are made.

II. BACKGROUND TO IS PRACTITIONER RESEARCH

Robson [13] suggests that a practitioner is a professionally employed person who is gainfully employed in a selected discipline [such as IS] and is concurrently carrying out a systematic inquiry relevant to the job. Practitioner research is seen as research that is done by practitioners to advance their practice [8].

In IS, practitioners’ involvement in research and general inquiry that is small-scale, local, grounded and carried out by IS professionals who directly deliver IS services, is an essential ingredient of good practice in the business world and management workplace environment. The professional IS practitioner must have strong ethical principles; demonstrate relevant, up-to-date skills and capabilities appropriate to a particular role with practical experience complementing theoretical knowledge. In order to maintain up-to-date skills, continuous professional development (CPD) is required. CPD “is a hallmark of a Professional” [3]. The professional IS practitioner should be able to demonstrate a combination of practical IS work and engage in workplace specific research/innovation and be able to critically reflect on his (or her) practice – this is a development of Donald Schön’s notion of the reflective practitioner [15]. The reflective IS practitioner is therefore someone who is simply thoughtful about his (or her) practice and such practice forms an integral part of the family of computing disciplines.

Manuscript received November 18, 2011; accepted December 28; 2011.
Udo Richard Averweg is with Information Service, eThekwini Municipality and Leadership Center, University of KwaZulu- Natal, Durban, 4001, South Africa (e-mail: averwegu@Durban.gov.za).
Computing means “any goal-oriented activity requiring, benefiting from, or creating computers” [2]. Computing is not just a single discipline but is a family of disciplines. According to the CC 2005 Overview Report [2], there are five major computing disciplines:

- **Computer Engineering** which is concerned with the design and construction of computers and computer-based systems;
- **Computer Science** spans a wide range, from its theoretical and algorithmic foundation to developments in robotics, computer vision, intelligent systems, bioinformatics, etc;
- **Information Systems** specialists focus on integrating IT solutions and business processes to meet the information needs of businesses enabling them to achieve their objectives in an effective, efficient way. This discipline’s perspective on IT emphasises information and views technology as an instrument for generating, processing and distributing information;
- **Information Technology**. While IS focus on the information aspects of IT, IT is the complement of that perspective: its emphasis is on the technology itself more than on the information it conveys; and
- **Software engineering** is the discipline of developing and maintaining software systems that behave reliably and efficiently, are affordable to develop and maintain, and satisfy all the requirements that customers have defined for them.

**III. IS PROFESSIONALS IN THE IS DISCIPLINE**

In the *IS 2010: Curriculum Guidelines*, the authors note that “[t]he IS discipline contributes significantly to several domains, including business and government. IS are complex systems requiring both technical and organizational expertise for design, development, and management” [16]. According to this guidelines report, in “...conceptualizing the role of information systems in the future ... several elements remain important and characteristic of the discipline” [16]. These characteristics evolve around four major areas of the IS profession:

- IS professionals exist in a broad variety of domains (e.g. business, government, non-profit organisations, etc);
- IS professionals must have strong analytical and critical thinking skills to thrive in a competitive global environment;
- IS professionals must exhibit strong ethical principles and have good interpersonal communication and team skills [10]; and
- IS professionals must design and implement IT solutions that enhance organisational performance.

Professionals in the IS discipline “are primarily concerned with the information that computer systems can provide to aid an enterprise in defining and achieving its goals, and the processes that an organization can implement or improve using information technology” - IS focus on the information aspects of IT [2]. IS professionals work with IT and must have sound technical knowledge of computers, communications and software [16]. Some of these IS practitioners in South Africa are registered as professional members of the CSSA.

**IV. COMPUTER SOCIETY SOUTH AFRICA (CSSA)**

The Skills Framework for the Information Age (SFIA) is a common reference model for the identification of skills needed to develop effective IS making use of IT. SFIA is used in more than 150 countries and uses a common language and logical structure outlining required skills, knowledge and competence. Organizations seeking International Professional Practice Partnership (IP3) accreditation define their professional standard requirements in terms of SFIA at Level 5 – see www.ipthree.org. The IP3 professional standard includes all elements found in ‘traditional’ professions: skills based on theoretical knowledge; demonstration of competence; a defined work autonomy; adherence to a professional code of conduct; and self-regulation through professional certification.

The Computer Society South Africa is a member of the IP3 of the International Federation for Information Processing (IFIP), which has an arm called IP3 of which the CSSA is also a member. The CSSA is “currently working towards professional accreditation by IP3, but are not, as yet accredited by them. To date, IP3 has only accredited the Australian Computer Society (ACS) and the Canadian ICT professional association called CIPS. South Africa, New Zealand and Japan are all busy working towards this accreditation” [11]. The CSSA will therefore have a responsibility to monitor and enforce continuing development and maintenance of professional competence of its professional members.

Article 3.4 of the CSSA’s Articles of Association states that one of the purposes of the Society is

“To improve the technical and general knowledge and to elevate the professional status of persons engaged in ICT”.

The Foreword to the CSSA’s Code of Practice (Professional Conduct) states:

“The Code of Practice deals with the ways in which all members of the Society are expected to exercise their professional competence …” – see www.cssa.org.za/page.php?p_id=176.

During July 2010 the CSSA approved a CPD policy for all registered professional members of the CSSA. The objective of this CPD is to assist members to develop and maintain professional competence. Professional members bear primary responsibility for documenting compliance with CPD activities. CPD categories include the following activities:

- formal academic education (e.g. formal educational courses at universities and/or universities of technology where the subject matter relates to computing);
- professional (e.g. author/co-author of a computing article in refereed/non-refereed journal, speaker on a computing-related topic at conference, symposium, workshop, etc);
- other education and learning activities (e.g. computing-related courses given by training providers);
• self-directed learning (e.g. watching videos or digital video/versatile discs, reading books and journals on computing-related topics); and
• volunteer service (e.g. ‘giving back’ to a computing non-profit organization).

From the above activities, the largest number of CPD points is awarded for professional computing activities. This indicates that, amongst other professional activities, professional IS practitioners who engage in computing research and publish their work will be ‘rewarded’ with CPD points towards their maintaining their PMCSSA membership status.

Currently the CSSA is “working towards being recognized as a professional body by the South African Qualifications Authority (SAQA) and having our PMCSSA registered as a professional designation. SAQA will only be commencing with a pilot project to do this registration and recognition of 8 selected professional bodies from October 2011 to March 2012” [11].

V. PRACTITIONER-BASED INQUIRY RESEARCH IN ORGANIZATIONS

Practitioner-research can be described as “a systematic form of enquiry that is collective, collaborative, self-reflective, critical and undertaken by the participants of the inquiry” [7]. Practitioner-based researchers very often apply exemplars and theories to their own experiences and situations in their jobs in organisational settings while maintaining strong ethical principles. Practice must usually be accompanied by documentation of the research process, some form of explanation or textual analysis, and a demonstration of critical reflection by the IS practitioner. Reflection is seen as the practice of periodically stepping back to ponder on the actions of oneself and in one’s immediate environment [12]. Such critical reflection by the IS practitioner in his (or her) work practices in an organisation may be focused in the three areas:
• content reflection (how a practical problem in an organisation was solved);
• process reflection (examining the procedures and sequences of events); and
• premise reflection (questioning the presuppositions in attending to the identified practical problem).

However, a problem often faced by IS practitioners relates to the organisational requirement that their work practices have to be ‘scientific’ and ‘scientifically founded’ [4]. Khin and Fatt [6] note that one area of controversy between critical institutional research and traditional research is the role of ‘reflective practice’.

Research is to be understood as original investigation undertaken by the IS practitioner in order to gain knowledge and understanding which is of direct relevance to the needs of organisations and where these lead to new or substantively improved insights. “Unfortunately, much of the research published in academic business journals is often seen as being too theoretical and of little practical relevance to business professionals” [9]. Active participation by IS practitioners in the computing research realm in organisational domains in South Africa is a required necessity but also demands an analysis of the actual context within which computing and IS practices function.

VI. CONCLUSIONS

Inquiry that is practice-based is therefore an essential tool for the IS practitioner when undertaking research in his (or her) workplace domains of business, government, non-profit organizations, etc. Knowledge becomes an integrated part of the IS practitioner’s professional research strategies through his active involvement in the generation of knowledge that is based on practice when designing and implementing IT solutions. Professional knowledge creation is knowledge which is derived from the systematic accumulation of evidence in the IS practitioner’s workplace environment. It is developed on strong ethical principles and from systematic forms of practitioner-based inquiry which results in the three possible areas of critical reflection. Engaging in practitioner-based inquiry research can thus contribute to the IS practitioner’s professional knowledge and his understanding of learning theory, although it is accepted that the links between theory and practice appear to be complex. Sometimes this complexity can be mitigated by well-educated IS practitioners.

The focal point for IS practitioner-based inquiry research is therefore identifying computing problems as they are seen by IS practitioners. Active participation by IS practitioners in the computing research domain is a necessity in the workplace environments in organisations in South Africa for addressing such problems and also for continued PMCSSA status - both require an analysed context in which computing, and specifically IS practices, operate. This participation will serve to improve their technical and general knowledge and also elevate the professional status of practitioners engaged in the IS discipline in organisational domains in South Africa. In sketching the landscape in this position paper, this should be seen as the context for the professional IS practitioner (PMCSSA) who conducts computing research in organisations in South Africa.

ACKNOWLEDGMENT

• Some of the text is based on:

• The comments and suggestions received from Mr Tony Parry, PMCSSA, Executive Director / CEO of the CSSA and Professor Alta van der Merwe, Meraka Institute, CSIR are appreciated.

REFERENCES

Communications of the Association for Information Systems, 24(9).


