Paradigm Shift—Cultural Implications for Development of IS Professionals

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Globalization increasingly highlights the need to understand cultural differences worldwide. This is particularly relevant to Information Systems (IS) professionals who, by the very nature of their job, participate in the development of systems that transcend cultural barriers. It also means that organizations have to formulate corporate IS human resources policies that take into account the different expectations and motivational patterns of IS staff worldwide. At the same time, the changing role of IS from support to driver in organizational strategies brings with it a need for a different set of skills in the IS profession. This has been described as the “IS paradigm shift” and implies that the IS professional of the future may need to be more focused on the business rather than technical processes.

The effective deployment of IS staff has long been an issue of concern coupled with the scarcity of IS professionals in many developing countries. The impact is felt not only by the organizations themselves but also by academic institutions that are charged with preparing IS professionals to enter the real world and make a substantive contribution to global developments.

This article reports on a cross-cultural study that addresses some of these issues. The study examines the expectations of graduating IS professionals with the reality of the IS profession as perceived through the eyes of past graduates. Hong Kong (HK) based IS professionals are compared at both stages of the study against their United States (US) counterparts. Not only is there a severe mismatch between the expectations and their realization but significant differences exist between the two cultures. These results have a number of implications for IS personnel policies and for IS education worldwide.

Information Systems (IS) have changed the way that business is conducted in the world and accelerated the trend towards globalization. This has also led to a vastly expanded role for the traditional IS department. The widespread restructuring of the IS services organization and the functions covered has an important impact on the skills required of the IS professional (Farwell et al 1992). Driven by a combination of enhanced technologies, new operating structures, increased demand from users and senior management’s emphasis on the strategic and competitive value of information, the IS professional entering the field in this decade faces an environment in which the traditional rules and roles no longer apply (Klenke, 1993).

To meet the information processing needs of the new global organization, IS managers must select and manage their IS staff effectively. The effective management of IS professionals has long been a major concern to those responsible for productivity and career development (Couger et al, 1993, Crepeau et al, 1992, Burn and Ma, 1990, Ferrat and Short, 1988). These concerns are intensifying in a world where the pervasiveness and critical importance of IS to global development is now fully recognized (Palvia and Palvia, 1992, Burn et al, 1993). They are also made more complex by the cross-cultural nature of such systems and the IS professionals involved.

This also impacts on the academic environment from which the initial pool of appropriately qualified IS professionals must be supplied. There is evidence, however, to suggest that different perceptions may apply within the IS practitioner
profession and the IS academic profession which may affect the ability of academic institutions to respond to the workplace requirements (Leitheiser, 1992).

To examine the issues related to IS academic development and the continued effective management of IS professionals, this paper first reviews the changing skills required by the IS professional worldwide and the implications of these changes for IS educators and IS managers. Strategies for effective IS career management are explored and some of the problems related to the motivation of IS professionals identified. These are specifically examined from a HK perspective.

The paper then reports on the findings of a study of the fit between the expectations of IS undergraduate students and the perceived realization by IS professionals in a working environment. The cross-cultural context derives from the comparison of findings in HK and the findings of a similar study in the US.

Finally, the paper discusses the implications of these findings from the viewpoint of IS managers and IS educators and makes recommendations for continuing research of this nature.

The Changing Skills Required of IS Professionals

The IS Paradigm Shift

A number of recent studies have suggested that an IS paradigm shift has created different job descriptions for IS professionals which requires them to acquire new knowledge and skills. The ideal IS professionals of the 21st century will be multifaceted individuals. They will possess a combination of interpersonal, technical and business skills that will allow them to analyze problems, integrate applications, and implement new business processes built around information technology (Farwell et al., 1992, Leitheiser, 1992).

Acceptance of this concept has renewed interest in research in the area of IS skills requirements, IS staff motivation and IS staff management. Green (1989) in his study attempted to find out the perceived importance of system analysts’ job skills, roles, and non-salary incentives in the US. A total of 872 questionnaires was returned from systems analysts and systems users in the participating organizations. Results showed that systems analysts recognized the importance of behavioral skills such as diplomacy, politics, and sales, for effective system and career development while users expected systems analysts to exhibit technical skills, such as programming.

As a continuation of their 1980 research Cheney et al. (1990) conducted another study through structured interviews with senior IS managers responsible for planning, training, and hiring IS professionals in the US. The IS managers were asked to rate the importance of twenty specific skill areas for each of three major IS worker job categories. These were: project manager, systems analyst/designer, and programmer. In general, the study indicated that senior IS managers believed that human factors and managerial skills have and will continue to increase in importance for all IS workers, particularly for project managers.

Nelson (1991) in his study asked IS professionals and end-user personnel from eight US organizations to identify the perceived usefulness and perceived proficiency of thirty different IS skills grouped within organizational and technical constructs. Results from 275 questionnaires showed that the perceived usefulness of organizational skills (organizational knowledge, organizational skills, and organizational unit) were rated higher than those of technical skills (general IS knowledge, technical skills, and IS product).

In a two-year research project by the Boston chapter of the Society for Information Management (Farwell et al. 1992), the key issues concerning the changing needs of IS professionals for the rest of the 1990s were examined. A group of 98 IS practitioners, including IS managers, user manager, and IS consultants in the Northeastern US, were asked to rate the importance of a list of IS activities and a list of IS technical skills. The study found that there was a shift in emphasis away from the traditional IS activities and skills. Future tasks and skills will be centered on reorientation of technology to solve business problems and the integration of business functions to provide competitive advantages. The ideal IS professionals of the 1990s should possess a combination of interpersonal, technical, and business skills.

Leitheiser (1992) undertook a study to identify the most important skills for systems developers from the IS managers’ perceptions, both for the early 1990s and projected into the year 2000. The 54 IS skills were assigned to seven categories: analysis and design, programming, interpersonal, business, environment/platform, computer languages, and applications. Results showed that interpersonal and business skills were ranked more important while knowledge of environment/platform and computer languages were considered relatively less important. Most recently Trauth et al. (1993) used data from four groups - IS managers, end-user managers, IS consultants, and IS professors - to identify the key skills and knowledge that will be required of future professionals. The 18 IS abilities were arranged into three categories: human, business, and technical. Results showed that the top six abilities fell under the human and business categories while only one technical skill was ranked in the top ten. In HK, Chau and Tye (1993) replicated this and confirmed the same findings from a survey with valid response from 116 IS managers.

In summary, these prior studies into IS skills have indicated that there has been a demonstrated shift in emphasis away from purely technical knowledge and skills towards strong interpersonal and business skills. The demand to attract IS professionals with solid business backgrounds is increasingly being met through the appointment of business professionals who may then be taught the technical requisites to help plan and implement IS for business (Israel, 1990). In the UK this has initiated the debate on the role of the “hybrid manager” as the more effective CIO of the future (Earl & Feeny, 1994). It has also renewed interest in the longer term debate surrounding the effective management and development of IS human resources.