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# The Nature of Soft Skills of Information Systems Professionals

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# The Nature of Soft Skills of Information Systems Professionals

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## 1. Introduction

Prior information systems research on I/S professionals and recent assessments of I/S curriculum reveal that while I/S graduates possess good technical knowledge and competence, they often lack soft skills (Fryer, 1995; King, 1995; Lee, Trauth and Farwell, 1995; Richards and Pelly, 1994; National Research Council, 1992). As a result, graduates who possess excellent technical skills may not necessarily perform well in real-world work situations because of poor soft skills.

Although this skills gap is generally acknowledged in the profession, surprisingly little theory-based research has been done to understand the nature of soft skills better (Boddy and Buchanan, 1992). Past research has concentrated on the total skill set of I/S professionals (e.g., Burn, Tye, Poon and Ma, 1995; Lee, Trauth and Farwell, 1995). One major research question is: What is the nature of soft skills in information systems? Drawing on Wagner and Sternberg's seminal work on practical intelligence, we have developed a taxonomy of soft skills for I/S professionals. Using the developed taxonomy, we will design conduct a study to examine the role of practical intelligence in work performance. The purpose of the research is to examine whether: (1) expert I/S professionals differ from novices in their level of practical intelligence; and whether; (2) differences in practical intelligence affect the career performance of I/S professionals.

## 2. Wagner and Sternberg's Practical Intelligence

Wagner and Sternberg (1985) and Wagner (1987) observed that people who do well academically may not necessarily perform well at work. One primary reason is that while academic settings tend to focus only on skilled acquisition of technical knowledge, practical settings require additional skilled acquisition of practical know-how. Wagner and Sternberg define this additional skilled acquisition as practical intelligence comprising four dimensions: managing tasks, career, self, and others (see Figure 1).

**Managing tasks.** According to Wagner (1987), managing tasks refers to the knowledge and skills required to perform a specific piece of work. An example of practical intelligence in managing tasks is knowing the actions and how to sequence the actions to fix a leaking faucet. In the I/S context, managing tasks will include knowledge and skills in a particular business domain (or business knowledge as it is commonly referred to), as well as actions and sequence of actions in developing, maintaining, or integrating information systems.

**Managing careers.** Managing careers refers to knowledge and skills required to aid an individual in progressing along his or her work life. It includes knowing one's career goals, and how existing work situation fit into the larger context of an individual's entire work career. Examples of practical intelligence

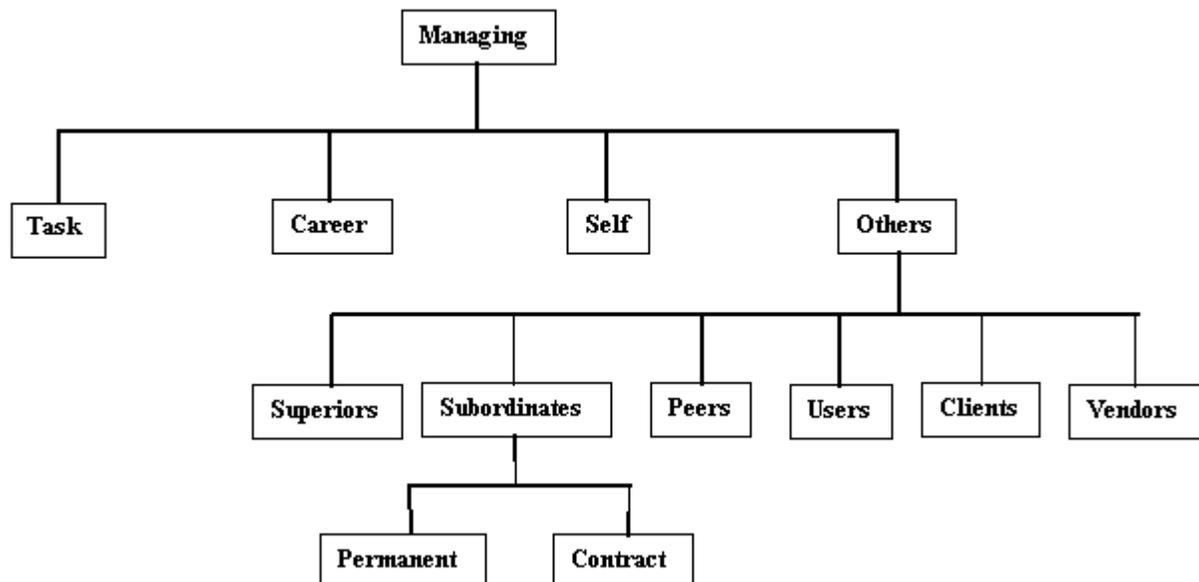
in managing career are knowing how to use one's reputation to enhance career prospects or knowing when to highlight outstanding levels of performance to superiors.

**Managing self.** Managing self involves applying knowledge about one's self-motivation and self-organizational aspects to enhance one's work performance (Wagner and Sternberg, 1990). The objective in managing oneself is to maximize one's productivity. Examples of practical intelligence in managing self are knowing how to overcome the problem of procrastination or knowing how to prioritize work based on importance and urgency.

**Managing Others.** Wagner and Sternberg (1990) described managing others as the knowledge and skills utilized in managing subordinates, peers and superiors. An example of knowledge and skills in this area is in convincing subordinates on the plan of action for the year. Managing others is perhaps the most important dimension of the I/S profession because of the diverse types of "others" that I/S professionals face in the course of their work. In this study, we extend Wagner and Sternberg's classification scheme of others to reflect the idiosyncratic nature of I/S. In addition to managing subordinates, peers, and superiors, I/S professionals also need to manage users, clients, and vendors.

I/S practitioners see the ability to maintain productive user and client relationships as an increasingly vital interpersonal skill (Trauth, Farwell and Lee, 1993). The rising I/S sophistication of the user community adds greater urgency for practical intelligence in managing users and clients. The common practice of assigning end-user managers as project leaders require that I/S professionals manage these managers not only as users, but also as peers or superiors within the organization (Boddy and Buchanan, 1992).

With the advent of I/S outsourcing, I/S professionals also need practical intelligence in managing subordinates that can either be contract workers or regular employees. Although contract subordinates offer technical knowledge that the organization may lack, they often disrupt the unity of regular employees. In managing a team of I/S professionals, the I/S manager must be aware that the interests; knowledge and skills that subordinates bring to the team may vary (Boddy and Buchanan, 1992). There may also be competing demands for the loyalty of the team members if the team is convened on a project basis.



**Figure 1: Dimensions of Practical Intelligence of Information Systems Professionals**

Another consequence of I/S outsourcing is the need to acquire practical intelligence in managing vendors. As the I/S organization undertakes partnerships and alliances with external service providers to serve the

I/S needs of the organization, I/S professionals must learn the necessary soft skills to evaluate services-providers, and form trusting, sustaining relationships with vendors.

### **3. Methodology**

To examine whether I/S experts and novices differ in their practical intelligence, and whether differences in practical intelligence affect work performance, the following steps are necessary:

#### **(1) Develop an instrument measuring I/S practical intelligence.**

Following the methodology suggested in Wagner and Sternberg (1985), we interviewed experienced I/S professionals drawn from a random sample of organizations to obtain real-world situations. Three I/S service providers and five in-house I/S departments were approached to participate. Selected I/S professionals from these organizations were asked to describe typical work-related situations in which managing tasks, career, self, and others were important to job performance. Their responses to these situations were also recorded. A typical example of a work related situation on managing career is as follows:

"Your organization is revamping all its major application systems. As a result, staff are being assigned to either develop new systems or being asked to maintain the old systems. You are assigned to stay with the old systems and be responsible for maintaining them. Although top management assures you that your contributions to the organization will not be overlooked, you feel that new projects would enable you to be exposed to more learning opportunities."

What should you do?

#### **(2) Administer the instrument to a random sample of professionals in various I/S organizations.**

The instrument comprises typical work-related situations covering the four dimensions of practical intelligence. Subjects are asked to write down their responses to each work-related situation. In addition, we will collect information on subjects' work performance as criterion reference variable, and subjects' demographics, educational background, work experience as control variables.

#### **(3) Evaluate the responses to work-related situations.**

The situations and the corresponding responses from the subjects will be given to an expert panel comprising the chief-information-officer (CIO) and the system development manager of the organization. The CIO and systems development manager will rate the responses based on their appropriateness to the given situation. The consensus from the experts will be used to assess each I/S professional within the organization. The expert panel's rating of individual responses to the situation would be key in differentiating expert-novice differences in I/S managers and in determining the extent to which practical intelligence results in successful career performance.

### **4. Status of Research**

The study is at step 1 of the methodology. Thus far, we have interviewed more than 15 I/S professionals from both I/S service providers and in-house departments. Work related incidents are being collected to populate the practical intelligence framework. A total of 125 incidents have been obtained at the time of writing. The distribution of the incidents according to their underlying practical intelligence dimensions is as follows:

Managing Tasks:           13   incidents collected

|                         |            |                     |
|-------------------------|------------|---------------------|
| Managing Careers:       | 8          | incidents collected |
| Managing Self:          | 8          | incidents collected |
| Managing Others:        | 96         | incidents collected |
| <b>Total collected:</b> | <b>125</b> |                     |

Managing others comprises the majority of work-related situations faced by I/S professionals. More interviews are being conducted to collect incidents to saturate the framework. By the time of the conference, we would have results from steps 2 & 3 of the methodology.

## **5. Selected References**

Full references available upon request.