

## 國立台灣科技大學九十五學年度博士班招生試題

系所組別：資訊管理系博士班乙組

科 目：管理資訊系統

總分 100 分 必所有答案必須寫於答案卷上，僅寫於試題者不予計分

一、何謂智慧資本(Intelligent Capital)? 此「資本」有何特殊意涵? 智慧資本與知識管理(Knowledge Management)兩者之間有何關聯? 試詳述之。(25%)

二、學者 Peter Senge 提出建立學習型組織(Learning Organization)的五項作法，其中以「系統思考」(Systems Thinking)最為關鍵。試說明：

1. 學習型組織的概念與理論對現今管理資訊系統學域的研究與實務有何影響?(10%)
2. 何謂系統思考?(10%)
3. 何謂系統基模(Archetypes)? (5%)

三、Fill-in Questions. Be NOTED that the answers must be written both in English and in answer sheet; otherwise, no points will be given (3% for each question)

- (1) A \_\_\_\_\_ is a set of rules and procedures that govern transmission between the components in a network.
- (2) A \_\_\_\_\_ is the Internet business model that provides an initial point of entry to the Web along with specialized content and other services.
- (3) An \_\_\_\_\_ provides software that can be rented by other companies over the Web or a private network.
- (4) \_\_\_\_\_ is a general-purpose language that describes the structure of a document and supports links to multiple documents, allowing data to be manipulated by the computer.
- (5) A \_\_\_\_\_ is a high-level computer language used to retrieve specific information from databases or files.
- (6) A detailed statement of the information needs that a new system must satisfy, identifying who needs what information, and when, where, and how the information is needed describes \_\_\_\_\_.
- (7) A \_\_\_\_\_ determines the potential frequency of the occurrence of a problem and the potential damage if the problem were to occur.
- (8) \_\_\_\_\_ is the ability of each party in a transaction to ascertain the identity of the other party.
- (9) \_\_\_\_\_ is the radical redesign of business processes, combining steps to

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cut waste and eliminating repetitive, paper-intensive tasks in order to improve cost, quality, and service, and to maximize the benefits of information technology.

- (10) \_\_\_\_\_ is a concept that makes quality control a responsibility to be shared by all people in an organization.

四、Below is an INTRODUCTION section of a published paper. Read through it and answer the following questions.

Assessment-based software process improvement (SPI) programs are based on formal frameworks and promote the use of systematic processes and management practices for software engineering. These approaches identify best practices for the management of software engineering. When applied, SPI programs enable organizations to understand, control and improve development processes.

Faced with an enormous choice of methods, tools and techniques, software development managers need evidence that their investment in new practices will produce benefits. Unfortunately, many approaches are adopted “based on anecdotes, gut feelings, expert opinion and flawed research, not on careful, rigorous software engineering experimentation”. Therefore, researchers are urged to undertake evaluative research involving realistic projects with sufficient rigor to ensure that any benefits identified are clearly derived from the concept in question. Although past studies have discussed issues that inhibit adoption of SPI, empirical research on software process innovation is largely lacking. Consequently, there is insufficient knowledge about which innovations are effective, and which factors influence their adoption. It is vital to understand the processes currently used, and to evaluate the effectiveness of process improvement programs, or investments in SPI are wasted.

This paper provides an evaluation of an assessment-based SPI program, which was carried out in 22 small software development firms in Australia. The outcomes of the program were analyzed as part of a doctoral thesis and aspects of the program have been reported previously. Analysis of the capability levels at the time of assessment and later follow-up meeting revealed that the process improvement program was effective in improving the process capability of many of these small software development firms. An association was found between assessed capability levels and the experience and education level of staff employed by the assessed firms; also, the process capability of firms varied depending on the industry sectors targeted by firms. The readiness of small firms to undertake an assessment-based software process improvement program was previously discussed along with the actions taken by the firms and reasons for lack of action. The evaluation reported in this paper is based on an analysis of the documents compiled during the SPI program. The goals of the analysis were to: (1) discuss factors related to small-medium software development firms that are inhibitors or incentives to

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process improvement; (2) suggest improvements to the RAPID program.

(1) Give a TITLE in both English and Chinese appropriate for the above paper. (8%)

(2) Write an ABSTRACT in Chinese less than 400 words for the above paper. (12%)