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Chapter XII

Information Technology Model Curricula Analysis

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INTRODUCTION

Most information technology (IT) bachelor degree recipients get jobs after graduation, rather than attend graduate school (Freeman & Aspray, 1999). They enter the workforce because of the tremendous demand for the IT skilled professionals. This means students (and employers) are looking for a practical rather than a theoretical education to fill the computing careers. Such a practical education necessitates a variety of approaches to work in various computing careers. "The traditional career path of programmer to systems analyst to project manager and eventually to IS manager" no longer holds (Urquhart, Perez, Rhoden & Lamp, 1996). With many career paths there is a need for varying academic tracts to start students in their careers.

INFORMATION TECHNOLOGY AS A PROFESSION

Information technology involves the design, development, implementation, support, and management of software and hardware artifacts (Information Technology Association of America, 1997). An artifact may be a chip, a device, a programming language, or a method to store and retrieve data. The jobs done on these artifacts by IT workers can be classified into four categories: conceptualizers, developers, modifiers, and supporters. There is a loose

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correlation between these categories and IT education (Freeman & Aspray, 1999). It is the job of academia to produce workers in all four of these categories.

Conceptualizers are workers involved with the conception of the basic nature of a computer system artifact. They investigate new ways of processing, storing, transmitting, and representing information. These workers have job titles such as research engineer, systems analyst, computer science researcher, requirements analyst, or system architect.

Developers are people who specify, design, construct, and test an IT artifact. They apply existing technology to new problems. Commonly their job titles are systems designer, programmer, software engineer, computer engineer, chip designer, or tester.

IT workers who modify or extend an information technology artifact work with existing hardware or software. Modifiers maintain systems by making improvements to increase the efficiency of information processing, storage, or communication. They may have job titles such as maintenance programmer, programmer, software engineer, computer engineer, and database administrator.

Finally are those who support or tend the existing systems by delivering, installing, operating, maintaining, or repairing of the information artifacts. Supporters work at the interface between the computer system and the end-user. These are the customer support specialists, help desk specialists, hardware maintenance specialists, network installers, and network administrators.

FORMATION OF INFORMATION TECHNOLOGY AS A DISCIPLINE

Professional fields, such as information technology, are derived from one or more of the traditional disciplines or from other professional fields. The professional fields are the applied application of the knowledge developed in the theoretical disciplines. The professional fields also have an association with the working profession. The working professionals provide guidance concerning the particular knowledge necessary to be successful in the profession. This in turn influences the profession's academic programs.

IT's origins and reference disciplines are management, mathematics, and engineering (Denning, 1998; Freeman & Aspray, 1999; Myers & Beise, 1999; Watson, Taylor, Higgins Kadlec & Meeks, 1999). At any given school, the IT discipline originated from one of these reference disciplines. Regardless of origin the goal of all IT is to process information to be useful.